



In Their Own Words:

Translation from Chinese source documents

Air Force Tactical Logistics (Introduction to Aviation Logistics)

In Their Own Words

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In Their Own Words: Air Force Tactical Logistics (Introduction to Aviation Logistics)

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In Their Own Words: Air Force Tactical Logistics (Introduction to Aviation Logistics)

Air Force Tactical Logistics (Introduction to Aviation Logistics)

[空军战术后勤学 (航空兵后勤概论)]

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Preface

Air Force tactical logistics is an integral part of Air Force logistics, and it is the logistics that guarantees the construction and operation of Air Force tactical units, units, and detachments. It mainly includes air force air depots and ground force divisions, brigades, and regimental logistics, as well as battalion and company logistics. Because the Air Force is a branch of the armed forces composed of many arms, air tactical logistics can be divided into air force aviation logistics, ground-to-air missile logistics, antiaircraft artillery logistics, radar logistics, communications logistics, and airborne logistics. In the practice and study of the logistics work of the Air Force, for the sake of convenience in work and research, people usually merge the logistics of the arms of the armed forces that are similar in nature and have many similar support contents, and refer to them as aviation logistics, air force ground force logistics, and airborne force logistics. The discipline that studies and expounds the internal contradictions of the Air Force tactical logistics movement and the connection with the outside world and guides the practice of the Air Force tactical logistics is called the Air Force tactical logistics. This textbook is mainly used to study the logistics of aviation units in the "Tactical Logistics of the Air Force."

Air Force Tactical Logistics (Aviation Logistics Component) was published in 1991 and revised in 1996. Under the leadership of the head of the air force and the academy, through the efforts of several generations of leaders and instructors of the teaching and research department, the original teaching materials have conscientiously summed up the theoretical and practical experience of our air force aviation logistics over the past several decades, and laid the foundation for the compilation of the teaching materials. In recent years, great changes have taken place in the international strategic pattern and in the situation around our country, and the in-depth implementation of our army's military strategic principles in the new period, the establishment of new strategic priorities, and the extensive application of high technology in the military field have promoted the development of military reform and construction. At the same time, the reform of the establishment system, the implementation of the joint logistics system, the renewal of aviation weapons and equipment, the change of the combat pattern of the aviation forces, and so on. As a result of all this, some contents of the original textbooks are obviously unable to meet the needs of the situation and changes in the situation, and there are also many incompatibles with the current and future trend of logistical reform, which need to be rewritten or updated. After repeated research by the leaders of the department and the department,

in conjunction with relevant experts and professors, he conducted many discussions and demonstrations, and decided to compile this book "Air Force Tactical Logistics" (Introduction to Aviation Logistics) based on the reality of logistics teaching and the construction of logistics disciplines.

The basic tasks of the aviation units are determined in accordance with the national military strategic guidelines, the mission of the air force, and the characteristics of the aviation itself. In future operations, the air force will mainly carry out air assaults on targets in depth, defend the security of the country's territorial airspace and important targets, carry out the struggle to seize air supremacy, carry out air transport, air drop, and air rescue, and carry out aerial reconnaissance and other special tasks. It is conceivable that in future operations, the tasks of aviation will be both heavy and complex. Without reliable and strong logistical support, it will be difficult to survive and complete its mission.

Our army's air forces, with the exception of reconnaissance aviation units, are organized into divisions, brigades, and squadrons. Divisions are the basic tactical corps of aviation. It can be subordinate to the Air Force or the Air Force of a military region, and when necessary, it can also coordinate operations with other branches of the armed forces. The regiment is the basic tactical unit of the air force, and the brigade and squadron are the advanced and basic tactical detachments of the air force, respectively. No matter what scale tactical operations are organized in future operations, the entity that will be responsible for the logistical support of the aviation force will be the air force air force station. As an entity of logistical support for the air force, the main function and central task of the air force air force depot is to ensure the growth of the air force's combat effectiveness, to be on alert, and to be ready for combat at any time in terms of funds, materials, equipment, facilities, and professional technology. Due to the needs of the aviation unit's operational support and the changes in the establishment system, the air force air force depot has not only the relevant logistical support units, but also the flight control, meteorology, communications, and other combat support units, as well as ordnance, aviation materials, and other equipment protection units. That is to say, the air force aviation depots not only have the function of logistical support, but also have some combat and equipment support capabilities. Under these circumstances, in order to facilitate leadership and unified organization and command support, the Air Force Party Committee made a decision to keep the air force depots and stations under the overall control of logistics. Therefore, in order to implement the spirit of the instructions of the Air Force Party Committee and facilitate our work, in the course of compiling the teaching materials, we have proceeded from the overall functions of the air force stations and conducted a study of the combat and equipment support issues related to logistics support.

The compilation of this textbook follows Mao Zedong's military thought, Deng Xiaoping's thinking on army building in the new period, and the general requirements of Chairman Jiang Zemin's "five sentences," takes the Central Military Commission's military guidelines for the new period as the overall guide, takes the air force's tasks and principles of application as the basis, combines the actual logistics of the air force, inherits the relatively mature air force logistics theory of the original textbook, focuses on the implementation of the joint logistics system and the support of new weapons and equipment units, and extensively absorbs the new experience and achievements made in the construction and support of air force logistics in recent years.

Air Force aviation logistics belongs to the most basic theoretical level in the air force logistics system, and it is not only a summary of the experience of aviation logistics in long-term practice, but also a theoretical summary of aviation logistics practice, which has a strong practicality, operability, and relatively clear and specific theoretical principles, and has certain guiding and reference significance for organizing, leading, and carrying out aviation logistics activities. The preparation of this textbook is carried out under the leadership of the department and department. In the process of writing, he also received specific guidance and help from the leading organs of the academy and the Air Force Logistics Department; Professor Yang Xujin made adjustments and revisions to the overall structure and some chapters of the book; Di Qiguang, Shang Jinsuo, Tang Qizhong, Yang Zongyou, Wang Dong, Ding Ming, and other experts put forward very good opinions. Liu Guicai, Guo Qingliang, Liu Daoqin (Chapter 5), Yu Xiaofei (Chapters 6, 13), Zhu Jianxiang (Chapter 8), Liu Daoqin, Yu Xiaofei (Chapters 11, 12). Due to the limited practical experience and theoretical level of the editors, we expect criticism and correction from fellow experts and readers.

Editor(s)

September 2002

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Chapter 1: Overview of Aviation Logistics

Section 1: The Concept of Aviation Logistics and the Process of its Emergence and Development

In the long-term practice of supporting the formation, training, and operation of the aviation force, people have abstracted the concept of "aviation logistics" that can reflect these practical activities. Now that the air force has been launched, the concept of logistics has been recognized by the whole world, and we have basically reached the same view on the connotation, extension, emergence and development of air force logistics.

1. The concept of aviation logistics

Aviation logistics is a general term for the logistics work and its institutions that support the construction, operation, training, and other operations of the aviation forces. Aviation logistics is an integral part of the logistics of the national armed forces, which is subordinate to the air force or other branches of the armed forces in terms of organization and establishment. The logistics organs of the aviation force include: command organs, logistics units, and management organs of logistics materials, equipment, and facilities. Its mission is to provide support for aviation materials, engineering field services, field and sanitation. The extension of aviation logistics is clear. Its scope is generally divided into air force aviation logistics, naval aviation logistics, and army aviation logistics according to their affiliation. Some countries also have air defense aviation logistics. According to the objects of support, it can be divided into: bomber aviation logistics, fighter aviation logistics, attack aviation logistics, transport aviation logistics, reconnaissance aviation logistics, and other aviation logistics. According to the equipment performance of the air force and the combat missions it undertakes, it can be divided into strategic aviation (strategic air force, long-range aviation) logistics and campaign and tactical aviation logistics. According to the habits of our army,

aviation logistics is usually understood as the logistics of aviation units or as air force stations according to the entity of aviation logistics. The aviation logistics discussed in this book is studied from the scope of aviation unit logistics or air force depots, and it is specialized in the study of the relevant contents of the air force aviation unit logistics. Since air force depots are responsible for logistical support as well as some equipment and combat support functions, for the sake of facilitating research, the contents of equipment support related to ordnance and aviation materials and the contents of combat support related to meteorology, communications, and airport defense have been expounded together.

2. The emergence and development of aviation logistics

Aviation logistics came into being with the creation of aviation and developed with the development of aviation. On the issue of the emergence and development of air force logistics in the world, there are different views in the historical circles. But the tendentious view is that aviation logistics originated in 1903, when the world's first powered aircraft were produced.

(1) The emergence and development of aviation logistics on a worldwide scale

In 1903, the world's first powered aircraft arose the problem of guaranteed flight. In 1909-1910 the first military aircraft appeared. After that, the United States, France, Britain, Russia, Germany, Italy, and other countries formed aircraft companies, aviation battalions, or military aviation units in the army. But before the First World War, due to the simplicity of the construction of the aircraft, it could only take on the tasks of reconnaissance and correction of artillery fire. Therefore, the content and methods of logistical support are simplified, and there is usually no special support organization alone, and all logistical work is undertaken by the logistics departments of the army and navy. Strictly speaking, there was such a thing as aviation logistics during this period, and the concept of aviation logistics had not yet arisen. During the First World War (1914-1918), aircraft developed into combat weapons, and some countries successively established aviation units, which gave rise to aviation logistics. It is mainly to supply aviation fuel, aviation equipment, and a small amount of aviation ammunition needed by the troops for flights, as well as to maintain and repair aircraft, and to build improvised flight sites. With the emergence of different types of aircraft, such as bombing, fighting, and strong attack, logistics support work has become complicated, resulting in the supply of materials for different types of aircraft, the provision of necessary airport support, and the beginning of aviation health services and other work. According to the needs of these tasks, logistics support began to be undertaken by specialized logistics agencies, and logistics support work was separated from the army and navy logistics.

However, these logistics agencies are all integrated into the organization of the air force, and there is no independent logistics system yet. After the end of World War I, especially in the 30s of the 20th century, some countries successively set up air forces, and the logistics work of the air force began to be incorporated into the air force logistics system, and the logistics organization was also separated from the air force organization to form an independent support force and form a system organizationally. The airfields where the aviation support units are stationed are gradually called aviation bases. After the outbreak of World War II, the logistics work of the air force was tested by actual combat along with the large number of air force units participating in the war. In addition to the sharp increase in the variety and quantity of supplies, it has also undertaken the heavy task of rescuing the wounded, the task of repairing damaged airfields, and the task of repairing war-damaged equipment. In order to meet the operational needs of the air support unit, the United States and some other Western countries have formally adopted the establishment of air bases, and since then, the bases have actually become the name of the support units of the air force logistics stationed at airports. With the increase of support tasks, the support mode has also changed, and the rear supply is the mainstay, combined with local financing and self-made processing. After World War II, the logistics of the air force has undergone new developments along with the continuous improvement of aviation equipment. The establishment system has been gradually perfected, some new scientific research achievements have been adopted in the means of support, and new technologies such as pipeline refueling and air refueling have appeared; in the command and organization of support work, electronic computers and other automated means have been adopted, and the logistics work of the air force has been greatly developed. Since the 70s, with the emergence of high-tech warfare, high-tech logistical support methods have been rapidly adopted in the armed forces of some developed countries, and the efficiency of support has been greatly improved.

(2) A brief overview of the logistics of the old Chinese Air Force

The logistical activities of China's aviation forces arose in old China before liberation. After the Xinhai Revolution, aviation units were established in Guangdong, Wuchang, Shanghai and other places, and aviation logistics came into being. In 1913, the Beiyang government built China's first airfield in Nanyuan, Beijing, using an army playground. Since then, the warlords in various localities have organized air forces to carry out logistical support activities. After 1928, the Kuomintang government incorporated the air forces in various localities, organized and unified the air forces, and initially formed a system of air force logistics, but the support methods and means were very backward.

(3) The emergence and development of aviation logistics of the Air Force of the Chinese People's Liberation Army

The logistics activities of the air force of the Chinese People's Liberation Army (PLA) were born in the Northeast Liberated Area before the founding of the People's Republic of China. In March 1946, our army created the first aviation school in the Northeast. The logistics department of the aviation school, together with all the personnel of the aviation school, raised aviation equipment and fuel, renovated the flight site, and ensured the training and teaching of the aviation school under the extremely difficult revolutionary war environment. In addition to training flight and aircraft maintenance cadres, the school also has a logistics class to train aviation logistics personnel.

In January 1950, the Air Force Logistics Leading Organization was established in Beijing, marking the formal emergence of aviation logistics. In the initial period (December 1949-November 1950), the logistics of the aviation unit was formed and assumed the task of flight logistics support. In each aviation regiment there is a supply brigade, which is transferred with the aviation unit, and at the same time, there is a fixed station at the airport. In the course of work practice, it is found that the organizational structure of the depot and the supply brigade is roughly the same, which not only overlaps and wastes manpower and material resources, but also the relationship between the two systems is not easy to coordinate, and more importantly, the supply brigade is transferred with the troops, which affects the mobility of the troops. On January 27, 1951, the Air Force issued an order to merge the supply brigade with the depot. The combined support entity is the base station. In November of the same year, it was renamed the military station. Three years later, as the attributes of the station base became more and more prominent, the station base system was reinstated on June 6, 1955. This system makes it clear that the depot is a logistics support organization fixed to the airport. However, due to the fact that the aircraft maintenance support organization is still transferred with the troops, the problem has not been completely resolved. In 1961, with the approval of the Central Military Commission, the Air Force Aviation fully implemented a base-based support system for flight support. Its advantages are that it conforms to the requirements of the Central Military Commission on strengthening combat readiness and dealing with the enemy's surprise attacks, greatly enhances the mobility of the troops, avoids the waste of manpower, material resources, and transportation capacity, facilitates the long-term construction of the bases, and allows the flying units to move at any time, ensuring that the troops are relatively fixed on the base.

Earth. In 1964, because the aviation unit was changed to one division under the jurisdiction of three flight brigades, which were placed side by side with the two sets of organs of the base, and the maintenance personnel who directly maintained the aircraft were assigned to the base, the use and management were not uniform, and there were many contradictions in the work. Later, in March 1970, the base was converted into a depot. The divisional flight brigade was changed to a regiment, and the aircraft maintenance brigade was organized in the regiment. This system has continued to the present day without major adjustments.

After the 80s, the logistics of aviation was strengthened and developed

through a large number of investigations and studies, the air force logistics organs have convened a number of meetings (depot work meetings) devoted to the study of aviation logistics construction, and have made a series of important decisions on aviation logistics construction. It has further defined the guiding ideology of "three aspects and three services" (facing companies, grass-roots units, and the field, serving troops, flights, and combat readiness); formulated the "Regulations on Flight Logistics Support" and other rules and regulations related to aviation logistics; further improved support equipment and support facilities, further strengthened education, training, and scientific and technological work, and markedly improved the overall quality of logistics personnel. In the 90 s of the 20th century, along with the formulation and implementation of our military's military strategic principles in the new period, the logistics of the air force aviation carried out extensive research on logistics support methods under high-tech conditions in accordance with the requirements of ensuring that the air force aviation organized offensive operations and had both offensive and defensive capabilities under high-tech conditions. From 1994 to 1996, he participated in the logistics support of the air force in live exercises on many occasions, and accumulated rich experience in logistics support similar to actual combat. In 1998, the General Armament Department was established, and the operational work of the ordnance and aviation materials departments under the station was transferred to the equipment department for management. In January 2000, after the implementation of the all-army joint logistics system, the mobilization of general-purpose materials, general-purpose logistics support, and combat resources was under the leadership and guidance of the corresponding joint logistics departments, and under their unified planning and coordination, the Air Force Aviation Logistics General Purpose Logistics, General Service, and Combat Resource Mobilization Support were organized.

Section 2: Tasks and Functions of Aviation Logistics

1. The tasks of aviation logistics

Generally speaking, the logistical task of the air force is to ensure that the air force can carry out its combat and training tasks under any circumstances in terms of materials and technology. At any time, it is possible to ensure that supplies are supplied, the wounded and war-wounded planes can be saved, the damaged equipment and damaged airfields can be repaired well, and the support tasks can be successfully completed. In addition, in order to accomplish the above-mentioned tasks, the logistics of the aviation forces also has its own construction and development, the management of troops, equipment and materials, the coordination of the actions of the subordinate personnel, and the organization and leadership of the work to ensure the completion of the above-mentioned tasks. The main tasks include:

(1) Supply the materials needed by the troops, cooperate with the equipment and technical departments in the supply of ammunition and aviation materials, and always maintain the prescribed amount of material reserves.

(2) Responsible for the maintenance, management and emergency repair of the airport, and ensure that the flight site, various support facilities and special roads are in good condition at all times.

(3) Organize the management and maintenance of transportation work and logistics technical equipment, and always maintain the specified good rate of equipment.

(4) Organize health and epidemic prevention, health protection, rescue of the wounded and sick and medical evacuation, and cooperate with the aviation medical department to provide aviation health support.

(5) Do a good job in livelihood security and various services, and carry out agricultural (industrial) sideline production and other agricultural activities permitted by national policies.

(6) To accomplish the relevant tasks of airport defense in accordance with the unified deployment of the aviation units and higher-level organs.

(7) Strengthen the construction of various operations of the station with the focus on outfield flight logistics support.

(8) Manage the equipment, materials and equipment owned by the subordinate detachments, and ensure the safety of warehouses such as oil, ammunition and aviation materials.

(9) Carry out logistical training and scientific research, and continuously improve the ability of logistical command and various professional logistical support capabilities.

2. The basic functions of aviation logistics

The meaning of the word function refers to the function or role that a person, thing, or institution itself has. The function of aviation logistics is the function of aviation logistics and the role it should play in the flight troops. Deepening our understanding of the logistical functions of the air force and clarifying the role it has in relation to the role that the flight unit should play can not only give us a clearer understanding of the essence of the air force logistics, but more importantly, it can guide us to proceed from its inherent functions and play its role in a scientific and rational manner.

The basic functions of aviation logistics are:

(1) Flight support

Flight support is the most basic function of air force logistics.

The reason why flight logistics support has become the most basic function of aviation logistics is that flight support is the specific expression of logistics support functions in the field of aviation logistics. This is what we have come up with theoretically. The same knot can be drawn from the development of the logistics of the aviation forces. Since the beginning of the logistics of the aviation unit, its basic work content has been to ensure flights. As far as the objects of aviation logistics support are concerned, there are different arms of the aviation force; In terms of time, there is a difference between past, present and future, but its fundamental function is to guarantee flight activities. Of course, this is understood in the most general sense. As a specific aviation logistics organization, there are functions of large and small. For example, some aviation logistics organizations can guarantee the flight of several types of aircraft, while others can only guarantee the flight of a single type of aircraft. The significance of understanding the function of aviation logistics lies in the fact that since aviation logistics has a flight support function, there will inevitably be an external form of expression in giving play to this function. This outward manifestation is the provision of services to the people who are protected. Therefore, it is correct for Air Force Logistics to put forward the direction of logistics work for flight services, because this is precisely the profound understanding of the function of aviation logistics. On the other hand, it should also be noted that the support function has an important restraining effect on flight. Whether the flight support function is played well or badly, whether it is strong or weak, has an extremely strong impact on the flight. Therefore, understanding the role of this function and studying how this function can be brought into full play has become an important topic in the theory and practice of aviation logistics.

The guarantee includes two aspects: material supply and technical services. In the work of supplying materials, because the air force consumes a huge amount of materials, many of which are special materials for the air force, which need to be specially produced and a separate storage system established, and in addition the allocation of troops is highly dispersed, it is necessary for the air force to organize the whole process of raising, storing, managing, and supplying the air force itself. Therefore, as a special material support for the logistics of the air force, it is necessary to apply for the distribution of materials step by step, receive and store the materials distributed, and calculate, distribute, and supply the troops during flights. All of these are activities that fall under the safeguards function. There is also a part of the activities of the support work that are technical labor, and the fruits of labor are provided to the troops, or the labor itself is a service activity. For example, health care, automobile driving, airport maintenance, logistical equipment repair, and food support all reflect the use of technical labor to provide support to the troops.

These support activities are characterized by the non-distribution of supplies to the troops, and the provision of labor services is the main thing. The service function of aviation logistics is more prominent than that of other branches of the military. Therefore, it constitutes a more prominent function.

(2) Management

The aviation logistics organization is a support organization composed of various departments and a variety of specialized detachments. The purpose of management is to organically combine various departments and specialized detachments, operate flexibly, work toward a common goal, and give full play to their respective roles in order to accomplish flight support. The level of management has an extremely important impact on the role of the air force's logistical functions. The traditional management method is only to use qualitative analysis to group various departments and specialized units together, and usually only for the purpose of accomplishing tasks and ensuring security, but it is quite difficult to adjust the internal structure to the best state and how to obtain the military economic benefits of support from the angle of quantitative analysis. Therefore, in order to give full play to the functional role of management, the logistics of the air force must apply modern management thinking, system, cybernetics, information theory, leadership science, target management, total quality management, operations research, computer technology, and other advanced management scientific knowledge, so that management can reach a new level.

The logistics of the air force has a management function, which is also manifested in the management of the materials, equipment, and logistics equipment in its possession. Because these substances are likely to be damaged by nature and man-made, if they are not strictly managed, they may become moldy, deteriorate, rust and become unusable. This waste is enormous. The management of material things is a prominent manifestation of the logistical function of the air force. This is because the logistics of the aviation unit has a considerable number of materials and funds at its disposal, and this is the main point that distinguishes it from political and military management. This kind of management is a kind of custodial and custodial management, and it is a function that can be seen intuitively.

The various logistical forces possessed by the aviation logistics are not for the purpose of maintaining their own activities, but are to be used to support the combat and training of the aviation units. How to make use of these forces and when to put them into use is an issue that the logistics management of the air force should always be concerned about. In addition, when existing materials are found to be wasted or used inappropriately, aviation logistics should take measures to restrict the distribution and supply.

The control function of aviation logistics can play a greater role in supporting the limited logistics forces of aviation forces.

(3) Construction

The construction function of aviation logistics has two meanings. The first layer is self-construction. Because everything that exists in society must survive and develop. The activity of survival and development for a certain purpose is the role played by the construction function and the construction function. The reason why the logistics of the aviation forces has developed so rapidly in just a few decades from its inception to the present is that the construction function is at work. It can be said that from the day when there was aviation logistics, the construction activities of aviation logistics also began. The self-building of air force logistics, including organizational, institutional, and operational construction, is a requirement for the self-improvement and development of air force logistics. The other layer means the construction of environmental facilities in order to create support conditions for aviation logistics. It mainly refers to the construction of airports, fortifications, roads, barracks, and other facilities. This is also a construction function of aviation logistics. This is because the logistics of the air force includes departments responsible for engineering construction and a certain amount of maintenance and management forces, and it has the ability to build projects. By understanding the logistics construction functions of the air force aviation units, we can promote, promote, and strengthen the logistics construction functions of the air force and accelerate the continuous development and advancement of the aviation logistics force.

Section 3: Characteristics and Requirements of Air Force Logistics Support

In particular, under high-tech conditions, along with the continuous development of aviation weapons and equipment, changes in the combat style of the aviation units have exerted a profound impact on the logistical support and formed their own distinctive characteristics. By understanding these characteristics, we will be able to provide more targeted guidance for the logistical support of the air force and put forward clear requirements.

1. Characteristics of the logistical support of the air force

Comrade Mao Zedong pointed out that in studying the guiding laws of war, "we should focus on its characteristics and development, and oppose the mechanical theory on the issue of war." "When we study the logistics of the air force, we must study its characteristics and possible developments, so that our understanding can conform to objective reality.

In order to pursue advantages and avoid disadvantages in light of these characteristics, do a good job in the logistics support work of the air force, and complete the logistics support task of the air force.

(1) The logistical deployment of the air force is relatively stable, which is conducive to long-term construction

The main body of the Air Force is aviation. The air force has the characteristics of long-range operations, high-speed mobility, and fierce surprise attacks, and is responsible for resisting the enemy's air assault, covering and supporting the operations of fraternal services (arms), fighting for air supremacy, destroying targets in the enemy's rear, and aerial reconnaissance, transportation, airdropping, and rescue tasks. In a local war, it is also possible to independently carry out strategic tasks. Before each combat mission, the air force must make full preparations at the airport and complete a series of support work, such as command planning, research coordination, and refueling, bomb hanging, and inflation, in order to ensure the completion of the mission. Aviation combat activities are carried out in the air, and all the necessary service work, such as field support, ammunition replenishment, power supply, and gas supply, must be carried out at the airport. Therefore, the combat activities of the aviation units are based on airfields, and they cannot do without airfields for peacetime training or for carrying out combat missions. The construction of airports is a large amount of work, the construction time is long, and the consumption of materials is large, so the airport network is built in peacetime according to the needs of future wars. Whether it is a change in the deployment of air forces, a temporary concentration, or a dispersion of troops, airfields generally do not give up. Generally speaking, when the air force is transferred to that airfield, it will be supported by that station. As the entity of the air force's logistical support, the air force depot is basically deployed on a fixed basis, and the logistics support units (subunits) are also deployed according to the situation of the airport network.

This stability of the air force's logistical deployment has brought very favorable conditions for the construction of logistical support. All air force stations and logistics support departments (subdivisions) can seize the time in peacetime to comprehensively strengthen logistics construction in terms of ideology, organization, battlefield facilities, and other aspects in light of the tasks they may undertake in wartime, ensure the formation of an organic whole under various complicated and difficult conditions, enhance their comprehensive support capability and rapid reaction capability, ensure the training and livelihood of their troops in peacetime, and provide uninterrupted supply support under any circumstances in wartime, so as to adapt to the revolutionization and modernization of the air force units. The requirements of regularization construction should be adapted to the needs of aviation operations under high-tech conditions.

Compared with the logistics of other services and arms, the logistics deployment of the aviation unit has a relatively strong stability. At the same time, we must also recognize that it has a certain degree of mobility. China has a vast territory and a large air defense area, and especially under the conditions of a high-tech local war, in order to accomplish its combat mission, the air force will inevitably carry out extensive and rapid maneuvers, and although the overall deployment of the rear has not changed much, the air force units stationed at some airfields have frequently changed due to the needs of combat missions, and the support tasks undertaken by the stations have increased and decreased from time to time. When an air force needs to be stationed at a field airfield, a highway runway, or a civilian airfield, or needs to urgently activate a guard airfield, or when an airfield is attacked by the enemy, and it cannot be used in this field and needs to be maneuvered to other aircraft, or when it needs to be stationed at an enemy airfield in the course of a campaign and operation, the logistical arrangements must be adjusted accordingly. In addition, with the development of aviation weapons and the use of vertical take-off and landing and short-moment take-off and landing aircraft, the requirements of the aviation force for airfields will be gradually reduced, the construction of airfields will become relatively easy, and the layout of airfields will have a certain degree of flexibility. Therefore, the logistical support of the air force must have a flexible and rapid mobile support capability, and the planes and warehouses in the main combat direction should be stocked with combat materials, equipment, and maintenance equipment needed for multi-aircraft combat flights; the stations must strengthen the training of multi-aircraft support, study and formulate mobile support plans that may be maneuvered to field airfields, highway airstrips, and civilian airports, and urgently activate guard airfields, and organize corresponding mobile support drills to meet the needs of the air force in carrying out different mobile combat missions.

(2) The time for preparing for the combat logistics of the air force is short, and the contradiction between time and task is prominent

The outbreak of modern warfare is sudden, the logistical support time of the air force is short and urgent, and the time available for logistical preparation is very limited. Historical experience has proven that the side that provokes a war always adopts the tactics of surprise attack, preemptive strike, and quick victory to paralyze or destroy the other side's armed forces in one fell swoop and seize the initiative in war. In particular, in high-tech local wars, the actions of the aviation units are more concealed and sudden, the pace of operations is quickened, and the two sides of the war are in a hurry to seize time and compete for speed throughout the entire process of the war, and the beginning of the war is even more prominent. In the battle for battle from the beginning of the war to the end of the war, because the air force has the operational characteristics of rapid maneuver and fierce surprise attack, the air force will bear the brunt and use it throughout the whole process.

In such a sudden, fast-paced modern air battle, the time spent by the aviation unit to prepare is greatly shortened compared with that of ordinary warfare, and logistical support is often carried out without time for preparation or when preparation is insufficient. The time is tight and the tasks are heavy, so logistics have to be prepared and supported at the same time, and the support is accurate at the same time. Aviation operations under high-tech conditions will, to a great extent, change the viewpoint advocated by the ancients that "the soldiers and horses have not moved, and the grain and grass go first," and the situation of "the soldiers and horses have been moved, but the grain and grass have not been moved" has inevitably reappeared. This is determined by the passivity of logistical support. The situation in which logistics cannot advance is that due to subjective foresight and objective constraints by material conditions, it is difficult for logistics support to be consistent with the combat operations of the air force.

At the same time, the short nature of modern warfare has also made the logistical support of the air force highly intense and heavy, and the contradiction between time and task is very prominent. Due to the comprehensive constraints of many factors in modern society, in modern warfare, the traditional timing of war has been replaced by a new concept of time. The two opposing sides must grasp the various time factors of the timing of the war and carefully select the best time for the war, and at the same time, they must make full use of the multidimensional warfare in a limited space to achieve the predetermined operational objectives within the extremely strict time limit. At the same time, a large amount of pre-war logistical preparations and heavy logistical support work during the war were also simultaneously compressed in a unit of time, with the result that the logistical support load in modern warfare increased exponentially, greatly increasing the intensity of logistical support. In addition, the large-scale input of air force and the sudden simultaneous concentration of a large number of new aviation weapons and ammunition in a limited area have led to a sharp increase in the consumption of equipment and materials, and the task of providing support is very arduous. During the Gulf War, the aviation of the US-led multinational forces flew an average of 2,000 to 3,000 sorties per day. During the Kosovo War, the US-led NATO forces bombed for 72 days in a row day and night, but without strong logistical support, it would be difficult to achieve the goal of the war. Judging from the current level of equipment of our air force, it will take more than 30,000 tons of various combat materials to ensure the current strength of a division in combat for three months, and if these materials are transported by train, they will require more than 1,000 wagons of 30 tons.

In addition, the supply requirements of modern warfare are urgent, the preparation time is short, and the uncertain, short-lived, and sudden nature of war often do not allow logistics to be transported for a long time, long distance, and multiple links, and the contradiction between tight and heavy tasks is becoming more and more obvious.

(3) The aviation forces consume a large quantity and variety of combat materials, and the task of supplying logistical materials is arduous and the quality requirements are high

Because the aviation unit has the operational characteristics of high-speed mobility, long-range operations, and fierce surprise attacks, it consumes a large amount of materials in both wartime and peacetime training, especially aviation fuel, ammunition, and aircraft auxiliary fuel tanks. A strong No. 5 regiment is dispatched once to supply more than 110 tons of aviation fuel oil, 36 auxiliary fuel tanks, and 144 tons of aerial bombs; a bombardment regiment of the sixth regiment needs to supply more than 600 tons of aviation fuel oil, 60 to 180 tons of aerial bombs, and 1,200 kilograms of liquid oxygen; and to support the airfields of the two fighter regiments, it usually consumes more than 10,000 tons of aviation fuel oil and more than 100,000 pieces of aviation materials every year. Under high-tech conditions, due to the development of aviation weapons and equipment and the increase in the intensity of sorties, the amount of materials that need to be supplied will be even greater. In 1979, during the self-defense and counterattack operations against Vietnam, the air force aviation units consumed more than 2,000 tons of aviation fuel oil every day only for covering and patrolling tasks, and the main combat airfields consumed more than 100 tons of aviation fuel oil every day, and sometimes even more than 400 tons. If the air force participates in the war in an all-round way, it is estimated that some stations will supply more than 1,000 tons of aviation fuel oil per day. The consumption of these supplies does not take into account the possible loss on the ground, and in fact the possibility of loss on the ground of the supply has increased significantly for various reasons. The logistics of the air force must not only supply a large amount of consumed materials in a timely and accurate manner, but must also take into account possible battle losses, and the amount of supplies will far exceed that of the logistics of fraternal armies and arms, and the task of supplying materials is very arduous.

The practice of air operations in several recent high-tech wars has shown that with the improvement of space reconnaissance technology and the enhancement of the aviation unit's long-range air attack and precision strike capabilities, new changes have also taken place in the structure of the types and quantities of combat materials consumed by the air force: The consumption of combat materials has decreased and the consumption of support materials has increased sharply; the consumption of materials in wartime has decreased and the consumption of materials prepared before war has increased; and the consumption of physical materials has decreased and the consumption of combat funds has increased sharply. This change in the law of consumption of combat materials by the aviation forces has provided us with a new frame of reference for making logistical preparations for military struggles.

The materials consumed by the air force in combat are not only large in quantity, but also have many varieties and specifications, and the quality requirements for all kinds of materials are strict. At present, more than 150 kinds of aviation fuel oil, more than 90 kinds of aviation ammunition, and more than 15,000 kinds of aviation equipment are supplied. If the specifications of these materials are complicated, if they are not well organized, even if there is a shortage of individual parts, it will cause the grounding of the air force and affect the operation of the air force. Since aviation performs combat missions in the air, there are high requirements for the quality of the required materials. The refueled oil must be strictly tested and inspected to ensure that the quality is up to standard; the oxygen filled must be of purity and free of bad gases; the aviation equipment and ammunition supplied must be strictly inspected to ensure that the quality is good; negligence in any link may endanger air safety, and even cause accidents and cause serious consequences.

(4) The logistics of the air force is highly technical, has many specialized contents, and has a complex establishment

Aviation is a highly technical branch of the armed forces. The logistical technical equipment that needs to be provided is complex and varied. With the development of aviation technology, the support equipment will become more and more complex, and the professional and technical skills will become stronger and stronger. In addition to the need to allocate general-purpose equipment for the supply of general-purpose materials, the most important thing in the logistics support of the aviation forces is to organize the supply of aviation fuel, the supply of aircraft engines, auxiliary fuel tanks, and tens of thousands of special aviation equipment and professional maintenance equipment with different names, specifications, and purposes, the supply of various aviation artillery shells, bombs, rockets, air-to-air missiles and their supporting fuses and accessories of different calibers, models, weights, and performances, and the supply of oxygen (liquid oxygen), nitrogen, and air conditioning. The production and supply of carbon dioxide, the supply of special flight equipment, the airport road and lighting, power supply, aviation health service support, special barracks and its facilities, meteorological forecast, communication and navigation, parachute service support, shooting range service support, etc. In order to accomplish the above-mentioned supply support tasks, the logistics equipment of the aviation unit is equipped with a wide variety of technical equipment. Such as aviation kerosene, gasoline, and ancillary fuel supply, storage equipment, power generation, power supply, power start, night navigation lighting equipment, gas production and supply equipment, farm equipment, wind and rain radar equipment and high-altitude wind detection equipment, radio navigation orientation, positioning, communication, landing radar, wired communication, sports communication equipment, etc.

There are more than 100 vehicles of more than 30 kinds for different purposes at just one station. Therefore, aviation logistics is a comprehensive technical and pragmatic body with strong technical nature and a wide variety of specialized contents.

Because the logistics of the air force is highly technical and has many specialized contents, its establishment is much more complicated than that of other branches of the armed forces. In terms of establishment, the aviation division does not have a logistics department, and the air force station performs the functions of the division's logistics department. Due to the needs of aviation support, the air force air depot has not only logistical support departments such as finance, quartermaster, health, transportation, and aircraft battalions, as well as logistical support detachments such as automobiles and field services, but also equipment support departments such as ordnance and aviation materials, equipment support detachments such as the four stations and parachute service, and combat support units such as meteorology, communications and navigation, flight control, and confidentiality, as well as combat support detachments such as guards. Because of these characteristics in terms of establishment, the air force depots must do a good job of internal organization and coordination. Since the support task of the air force flight is jointly completed by the depot and the aircraft maintenance detachment, the depot must also take the initiative to do a good job of coordination with the aircraft maintenance unit, frequently solicit the opinions of the aircraft maintenance department, and under the leadership of the division organs, often coordinate the relationship between supply and demand, properly resolve the contradiction between supply and demand, and take the initiative to do a good job in the support work. At the same time, it is also necessary to promptly request instructions and report to the division commanders, organs, higher-level organs, and relevant operational departments.

(5) The frequent maneuvers and joint operations of the air force make the task of multi-aircraft support heavier, and the command is more complicated

In future air force operations, the joint operation of various types of aircraft with different performances is the key factor in achieving operational victory. Recent local wars have shown that mobile aviation operations and multi-aircraft joint operations have become the basic forms of modern aviation operations. The planes participating in the war include combat planes such as fighter, strike, and bombing, as well as support and support planes for different purposes, such as early warning, jamming, in-flight refueling, and ambulance, forming a joint combat aircraft group with reconnaissance, attack, cover, and support. In the future, most of the local wars we will face will be fought in the border areas, the choice of battlefield space and airports will be limited, the density of airports will be small, and in wartime, in order to concentrate or disperse air military forces in a timely manner, frequent combat transitions will be implemented. Due to the different combat missions undertaken by the aviation units at different stages of operations, the types (types) of participating fighters need to be frequently transferred in a mobile manner. In addition, the combat radius of the aircraft of various types (types) of the aviation force is small;

If the whole operation is implemented, the number of transfers will also increase accordingly, and the task of supporting multiple aircraft at the station will also be increased. Therefore, some airports may be stationed with several types of aircraft and several aviation regiments at the same time in a short period of time. Some aviation regiments may be stationed at several airports at the same time. For example, during the 1996 joint operations exercise along the southeast coast, the number of planes stationed at the forward airfields increased by nearly four times, from five to 15, and more than 120 planes of 13 types were stationed at a certain airfield alone. This shows that in the future logistics support of the air force, the main content of logistics support will be to ensure the joint operation of multiple aircraft. Because different regions, different troops, different types (types), and different combat missions have different requirements for logistical support, the quantity of materials raised, stored, and supplied, the ways and means of support, and even the organization and command all have certain particularities. Logistics should not only organize and carry out the struggle against air raids and sabotage at airports, but also be ready to organize at any time the support for the air units to take off into the air, organize the transfer of support for the air units stationed in their own fields, and organize the support for the transfer of the air force units to the field; it is necessary to organize the support activities of the subordinate departments and detachments, and at the same time to direct the logistics support units (subunits) and the militia and civilian workers attached to the logistics at the higher level to carry out the support; it is also necessary to do a good job in maintaining contacts with the logistics organs and joint logistics departments at the higher levels, as well as with the friendly and neighboring units, and the coordination of local support and front-line organs is complicated, and the organization and command are very complicated.

With the extensive application of high technology in the night battlefield, the night battlefield has become a "transparent battlefield", and the night combat capability has been greatly enhanced. Night air raid operations have become a common tactic in high-tech local warfare, and night fleet support has become an important part of the air force's multi-aircraft logistics support. Due to poor nighttime visibility, the difficulty of support work and the complexity of organization and command work have increased.

(6) The logistical position of the air force is fixed, the target is obvious, and the threat of being attacked and damaged by the enemy is great

Modern warfare is an all-round and three-dimensional war, and at the same time, it is increasingly dependent on logistics. Both sides of the war regard the attack and destruction of the other's rear as an important part of their strategy and tactics. The development of long-range air attack weapons and space reconnaissance technology, especially the enhancement of the strike accuracy and destruction power of precision-guided weapons, has increased the threat to airport security. With the application of laser, infrared, television guidance and other high technologies to aviation ammunition, aerial bombs are developing in the direction of miniaturization, clustering and precision.

In particular, countries are developing low-resistance concrete ground-drilling bombs that destroy runways, specifically for sabotage each other's runways. At present, the United States, France, Germany, and other countries have been equipped with anti-runway bombs, which have the characteristics of low altitude dropping, large falling angles, and high kinetic energy. This increases the power of damage to the airport. In addition, the warring parties not only used air strikes to destroy airfields, but also used airborne means to seize or occupy airfields or send small bandits to sabotage. The logistics of the air force implements supply support at the airport, the position is fixed, the target is obvious, it is not easy to camouflage, and it is more vulnerable to enemy attacks and damage than the logistics of other services and arms. In future wars, the enemy will certainly use all means to seize airfields, and the logistics of the aviation units will carry out the task of providing supply support under the conditions of resisting the enemy's air raids and landing in the air.

2. Basic requirements for logistical support of the air force

In light of the above-mentioned characteristics of the logistics of the air force, in order to adapt to the situation of the modern air force being highly efficient, consuming a large amount of food, maneuvering extensively, carrying out joint operations of different types of aircraft, and the possibility of repeated surprise attacks by the enemy on our airfields, and to successfully accomplish the logistical support tasks, the logistical support of the air force must strive to meet the following requirements:

(1) Enhance comprehensive support capability to meet the needs of the development of aviation weapons and changes in the combat patterns of aviation units

Comprehensive support capability refers to the degree of optimal combination of specialized logistical support forces that can meet the needs of different support targets for operations under different conditions. The scope and number of logistics support tasks that can be accomplished by using the optimized combination of logistics support capabilities are the criteria for judging the strength of comprehensive logistics support capabilities.

Improving the comprehensive support capability is the need for the modernization of aviation weapons. Along with the development of science and technology and the extensive application of scientific research results in the military field, the tactical and technical performance of aviation weapons has been rapidly improved, and the following three aspects are directly related to logistical support: First, the aircraft's air combat mobility and long-range combat capability have been greatly enhanced; second, the diversification of airborne weapons and the great increase in the amount of bombs carried by a single aircraft; and third, the proportion of electronic and automated aircraft fire control, navigation, and flight control systems has increased. The improvement of the tactical and technical performance of aircraft has not only increased the types of combat materials such as fuel, ammunition, and aviation materials, but also increased the amount of consumption and the content of logistics services,

And higher requirements are also put forward for the performance of logistics technology and equipment. In order to meet the logistical requirements of modern aviation weapons, the logistics support force of the aviation unit must enhance its comprehensive support capability.

Improving the comprehensive support capability is a requirement of the joint operations of the aviation forces. In future aviation operations, aircraft with different performance will operate jointly. That is, in one battle, different aircraft types are used at the same time to form a composite formation of assault, cover, support, etc. In order to concentrate forces to strike at the enemy and evacuate forces to preserve themselves, it is necessary to frequently adjust the deployment of forces, and aviation units usually have to organize extensive combat transitions. As a result, there are often situations in which troops of different types (types) are stationed at the same airfield one after another or at the same time. At the same time, all units participating in the war may urgently need the depot to complete the replenishment of various combat materials and provide other technical support. Therefore, it is required that the logistics of the aviation unit have a wide range of adaptability to the objects of support and a strong comprehensive support capability.

Improving the comprehensive support capability is a requirement of the aviation force's mobile operations. One of the main characteristics of modern warfare is highly mobile operations, and the air force, as a highly mobile branch of the military, "bears the brunt of the battle and is used throughout the whole process" in modern warfare, and the high mobility of the air force is fully manifested in modern warfare. The high mobility of the aviation unit can only be achieved by relying on the rapid mobility support of the aviation unit's logistics. Therefore, the rapid mobility support of aviation logistics will inevitably become an important form of support for future air force operations. China has a vast territory, a complex surrounding environment, many "hot spots," and objective random suddenness in the battlefield area, and the air force must adapt itself to this objective situation and environment and carry out extensive maneuvering, long-range raids, and cross-regional operations. At present, due to the constraints of funds and other conditions, the construction of the air force battlefield is not yet perfect, and it is impossible for all air force air force stations to be fully equipped with multi-aircraft support capabilities, and the accompanying support for the mobility of the air force will be the main form of support for the mobile operations of the air force for a certain period of time in the future. The mobile operations of the air force will inevitably set higher demands on the emergency mobile support capability of the air force air force air stations. Therefore, the air force air force depots and stations must strengthen the building of emergency mobile support forces, continuously improve the air force's logistical emergency mobile support capability, and meet the needs of the air force's mobile operations.

Improving the comprehensive support capability is to meet the needs of night air raid operations.

The extensive application of modern high technology on the night battlefield has markedly enhanced the combat capability of night air raids. The side that has mastered the high technology of night always chooses the start time of the air raid of the war at night, and most of the air raid combat operations are carried out at night. Night air raids and counter-air raid operations have become common tactics in high-tech local warfare. Due to the poor darkness at night, the logistical support for night flights is more difficult and has different requirements than during the day: Due to the implementation of light control in wartime, the organization of loading and unloading materials, refueling, charging, and gas supply of aircraft is usually carried out under unlit conditions, and the accuracy is affected; airports must not only have a fixed power supply, but also have emergency power supply means; it is inconvenient to observe at night, the organization and command are complicated, and the support methods and methods need to be changed accordingly, and so on. Therefore, it has become an urgent task to conduct in-depth research on the logistical support of night combat flights and to improve the flight logistics support capability of night air units.

To sum up, it is not difficult to see that improving the comprehensive support capability of the depots and stations is a new requirement for logistical support put forward by the development of aviation weapons and changes in the combat pattern of aviation units. The development of aviation weapons and the changes in the combat patterns of aviation units require that the content of logistics support must be comprehensive, the means of support must be highly efficient, and the objects of support and the support environment must be extensively adaptable.

Air Force air depots and stations should enhance their comprehensive support capabilities in the following aspects: First, they should enhance their material supply capabilities, which are mainly the ability to store, send, receive, and manage major combat materials such as fuel, ammunition, and aviation materials needed by major combat aircraft; second, they should step up the development and gradual equipping of logistical technical equipment with strong adaptability, comprehensive support, and high performance, and gradually realize the serialization of logistical technical equipment. generalization and automation; third, it is necessary to improve the professional and technical level and organizational and command ability of logistics personnel; and fourth, all specialized support forces should cooperate with each other, cooperate closely, and pay attention to bringing into play the overall support efficiency.

(2) Enhance the rapid response capability of logistical support to meet the needs of the suddenness of modern warfare

The rapid response capability of logistics support refers to the degree to which a station can achieve the degree of timeliness in taking logistical support countermeasures and actions in response to changes in the situation, especially sudden wars or incidents.

In modern warfare, the belligerents always try to place the guidance of war on the basis of strategic campaign raids, preemptive strikes, and quick battles.

Especially since the 80s of the 20th century, the extensive application of high and new technologies in local wars has made combat operations more concealed and sudden, and the process of war has been markedly accelerated, which has been more prominent in aviation operations. Therefore, logistical support must be carried out simultaneously with the combat operations of aviation units. The main thing is to make a quick logistical decision on a sudden war or incident, quickly issue support instructions, quickly launch logistical deployment, rapidly raise and reserve materials, quickly complete the replenishment of combat materials for the air force, and quickly do a good job in all other logistics support for the rapid reaction operations of the air force. When conditions permit, it is also necessary to make advance preparations at the backbone airfields in the main operational directions, preset them in advance, and strive for the initiative in support.

Improving the rapid response capability of logistics is in essence improving the utilization rate of logistics equipment time. The so-called time utilization rate refers to the ratio of the field station to the effective workload completed in a certain time. Other factors are equal, and the response ability of the station with high time utilization rate is bound to be fast and the support ability is bound to be strong. The British military critic Fuller once pointed out: "Half of the victory or defeat in a battle depends on the speed of logistics, not on the number of troops." "Improving the utilization rate of time. As far as the air force station is concerned, it is mainly to improve the utilization rate of the time after completing the logistics preparations and receiving the combat flight support tasks in the preparation stage for the first battle. Only by improving the utilization rate of time can the depots have the ability to react quickly to the suddenness of modern warfare.

To improve the station's rapid response capability, first of all, it is necessary to formulate various support plans to deal with emergencies in ordinary times, so that various complex situations can be properly handled in emergency situations. Second, it is necessary to establish and improve a logistical combat readiness system, so that all kinds of logistical support activities can be carried out quickly at the first order, so as to ensure that the troops can take off in the air in a timely manner. Third, it is necessary to automate logistics command and improve the timeliness and accuracy of logistics command.

(3) Improve the organizational and command capabilities of station leaders and headquarters to meet the needs of complex logistics command

The ability of station chiefs and headquarters to organize and command refers to the extent to which station chiefs and headquarters use their leadership powers, give full play to their leadership abilities, realize their leadership intentions, and achieve work results in accordance with the logistical support tasks and the needs of other military work at the stations.

Strong organizational and command capabilities are an objective requirement of modern high-tech warfare.

The head of the station and the headquarters occupy a commanding position in the logistics command system of the aviation force. To a great extent, the effectiveness of the entire logistics command depends on the wisdom and ingenuity of the station chiefs and headquarters, the command art, and the work efficiency, as well as the organic integration with each other. Cultivating and improving the organizational and command capabilities of station chiefs and headquarters is an objective requirement for the arduous and complex logistical command task of modern air forces.

The arduous and complex tasks of logistics command are mainly manifested in the following aspects:

First, there are multiple leadership relationships and difficult command. Under the new structure, the logistical leadership of the air force has an obvious characteristic. Aviation logistics must not only accept the overall leadership of military commanders at the same level, but also accept the leadership of higher-level logistics, division equipment departments, and operational support departments of division headquarters. The higher-level logistics may be the logistics of the air force of the military region, or it may be the logistics of the army or the logistics of the army-level base. After the implementation of the joint logistics system, the general logistics support business will have to accept the leadership of the joint logistics department, but at the present stage, the operational relationship of the general logistics support of the air force is "two-line diversion," and the joint logistics subdivision is only responsible for organizing and implementing the general logistics support of the depots and stations, but has no authority over the general logistics plan and operational management, and the leadership of the general logistics support operations of the depots and stations is still in the logistics at the higher level, not in the joint logistics system. This situation of "disconnection between supply and management" will bring certain difficulties to joint logistics support. With the further development and improvement of the joint logistics system, the scope of support will be gradually expanded, the operational relationship of the "two-line diversion" will change, and the logistics of the aviation unit will eventually accept the operational leadership of the joint logistics subdivision. The multiplicity of the relationship between the logistics leaders of the air force will inevitably bring difficulties to the logistics commanders in handling various orders and instructions from the higher levels. Therefore, "in the logistics command of the air force, the commanders of the stations must take the orders and instructions issued by the leaders at all levels at the higher levels as the basis for command, accurately comprehend them, conscientiously grasp them, handle them systematically, make scientific decisions, and make careful plans and organizations.

Second, the organization and coordination of logistics support are complex. A striking feature of the logistical support of the air force in modern warfare is that it uses a variety of logistical support forces at the same time to complete logistical preparations in a short period of time and ensure the high intensity and extensive mobility of the air force. To adapt to this characteristic, station chiefs and headquarters should meticulously organize and coordinate activities, fully arouse the enthusiasm of all quarters, and jointly accomplish logistical support tasks.

At the same time, the station should constantly coordinate with the aviation units stationed at the field, the logistics organs at higher levels, the joint logistics departments where they are located, the local support front organizations, and the logistics of friendly and neighboring troops, understand the relevant information, take the initiative to report on their work, strengthen contacts, and strive to obtain support and help from various quarters, so as to create good external conditions for the fulfillment of logistics support tasks. Inside the station, it is necessary to rationally organize and distribute support forces in accordance with the combat tasks and requirements of the aviation units stationed at the station, coordinate the actions of various departments and detachments at the station, maintain the internal balance of the logistics support system, and arouse the enthusiasm of all personnel to work hard to accomplish the logistics support tasks. At the same time, due to the extensive mobile operations of the air force, there are many objects of logistical support and great changes, and there is great uncertainty in the combat activities of the air force stationed on the ground. All this increases the difficulty of organizing and directing the station chief and the headquarters.

Third, in the process of guarantee, there are many random factors and the situation changes quickly. In future wars, the air struggle will be fierce, the battlefield situation will change rapidly, the way the air force will carry out its combat missions will change frequently, and logistics support may encounter many unexpected problems at any time, so that logistics command will have a great deal of randomness. For example, the temporary fighter movement of a group of fraternal troops, the forced landing of wounded planes, the parachuting of pilots, the blockade of airfields and the threat of air raids at airfields, and the use of emergency take-off runways to support the operations of troops, all require the field stations to adapt to the situation in terms of manpower and material resource organization, force deployment, and support methods, and the backwardness of the logistics command and communication tools of the stations have increased the difficulties of logistics command. On the one hand, logistical command is complex, requiring a responsive automated logistical command system and reliable communications and liaison; on the other hand, logistical telecommunications tools are backward and inadequate, and do not meet the needs of logistical command. In future wars, under the conditions of heavy tasks, large targets, large amounts of information, and tight time for logistics command, backward and insufficient command means will make logistics command face an extremely difficult situation.

In order to meet the needs of the complexity of logistics command, station chiefs and headquarters must keep abreast of all aspects of the situation related to logistics command at all times, improve all kinds of support materials and other materials related to support activities; strengthen the command and training of the leaders and headquarters and the logistics support drills of various specialized units, conscientiously sum up the logistics support experience of combat and training flights, and constantly improve their organizational and planning capabilities, on-the-spot command capabilities, and adaptability to various operational conditions in the meantime.

Extensive use of modern technology and equipment, the establishment of an automated logistics command system with electronic computers as the main equipment, and the laying of a foundation for the implementation of correct and uninterrupted logistics command.

(4) Enhance the defense capability of airports and effectively preserve the combat strength of the air force and the support strength of the depots

Airport defense capability refers to the degree to which resistance actions and protective measures can be taken to defend an airport from enemy attacks. If the airfield has a strong defense capability, it will be able to effectively prevent and resist the enemy's attack on the airfield and effectively preserve the combat strength of the air force and the support strength of the station.

The development of weapons technology has expanded the scope of the battlefield and led to changes in operational thinking and tactics. In modern warfare, in order to realize their operational attempts of preemptive strike and quick victory, the belligerents will pay more attention to surprise attacks on enemy airfields, and the main methods are air raids and airborne landings. This increases the likelihood of an attack on the airport. Modern air attack weapons have advanced navigation and fire control systems, and generally use various air-to-surface missiles, precision-guided bombs, anti-runway bombs, and so on. Therefore, the ability to penetrate the defense is strong, the assault hit rate is high, and the destructive power is great, which will greatly aggravate the consequences of the attack. In order to enhance the ground survivability of the air force and preserve the logistical support strength, the enhancement of the defense capability of the airfield should be listed as a long-term combat readiness task of the air force.

The situation of local wars in modern times shows that the strength or weakness of the defense capability of airfields has a major impact on the ground survival of the air force and even on the course and outcome of the war. In the third Middle East war in 1967, Egypt neglected the defense of its airfields, and on June 5, through three waves of Israeli surprise attacks, more than 300 planes of various types were destroyed on the ground, and 19 airfields were unusable, thus losing its air resistance capability. The defeat of the Air Force basically determined Egypt's defeat in the "Six-Day War." However, during the Fourth Middle East War in 1973, Egypt drew lessons from the previous war, established an effective ground-to-air missile defense system in advance, and built a solid aircraft concealment hangar, so that the 68 sorties carried out by the Israeli army on seven Egyptian airfields on 7 October not only achieved little results, but on the contrary lost 18 planes, so that it had to give up its attempt to continue the assault on the airfields. In the 1991 Gulf War, Iraq's airfields were also the preferred targets for attacks by US-led inferior forces.

During the Kosovo War that broke out on March 24, 1999, the US-led multinational forces repeatedly bombed the airports of the Federal Republic of Yugoslavia during their 72-day air raids, paralyzing most of them. The practice of local wars has effectively illustrated the status and role of airfield defense in modern warfare.

In order to enhance the defense capability of air force units and depots, it is necessary to enhance the organizational ability of commanders and make full material and technical preparations in this regard. The main measures are: First, draw up and constantly improve the air defense plan; second, strengthen the construction and management of airport defense projects; third, make full use of the terrain and features to organize evacuation and concealment; fourth, adopt advanced technical measures to tightly camouflage; and fifth, make all preparations to eliminate the consequences of the attack.

Section 4: Basic Principles of Air Force Logistics Support

The basic principles of air force logistics support are put forward in light of the characteristics of modern warfare and the requirements of air force operations for logistics support by summing up the historical experience of air force logistics support. It is the basic basis for guiding the logistics support of the aviation forces to advance along the correct track. Logistics commanders and all personnel of the air force should be familiar with these basic principles, correctly understand their spiritual essence, base themselves on these principles in all kinds of support, and creatively apply them.

1. Everything is for the troops, everything is for the victory in the battle

Doing everything for the troops and for winning battles is the starting point and the end result of the air force's logistical support, and adhering to this principle is of great significance to strengthening the ideological building of the logistics personnel, maintaining the correct orientation of the air force's logistics, and doing a good job in the air force logistics work. Doing everything for the troops and for winning battles is a fine tradition of our army's logistical work. During the protracted revolutionary war, under the guidance of the idea of "doing everything for the front," our army's logistical personnel carried forward the spirit of revolutionary heroism, thought about what the troops thought and were anxious about what the troops were anxious about, were not afraid of bloodshed and sacrifice, overcame difficulties and dangers, did everything possible to meet the needs of the troops, fulfilled the tasks of supplying materials and treating the wounded and sick, and ensured the operational needs of the troops. Under the conditions of generation, the objective environment for the logistical support of the air force has undergone great changes, and the material and technical conditions have been greatly improved.

However, we must inherit this fine tradition, carry forward the revolutionary spirit of not fearing hardship and death, apply science and technology, rely on the local people's governments and the broad masses, give full play to the potential energy of joint logistics and air force aviation logistics, form a solid overall support force, and satisfactorily accomplish the logistical support tasks of the air force units.

Everything for the troops, everything for victory in battle, is the direction of the logistics support of the aviation forces. The fundamental purpose of all the activities of the air force's logistical support is to ensure the fulfillment of the air force's combat and training tasks in terms of material supply, medical aid, airport barracks, equipment maintenance, and transportation services. Only by proceeding from the operational needs of the air force, thinking about the troops everywhere, and focusing all work on ensuring the combat victory of the air force units, so that all logistical support conforms to the operational determination of the air force commanders, meets the requirements of the air force combat operations, and actively creates favorable conditions for the air force to fight, can we effectively enhance the combat effectiveness of the air force and ensure the victory in battle. Otherwise, the logistics support of the aviation forces will deviate from this correct direction.

Everything is for the troops, everything is for the sake of victory in battle, which is determined by the essence of our army and embodies our army's purpose of "serving the people wholeheartedly." The logistical support work of the air force is a very specific and complicated service work, but it is an important part of the combat effectiveness of the air force, and implementing the principle of doing everything for the troops and for the victory of the battle in the logistics support work of the air force is the operational requirement of the air force and is also where the interests of the people lie. Therefore, we must adhere to the "three aspects" and "three services," which are also the concrete embodiment of our military's purpose in the field of air force logistics support.

In order to ensure the victory of the air force in battle, the air force logistics support personnel must inherit the fine traditions of our army, keep in mind the purpose of our army, carry forward the spirit of being brave and tenacious, and not afraid of sacrifice, overcome all difficulties, and resolutely fulfill the task of providing combat logistics support for the air force.

2. Taking combat as the driving force to strengthen aviation logistics construction

The so-called combat-oriented approach refers to the establishment of a fundamental starting point in the field of aviation logistics in the field of aviation logistics, which is conducive to improving the logistical support capability of the aviation forces in combat under modern conditions,

and take this as the fundamental standard and basis for testing various logistics support work. We must resolutely stop all activities that run counter to the enhancement of such logistical support capabilities. Of course, stressing the need to take operations as the traction for logistical construction does not mean that other work is excluded, but the problem is that it is necessary to have priority over priority, and when arranging other work, it is necessary to pay attention to the enhancement of the combat and logistical support capability of the air force.

The logistics of the aviation forces must abide by the principle of ensuring the victory of the troops in combat, and this requires that the logistics must be guided by operations and meet the operational needs of the aviation units as the standard. In peacetime, the logistical work of the air force is complicated, and the logistics of the air force has to accomplish many tasks. - For example: production tasks, safety work, administrative management, political learning, life support, dual-use personnel training, etc. If aviation operations are not used as traction, the goals of logistics work can easily be deviated. Some people believe that the troops are in peacetime, that a major war cannot be fought for a while, that the need to support the troops in fighting is no longer as urgent as in the past, and that the concept of serving combat readiness is outdated. Therefore, the need to consider more in peacetime and less in wartime aviation in logistics construction. This is manifested in the following conspicuous manifestations: Failure to carry out logistical and combat readiness work; the decline in the wartime organization and command capability of logistical commanders; the deterioration of equipment and technical conditions; the low rate of supporting reserves of wartime materials; and the construction of airport engineering facilities only takes into account the convenience of peacetime and does not take into account the needs of air defense in wartime. All of this is a reflection of the lack of proper understanding of combat-oriented logistics building.

Taking operations as the traction to carry out logistical construction and enhance logistical support capability has correctly reflected the objective law of the air force's logistical support and revealed the essence of things. This is because the basic function of logistics is to provide support for the combat operations of the troops, and this is the embodiment of the army building in the field of aviation logistics with combat effectiveness as the criterion.

To persist in taking operations as the traction, it is necessary to fundamentally strengthen the construction of air force logistics. We should take advantage of the peacetime period when a major war cannot be fought for a long time in the future, and on the premise of subordinating ourselves to the overall situation of the country's economic construction, we should seize the time and step by step to strengthen the construction centered on modernization, and the logistics construction of the air force is no exception. To fundamentally strengthen the building of aviation logistics, specifically, it is necessary to strengthen the theoretical building of aviation logistics and form a complete theoretical system of aviation logistics. Engage in various construction activities under the guidance of correct theories.

Strengthen the construction of aviation logistics equipment, raise the level of mechanization and automation operations, strengthen the construction of logistics teams, and improve the quality of logistics support and command personnel; It is necessary to strengthen material reserves and improve supply capacity; strengthen scientific research and technological reform, raise the level of application of scientific and technological achievements in the field of aviation logistics; strengthen combat readiness and enhance the combat support capability of air force units.

3. Improve comprehensive support capabilities and focus on flight field support

Field support is the central link in the logistics support of the air force. This is because all the logistical work of the air force is ultimately aimed at satisfactorily fulfilling the logistical support task of the troops' flights. The outfield is the place where the air force directly organizes flights, including the work of the air force, the various preparations of the aircraft, the various preparations of the pilots before the flight, and the implementation of the flight. This is an extremely important part of whether or not the aviation can be smoothly carried out in operations, and it is the basis for the aviation unit's flight activities. Therefore, the logistics of the air force should concentrate all its efforts to do a good job in providing support for the flight field.

The Air Force's logistics system has always regarded flight logistics support as the central task. From the early days of the formation of the Air Force, it was clearly stated that the fundamental purpose of the depot was to ensure the completion of flight tasks and to serve flights. Since then, flight field support has always been listed as the key and central task of the Air Force's logistics, and all levels have been very concerned about field support, and every year they have invested a certain amount of force to strengthen field construction. The logistics of the air force in the theater also requires monthly statistics on the work in the field of flights. As a direct logistical support organization of the air force, the station is all the more concentrated on organizing outfield flight support, providing the best quality service to the outfield in terms of organization, personnel, equipment, facilities, and materials, and regards the level of outfield support capability as a fundamental indicator of the level of logistics support.

The flight logistics support of the air force is jointly accomplished by multi-specialty, multi-departmental, and multi-support detachments under a unified organization. It provides support to the flight units with an integrated support force. Therefore, flight support capability is a comprehensive capability. Attaching importance to the role of comprehensive support capability and vigorously enhancing comprehensive support capability is an important criterion for air force logistics support. This criterion contains the following implications: First, it is necessary to integrate the support forces of all aspects to form a support whole. It includes the strength of the station itself (each professional force), the strengthening force of the superiors, and the local support force.

These forces are organically combined to form a whole with dynamic characteristics that meet the operational needs of the aviation units. Second, it is necessary to integrate all kinds of support contents, apply various support means, simplify supply levels and procedures, and meet to the greatest extent the needs of the supported troops in carrying out different combat tasks under different conditions. Especially the need for aviation units to operate in local wars and emergencies. Third, it is necessary to optimize the use of various personnel, materials, and equipment (equipment) participating in flight support, so that the limited support forces can give full play to their support efficiency. This requires commanders to have the most thorough understanding of the support forces and support tasks they are undertaking in their units, to have the best implementation plans and emergency measures, to have a certain degree of defense, monitoring, and adjustment capabilities, and to enhance their comprehensive support capabilities in various aspects, links, and ways.

4. Rely on science and technology to accelerate the process of modernization

Comrade Deng Xiaoping pointed out: "Science and technology are the primary productive forces. Comrade Jiang Zemin also pointed out: "In order to modernize the armed forces, we must rely on the progress of science and technology." "Science and technology are productive forces, combat effectiveness, and logistical support. The so-called science and technology are logistical support capabilities means that after science and technology are applied in logistical construction and logistical support, they can achieve greater logistical support results or greatly improve the efficiency of logistical support under the condition of investing less manpower and material resources. Only by closely relying on science and technology can the logistics support of the air force improve its logistics support capability relatively quickly and well.

The logistics of the air force relies on science and technology to enhance its support capability, and it has very superior conditions. There is a lot of work in the logistics of the air force that is very technical in nature, and it can even be said that all walks of life have a certain degree of self-skill. This is a good basis for applying new science and technology to improve support capacity. For example, the existing technical equipment includes oxygen production, refrigeration, charging equipment, power supply equipment, refueling equipment, bomb disposal machinery, etc., and through the use of new technologies, its support capacity may be doubled or even increased dozens of times. Taking refueling equipment as an example, it is estimated that an old-fashioned refueling truck can guarantee a Jian-6 aircraft, and two can guarantee a Jian-8 aircraft, and the refueling time is as long as 17 minutes; the use of a new refueling truck for refueling, it only takes about 7 minutes to refuel, which can be shortened by 8-10 minutes; the fuel tank capacity of the newly introduced Il-76 aircraft is 85 tons, and it takes 2 hours to refuel with a large capacity of the Yellow River refueling vehicle, and it only takes one and a half hours to refill with a Steyr refueling vehicle.

It can be seen that relying on science and technology is the only way to improve the logistical support capability of the air force.

To rely on science and technology to enhance the logistical support capability of the air force, it is first necessary to change the traditional backward concepts. It is necessary to enable all logistics support personnel, especially logistics commanders, to establish a firm belief that science and technology are logistical support capabilities. In all aspects of work, we insist on using science and technology and boldly carry out technological innovations. Gradually change from the current empirical support to a scientific support model. Second, it is necessary to persist in carrying out scientific research in work practice. When conditions permit, we should extensively absorb advanced scientific research achievements at home and abroad, inside and outside the military, and use them for our own use. At the same time, it is necessary to give full play to the enthusiasm of all kinds of support personnel in scientific research, give full play to their wisdom and talents, make bold innovations, and carry out scientific research and technological reform. Concentrate the wisdom of the masses, sum up scientific research experience, popularize scientific research results, and let more scientific and technological achievements serve logistics support.

Relying on science and technology to improve the efficiency of logistical support must certainly have corresponding material conditions. However, under certain material conditions, the degree of application of science and technology has a crucial impact on the efficiency of guarantees. For example, a 100-kilometer oil pipeline with a diameter of 100 mm has a capacity of 700 tons of oil in one day and night, which is equivalent to the one-time oil transportation capacity of 200 Jiefang brand oil trucks. In flight support activities, support items such as refueling, inflating, and providing power supply have an important impact on the time of aircraft ground preparation. Shortening the working hours of these professional guarantees can greatly improve the sortie intensity of the aircraft. In the Fourth Middle East War, the preparation time for the Israeli Air Force to make another sortie was controlled within seven minutes, which was much shorter than the ground preparation time of the four planes that we also supported, and the reason for this was that the Israeli Air Force's logistical ground support equipment performed well and the logistical personnel engaged in ground preparation work had a high technical level. We must shorten the ground preparation time for the re-sortie of planes, and on the one hand, we must increase the scientific and technological content of our support equipment and facilities, and on the other hand, we must improve the quality of our personnel. All in all, it is up to science and technology to solve the problem. It should be noted that the reduction of ground preparation time by a few minutes to a dozen minutes is of special significance for aviation operations measured in minutes and seconds.

Relying on science and technology, we can also change the way in which aviation logistics are supported. Engels said: "As soon as technological advances can be used for military purposes and have been used for military purposes, they immediately and almost forcibly, and often against the will of the commander, cause a change or even a change in the mode of warfare." For example, after the aviation unit applied the technology of aerial refueling, the support mode was greatly advanced from plane support to three-dimensional support. Modern management means and guarantee means have produced and are having a profound impact on reducing the supply level and simplifying the supply hand. The application of electronic computers in logistical support has not only saved a lot of labor, but also reduced a lot of formalities and improved accuracy. In addition, once the mode of supply changes, it will contribute to a substantial increase in support capacity.

5. Strengthen management and improve efficiency

Strengthening management and improving the efficiency of support are the basic requirements for modern logistics management. In the logistical support activities of the air force, the main purpose of strengthening management is to carry out effective planning, organization, command, and control of the entire process of the air force's logistics support. By selecting the best support plan, we can invest in the most suitable support personnel, equipment, and materials to complete the support task as soon as possible.

Strengthening management and improving the efficiency of support are the principles of air force logistics support, which requires the leaders of air force logistics to arm their minds with modern management thinking. A series of modern management ideas, such as system theory, cybernetics, information theory, leadership science, operations research, and total quality management, are flexibly and skillfully applied to various support activities and organizational leadership activities. For example, under the guidance of the thinking of systems theory, flight support should be regarded as a support system with a rigorous structure and close connections, and the various support units participating in flight support should be regarded as an integral part of flight support as a whole. Through management, all parts of the whole can closely cooperate and unite and cooperate, so that the entire support process can be carried out smoothly. Another example is that in order to improve the efficiency of support, we should apply control theory as a guide, closely monitor the activities of various support units in flight support, and dispatch support forces in a timely and accurate manner according to the needs of the flight mission, so as to achieve the goal of investing the least amount of manpower and material resources and obtaining the best support results. In short, scientific management can be widely used in all aspects of flight support;

only by practicing scientific management can we continuously achieve relatively good military economic returns. It can be said that the acquisition of flight support benefits depends to a large extent on the improvement of management level.

Establishing and perfecting various support systems is another important means for strengthening the logistics management of the air force. For example, the regulations on flight logistics support, the code of conduct for logistics support of major aircraft, the flight logistics support plan, the post responsibility system for flight support personnel, the inspection system, the safety support system, and the evaluation system are all sublimated from the accumulation of flight support experience, and they are effective systems that must be conscientiously observed. And with these standard systems, the quality and efficiency of flight logistics support will be inspected.

To strengthen management, it is also necessary to conscientiously implement the principle of diligence and thrift. In flight support activities, the consumption limit should be strictly enforced for material supply to prevent waste. In the use of equipment, strict operating procedures and safety systems are used to prevent man-made damage. In addition, it is necessary to pay attention to safety everywhere, put an end to security accidents, and make the materials, equipment, and equipment of the guarantee fully play their role.

Chapter 2: Formation and Deployment of Aviation Logistics

The entity of aviation logistics is the air force aviation depot. The Air Force Aviation Depot refers to an organization that undertakes flight support tasks at airports. It is composed of organs, communications, navigation, flight control, meteorology, four stations, automobiles, field services, sanitation, security and other service units. Usually under the leadership of the aviation division or flight academy stationed there, it is mainly responsible for material supply, airport maintenance, protection, emergency repair, medical aid, as well as communications, air traffic control, meteorology, life and other support work.

Section 1: Formation of Air Force Aviation Stations and Distinction of Tasks

The organization of air force air depots refers to the formation of air force air force depots and stations into an organic whole with comprehensive support functions according to certain requirements. It is a specific regulation on the establishment of the internal organization of the air force air force station and the composition of personnel and support equipment. The distinction of tasks refers to the regulation and division of the responsibilities and support tasks of the organs and personnel of the Air Force aviation stations. Whether the internal structure of the air force air force depots and the division of responsibilities and tasks are scientific and rational affects to a great extent the functions and roles of the air force air depots.

1. Principles and basic requirements for compilation

The organization of air force air depots and stations refers to the process of organizing all relevant support entities to support the flight of air forces into an organic whole in accordance with the requirements of the laws and regulations on the establishment of air force in order to accomplish the flight support tasks of the air force. The establishment of air force aviation stations specifically stipulates the organizational system, organizational setup, and personnel and equipment allocation of air force air force stations.

When determining the composition of air force air force stations, the following principles should be followed: First, they should be commensurate with the tasks undertaken by the air force units to be supported. The air force has fighter planes, attack planes, bombers, transport planes, and other types of aircraft, and different types of aircraft perform different tasks, so the quota of personnel and equipment and the division of duties for the support should not be exactly the same. For example, if a bomber has to carry a large number of aerial bombs in a combat sortie, the station should have a relatively large number of carrying machinery, vehicles, and personnel. Second, it should be consistent with the requirements of the air force for logistical support. The combat flight of the combat units of the aviation units requires accurate and rapid logistical support, a relatively high mobile capability, and a certain degree of ground defense capability in the logistics units; while the flight of the aviation training units only requires that the logistics support be stable and reliable, and that they have a certain degree of continuous support capability. Therefore, they should not be exactly the same in the setting of institutions, the quota of support personnel, and the number of equipment. In addition, the support workload of a station that is responsible for stationing one air force or two air regiments, or at the same time is responsible for the logistical support tasks of the ground forces of the nearby air force at the same airport is quite different, so their organization should also be different. Third, it should meet the basic requirements of the air base. In addition to stable facilities, the air base should have all the support structures responsible for the flight of aviation units. These support organizations include logistics support organizations, engineering maintenance support organizations, and combat support organizations. They can be integrated into the air force air force depots, but because of the large workload of engineering aircraft maintenance support and the large number of personnel, they are generally directly set up in the air force sequence, and the rest, such as communications, meteorology, and flight control, are usually arranged in the sequence of the air force because of the small number of people and the relatively stable nature of the work. Fourth, it should be coordinated with the development of aviation weapons. With the development of aviation weapons, the technical equipment has become more and more complex, resulting in more and more onerous logistical support tasks, more and more logistical support contents, and more and more detailed division of labor. Therefore, there will be considerable changes in the organizational structure, personnel and equipment quotas for the establishment of air force air stations, and the division of responsibilities.

The basic requirements for the organization of air force air stations are: The organizational structure should be rational and the organizational setup should be lean and capable. So that the horizontal business does not overlap, and the upper and lower commands are not disjointed. It is necessary not only to ensure that the logistical support tasks of the aviation unit's flight can be fulfilled under all kinds of complicated and difficult conditions, but also to maintain a relatively reasonable ratio of the planes and pilots of the aviation unit to the logistical support equipment and support personnel.

Only by having a rational structure can we improve the efficiency of support and give full play to the overall effectiveness of logistics support forces. Only if the organization is lean and capable can the size of the establishment be reduced, which will not only be flexible and convenient for logistical command, but also reduce the cost of non-combat posts.

When determining the composition of the station, it must be fully demonstrated. On the basis of investigation and study, it is necessary to conduct quantitative analysis and take into account such factors as the requirements of the air force for logistical support, the support habits and experience of the depots and stations for many years, the possible development of aviation weapons and logistical support equipment in the future, and the quality of support personnel.

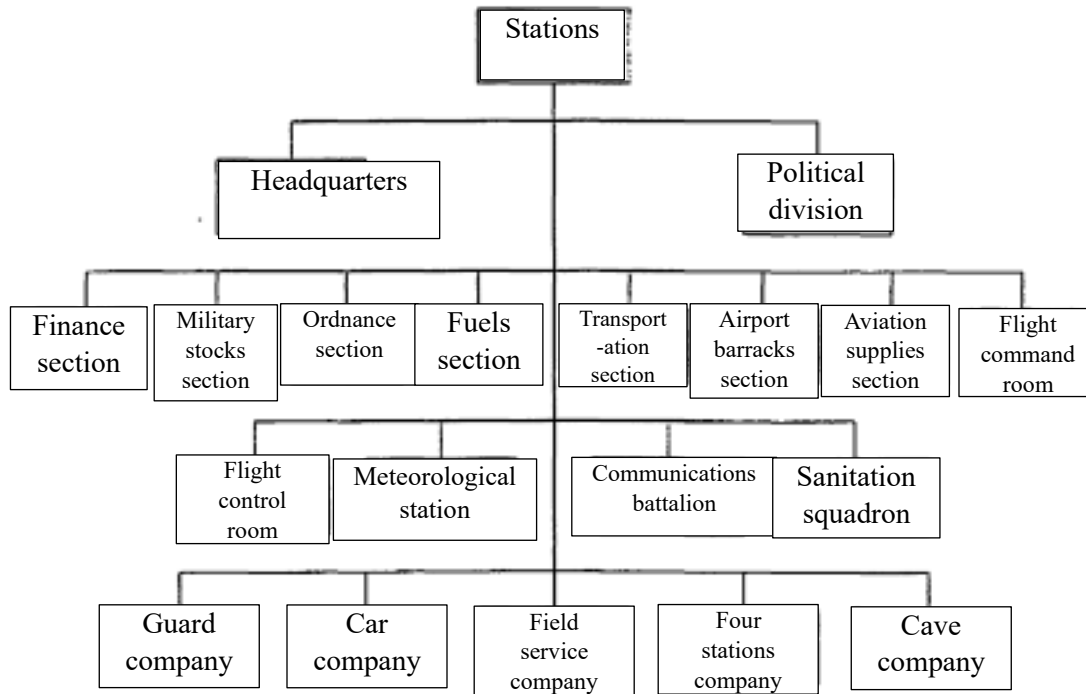
2. The basic form of compilation

The Air Force Aviation Depot is composed of a chief, an organ, and a detachment directly under it. The organ is composed of a command, a political department and an operational department. Among them, the business department responsible for material support also has a corresponding material warehouse. According to the nature of their operations, the units directly under them are divided into three categories: logistical support, equipment support, and combat support.

According to the different support tasks, the air force aviation stations are currently divided into four types: A, B, C, and D. The first type station can support two aviation regiments at the same time, the second type station can support one aviation regiment, the C station is responsible for airport guarding and alternate landing, and the D station is only responsible for airport guarding tasks. According to the nature of the support object, it can be divided into air force (training base) station and flight academy station.

The specific organization of the air force air station is as follows: The station headquarters is composed of the headquarters, the political department, the finance, quartermaster, ordnance, oil, transportation, aircraft battalion, aviation materials and other business departments, and the flight support command room of the station. Each business department has warehouses for oil, ammunition, aviation materials, vehicle materials, and military quartermasters, as well as distribution (distribution), umbrella, photography and other institutions. The subordinate detachments include logistics and equipment support units such as automobile transportation, four stations, field affairs, cave warehouses, and sanitation, as well as combat support detachments such as communications, navigation, flight control, meteorology, and security (see attached map for specific composition). Each subordinate detachment is equipped with a variety of technical equipment. It is mainly traction, refueling (transportation), transportation, oxygen production, oxygenation, refrigeration, refrigeration, power supply, firefighting, field maintenance, ambulance, communication, navigation, command and personnel riding and other vehicles and machinery.

Figure 2-1: Schematic Diagram of the Formation of Air Force A and B Stations



The flight support command room is an organization and command organization that dispatches support the flight of aviation units from the station to the flight site. It is usually composed of station chiefs, staff officers, and other relevant personnel, and under the unified command of the flight commander, it specifically organizes the logistics support of the flight and the support work of communications, navigation, meteorology, and flight control. In order to undertake emergency support tasks, the flight support command room should also be equipped with a certain number of support personnel and equipment. In light of the needs of modern high-tech warfare and the characteristics of the Air Force's logistical deployment, and in order to enhance the rapid response capability and emergency support capability of the depots, it is necessary to select a number of airfields as central depots in the main operational directions, and focus on strengthening logistical construction. The air force flight academy does not have a headquarters or a political office. There is also a big difference in the number of units directly under the detachment and the support equipment due to the different workloads of supporting the junior and senior training regiments. The organization of the training base varies according to the severity of the tasks undertaken by the training base and the level of the training base.

Normally, the station organs of the division-level training base have headquarters and political offices, and the station organs of the regiment-level training bases do not have headquarters and politics.

Structurally, the depots of the support aviation units are usually under the command of the aviation divisions, and because of the different support tasks and the different positions they are in, some of the depots are under the direct leadership of the air force of the military region or (corps-level bases). The stations of the training base are under the leadership of the head of the training base. The stations of the Air Force Flight Academy are under the leadership of the head of the training regiment.

3. Distinction of tasks of various organizations

(1) Station organs

The station headquarters is the command organ of the head of the station and the organ of the station organization and leadership of military work and the comprehensive coordination of logistics work. It has a flight support command room, a service equipment unit and a confidential unit. Its basic function is to assist the head in determining the determination to ensure and realize the determination. Its basic tasks are: In accordance with the intention and determination of the chiefs, it is necessary to organize the flight support of the air force, organize the combat readiness, training, equipment, and facilities management of the stations, and guide the military construction of the stations and other military operations.

The political office of the station is the office of the party committee of the station. Mainly responsible for the political and ideological work and organizational work of the station.

Each business department of the station is responsible for the organization and implementation of various professional services of logistics. The specific division of labor is as follows:

The financial department is responsible for raising funds, allocating and supplying funds in accordance with the state's financial and economic policies and the military's financial rules and regulations, and managing and supervising finances in accordance with the standards for the supply of funds.

The munitions department is responsible for organizing and carrying out the procurement, storage, and supply of supplies, supplies, equipment, clothing, equipment, and other military supplies, and for organizing and guiding the troops' agricultural and sideline production.

The Ordnance Department is responsible for the procurement, stockpiling, and supply of aviation ammunition and ground light weapons and ammunition, as well as the management and maintenance of other ordnance materials. In terms of business, it is guided by the superior equipment department.

The Fuel segment is responsible for the procurement, storage and supply of aviation fuel, fuel equipment and ground vehicle machinery.

Focus on the management of aviation fuel to prevent the occurrence of fuel accidents.

The transportation department is responsible for transporting materials for combat readiness and daily life of the air units; planning, organizing, and using the transportation capacity required for the transfer and transportation of troops; organizing the use and management of vehicles; arranging technical support for vehicles, and providing operational guidance to automobile detachments.

The barracks department of the airport is responsible for the management and maintenance of the flight site, the concealment facilities for aircraft evacuation, and the camp property; the power supply, water supply, and lighting support for the airport; the material and technical support for the emergency repair of the airport; the greening of the barracks; the assistance of the command department in the management of the clear space area of the airport; and the operational guidance of the field affairs and cavern detachments.

The aviation materials department is responsible for procuring, storing, and supplying aviation equipment needed for aviation flight and maintenance of aviation technical equipment; is responsible for the management of aviation equipment and funds; and guides the production, supply, and management of air conditioning, oxygen, and power supply by the service detachments of the four stations. Operationally, it is guided by the superior equipment department.

The main tasks of the flight support command room are: receiving support tasks and drawing up support plans; providing support materials and suggestions to the chief; conveying the instructions of the commander and issuing support tasks to various support units in a timely manner; mastering and deploying support forces and inspecting the support situation in a timely manner; organizing coordination with the aviation units stationed on the field; maintaining order in the field and ensuring safety.

(2) Directly subordinate detachments

Under the arrangement of the higher-level operational department, the flight control detachment is responsible for scheduling, adjusting, and supervising flight activities, maintaining flight order, and organizing and implementing flight control.

The main task of the meteorological detachment is to predict the weather according to the laws of atmospheric movement and weather changes, to provide weather forecasts to the aviation units, and to provide timely information such as live weather conditions and climate reports according to the needs of the troops' tasks.

The communications detachment is responsible for the communication and liaison between the air force and the air force from top to bottom, organizing and implementing the navigation support for the flight of the air force unit, and managing, protecting, and repairing the communication and navigation equipment and equipment. The health detachment (the station of the aviation division is a hospital) is responsible for sanitation and epidemic prevention and medical work;

organize the rescue, medical treatment and evacuation of the wounded and sick during wartime, and cooperate with aviation doctors to carry out aviation health and disease prevention work.

The guard detachment is responsible for the airport guard, ensuring the ground safety of aircraft, equipment, airport facilities and flights, and carrying out the combat missions specified in the airfield defense plan.

In accordance with the tasks assigned by the station headquarters, the automobile detachment is responsible for towing and refueling the planes and transporting personnel and materials during the flight of the air force units; and completes the tasks of transporting combat materials in close range and supporting nearby stations or ground units of the air force in accordance with the unified plan of the transportation department.

The field service detachment is responsible for the maintenance of flight sites and special roads for airports, the support of field roads and firefighting during the flight of air units, and the technical operations of bomb disposal and crater filling during the emergency repair of damaged airports.

The four detachments are responsible for the production and supply of cold, oxygen, nitrogen, and other gases needed for the flight of the aviation units and the maintenance of aviation technical equipment, the power supply support for the ground start-up and maintenance of aircraft, and the charging of aviation batteries.

The depot detachment is responsible for the maintenance of aircraft hangars and airport protective fortifications, and the vigilance of aircraft hangars.

The professional repair detachment is responsible for the technical maintenance of various vehicles and equipment at the airport according to their respective division of labor.

Some stations have missile maintenance squadrons, whose main tasks are to be responsible for the docking and commissioning of air-to-air missiles and to supply tested air-to-air missiles to the flight field.

If an air defense detachment is assigned, it should be deployed at or near the airport in accordance with the arrangements of the combat department of the aviation unit and assume the task of air defense against the airport.

Section 2: Logistics Deployment of Air Force Aviation Depots

The logistical deployment of air force air depots refers to the task distinction, grouping, and allocation of depots' logistical support forces. Rational deployment of station logistics support forces

is of great significance to give full play to the overall support function of the station's logistical support of manpower and material resources, improve the support efficiency of the air force units, enhance the survivability of the station's logistics support forces, and ensure the smooth completion of the combat mission of the air force units.

1. Requirements for logistical deployment

When deploying logistical forces at a depot, it must be based on the operational characteristics of the air force, the overall layout of the airfield's support facilities, the topographical conditions of the airfield, and the degree of threat and damage to our airfield. The basic requirements for deployment are: easy to secure, good for security.

(1) It should be adapted to the combat characteristics of the air force

High-speed maneuvering, concealment, and quick victory are the inherent characteristics and traditional tactics of the air force. Because modern aviation weapons have the capabilities of stealth, electronic jamming and suppression, precise navigation, and long-distance firing of precision-guided weapons, they have greatly enhanced the air force's ability to penetrate defenses, increased the suddenness of the air force's combat operations, and accelerated the offensive and defensive rhythm of air operations, greatly shortened the course of the campaign, and rapidly changed the battlefield situation, which is conducive to the fleeting loss of fighter planes. Therefore, the combat operations of the aviation units are required to be flexible and agile, respond quickly, and counter speed with speed. This requires that the depots, which are the basic components of the combat effectiveness of the air force units, must adapt themselves to the combat characteristics of the air force when deploying support forces, have a rational organization, have a scientific structure, have complete functions, and respond quickly, so as to be able to provide reliable and effective logistical support for the air force in the shortest possible time and meet the operational needs of the air force units.

(2) It should be compatible with the requirements of multi-model support

In modern warfare, especially in future high-tech local wars, the aviation units will inevitably adopt a wide range of airplanes in order to concentrate or disperse their forces in a timely manner, or to attempt covert operations. In particular, at present, the number of airfields available for use in several major operational directions of our army is limited and relatively fixed, so the wartime field stations will undertake very heavy multi-aircraft support tasks. At about the same time, the various types of aircraft participating in the war may urgently need the stations to complete the replenishment of various combat materials and provide other logistical support. Therefore, it is required that when deploying forces, the field station must meet the needs of multiple types of aircraft for logistical support in future operations. In terms of the composition of the personnel of the command post, the commander of the station should have rich experience in multi-aircraft combat flight support command and strong organization and coordination ability.

On the formation of the combat flight support force of the station, it is equipped with adaptable traction, With regard to the reserve structure of combat materials, it is necessary to reserve the combat materials of all major aircraft types that may come to the field in wartime according to the operational geographical location of the airfield and the multi-aircraft support tasks that may be undertaken, so that it will have a relatively strong supply capacity of multi-aircraft materials, so that the stations can meet the needs of multi-aircraft support in future operations.

(3) It should be adapted to the geographical environment of the battlefield where the airport is located

The geographical environment of the battlefield where the airport is located is an external influencing factor for the combat flight support activities of the station, which has an important impact on the preparation, deployment, implementation and survival of the combat flight support force of the station. First of all, it is necessary to adapt to the external geographical environment in which the airport is located, that is, the geographical location of the airport in the entire battlefield layout. For example, a backbone airfield located in a very important geographical position in the battlefield will have extremely heavy support tasks in wartime, and it will not only be responsible for the combat flight support tasks of the aviation units stationed at the field, but will also provide support and support to the ground air defense units deployed around the airfield; at the same time, because of its important battlefield geographical location and the fact that it is the target of the enemy's key strikes, the task of rushing to repair and rescue the air in wartime will be extremely arduous, and the survival of the support forces at the stations will be greatly threatened. Therefore, when preparing and marshalling support forces, depots should not only pay attention to being mobile and flexible, but also increase the preparation and marshalling of forces for emergency repairs at airports, support equipment and facilities, and rescue of the wounded, and also have the ability to maneuver to guard airports, civil aviation airports, and highway runways to provide emergency support. Secondly, it should be adapted to the topography and landform inside the airport. When deploying forces, the field station should make full use of the natural terrain conditions on the airfield, and select the evacuation reserve site for all kinds of support materials, the location of the reserve command post, and the evacuation site for personnel and support equipment in a location with good terrain that is convenient for protection and concealment; at the same time, before the war, it is necessary to make full use of the natural terrain conditions of the airport, and carry out fixed support facilities, such as hangars, aircraft evacuation areas, towing lanes, aprons, warehouses for various materials, and so on. A variety of means should be used to camouflage the fixed locations of personnel and equipment to change the appearance and characteristics of the fixed support facilities on the airport and the topography of the airport, reduce the probability of being discovered and attacked by the enemy, and improve the survivability of the station's support forces and support facilities.

2. The form of logistics deployment

The form of logistics deployment of the station refers to the form adopted by the differentiation and allocation of the station's flight logistics support forces. It is usually determined by the head of the station. In wartime, due to the threat of the enemy situation and the need for multi-aircraft support, the establishment of command posts, the grouping and use of support forces, and the allocation of material evacuation are all different from those in peacetime, but they are all within the scope of the airport. Its specific logistical deployment usually adopts the methods of fixed deployment, mobile deployment, and a combination of fixed deployment and mobile deployment.

(1) Fixed deployment

Fixed deployment refers to the way in which the support force of the station is configured based on the fixed facilities of the airport. Due to the inherent characteristics of the stations, almost all the logistical support forces of the stations have fixed work and life support facilities, and all kinds of support forces are deployed in these fixed support facilities in peacetime. Therefore, relying on these support facilities to deploy support forces is the basic way adopted by the station when carrying out logistics deployment.

Airport fixed support facilities are an important material basis for the implementation of flight logistics support at the station, mainly including infield and outfield support facilities and airport protection facilities. The support facilities in the field mainly include all kinds of material storage warehouses, equipment repair, power supply, medical treatment and administrative life and other support facilities; the fixed support facilities in the field mainly include the flight support command room, field lights, fixed refueling, starting power supply, field aviation materials and aviation auxiliary fuel supply and other support facilities; the airport protection facilities mainly include aircraft caverns, personnel, equipment protection fortifications, etc. In wartime, the station's field support activities, combat material reserves, equipment repair, wounded rescue, and personnel livelihood support all depend on these fixed support facilities, and these facilities have a direct impact on the reliability and efficiency of the station's flight logistics support. These support facilities are not only the basis for the survival of the aviation units stationed at the site, but also the basis for enhancing the survivability of the station's logistical support forces. Therefore, when carrying out the logistics deployment of the station

according to the specific distribution of airport fixed support facilities, it is necessary to rationally deploy logistics support forces, give full play to the support function of airport fixed support facilities, and maintain strong rapid response capabilities, continuous support capabilities, survivability and efficient support efficiency.

The fixed deployment can maintain the basic stability of the establishment of the station organs and detachments, and the personnel are relatively concentrated according to their specialty, and they have relatively complete fixed support facilities to rely on, which is convenient for organization and command, and forms a relatively strong comprehensive support capability. Its disadvantage is that the target is obvious and fixed, and it is easy to suffer losses when there is a threat of hostile situation. It is generally used in peacetime and before the war.

(2) Mobile deployment

Mobile deployment, which can also be called decentralized deployment, refers to the deployment form of dispersing the logistics support forces of the station in a number of support locations in the airfield area and in the airfield protection facilities according to the needs of the support mission, the distribution of airfield support facilities, and the threat of the enemy.

The flight field area refers to the runway, taxiway, apron and other field areas that are directly related to flight activities, and the flight logistics support activities of the station are mainly carried out in this area, which is the main place for transforming the material energy of the station into the combat effectiveness of the troops, and the airport protection facilities have better protection capabilities. Therefore, the purpose of dispersing the station support forces in various support locations in the above-mentioned areas is to shorten the distance of supply support, improve the survivability of the support forces, and enhance the rapid response capability of the station flight support.

The logistical support forces of the mobile deployment depots can adapt to the maximum extent the characteristics of scattered multi-aircraft support locations and high support time limits in wartime, and are conducive to ensuring the safety of logistical support forces. Its shortcomings are that the support forces leave the original distribution area, the forces are scattered, and it is difficult to organize and command. Generally, it is used when the multi-aircraft support task is heavy and the support location is scattered, especially when there is a serious threat of enemy situation.

(3) Combination of fixed deployment and mobile deployment

The combination of fixed deployment and mobile deployment means that on the basis of the original fixed deployment of the station, according to the support task and the threat of the enemy, part of the support materials, equipment, personnel and other support force cameras are deployed near the field support site or around the fixed support facilities,

as a result, a flexible deployment posture is formed in which the fixed-deployed support forces are relied on, the mobile-deployed support forces are supplemented, the mobile-deployed support forces are used for emergency response, and the fixed-deployed support forces are the follow-up dynamic and static forces. It is possible to give full play to the comprehensive support capability of the fixed deployment support forces, and also to give full play to the flexibility of the mobile deployment support forces to carry out rapid support in the vicinity, give full play to the supporting role of the fixed support facilities at the airport, and organically integrate the support facilities in and out of the station to form a whole, so as to improve the survivability of the support forces in the station in wartime.

3. Formation of logistics forces

The organization of station logistics forces refers to the distinction and combination of station logistics forces for the purpose of carrying out flight logistics support tasks, and is one of the main contents of station logistics deployment. Scientific organization of logistical forces is a necessary condition for depots to accomplish their wartime flight logistical support tasks. Whether or not flight logistics support can be smoothly implemented depends to a large extent on whether or not the stations can establish appropriate support organizations and whether they can correctly distinguish and use logistics support forces. In wartime, in addition to the original support force of the station, there will often be a logistically strengthened support force at a higher level, an accompanying support force temporarily dispatched by the air force carrying out mobile operations, and a support force supported by the local government. To give full play to the overall support function of various support forces, it is necessary to scientifically organize the logistics forces.

(1) Requirements for the organization of logistics forces at the station

Attention should be paid to the following three aspects when organizing the logistics forces of the stations: First, it is necessary to make rational use of the logistics forces. The personnel, materials, and equipment in the original structure of the station are the basic force for the station to carry out the flight logistics support task, and are usually organized on the basis of it. Under normal circumstances, the logistically strengthened support forces at higher levels, temporarily dispatched by the original stations of the aviation units participating in the war, and supported by local governments are to be combined and grouped according to their specialties. When these support forces are relatively strong (e.g., professional medical teams formed into formations, airport repair teams supported by local governments, etc.), they can retain their original structures, organize them separately, and be assigned corresponding support tasks. Second, it is necessary to facilitate unified command. The wartime flight support tasks of the stations and stations, especially the multi-aircraft support tasks, will be very heavy, the organization of support forces will be complicated, and the organization and command of flight support will be difficult.

Therefore, attention should be paid to reducing the level of command and using logistical forces as much as possible in accordance with the original structure when organizing forces. The main reason is that the responsible persons of each detachment in the original structure have clear responsibilities, are familiar with their personnel and equipment (equipment), and have a clear command relationship with the command post of the station, which is convenient for organization and command. Third, it is necessary to control a certain number of reserve support forces. In order to cope with emergency and unexpected situations, enhance the station's ability to respond to contingencies, and provide effective support for the air force without interruption, a certain number of reserve support forces should be controlled when organizing the station's logistical forces, regardless of the form of deployment. The scale of the reserve support force depends on the needs of the station's wartime flight support tasks and the station's existing logistical manpower and material resources. Under normal circumstances, it should be controlled at about 15 to 20 percent of the existing support force. Reserve support forces can be grouped in fixed groups, or they can be temporarily designated according to the situation of each support task.

(2) Methods for organizing logistics forces at stations

The method of organizing the logistics forces of the depot mainly adopts the method of combining the grouping according to the various support specialties and the mixed grouping. For example, the logistics forces are organized into ambulance groups, medical groups, surgery groups, and casualty evacuation groups, and the field support forces are organized into field support groups, night flight lighting support groups, and firefighting groups. For example, the logistical support forces directly involved in field flight support activities, such as tractors and refueling trucks, and other support equipment directly involved in flight support activities at other professional stations, such as power supply, air conditioning, and oxygen, will be organized together to form a support team. There are three main methods of organizing forces directly involved in field flight support activities: temporary dispatch of fixed quota formations, separate comprehensive support teams, and a combination of emergency support teams and temporary dispatches. The so-called temporary dispatch of a quota group means that all the support forces participating in the flight support activities of the station are grouped according to a certain scale of support, and each group has the ability to independently undertake the support task, and the composition of the support force of each group is relatively fixed, and it is temporarily dispatched by the station command post according to the needs of the task when used. However, when these support forces are not undertaking flight support tasks, their day-to-day administrative management is still in the original units and is not concentrated.

The separate formation of a comprehensive support team is to organize the support forces participating in flight support activities at the station according to a certain scale, and to disrupt the original structure and reorganize into a new administrative unit, and the daily administrative management is also managed by the newly established support organization. When using support forces, the station command post will issue support tasks to the support team, and then the support team will dispatch them according to the needs of the mission and the requirements of the station command post. The method of combining the formation of emergency support teams with temporary dispatch is to set aside a certain number of specialized support forces directly involved in the outfield flight support activities of the station to form an outfield flight emergency support team of the station, which is responsible for the support tasks of being on duty and dealing with emergencies in the field, and other support forces are not assigned to the support team, and are carried out in the form of temporary dispatch when used. Each of the above three marshalling methods has its own advantages and disadvantages, and the method to be adopted for marshalling should be flexibly determined according to the specific conditions of the support tasks undertaken by the station, the existing support forces, and the construction and distribution of airport support facilities.

(3) The form of marshalling the logistics forces of the station

The logistics force of the station is usually organized into the following organizational structures:

1. Station command post

The station command post is the place where the station organizes and implements the flight support command of the station, and is the organization that organizes and commands the station organs, the directly subordinate detachments, and the temporarily strengthened support forces. In wartime, there are usually basic command posts and reserve command posts. For details of the organization and task differentiation of the basic command post and the reserve command post of the station, see Chapter 3, Section 3, and Chapter 6, Section 2 of this book.

2. Outfield flight support detachment

The outfield flight support detachment is the main force for the direct implementation of flight support at the station. According to different forms of organization, the existence form of its outfield flight support detachment is different. However, it can generally be divided into a support group and an emergency group. The support group is mainly used to provide various materials and technical support for the combat flight of the troops, such as traction and refueling. The emergency response team is mainly a support force that provides emergency rescue for combat flight support, such as emergency repair vehicles, fire trucks, ambulances, etc.

3. Oil support detachment

According to the support tasks undertaken by the oil support detachment, it can be organized as follows:

Oil Supply, Oil Receiving and Receiving Section, and Oil Laboratory Section. The Fuel Supply Section is mainly responsible for the delivery of aviation fuel from the consuming depot to the refueling truck or to the outfield aviation fuel supply station (refueling well), and is responsible for the delivery of aviation ancillary fuel. The Fuel Receiving and Receiving Group is mainly responsible for receiving oil from railway tankers or tankers, and is responsible for supplying oil from the reserve oil depot to the consuming oil depot. The Fuel Laboratory Unit is responsible for the quality inspection and supervision of fuel throughout the entire process from receiving, storing, supplying to refueling aircraft. It is also possible to send aviation attached fuel to the personnel separately according to the situation.

4. Guard support detachment

It is mainly responsible for the treatment and evacuation of the wounded (sick) of the troops stationed on the field. It can be organized into an ambulance group, a surgery group, a medical group, a medical security team and the evacuation of the wounded. The ambulance team is mainly responsible for the rescue of the wounded at each support site, the surgical team is responsible for the early surgical treatment of the wounded, the medical team is mainly responsible for the admission and treatment of the wounded below moderate injury and some seriously injured transferred from the surgical group and the classification post, the medical security group is mainly responsible for the supply of medicines, liquid preparation and related professional medical examinations in the medical rescue, and the casualty evacuation team is mainly responsible for the search and rescue of the wounded and the flight personnel in distress who are transferred to the superior rear hospital. The strengthened security forces at the higher level can be combined or assigned support tasks separately according to the situation.

5. Transport support detachment

The transportation support detachment is mainly responsible for the on-site and off-site transportation of combat materials and life support materials required by the troops. It can be divided into on-site transportation group and off-site transportation group. The on-site transportation team is mainly responsible for the transportation of materials from the material reserve warehouses of the station to the outfield flight support supply points. The off-site transportation team is mainly responsible for requesting and transporting materials to the rear warehouse of the superior, or urgently transporting materials from the station to external friendly and neighboring units.

6. Vehicle technical support detachment

It is mainly responsible for the maintenance, inspection and repair of the station's logistics support vehicles. According to the allocation of strength, it can be divided into a fixed repair group, a roving repair group and a maintenance group. The stationary repair team is mainly responsible for the repair of vehicles with minor and moderate damage, assembly replacement and minor repairs. The roving repair team is mainly responsible for the on-site repair of slightly damaged vehicles and faulty vehicles at each flight support site.

The maintenance team is mainly responsible for the second- and third-level maintenance of logistics support vehicles and the emergency repair of some war-damaged vehicles.

7. Field service support detachment

It is mainly responsible for providing on-site roads, lighting, firefighting and other support work for the aviation troops stationed on the field. It can be organized into a field road support group, a night aviation lighting support group and a firefighting group. The road support team is mainly responsible for the cleaning, maintenance and management of the road. The night flight lighting support team is mainly responsible for the inspection and management of the field lighting support and the field lighting system during night flight. The fire brigade is mainly responsible for the firefighting work in the flight support process and the fire extinguishing work with other units of the station in peacetime.

8. Quartermaster support detachments

It is mainly responsible for providing food and clothing support for the troops stationed in the field. It can be organized into a food security group and a quilt security group. In general, the food and beverage support of each unit of the troops stationed on the field is mainly provided by the catering units themselves, and the food of the air crew personnel is uniformly provided by the quartermaster detachment. According to the characteristics of the flight field food support, it can be organized into the field flight crew food security group and other personnel food security group, which is responsible for the food security of field flight personnel and ground support personnel respectively. The Quilt Support Group is mainly responsible for the supply and guarantee of the blankets, special equipment and martyr cloth of the troops stationed on the field.

4. Logistics allocation

Logistics allocation refers to the specific selection of the work positions of the command posts of the stations and the specialized support units within the logistics allocation area. It includes two aspects: the geographical area of logistics configuration and the specific location of logistics deployment.

(1) Logistics allocation area

The logistics deployment area is the area where the logistics force is allocated and the work is carried out. It is usually selected by the station commander and submitted to the division commander for approval. Generally speaking, the selection of logistics deployment areas should be determined according to the needs of the support tasks undertaken by the stations and the form of logistics deployment. However, due to the fact that the station mainly relies on the fixed support facilities on the airport to carry out the flight support task, the logistics configuration area of the station is usually selected in the fixed deployment area of the infield, near the field support facilities and around the airport;

or according to the adjustment of the strength of the aviation unit, choose to be near the area where support forces need to be deployed (field airfields, highway airstrips). The logistics deployment area of the station should have a good area that is convenient for the implementation of support and adaptation to the decentralized configuration, good access roads, and good terrain for evacuation and concealment. The evacuation and distribution areas of all kinds of combat materials should have good conditions for protection and moisture-proofing, and in addition to good access roads, some support detachments should also have water sources that can be used. The size of the logistics deployment area of the depot should be determined in light of the distribution of support facilities at the airport and the number of troops stationed at the site, and in light of the actual situation of the support.

(2) Logistics allocation location

The location of logistics allocation refers to the specific location where the command organs of the station and the logistics support detachments carry out their work. Except for the location of the basic command post of the station, which is determined by the division commander, the location of the deployment of other support detachments is generally selected by the commander of the station within the logistics deployment area of the station. The selection is mainly based on the nature of the work, tasks, and equipment of the logistics support detachments at the station, the terrain, the geographical area, the water source, the roads, and the distribution of the fixed support facilities at the airport, and the rational layout should be made by considering the original fixed deployment locations of the logistics support detachments at the station and the work links between the logistics support detachments. The basic command post of the station should be close to the outfield flight support site, and generally deployed in the flight support command room of the station. In addition to warehouses with better protection conditions (cave warehouses and underground warehouses), each material warehouse should also select a location with better protection conditions and convenient transportation and support in the logistics configuration area for decentralized allocation. Other service support detachments should also select a place to prepare for deployment in a location with a certain area, relatively hidden terrain, good road conditions, and water sources.

Chapter 3: Logistics Command of the Air Force

Aviation logistics command refers to the organization and leadership activities of station commanders and their command organs for aviation flight logistics support and other logistics operations. The logistics command of the air force is an integral part of the organization and command of the air force, and it is a leadership activity with a remarkable combat character, and at the same time, it is also a link in the logistics command of the air force. The main contents of the logistics command of the air force include the command of the deployment of the organs and detachments of the air force and their actions, the planning and implementation of the flight logistics support of the air force, the command of completing the tasks related to airport defense and emergency repair in accordance with the determination of the head of the air force, and the coordination and logistics communication between departments and detachments. The purpose of the logistics command of the aviation unit is to unify the will and actions of the organs and detachments in accordance with the instructions of the head of the aviation unit and the orders of the rear forces, to accomplish the flight logistics support and other tasks of the aviation units with high quality and high efficiency, and to ensure the victory of the aviation units in combat.

Section 1: Logistics Command Tasks

The basic task of the logistics command of the aviation unit is to stipulate the basic work undertaken by the commander of the station and his command organization in the flight support of the aviation unit or the main responsibility to be assumed, and it is the differentiation and concretization of its fundamental task. The fundamental task is to make use of objective material conditions to form the logistics forces under our control into an organic whole, give full play to their functions, and lead the logistics support forces under their control and at their disposal to successfully accomplish the logistics support tasks of air force operations and training. The basic tasks are: grasping command information, making a determination to provide support, organizing and planning support operations, and coordinating and controlling the support process.

1. Grasp command information

Mastering command information is a prerequisite for station commanders to make up their determination to provide support, an objective basis for exercising correct command, and a major task of the logistics command of the air force.

From the perspective of information theory, the process of logistics command is the process of information collection, transmission, processing, and use, that is, the process of information collection and distribution. Logistics command is also inseparable from intelligence information for the moment. Whether or not logistics command decisions are correct or not and the success or failure of logistics command activities have a direct relationship with whether or not they can grasp logistics command information in an able, comprehensive, and accurate manner.

Station commanders and their command organs should obtain and grasp relevant information on logistics support through various channels and by various means. It mainly includes the determination of the combat commander of the aviation unit and the situation of the troops (including subordinate units and subordinate units); the situation of logistics at the same level and the logistics forces at their disposal; the natural geography and traffic and road conditions of the airfield; the meteorological and hydrological situation of the weather; the situation of logistics defense; and the possible means and capabilities of the hostile airfield. Logistics command information is very time-sensitive, and it is necessary to pay close attention to the development and changes of the above-mentioned information, and continuously collect and master dynamic and near-real-time information.

In order to ensure that the information mastered has a high quality, we must pay attention to the following points: First, the timeliness of the information. Any information works for a certain period of time. Outdated information is not only worthless for the logistics command of the aviation forces, but can even lead to the wrong decision. In particular, the situation of modern aviation operations is changing rapidly, and the requirements for the timeliness of information have been greatly enhanced. It is necessary to improve the timeliness of information, quickly collect, correctly understand, and quickly grasp to ensure the use value of information. The second is the pertinence of the information. According to the needs of the logistics support tasks of the aviation units, it is necessary to collect and grasp information in a targeted manner. With regard to the information needed to judge the situation and make a decision, we should concentrate our efforts on collecting and mastering it, and pay special attention to grasping information that can reflect the essence of support activities, has a precursor nature, and has a major impact on support actions. The third is the comprehensiveness of information. Battlefield information is controlled by various specific conditions, and its distribution is uneven, and the degree of information intensity, generation, and visibility varies from region to region, from department (division), from one position to another, and from one support stage to another. It is necessary to collect all kinds of information as much as possible, pay more attention to the comprehensiveness of important information, and prevent the negative impact of one-sidedness on the logistics command of the air force. Fourth, the accuracy of information.

It is necessary to pay attention to the authenticity and reliability of the source of information, pay attention to the objectivity of the information when collecting information indirectly, eliminate the untrue elements of the information at any time, and trace the source of some vague information to ensure the authenticity and accuracy of the information. Fifth, the continuity of information. The development and change of support activities is a continuous process, and all stages and parts are inevitably linked. Only by tracking and mastering it on an ongoing basis can we ensure that the information is consistent with the security situation.

2. Determine support

Support determination is the decision made by the commander of the station on the support objectives and actions in order to implement the determination of the combat commander of the air force and fulfill the logistics support task, and plays an important guiding role in the logistics command activities of the air force. Whether the determination is correct or not has a direct bearing on whether or not the air force's logistical support task can be accomplished. Generally speaking, the commander of the station should complete the support task in two steps: After receiving the support task, he or she should first make a preliminary determination on the basis of analyzing and judging the situation, so as to organize and carry out the preparatory work for logistical support; before the battle, he or she should make necessary corrections to the advance determination in light of the changes in the actual situation, and make a determination to provide support for the immediate battle, so that the logistics units (subunits) can be organized and led to devote themselves to intense and orderly preparations for the battle. Making up the determination to provide support is a process in which station commanders and their command organs comprehensively observe and profoundly understand the various factors affecting the air force's logistical support operations from different angles and make decisions on the air force's logistical support objectives and actions. In his book "The Quest for Correct Determination", the former Soviet military strategist Biryuzov pointed out: "The process of making a decision is a highly tense process, which can also be said to be a painful process. During this time, the commander must judge the situation accurately and make the right conclusions based on it. He must be highly focused, decisive and tenacious." The special work of setting the determination to guarantee must be in line with the characteristics and requirements of its own activities. The first is to clarify the goal. A definite goal is the starting point for setting the determination to provide support, and it is the direction of the entire logistical command activity. Unclear goals will inevitably lead to blind action. This requires station commanders to have a clear logistical support objective when making up their support determination. Second, we must plan scientifically. The process of making a determination to protect is the process of selecting the best for multiple cases.

Multiple assurance schemes are the result of strategic thinking activities. To make a decision is to choose the results of strategy, so the process of making a decision is always accompanied by a strategic thinking process. Only by scientifically planning and forming multiple cases can we compare and distinguish and form the best determination. The third is to be timely and decisive. Indecision and delayed response will not only deprive the logistics command of the air force of good opportunities, but will also lead to the sluggishness of the logistics units (sub-units) in their actions. The station commander must not only judge the situation at a very high speed, but also make decisions in a timely and decisive manner. Only by adapting to the characteristics of the quickened tempo of modern operations and the shortening of command time can we strive for and maintain the initiative in logistics command and logistical support. Fourth, the determination is correct. The so-called correctness means that it conforms to the intentions and determination of the operational commanders of the air force, the requirements for logistical support, and the instructions of the higher levels for logistics, conforms to the objective reality of the battlefield, and is conducive to the fulfillment of logistical support tasks.

3. Organize and plan support actions

Organizing and planning the logistics support operations of the air force is an activity in which the command organs of the stations formulate specific support measures in accordance with the determination of the commanders of the stations, and are also a process of combining and allocating relevant resources such as logistics personnel, materials, equipment, equipment, time, and regions. It is another basic task of the logistics command of the air force and another important link in the command process.

A good organizational plan is necessary for the implementation of effective logistical command. It has two most basic functions: First, it concretizes the logistical commander's determination to provide support. Former Soviet military command theorist Shtemenko pointed out in his book "The General Staff in the War Years": "A good determination is only a good wish if it is not concretely and practically organized and implemented." The logistics command of the aviation unit cannot carry out the entire logistics support without a concrete and practical organizational plan for the commander's determination. The role of the organizational plan is to supplement and improve those aspects that cannot be covered in detail by the content of the determination, so as to help the logistics units (subunits) to understand the logistics support intentions more deeply, comprehensively, and profoundly through various plans, and to plan their own support operations. The organizational plan plays a role in implementing the determination of the air force to provide logistical support. The second is to standardize the determination to provide support. The logistical support of modern aviation units involves many logistics units participating in battles, the relationship is complex, and the requirements for coordinated action are high, so it is necessary for the command organs of the stations to carefully distinguish and standardize the tasks, support time limits, support areas, support relationships, support behaviors, and defense actions of many support units (subunits).

Otherwise, there will be no basis for support and coordination, and the requirements of coordination and overall support will not be met. The various logistical plans of the air force can clearly express the determination of the station commanders in the form of documents, tables, diagrams, or comprehensives, which is conducive to the implementation of the logistics units (sub-units).

The content of the organization and planning of logistics support operations is defined by the determination to provide support and the support and defense needs of logistics units (subunits). It usually includes: formulating various logistical support action plans, such as logistical deployment plans, specialized support plans, logistical defense plans, and so on; issuing support orders and instructions; organizing coordinated actions and communication and liaison; and organizing units (subunits) to make logistical preparations.

The requirements for organizing and planning work are, first, thorough. That is, it is necessary to conform to the objective situation, take into account all stages and aspects of the development of the aviation unit's logistical support, closely integrate the needs with the possibilities, the present and the future, the key points with the general, and the overall situation with the localities, and make careful arrangements for the logistical support forces. It is to avoid mistakes caused by carelessness and mistakes, and to be specific and take into account the possible adverse effects of various complex situations. The third is accuracy. The distinction between support tasks, the time limit, place, and standard for completing tasks should be accurately expressed, and ambiguous and specious expressions such as probable and possible should be avoided. Fourth, conciseness. The content of the various plans should be concise and to the point, and the text and charts should be clear and easy to read and understand, so as to facilitate rapid implementation.

4. Coordinate and control the guarantee process

Coordinating and controlling the process of logistical support for the air force is a command activity in which the commander of the station and his command organs put the determination of the support into practice through orders, instructions, and plans during the implementation stage of the air force's operation. The key to whether or not the determination to provide support can be fully realized lies in whether or not we can effectively regulate and control all activities in the process of logistical support for the air force.

The purpose of coordinating and controlling the process of logistical support for the air force is to control the operations and processes of the air force's operational logistics support, maintain the coordination and overall operation of the logistics support forces of the numerous air forces, ensure the realization of the determination of the commanders of the air units, and smoothly fulfill the logistics support tasks. Its main functions are: First, to maintain the orderly operation of the entire process of logistical support for the air force. The logistical support of the air force is an activity in which all units (subunits) and other support forces under the station are unified and concentrated. Unified regulation and control of the logistics support process around the support objectives,

is conducive to maintaining the orderly operation of the logistics support process, giving full play to the overall support power of the station's logistics support forces, and completing the support tasks in a coordinated manner. Second, it is necessary to continuously solve practical problems that arise in the course of guarantees. Due to the uncertainty of the battlefield situation and the particularity and complexity of the environment in which the support units (subunits) are located, it is very easy for the phenomenon of deviating from the support objectives. By supervising and regulating the logistics support process, station commanders can promptly correct behaviors that deviate from the logistics support objectives, properly solve the problems that arise, reduce to a minimum the adverse effects of achieving the logistics support objectives, and make the support operations consistent with the support objectives as much as possible. Third, we should give full play to the potential of logistical support. Logistics units (sub-units) have tremendous potential support capabilities. Whether or not this potential support capability can be brought into full play and transformed into a realistic support capability depends not only on objective conditions, but also on the ability of station commanders to coordinate and control the logistics support process. Only through the continuous regulation and control of logistical forces by station commanders and command organs in accordance with the actual situation in the support process can we realize the transformation of support potential into support strength.

The content of the station commander's regulation and control of the logistics support process is determined by the support objectives, changes in the support tasks in the support process, and possible unexpected situations. Its main contents generally include four aspects: First, the input of the station's logistical forces is regulated and controlled. It mainly includes regulating and controlling the timing, quantity and direction of investment of logistics forces (such as personnel, materials, equipment, etc.). The support forces at our disposal should be invested in a timely manner, in an appropriate amount, and in the right place according to actual needs, through unified guidance. The second is to regulate and control the spatial structure of the station's logistical forces. All logistics support forces of subordinate stations should be included in the unified layout, and the deployment of support personnel and equipment should be adjusted in a timely manner according to the needs of changes in support tasks, and the amount of material reserves should be adjusted. Prevent unreasonable deployment of support personnel and uncoordinated material reserves. The third is the regulation and control of the station's logistical support operations. These include: the coordinated use of various support forces and support equipment, the division of labor among key support points, the handling of special situations in the support process, the coordinated use of various support methods and means, and the mutual cooperation of various support operations. Fourth, it is necessary to regulate and control the operational status of the logistics support process. The main thing is to take care of and connect the logistics support and support links between the various stages of the aviation operation.

How to regulate and control the process of logistics support for the air force is a question of method for coordinating and controlling the process of logistics support for the air force. Objectively speaking, the method of coordination and control should be flexibly adopted according to the time, place, and task; subjectively speaking, it is closely related to the quality, style, and experience of the station commanders. In light of the experience of aviation logistics in coordinating and controlling the process of large-scale support operations over many years, it is necessary to attach importance to the collection of real-time information in coordinating and controlling the process of logistics support. Keep abreast of the security situation, location, and ability status of the subordinates, so as to regulate and control them in a timely manner. Second, we must combine internal and external. As a station commander, he should not only grasp the internal links of the logistics system through macroeconomic regulation and control, but also pay attention to the coordination and connection between his own system and the external system, such as coordination and cooperation with the theater's joint logistics and local support and front support organs, so as to win support from various quarters and increase the intensity of coordination and control. Third, we must grasp the key points. It is necessary to focus on regulating and controlling the logistical support of the main combat units, and not to cover all aspects. Fourth, we must enhance our ability to adapt to changes. Fighting under modern conditions, the confrontation between the two sides is fierce, and it is difficult for the logistics support process to run smoothly. The station commander should not only have the ability of routine regulation and control, but also enhance the ability of regulation and control in unconventional conditions, properly handle possible unexpected situations, and strive to ensure the relatively stable operation of the process.

Section 2: Characteristics and Requirements of Logistics Command

1. Characteristics of command

Because the combat flight of the air force has the characteristics of high speed, large space, and extensive maneuvering, the air battle is rapid and intense, and a large amount of materials will be consumed in a very short period of time, the logistics command of the air force has the following characteristics:

- (1) The amount of command information is large, and it is difficult to obtain information

In order to carry out correct command, station commanders must continuously understand and master the necessary information. The more comprehensive and accurate the information is at the station commander's disposal, the higher the quality of determination. However, the information contained in an air force station is very extensive and complex, far greater than the amount of information of a motorized infantry division of the army. Moreover, with the development of aviation technology and equipment, the amount of information is increasing dramatically. Such a huge amount of information requires the station commander to grasp all of it;

which is not necessary either. However, the following important command information must be mastered.

1. Information on the natural elements of the station support system. There are many categories of aviation logistics specialties, and each specialty is a subsystem, and each subsystem carries a large amount of information. In order to rationally deploy support forces, station commanders must understand the most important information about each subsystem. Such as station support personnel, important materials, main equipment, equipment, superiors to strengthen forces, friendly neighbors and so on. Although this information is provided by filtering from each subsystem, the amount of information is considerable. At the same time, due to the large amount of combat materials consumed and replenished by the air force in wartime, when attacked by the enemy, the damage to personnel, materials, and equipment is complicated, and the information changes rapidly, and it is very difficult to grasp it in a timely and accurate manner.

2. Information on combat logistics required for logistical support. For example, the instructions of the head of the aviation unit and the logistics department at a higher level, the organization and deployment of station support forces, the logistics support, and the airport emergency repair plan. Due to the great combat mobility of the air force and the rapid changes in the situation, in order to adapt the logistical support to the changing situation, it is necessary to grasp the changed information in a timely manner. However, due to the backward means of obtaining information at the station, it is difficult to obtain changing information in a timely manner.

3. Information on airport defense. It includes information on the defense and protection plan of the airport, the report of the enemy situation of the combat department, the enemy situation and social situation near the airport, the report of the local armed forces, and the defense organization and facilities of the station. Because the enemy's situation changes rapidly, and the defense of our air force's airfield is only a part of the rear defense of the composite army, it is also quite difficult for the station commander to obtain the above information in a timely manner.

(2) The survivability of the command system is weak

Due to the complexity of the logistics support of the air force, it is necessary to have a reliable logistics command system as a guarantee. Once the logistics command system is destroyed and the command is paralyzed, it will be difficult to complete the support task. In order to facilitate the organization and command of flight support, the logistics command organization of the aviation unit is usually set up in the flight area of the airport with obvious targets, so the command organization is extremely vulnerable to enemy attacks. There is no independent communication and command network on the opposite side of the station, and can only rely on the operational command and communication network. However, because the airport is hundreds of kilometers away from the upper level, wired communications are vulnerable to disruption, and it is very difficult to recover after being destroyed, and wireless communications are prone to interference.

Therefore, the survivability of both the command structure and the command communication network is weak.

(3) It is difficult to command the logistics of the air force

Due to the frequent combat sorties of the air force and the complex changes in the battlefield, the preparation time between the two sorties is short, and the amount of material consumption and replenishment is difficult to predict. There is not only coordination within the stations but also coordination with the equipment departments and the coordination with the militia and migrant workers in the local branches; the means of command at the stations are relatively backward, the information is not very well-informed, and the command organs are easily sabotaged. All this has made it more difficult to command the logistics of the air force.

2. Command requirements

Since the logistics command of the air force has the above characteristics, the commander of the station must follow the objective law of logistics command and smoothly carry out the logistics command work in order to organize and lead the subordinate departments and detachments to accomplish the logistics support tasks. The fulfillment of the logistical support tasks of the air force is determined not only by the objective material basis, but also by the subjective guidance capability, that is, the superb command capability. In order to achieve unity, firmness, flexibility, and continuity in the logistics command of the aviation forces, the following requirements should be observed:

(1) Overall coordination, centralized and unified command

The purpose of overall coordination is to form all elements and parts of the air force's logistical support into an organic whole, give full play to the overall support efficiency, and make the diversified support forces cooperate with each other through coordination functions, closely link the support work, and coordinate the support operations. In the process of logistical support for the air force, each support force not only has its own relative independence, but is also interrelated and mutually influential. Only by rationally combining them and coordinating their actions from beginning to end can we reduce friction and conflicts between them, produce good results in making up for and promoting each other, and form a mechanism and situation for orderly operation, so that the overall support function can be brought into full play. Without a high level of overall coordination ability, there will be no strong overall support capacity, even if a single element and each part of its own function is very strong, it is difficult or impossible to produce a $1+1>2$ effect. The overall coordination is like filling the running machine parts with lubricating oil, so that the internal consumption is reduced and the operation is fast.

The effectiveness of the overall support depends on the coordinated action of all support forces, and the coordinated action of all support forces depends on centralized and unified organization and command.

The so-called centralized and unified command means that the commanders of the depots and stations should concentrate in their own hands the decision-making power related to logistics support and airport defense, and through effective organization and command activities, unify the logistics support forces and defense forces of the depots into an organic whole, and accomplish the logistical support and defense combat tasks in a coordinated manner. Centralized and unified command is one of the basic principles of the army's operational command, and is also the basic requirement for the logistics command of the air force.

Modern aviation operations are usually carried out on the ground under the conditions of dispersion and concealment, and the support points are many and wide; the flight logistics support tasks of the air force are arduous, and there are many departments involved in the support, and the types of operations are miscellaneous; there are many targets for airport defense, but the defense force is relatively insufficient; and in wartime, it is necessary to provide support on the one hand, and rescue and repair on the other. Without a centralized and unified line of action, each party will do its own thing, and it will not be possible to form an overall support and overall defense, which is not conducive to concentrating forces to support key points and urgent needs, and it is extremely difficult to accomplish the tasks assigned by the higher authorities. Therefore, only by acting in a unified manner under a unified order can we release a huge amount of support energy with limited manpower and material resources. In accordance with the determination of the head of the air force unit and the orders of the rear of the higher authorities, the head of the station should organize and use the support forces of the station in a unified manner and command and control all service support activities according to the unified plan.

To implement centralized and unified command, it is first necessary to have a comprehensive understanding of the tasks. Flight support is a comprehensive support activity carried out in coordination with a variety of professional services, and to complete each flight support task, it is necessary to clearly define the combat intentions, support targets, and support workload of the superiors, so as to provide a basis for making a determination and formulating a unified code of action. Second, it is necessary to establish a centralized and unified command structure at the station. It is necessary to make unified arrangements for and use of support forces, uniformly distribute and use local support forces, unify the organization of command stations to fight against the enemy, and unify coordinated actions, so that all kinds of support forces can strive for the same goal according to a unified order.

Only by unifying command can we achieve effective overall coordination. Only by unifying command can we uniformly weigh the priorities of all support tasks, make overall plans, and make rational use of them. Only with unified command can we make the deployment of scattered logistics support forces mobile in a short period of time, quickly concentrate forces on the main support areas and important support seasons, and accomplish the most important logistics support tasks.

Unified command is based on the political and ideological unity and unified support thinking between the logistics forces at the higher and lower levels and among other logistics support forces at their disposal. Commanders of stations and stations must strengthen their overall concept, resolutely carry out the orders, instructions, and requirements of their superiors, strictly enforce discipline in providing support, and all support operations must conform to the logistical support determination of the station chiefs, subordinate themselves to the interests of the overall situation, and actively fulfill the support tasks assigned to them under unified command.

In the event of an emergency or when the command is interrupted and there is no time to ask for instructions, the lower-level commander should, in accordance with the determination of the head of the station and the specific local situation at that time, have the courage to take responsibility, deal with the situation, and then report to the head of the station.

(2) Take care of the overall situation and master the joints

Paying attention to the overall situation and mastering the joints means that in command activities, station commanders should focus their attention on the main tasks that affect the overall logistics situation and on the important joints in the process of logistics activities. Taking care of the overall situation and mastering the joints is one of the important principles of the logistics command of the air force. In order to control the entire support activities and effectively organize and lead their subordinates to accomplish the support tasks, the station commanders must take good care of the overall situation of the station's flight support and be good at discovering and resolving the main contradictions in the support process.

The "overall situation" here refers to the whole process of things and their development. The overall situation of the logistics command of the air force is to ensure the logistics work of the air force and the entire process of the operation. In order to take care of the overall situation, it is necessary to take into account the needs of all aspects and stages of logistical activities, so as to prevent one at the expense of the other. For example, when supporting the flight of different types of aircraft, it is necessary to give full consideration to the needs of various units and types of aircraft for various types of support equipment and equipment, as well as their needs at each stage of the entire operational process. Only by understanding the overall situation can we properly estimate the position and role of the station's logistical support work in the overall situation of the campaign, and can we also correctly handle the contradiction between the local part of the station and the overall situation of the campaign. Therefore, in commanding activities, the head of the station must firmly establish the concept of the overall situation and the concept of the whole; when making determinations and making plans, he must proceed from the interests of the overall situation; and when using the forces of departments and detachments, he must weigh the overall support benefits so that the various specialized support forces of the station can operate at a high speed and in an orderly manner around the realization of the support objectives.

To grasp the joints is to grasp the main contradiction in the whole process of logistics activities. That is, issues and actions that are of decisive significance to the overall situation of logistics support. If you master the joints, you will be able to move the whole body, promote the development of the overall situation of station flight support, and be conducive to the solution of all problems. Otherwise, you will fall into a passive situation of "if you are not careful, you will lose all the games." Therefore, the command focus of the head of the station must always be placed on issues and actions that are of decisive significance to the overall situation.

To master the joints, do not use the support force evenly. In the process of carrying out campaigns and battles, it is necessary to do a good job in the organization and use of flight logistics support forces, the replenishment of major combat materials, the treatment of the wounded and sick, the repair of damaged equipment, and the emergency repair of damaged airfields. Due to the differences in the combat style, nature, and tasks of the aviation units, and the differences in the support environment, the support joints are also different. Even in the course of a combat flight support, due to the development and change of the situation, the main contradiction will also change. The head of the station must judge the hour and size up the situation, be good at discovering and resolving the main contradictions, and exercise correct command.

(3) Careful planning

The essence of careful planning is to make decisions scientific. That is, it is necessary to make up a scientific decision, and the determination of the commanders of the nine stations to formulate plans according to their determination is the basis for organizing and implementing logistical support, and whether they are scientific or not, and whether or not the support plan drawn up according to their determination is thorough, will have a direct impact on the results of logistical support and even on the course of operations. Planning and organizing various logistical support is the basic activity of the logistics command of the air force and the direct basis for the command and control support activities. Station commanders and command organs should make overall arrangements and make careful plans in accordance with the support tasks and support capabilities undertaken by various operational departments and detachments, do everything possible to improve the efficiency of support, and provide a good material foundation and technical services for the air force to win combat victories.

Determination and planning must be rigorous, accurate, and cost-effective in order to be scientific and thorough. Strictness means that it is necessary to systematically reflect all aspects of logistical activities, meticulously handle the relationship between the various elements of the station support system, and ensure that the support system operates in a coordinated manner.

Accuracy means that the final result of the logistics activity should be in line with the objective reality and intended purpose. For the determination plan to be accurate, it must be scientifically predicted. On the basis of a timely and comprehensive understanding of the situation, we should use scientific forecasting methods to conduct full demonstration and analysis to find out the favorable conditions and unfavorable factors in the current and future logistics support, as well as the reliability of completing the task. For example, when determining the distribution and use of support forces, it is necessary to take into account the needs of the air force units, the relevant regulations of the higher authorities, the support capabilities of the depots, and the problems that may arise under special circumstances, and conduct qualitative and quantitative analysis in a timely manner to find out the main contradictions affecting the distribution and use of support forces, so as to make a relatively correct determination. Practice has proven that only by formulating an accurate support plan can we effectively organize support, and any mistake in the support plan may delay fighters and cause unnecessary losses and waste. Therefore, when drawing up support plans and determining the various elements of support forces, it is necessary to conduct accurate quantitative and qualitative analysis on the basis of data and data such as task workload, consumption standards, and equipment performance, so as to prevent subjective assumptions and rough estimates. The high efficiency of logistics command is mainly reflected in the determination of the station commanders to achieve the following criteria after the plan is realized: They can complete the logistics support task in the shortest possible time, or use the most manpower and material resources to complete the established support task.

(4) Rapid response and efficient command

The quickening of the operational tempo and the shortening of the process of the aviation in high-tech local warfare have determined that the preparation time and implementation time of the aviation logistics command are very short and intense, and it is necessary to respond quickly and command with high efficiency.

"Time is the army" and "efficiency is life" have been tested by countless war practices. The role of timeliness is far beyond the main body of command itself, and affects "thousands of troops." The time and efficiency of command no longer play an important role in support operations, but play a decisive role. High-speed and high-efficiency command is a very important issue in the logistics command of the air force.

To respond quickly and commanding efficiently, first, it is necessary to establish and improve the station command automation system, quickly collect, process, process, and use information, and provide the near-real-time information needed for command decision-making. Second, it is necessary to attach importance to improving the military quality, strategic ability, and professional level of station commanders,

speed up decision-making, improve the quality of command, and strive to achieve it in one step. Third, it is necessary to improve command methods, reduce command levels, simplify command procedures, and constantly compress the command cycle to meet the needs of the fast-paced logistics support operations of the air force. Fourth, it is necessary to strive to complete more wartime command work before the war, minimize the workload of organizing and planning for the immediate battle, organize and plan logistics support according to standardized procedures, and improve the speed of response. Fifth, it is necessary to draw up a well-coordinated logistics command plan for the air force and make multi-handed preparations in advance.

(5) Firm, flexible, and uninterrupted command

Firm, flexible, and uninterrupted command is an important condition for adapting to the development and changes of the war situation, quickly and accurately handling all kinds of complex and difficult situations, and smoothly accomplishing the support tasks. This is the command and control ability that station commanders must have.

Firmness means not being swayed by certain situations that arise when there is no major change in the situation.⁶ In the course of logistical support for the air force, as long as there is no fundamental change in the situation, the station commander should have unwavering confidence, not be overwhelmed by temporary difficulties, and do his utmost to bring about the realization of his determination. Firmness is a character trait that a station commander must possess, which is mainly manifested in two aspects: boldly making a determination to provide support and resolutely realizing the determination. When making up his mind, the head of the station should not be confused by certain superficial phenomena and not be swayed by various demands and suggestions that are divorced from reality, but should have the courage to take risks and make up his mind quickly and decisively. The content of the determination should be affirmative and clear, and there should be no ambiguity. In the course of a battle, the development and change of the situation often cannot proceed according to the predetermined plan, and when the situation does not change fundamentally, we must not be swayed by certain difficulties that arise, but must exercise command with indomitable and tenacious fighting spirit, and unswervingly carry out the established determination to provide support. In particular, when material consumption, equipment damage, and casualties exceed expectations, and the supply and replenishment of higher authorities are temporarily interrupted, the station commanders must be all the calmer and firmer, have the courage to overcome difficulties, and do everything possible to complete the support task.

Flexibility means that the method of command is not conventional. It has two meanings: First, under normal circumstances, logistics commanders should adopt appropriate methods to handle the situation in light of the specific situation at that time, and should not be confined to past experience and exercise command in a rigid and mechanical manner; second, when there is a major change in the situation, the station commander should be good at making a quick response in light of the changed situation.

Flexible command is a reflection of the resilience of the station commander. The flexibility of conducting is the core of the art of commanding, which is mainly manifested in the non-conformism of the way and method of commanding. Command activities are a kind of creative labor, and it is a process of constantly analyzing, judging, and disposing of situations. These activities require not only knowledge, intelligence, keen observation, rich imagination and accurate calculations, but also the ability to deal with problems appropriately. In the course of the implementation of the battle, along with the development and change of the battlefield situation, the operational determination of the head of the aviation unit may be partially or completely changed, and the support tasks of the station may undergo major changes. In such a situation, the head of the station should be good at decisively changing his original determination according to the new situation.

Uninterrupted command means that the whole process of command can be continuously and effectively controlled. Logistics commanders should establish an information feedback system so that they can constantly grasp the situation of logistics support. Some departments and detachments at the field station have deviations in realizing the determination of the station commanders, and they can correct them in a timely manner to ensure the smooth realization of the determination. In modern warfare, the situation changes rapidly, coordination is complex, command means are backward, and airfields are often important targets for enemy attacks and sabotage, and the danger of command interruption may occur at any time. In order to maintain the continuity and stability of the command of the station commander and the headquarters, it is necessary to constantly collect relevant information, comprehensively understand the development and changes on the battlefield, keep abreast of the operational needs of the air force units and the current situation of the station's support, and deal with various problems in a timely manner.

Only by being firm and flexible: Uninterrupted command can we adapt logistical support to the needs of air force operations. It is necessary to achieve firm, flexible, and uninterrupted command. The key lies in the fact that station commanders constantly grasp and process real-time support information. In particular, it is necessary to focus on grasping the changes in the operational situation, the types of aircraft and the composition of the troops stationed in the field, and the support forces at the stations, and analyze in a timely manner the impact of these changes on the use of logistics support forces, so as to deal with them quickly and decisively.

Section 3: Logistics Command System

Logistics command system refers to the general term for the organizational system, institutional setup, division of functions, and determination of relationships of logistics command.

The logistics command system is an important part of the operational command system. Only by establishing a scientific and rational logistics command system can we form a good logistics command mechanism and implement smooth and efficient logistics organization and command.

1. Commanders

The logistics commander of the aviation unit refers to the leader of the station. The commander of the station is not only the executor of the determination of the superior leader, but also the decision-maker and the organization and commander of the station's logistical support and defense operations. Therefore, the individual quality and command ability of the station commanders play a very important role in leading the subordinate departments and detachments to accomplish logistical support tasks and ensure the combat victory of the air force units.

(1) The qualities that station commanders should have

The quality of station commanders refers to the ability to carry out logistics command under certain conditions and in a specific environment. It is a state in which a station commander possesses various elements such as morality, knowledge, talent, body and soul on the basis of innate endowment, through hard study, painstaking study and hard practice. Modern high-tech warfare requires station commanders to have good quality. However, military commanders in different periods have different requirements for their quality. In ancient times, emphasis was placed on "wisdom" and "bravery." For example, Sun Tzu of the Warring States Period: "Generals, wisdom, faith, benevolence, bravery, and strictness are also workers Most people in modern times believe that they should have the five aspects of "morality, talent, learning, and physique", and focus on "morality" and "talent" According to the nature of the work of station commanders, various discussions on the quality of military personnel are summarized, and station commanders should have the following five qualities:

First, it is necessary to have firm political convictions. It is embodied in a high degree of dedication and a strong sense of responsibility, which is commonly referred to as "morality." Station commanders should have the spirit of dedicating themselves to the air force's logistics cause, and this is the driving force behind doing a good job in the air force's logistics command work. Only by arming ourselves with Marxism-Leninism and Mao Zedong's military thought, constantly reforming our world outlook, and fully understanding that the logistics work of the air force is a part of the military struggle, can we strive to master the law governing logistical support. Station commanders should have a strong sense of responsibility. The aviation unit has a heavy responsibility for flight logistics support, and the slightest negligence will not only fail to accomplish its combat mission, but will also cause accidents and cause its own side's unnecessary sacrifices. Only with a strong sense of responsibility can we consciously take responsibility for the victory of the air force,

in order to complete the tasks assigned by the superior in the most complex and difficult time.

Second, they should have knowledge of military and military economics. Logistics command is an integral part of military command. Therefore, logistics commanders must understand military affairs. Commanders of stations should understand and familiarize themselves with the principles of joint operations, especially the substitution principles of joint combat campaigns and tactical operations under modern high-tech conditions, the composition, tasks, and logistical support of the army and navy, the basis and requirements for the rear deployment of joint campaigns, and the tactics of various arms of the air force, such as the tasks of each branch of the armed forces and the principle of using troops. With the above knowledge, we will be able to keep the overall situation in mind in wartime, profoundly understand the operational intentions of the higher authorities, and make logistical support more suitable for military struggles. Military logistics work is not exactly the same as military work, and it has a considerable economic component. Therefore, station commanders should also learn the necessary economic knowledge, especially the knowledge of the market economy, and follow the economic laws in their own command activities. There will always be a gap between the demand for logistical personnel and material resources and the support capability of the depots and stations in future war aviation operations, and only by combining economic knowledge with military knowledge can we improve efficiency, ease the contradiction between supply and demand in logistics support work, and produce the greatest combat effectiveness with the least input.

Third, it should have a solid and solid professional foundation in logistics. Station commanders should be proficient in logistics and be experts in aviation logistics. However, the logistics profession is a broad concept, and it is neither possible nor necessary for station commanders to be proficient in every specialty of the logistics system. This means that on the basis of being proficient in logistics command science and skillful use of various command means, one should also be relatively familiar with the general theories, principles, and working procedures of various logistics professional services, the basic laws and regulations on logistics, and the key points of various professional and technical regulations.

Fourth, they should have the ability to make scientific decisions. The scientific decision-making ability of station commanders is a comprehensive embodiment of the use of a variety of knowledge and wisdom. Strong decision-making ability is manifested in the fact that commanders are good at foresight, meticulous in planning, able to come up with ideas when encountering problems, and able to quickly make correct judgments when dealing with complex problems. When making decisions, station commanders should make decisions in accordance with scientific decision-making procedures, make full use of modern technology and means, give play to the role of station headquarters, and obtain information extensively. And carefully carry out processing analysis, and then combine personal experience to determine a satisfactory plan as the goal of action.

Fifth, they should have the temperament of bravery, tenacity, composure and self-restraint.

This kind of temperament can neither be contained in "virtue" nor belong to the category of "talent", but it is the necessary emotion, will and character of the station commander. Modern aviation operations are becoming more and more dependent on logistics, and logistical support is not only a heavy task, but is often carried out under extremely difficult conditions and in a harsh environment. Therefore, without a brave spirit and a stubborn will, the station commander cannot lead his subordinate personnel to complete the support task. At the same time, the more complex and difficult the situation, the more you need to be calm, not discouraged when encountering difficulties, be rational when frustrated, and always maintain a stable mood.

In order to meet the above-mentioned quality requirements, station commanders must be familiar with and grasp their own personality and psychological characteristics, and be able to make use of their strong points and avoid their weaknesses; study diligently, constantly update their knowledge, and form the knowledge structure necessary for commanders; have the courage to practice, exercise assiduously, and increase their abilities; be good at summing up and refining, and constantly improve their judgment and decision-making ability.

(2) The art of command of station commanders

The so-called art of command refers to the ability to creatively apply the principles and methods of command in normal and abnormal situations, especially in abnormal situations, on the basis of certain knowledge, experience, and dialectical thinking. This is manifested in the creative and flexible use of the scientific knowledge, military knowledge, and command methods that we have mastered, to concretely analyze various complex factors, and to properly solve various practical problems in command work. It is a non-standardized, non-procedural command behavior, and a comprehensive embodiment of a commander's wisdom, knowledge, courage, experience, style, character, methods, and ability. The more urgent it is, the more creative rather than mediocre it is to conduct a command, the more it can show the mastery of its commanding art. To a large extent, the art of conducting depends on the commander's personal talent and the accumulation of knowledge and the summarization of experience. Because the command environment is complex, diverse, and ever-changing, and the personal qualities of commanders are also different, it is impossible to have a fixed and unchanging command art that can adapt to any situation and to anyone. When we study the art of conducting, we can only summarize the general principles that can be called the art of the finger bank from the practice of conducting and from the specific methods of conducting.

1. Judge the situation and be resourceful and decisive

The so-called "judging the situation and sizing up the situation" refers to being good at understanding the characteristics of the objective situation and predicting changes in the situation.

It is necessary to proceed from objective reality and make concrete analysis based on facts. In wartime, station commanders may encounter many contradictions and difficulties in the course of exercising command, and the methods of resolving them must not remain unchanged. As the course of the campaign and combat moves forward, time is changing, the environment is changing, and the personnel and objects to be supported are changing, and even if commanders encounter problems that are very similar to those in the past, they must realistically speculate, estimate, and resolve them in light of the objectively changed situation at that time. "Resourceful and decisive" means to be resourceful and decisive. "Be resourceful", think more, come up with more ideas. When encountering problems, we should take into account all kinds of favorable conditions and unfavorable factors, compare them repeatedly, and then find a better strategy. "Good judgment", good at decisiveness. Not only to break in time, but also to break correctly. Station commanders can grasp the main contradictions from complex things and bring all the links along the way, so as to push forward the development of logistics command. In wartime, if the commander of the field station is not good at planning and making correct decisions in a timely manner, he will not only fail to complete the support task, but may also affect the course of the battle.

2. Seize the opportunity and strive for the initiative

The "capture of fighters" in military command should be called "seizing the opportunity" for logistics command. The so-called "seizing the opportunity" means not overly pursuing safety and reliability, but also not rushing forward. Station commanders should be good at avoiding unfavorable conditions and give full play to their own advantages. Commanders of depots and stations should grasp the opportunity well, mainly referring to the fact that in the course of support work and defense operations, the deployment and use of forces can be just right, which not only conforms to objective reality but also conforms to the intentions of their superiors, and can also receive the support of their peers and the support of their subordinates.

Taking the initiative in logistics command is an organizational and leadership activity carried out by station commanders based on the existing conditions and correctly understanding and applying the laws governing logistical support. With the initiative of logistics command, there is freedom of action for logistics support. Otherwise, even if there are abundant combat materials and sufficient support equipment, they may not be able to meet the needs of the combat troops.

In order to gain the initiative in logistics command, it is necessary to make good logistical preparations by making far-sighted plans and proceeding from the most difficult and complicated situations; it is necessary to concentrate the main manpower and material resources, give priority to the key points of support, and form logistical support superiority in some parts; it is necessary to be good at proceeding from the overall support system of the station and carrying out the best combination; and in the process of support, it is necessary to rationally allocate forces and exercise optimal control in order to give play to the overall superiority.

3. Adaptable, witty and flexible

Adaptability, wit and flexibility are all about being able to adapt quickly to changes in things. That is, a certain command style or method of a commander cannot be effective in all circumstances. Things like war are more uncertain, and their development and change are both inevitable and often pregnant with contingency, and inevitability is manifested through chance. If a commander does not pay attention to the accidental phenomena that manifest themselves in the development of things, but only wants to grasp the inevitable laws of the command process at once to resolve contradictions and deal with problems, not only will he not be able to talk about the art of command, but he will inevitably be rigid in his thinking and will not be able to adapt himself well to the work of logistics command.

The resourcefulness and flexibility of station commanders are also manifested in the ways and means of logistical support, which must conform to the spirit of the instructions given by the higher authorities and not violate the general principles; and must also conform to the actual conditions of their own units and have the ability to be resourceful and flexible in adapting to changes.

4. Rigidity and softness, combination of cold and heat

"Gang" means strong. No matter what difficulties they face or how big the storms they encounter, they can be indomitable and firmly believe that they can win the battle. However, self-confidence is not blind, but is guided by a scientific attitude, supplemented by gentle methods, so that the logistics command work is both impressive and steady. "Heat" refers to revolutionary fervor. When leading their subordinate departments and detachments to accomplish logistical support tasks, station commanders should have the spirit of forging ahead courageously, working with all their might, and vowing not to give up until the goal is achieved. However, when making up our minds and dealing with problems, we must be calm and thoughtful, so as to prevent some hidden contradictions from being covered up by people's enthusiasm and making mistakes. Sometimes, despite people's enthusiasm, when the conditions for solving the problem are not ripe, it is necessary to carry out appropriate "cold treatment" to avoid blind and brutal action and cause undue losses.

2. Command structure

The effectiveness of logistics command depends not only on the commanding art of commanders, but also on the role of command organs. No matter how good the commander's determination is, it will not be possible to achieve the goal without the correct execution of the command structure. Therefore, the command structure has an important position and role in the chain of command.

In order to ensure that the head of the station can exercise flexible and uninterrupted command under any complicated and difficult circumstances, the establishment of the command organization of the station should meet the following requirements: In order to improve efficiency, the composition of personnel should be lean and capable; in order to reduce internal friction and avoid unnecessary duplication of work, the division of labor should be scientific; in order to ensure the safety of the command post and the reliability of the command, the command post should have a certain defensive capability; and in order to maintain the stability and convenience of command, the command post should be built in a place with convenient transportation, relatively concealment, convenient for command, and convenient for organizing communications and liaison.

In accordance with the above requirements, the command organization of the station in wartime should establish a station command post on the basis of the flight support command room and the station duty room, including the basic command post and the reserve command post.

The basic command post is the main command organ of the station head and the headquarters, which is usually composed of the station head and the staff officers of the headquarters, and a small number of cadres from political work and business departments are recruited. In order to carry out counterpart command, the members of the command post should be organized into command groups for planning, flight support, airport defense, and emergency repair. The members of each group should be relatively fixed, allowing one person to participate in the work of both groups. The members of the basic command post are on duty in turns. The main duties of the personnel on duty are: to maintain close contact with the air force units and the logistics command organs at higher levels, to keep abreast of the development and changes in campaigns and battles, and to grasp all kinds of information related to logistics command; to convey orders and instructions from higher levels and to put forward suggestions for implementation; to keep abreast of the implementation of logistical support for combat flights, as well as the work process of the organs and detachments at the stations, and to solve problems that arise in the course of support; to make statistics on casualties and the wear and tear of materials, technology, and equipment, and to summarize and report the support situation on the day.

The basic command post should be equipped with relatively complete command facilities. It is necessary to communicate with the command posts of the air force units and the reserve command of the depots and stations, and with the logistics command organs at higher levels, and have a wireless communication network. In order to improve command efficiency, the command post of the station should gradually build a command automation system composed of electronic computers and related technical equipment.

Reserve command posts are usually set up on the basis of the station duty room, and their task is to take over the command when the basic command post is unable to work. When not in charge of the main command task,

the reserve command post is responsible for the management of administrative life in the infield and the command work entrusted by the basic command post. The reserve command post should be equipped with approximately the same communications equipment as the basic command post.

The flight support command room of the station is the command organ of the flight support aviation unit dispatched from the station to the flight site, and it is subordinate to the basic command post of the station in wartime, and the flight support personnel of the command room are on duty in turn. Under the unified command of the flight commander, the head of the duty station and the field attendant shall specifically organize the logistics support and communications, meteorological and other support work of the flight. The flight support command room is usually equipped with a command room, a combat data room, a rest room for duty personnel, a parking lot and other places. The command room is equipped with a field support operation monitoring system, which can directly communicate with the station chief, the flight control tower, the basic command post of the station, the reserve command post and the "three-line" support site.

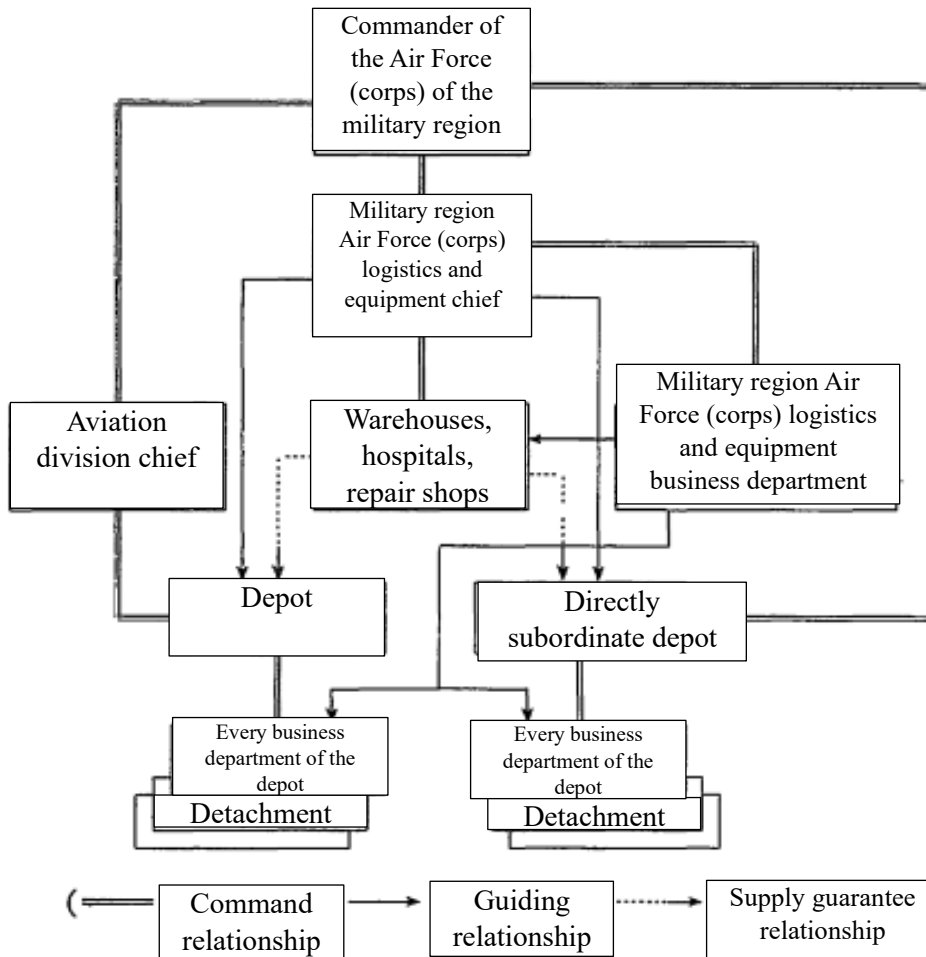
To ensure the safety of the station command system, the basic command post and the flight support command room should have underground or semi-underground sheltered fortifications.

3. Command relationship

Station flight support command is a complex system. There are relationships such as command, guidance, and supply guarantee. As shown in Figure 3-1 and 3-2. Command relationship. The Air Force Aviation Field Station is subordinate to the aviation division in terms of establishment and is under the direct leadership and command of the party committee and military and political chief of the aviation division to which it belongs. Directly subordinate stations and stations not stationed in the air force units are subject to the leadership of the party committees of the air force (army) of the military region, as well as by the military, government, and chiefs. The training base stations are under the leadership and direction of the party committee and the military and political leaders of the training base. The flight academy station is subordinate to the flight training regiment in terms of establishment sequence, and is subject to the leadership and command of the party committee and military and political leaders of the training regiment. The station has a vertical leadership relationship with its subordinate business departments and detachments, so each station has a command relationship with its subordinate departments and detachments.

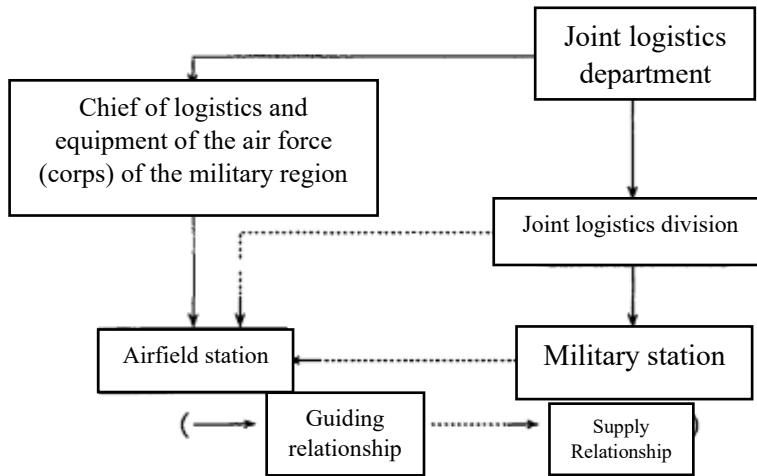
Mentoring relationships. The air force (corps) divisions, political, logistical, and armament organs of the military region shall have the right to supervise and guide the implementation of relevant operational issues and principles, policies, and rules and regulations, and to put forward suggestions for improvement. Major issues that need to be decided by the direct military and political leaders of the depots are usually decided by the direct military and political chiefs and reported to the higher-level divisional, political, logistical, and armament departments for the record, but not by the higher-level divisional, political, logistical, and armament departments, but the higher-level divisional, political, logistical, and armament departments have the right to make suggestions.

Figure 3-1: Schematic Diagram of the Flight Support Command Relationship



Supply relationships. It refers to the operational work connection between the military depots, warehouses, hospitals, repair shops (institutes) and other support organizations under the logistics and equipment departments and the joint logistics departments at the higher level and the stations they supply. There is neither a command nor a guidance relationship between the two, only a negotiation relationship. Military depots, hospitals, warehouses, repair shops (institutes), and other institutions distribute materials, treat the wounded and sick, and repair equipment to the stations they supply in accordance with the orders and instructions of their higher-level organs; The contradictions and problems that need to be resolved between the two should be coordinated through the logistics and equipment departments at their respective levels.

Figure 3-2: Schematic Diagram of the Relationship Between the Station and the Joint Logistics System



4. Command style

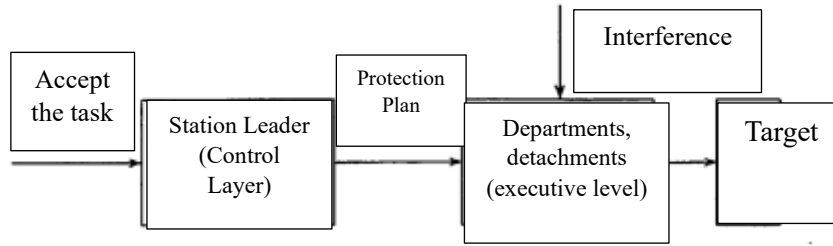
The logistics command of the air force is a process of command, supervision, and control of various logistics activities carried out by the head of the station with the determination to provide logistical support as the center, the logistical support plan as the basic basis, and the actual situation in the war. According to the point of view of cybernetics, there are two basic forms of command and control process: open-loop control and closed-loop control.

(1) Open-loop control

The open-loop control process is the process of inspecting and supervising the implementation of flight support activities without information feedback, also known as feedforward control. It is a way of delegating command. Figure 3-3 shows the process.

Its control procedure is as follows: The head of the station authorizes the organ (outfield flight support command room) to formulate a flight support plan according to the combat flight support task he has received, and the executive layer (each support unit) implements flight support in accordance with the requirements of the flight support plan. In the support process, due to the influence of random interference factors, when the support activities deviate from the mission objectives, the executive layer should take measures to adjust the support force and correct the deviations in the support process according to the real-time information such as the support situation and effect, so that the support activities and the predetermined support plan are in dynamic balance until the task is successfully completed.

Figure 3-3: Schematic diagram of open-loop control

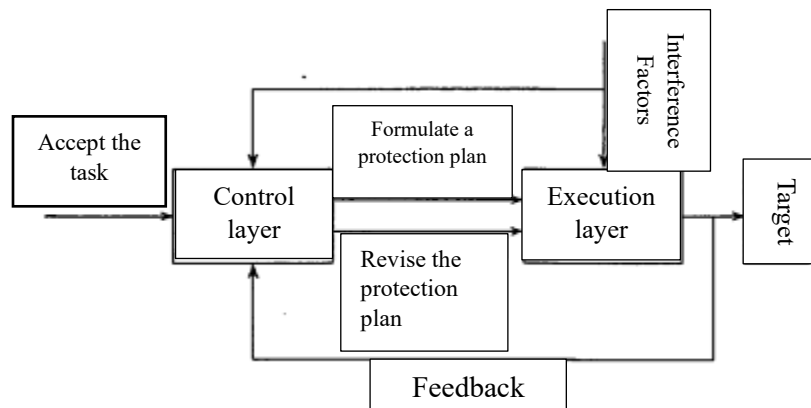


Open-loop control is a form of delegated command procedure. The executive level has a strong degree of autonomy, which is convenient for bringing into play the enthusiasm of lower-level commanders. Due to the lack of information feedback, the head of the station cannot understand and grasp the support situation and effect in a timely manner. Therefore, the open-loop control method is usually suitable for completing generally simple support tasks.

(2) Closed-loop control

The closed-loop control process is a method to ensure that the feedback information is obtained in time, and according to the feedback information, the flight support activities are inspected and supervised at any time, also known as feedback control. It is a way of commanding command. Figure 3-4 shows the control process.

Figure 3-4: Schematic Diagram of Closed-Loop Control



Its control program is: when the control layer gives instructions,

the executive layer carries out the work according to the guarantee plan, and the progress and effect of the guarantee work are fed back to the control layer in a timely manner, when the guarantee process, affected by random interference factors, the executive layer is difficult to execute according to the original plan, the control layer supplements and adjusts the support force in a timely manner according to the feedback information, changes the support method, compensates for the shortcomings of the original guarantee plan, and re-issues instructions to the implementation layer, and the executive layer carries out the guarantee according to the new guarantee plan. Closed-loop control is a form of command-based command method, in which all departments and units of the station act according to a unified support plan, the binding force of the plan is strong, and the coordination of various support forces and parts is good, which is conducive to fully improving the overall support capability. Due to the information feedback in the control system, the head of the station can control and adjust the whole process of support in a timely manner, and can grasp the coordination and initiative of the overall support at any time. The closed-loop control method is usually adopted under the conditions of complex support environment and changeable support tasks.

In practice, the control of combat flight support often needs to be in the form of open-loop and closed-loop. On the one hand, combat flights are usually carried out in a planned manner, with few random interference factors, and the set tasks can be accomplished by carrying out the original plan. On the other hand, due to the complex and ever-changing combat situation, the flight support plan often needs to be revised according to the changes in the combat sortie plan of the aviation unit, and then the support activities are controlled in accordance with the new support plan.

5. Station command automation system

(1) General concepts

The so-called station command automation is a part of the logistics command process of the aviation unit, and the work is handed over to the man-machine system to complete automatically. Therefore, we call the man-machine combination system composed of electronic computers and related high-efficiency technical equipment that can automatically complete part of the command work of the station as the station command automation system.

With the development of the aviation unit's weaponry, the task of providing logistical support for the air force is becoming more and more heavy and complex, and the commanders of the stations are required to be both timely and accurate in making their decisions. Therefore, it is not only very necessary to change the traditional means of command and establish an automated system for station command, but also of great significance. It can improve command efficiency and economic benefits. For example, it can improve the quality of commanders' determination and station command's preparation of logistics support plans,

reduce the time for preparing logistics documents; after the realization of command automation, it can reduce the personnel of the command organization and the reserve of warehouse materials, etc. Therefore, the establishment of an automated command system for stations will have a great impact on the logistics support operations of the aviation units and the campaign and combat operations of the aviation units.

In establishing an automated command system for depots and stations, it is necessary to follow the following principles: in accordance with the principle of unified planning for the logistics of the Air Force and gradual construction in stages; proceeding from the actual needs of depots and stations, the principle of gradually developing and perfecting from low-level to high-level by simultaneously developing and improving both local and foreign areas; integrating peacetime with wartime and attaching importance to economic returns; and the principle of giving priority to cultivating qualified personnel and paying attention to retaining backbone cadres.

(2) The structure and function of the station command automation system

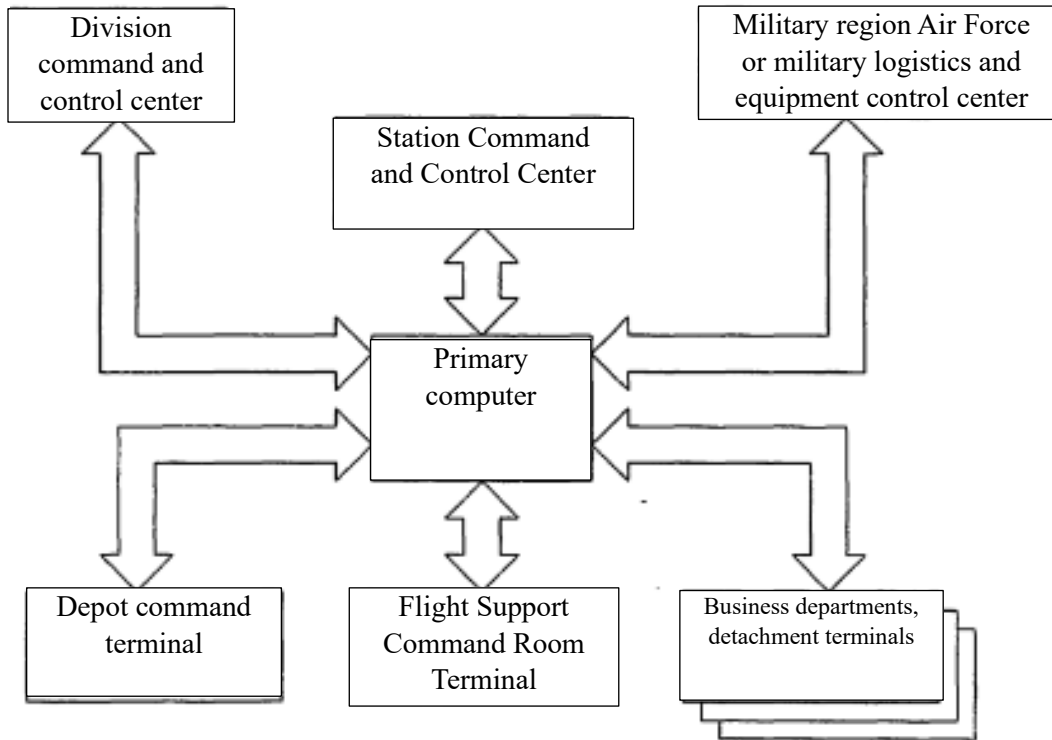
The station command automation system is composed of three parts: the station command post, the computer and its technical equipment, and the communication network. The main purpose of the station command post is to obtain relevant information, use computers to analyze it, provide the analysis results to station commanders, and use computer networks to prepare and transmit logistics documents. Computers and their technical equipment are mainly used to store and query the relevant data of the station, conduct flight support simulations, and prepare, print, or display relevant information in accordance with the requirements of the commanders. The structure is shown in Figure 3-5.

After the completion of the station command automation system, it should have the following functions:

1. It can carry out dynamic simulation of flight support and assist station commanders in decision-making analysis.
 2. Be able to transmit, receive and process various documents, reports and images in a timely and accurate manner.
 3. Be able to grasp the overall dynamics of logistics support in real time, supervise and inspect the logistics situation, and ensure the implementation of uninterrupted command.
 4. Be able to prepare logistics support plans and other combat documents according to the determination of the station commander, and print or display the documents, reports, and data.
- (3) Aviation logistics command model

In the station command automation system, it is necessary not only to have hardware equipment such as electronic computers with good performance, fast computing speed and large storage capacity, but also to have a series of software to realize the above functions. The development of software is based on a series of mathematical models or simulation models. A mathematical model is a description of an object under study in mathematical language.

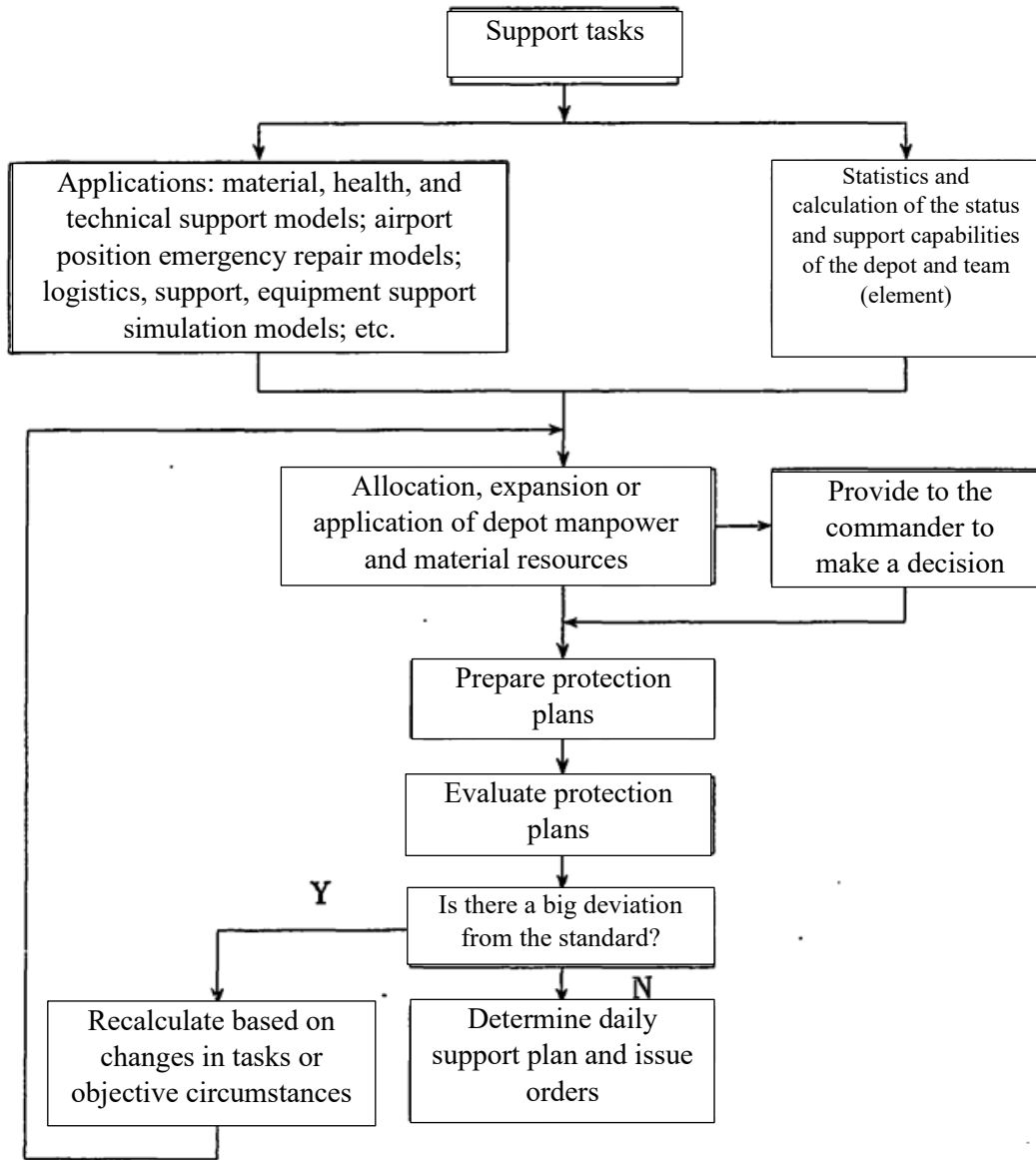
Figure 3-5: Schematic Diagram of the Structure of the Station Command Automation System



A mathematical model is usually understood as a series of mathematical relations and logical rule systems, with the help of which we can approximate the main activity processes of the object under study. The simulation model is a series of mathematical models that describe the interrelationship between various elements, and some technical means are added to replace the actual activity process of the object under study through experimental and observation methods. The aviation logistics command model is a set of model systems based on mathematical models and simulation models, which can describe the process of logistics command activities. Among them, the mathematical model and simulation model include flight support simulation model, airport emergency repair model, material, health and technical support model, military transportation model, and various logistics management models. The schematic block diagram of the aviation logistics command model is shown in Figure 3-6.

In order for the above model to be computable on a computer, it must be provided with a series of raw data, for which a database can be created. The data in the database includes both immutable and dynamic information. Invariant information includes standard, prescriptive, indicative, referential and empirical data.

Figure 3-6: Schematic Diagram of the Logistics Command Model of the Aviation Force



Dynamic information includes the existing number of main materials, the number of consumption, the data related to field support, and the data of frequent changes in personnel and equipment strength. Although it is very necessary to set up an automated command system for stations, in the process of establishing it, it is necessary to be cautious and conscientiously solve the following problems:

First, it is necessary to renew concepts. First of all, it is necessary to renew the concept of command.

Change the past concept of organization and command that relies solely on one's own experience to provide logistical support for the air force. It is necessary to realize that it is very difficult to meet the operational needs of future air units by relying solely on empirical methods to command logistics support, so as to enhance the sense of urgency in building an automated command system. Second, it is necessary to renew the concept of decision-making. It is necessary to change the decision-making method that relied solely on intuitive judgment in the past to a decision-making method that combines qualitative and quantitative analysis, so as to give full play to the efficiency of the automation system. Third, it is necessary to establish the concept of efficiency. In establishing an automated system for station command, it is necessary to proceed from reality, strive for practicality, not be greedy for foreign goods, and avoid blind investment and blind construction.

Second, it is necessary to combine peacetime with wartime. The establishment of a station command automation system is expensive and takes a long time. Therefore, it is necessary to give thoughtful consideration to the planning and construction of the unit, so as to facilitate the implementation of the logistics command of the air force in wartime and the logistics management in peacetime. For example, material procurement, application, payment management, equipment life cycle management, document management, transmission, etc., so that it can give full play to the efficiency of automation equipment.

The third is to pay attention to the cultivation of talents and the retention of backbones. Judging from the lessons learned from the construction of logistics command automation in foreign armies and the process of building automation systems in some of our depots, a problem is also reflected, that is, it is easy to purchase hard equipment, but it is very difficult to train qualified personnel. It is more difficult to retain the backbone after it has been cultivated. If station commanders do not take a long-term view of this problem, the automation of station command will be nothing more than empty talk. Leaders of depots and stations should pay attention to the cultivation of qualified personnel in this field, and in particular, they should pay attention to the cultivation and retention of personnel who understand both the theory of logistical support of the air force and the system analysis of electronic and computer technology.

Chapter 4: Aviation Logistics Combat Readiness

The logistical combat readiness of the air force refers to all ideological, organizational, material, and technical preparations made by the depots and stations for peacetime operations in order to organize the flight support of the air forces in wartime. The purpose is to enhance the rapid reaction capability, sustained combat capability, and ground and ground survivability of the stationed aviation units in terms of station support. When an emergency occurs, it can complete preparations in the fastest possible time to ensure that the aviation units can take to the air in a timely manner for combat, maneuver, or evacuate and conceal; before receiving supplies from the rear, they will have the ability to provide material support for a certain number of combat days or sorties; and when an airfield is attacked by the enemy, it will be able to reduce the consequences as much as possible and quickly restore its support capability. The combat readiness of the depots and stations is a part of the combat readiness of the air force, a fundamental construction work of the depots and depots, and the basis for organizing wartime support.

Section 1: Basic Requirements for the Logistics and Combat Readiness of the Air Force

In the logistical and combat readiness of the air force, it is necessary to always adhere to the guidance of the military strategic principles in the new period, firmly establish the idea that the air force "bears the brunt and uses it throughout the process" and the consciousness of being ready to support the troops in independently carrying out combat tasks at any time, and get a good grasp of solving the key support problems in combat readiness.

1. Be prepared for danger in times of peace and be unremitting

In the face of the complicated international situation and the surrounding environment, the combat readiness work of the stations must withstand the test of peacetime and wartime, and firmly establish the idea that "one is always a combat team." To this end, we must strengthen our concept of combat readiness in the following three areas:

(1) Firmly establish the thinking of ensuring that troops can take to the skies at any time

The battlefield of the aviation forces is in the air, and if it is not lifted into the air, it will be useless, and its combat effectiveness is only potential.

No matter how the international situation changes, the military will always be a combat team, and the air force will always be an important member of this combat team. The aviation forces are the first to bear the brunt of the situation. It is the bounden duty of the stations to ensure that the air force can take to the air at any time to carry out various tasks such as operations, and there must be no wavering in this regard. It is necessary to make full use of the good environment in peacetime, strengthen the comprehensive construction of the stations, fundamentally enhance the stations' rapid reaction capability, comprehensive support capability, organization and command capability, and effective defense capability, and provide effective means to ensure that the air force can take to the air at any time to fight.

(2) Firmly establish the idea of taking the overall situation of logistics work into account with combat readiness work

Combat preparedness is a comprehensive and systematic project. The level of combat readiness is a comprehensive reflection of the quality of the armed forces and an important indicator of the combat effectiveness of the armed forces in peacetime. In guiding their work, the leaders of the depots and stations should always put the work of preparing for war in an important position, take the overall situation of the work of the stations in charge of the work of the depots with the work of war readiness, and form a joint force with other work to promote each other. It is necessary to ensure that the requirements for combat readiness work are put forward when making arrangements, the combat readiness work of the troops is regarded as an important content during assessment and inspection, and the implementation of combat readiness work is commented on when summing up the work. All departments of the organs have consciously regarded the work of preparing for war as an important aspect of their own work and have made joint efforts to make suggestions and efforts for strengthening war readiness.

(3) Firmly establish the idea of persistently grasping war preparedness

Combat preparedness work is a long-term basic work, and we must not rush for quick success or quick success, but must persevere and unremittingly grasp it. It is necessary to incorporate combat readiness education into the content of regular ideological and political education and cultivate the awareness of combat readiness among officers and men; regard specialized training and support for the flight of troops as the main way to raise the level of combat readiness, and truly place them in the central position of the work of the stations and stations, and they are willing to make efforts; the construction of combat readiness facilities should be planned for a long time, arranged for a short period of time, and improved year by year; and the management and administration of troops, equipment, and materials should be linked with the regular requirements and work for combat readiness, so as to promote the implementation of the order of combat readiness and the combat readiness system. It is necessary to organize combat readiness training and drills in connection with regular flight support tasks, arouse enthusiasm for combat readiness, and enhance the concept of combat readiness.

2. Lay a solid foundation and enhance strength

(1) Lay a theoretical foundation for combat preparedness work with academic research as the forerunner

It is necessary to convene a study meeting on combat readiness work in a planned and prepared manner in close connection with the actual conditions of work,

and also take an active part in the academic activities organized by the higher authorities on combat readiness work such as tactics and training methods, discuss and demonstrate important issues related to combat readiness, and put forward suggestions and constructive suggestions on the establishment and implementation of the guiding ideology for combat preparedness, such as standing unremittingly and being on appropriate alert in the new period, so as to guide the implementation of combat readiness work at the station and make it develop in the right direction.

(2) Improve the combat readiness plan to meet the needs of the combat support of the air force

Dealing with local wars and emergencies is one of the important tasks of our military for a long time to come. We often encounter emergencies that range from military and political to unintended social damage and natural disasters. Whether participating in wars, counterinsurgency, or emergency rescue and disaster relief, the air force has the characteristics of pressing time, making too late preparations, carrying out arduous tasks, making unpredictable situations, handling problems beyond the norm, and having almost no or very few rules to follow. In such a situation, it is difficult to deal with complex situations on an ad hoc basis without a plan that anticipates and reflects those scenarios. Therefore, it is necessary to formulate various plans for the aviation units stationed at the site and the tasks that may be undertaken by the field, and organize drills and revisions in a timely manner.

(3) Strengthen the construction and management of combat readiness facilities and support equipment, do a good job in material storage, and enhance support strength

It is necessary to strengthen the construction, management, and maintenance of command rooms, oil depots, ammunition depots, aviation material depots, garages, depots, and airfield areas, as well as roads in the field areas; it is necessary to adopt various measures to overcome difficulties, vigorously grasp the management of combat readiness materials and the maintenance of equipment, and improve the rate of good equipment and the level of material support.

3. Respond quickly and improve the mechanism

Every second counts in the air force's operations, and the time efficiency is extremely high. In order to ensure that the air force can take to the air at any time, the depots and stations must establish an operational mechanism suitable for rapid response. Key points include:

(1) The leadership division of labor is responsible

Party committees and chiefs of stations and stations should conscientiously strengthen their leadership over the work of preparing for war. It is necessary to conscientiously study major issues in war preparedness, make decisions in a timely manner, and propose solutions. The division of labor is in charge of combat readiness work, and listens to and accepts special reports and reports on combat readiness work. The station headquarters is the office in charge of combat readiness,

and it is necessary to conscientiously implement the will of the party committees and leaders, and conscientiously and responsibly do a good job in the organization, planning, coordination, and inspection and implementation of the work of preparing for war. It is necessary to organize short-term intensive training, lectures on combat readiness knowledge, operations on maps, and flight support drills that are close to actual combat in a planned way, so as to enhance the ability of station chiefs and organs to grasp the implementation of combat readiness work and organize wartime support in many aspects.

(2) Strengthen combat readiness on duty

The station duty room, the flight support command room, and each service detachment should establish a day and night duty system. For festivals and major combat readiness operations, the main leaders of the station should be on duty in person. Squad personnel should be familiar with the combat readiness system and the combat readiness plan, stick to their posts, promptly and accurately convey the orders and instructions of their superiors, conscientiously do a good job of combat readiness registration, and strictly enforce the system of handing over shifts. At the stations that are responsible for the combat readiness level of the support aviation units, the flight support command room should organize all kinds of support personnel and support equipment to carry out support at the time, place, and requirements in accordance with the first, second, and third combat duty orders of the flight units. It is necessary to conduct combat readiness inspections in accordance with the regulations of the higher authorities, discover problems, and deal with them in a timely manner. Major matters and support situations in combat readiness work, as well as accidents that have occurred, should be reported in a timely manner in accordance with regulations.

(3) Improve protection materials

There are mainly four types of materials: First, support tasks: including the combat strength of the aviation units, the operational plans, the operational orders, instructions, and circulars of the higher authorities, the relevant rules and regulations, the construction plans of the higher authorities for the construction of airport facilities, and the enemy's situation (especially the threat to the airfield and the possible consequences of the attack). On the basis of the above-mentioned information, the combat flight support, airfield infrastructure and defense tasks of the station were determined. The second is the type of support parameters and laws: It is mainly based on the tactical and technical performance and tasks of each type (type) to sort out the loading and consumption data and consumption rules of aviation materials (engines, auxiliary fuel tanks, supporting aviation materials, etc.), fuel, ammunition, and gas; according to the situation of the airborne equipment of each type (type), the types, models, and performance indicators of technical equipment are provided; and according to the performance, operation regulations, and round-trip distances of various types of equipment, they are counted as a working cycle time. The third is the support strength: it mainly includes the support strength of the station, the business and technical quality of all kinds of personnel, the material reserve and consumption standards, and the performance and quality of various existing technical equipment. The specifications, quality, and clearance conditions of the flight site, and the performance and quality of the power supply and road lighting facilities.

The capacity and storage and maintenance conditions of various material warehouses. The status of command, communication and navigation, flight control, meteorology, and other combat support facilities and equipment. The equipment status of maintenance support facilities (repair shop, regular inspection factory, etc.). The area, quality of various protective fortifications (holes, shelters, evacuation areas, etc.). Fourth, foreign military logistics and local resources: including the establishment of foreign air force logistics systems, business scope, organization, command, and support methods. Local resources are mainly to grasp the situation of industrial and agricultural production, transportation conditions, transportation, vehicle repair, medical and other forces related to security, and militia organizations. Find out what items and quantities may be mobilized in wartime.

(4) Do a good job of communication and liaison

It is necessary to be on strict communications duty to ensure that the lines on duty for combat readiness are unimpeded; it is necessary to use a variety of means of transmission at the same time, and in case of an emergency, under the condition of absolute secrecy, multiple telephones, stations, faxes, and microcomputers can be connected at the same time; it is necessary to do a good job in the professional and technical training of the communications detachments, improve their tactical and technical level and their ability to resist electronic interference, troubleshoot accidents, and rush to repair, properly maintain communications equipment and facilities, maintain and improve their technical status, and enhance the timeliness and accuracy of the information transmitted.

Section 2: Preparation of the Air Force's Logistics Combat Readiness Plan

The logistical combat readiness plan for the air force is the idea of various support and defensive measures adopted by the leaders of the air force in peacetime to ensure that the air force can take to the air at any time to cope with possible war or military emergencies. Usually, the station headquarters organizes and prepares under the leadership of the station chief in charge of combat readiness.

1. The basis for drawing up a war readiness plan

In drawing up a combat readiness plan, it is necessary to base it on the support tasks that may be undertaken by the midfield stations of the various services and arms in joint operations under the conditions of high-tech warfare, the rear deployment and battlefield construction plans of the higher levels, the support strength of the stations, and the social and geographical environment in which they are located.

Safeguard the mission. Due to the adjustment of troop deployment before the war and the extensive maneuvering during the war, the air units and aircraft types (types) to be supported at the time of the depot may be different from those in peacetime, and the objects of support at each campaign stage will also change.

In order to make the combat readiness plan suitable for the wartime support tasks, it is first necessary to understand the position of the current station in the war and the support tasks that may be undertaken at each stage of the campaign. For example, whether or not the type of aircraft (type) will be changed at the beginning of the war, and which units will be transferred in and out later, as well as their organization and combat missions.

The higher-level logistics base is the support for the station to carry out the logistical support of the air force, and its deployment and reserve have a direct impact on the organization of the station's support work, such as material supply, equipment repair, and medical aid. When drawing up a combat readiness plan, it is necessary to determine the amount of main combat materials in reserve and the allocation of equipment repair and logistics forces in accordance with the distance, scope, and support capability of the logistics base at the higher level.

The higher-level battlefield construction plan is the basis for improving the protection conditions of the airport at the station. When drawing up a war readiness plan, it is necessary to find out the scale of the protection project that the airport should have, and whether it is necessary to build a backup runway, a highway and an airstrip, and so on, so that it can be reported to the higher authorities for construction in a planned manner in peacetime.

Station support strength is the basic basis for formulating a plan for the use of support forces. When drawing up a combat readiness plan, it is necessary to ascertain the number and quality of each component element of the support force, and distinguish the arrangement and use of each element in different plans according to the characteristics of the specialized support tasks undertaken by each element.

Socio-geographical environment refers to social resources and physical geographical characteristics. To draw up a contingency plan, it is necessary to understand the types and quantities of local social resources that can be requisitioned by the depots in wartime, and understand the possible impact of the local natural geographical environment on the wartime support work of the depots.

2. Types and main contents of the combat readiness plan

The aviation unit's logistics combat readiness plan includes a comprehensive support plan for stations and various individual support plans. The former reflects the organizational and command activities of station chiefs and headquarters in the stage of preparing for battle, while the latter reflects the support activities of the air force in emergency combat sorties, transfers, airport defense, and eliminating the consequences of the enemy's attack.

The comprehensive support plan is an important basis for the station commander and the headquarters to organize the station to make pre-war preparations in the stage of preparing for battle. The plan should systematically reflect the procedures and contents of the organization's command. Organizing and commanding procedures means understanding tasks, analyzing and judging the situation, making support determinations, drawing up support plans, and supervising and controlling the preparations of the stations.

The content of command is mainly to determine the demand, source (financing) and allocation and use (or task differentiation) of various support forces (personnel, materials, equipment, and facilities) of the station through understanding the task and judging the situation. Due to the many uncertainties in future wars, it is difficult for the station to predict all the support tasks during this period. Therefore, the plan can only be based on the support task of the first wave at the beginning of the war, and take into account the support tasks that may be undertaken later. For example, fighter air stations are mainly responsible for completing the support tasks of the first and second anti-air raid campaigns, and take into account the needs of bombing and assault air units in temporary mobile operations. Bombing and assault air stations are mainly aimed at completing the task of supporting ground combat support for a campaign, and taking into account the needs of fighter units to temporarily come to the field to fight.

There are nine types of individual protection plans:

Aviation combat take-off support plan. The main contents include: the amount of professional service support personnel, materials, and technical equipment required when different combat formations (twin, four, eight, etc.) are dispatched urgently, the time limit and place for arrival after receiving the transfer order, and on-site command measures.

Multi-aircraft combat flight support plan. The main contents include: multi-aircraft combat sorties, the demand for various professional service support personnel, materials, and technical equipment, the organization and use of support forces, and on-site command measures. Aviation combat transition support plan. This plan is the basis for organizing the use of support forces in the event of an emergency combat transfer of the air force. In general, a support plan for the transfer of an aviation division and an aviation regiment and the transfer of a station should be drawn up. Its main contents include: transfer command organization, flight echelon pick-up plan, ground and air echelon transportation plan, material and technical equipment loading and unloading plan, as well as supply relationship handover, en-route support, left-behind matters, etc. The plan for the transportation of troops is drawn up by aviation divisions and regiments.

Anti-air raid evacuation plan. The main contents include: regulations on alarm and command signals, the division of evacuation areas for personnel, materials, and equipment, camouflage measures for important targets, the organization of air and ground vigilance, the organization of firefighting forces, and the control of lights.

Airport emergency repair plan. Highlights include:

Emergency repair command organization, the composition of professional emergency repair points (reconnaissance and ammunition platoon, crater filling, pavement emergency repair, water and electricity emergency repair, transportation, fire extinguishing, etc.). The organization of military and civilian emergency repair forces, the method of communication and liaison, the division of the assembly area, the amount of emergency repair materials and machinery required (calculated according to the amount of emergency repair work with a medium degree of damage), the financing channels and their storage locations, and the livelihood support of militia and civilian workers.

Anti-air (aircraft) landing ground defense plan. The main contents include: the command organization of military-civilian joint defense, the division of defense areas and the deployment of troops, the allocation of weapons and equipment, the regulations on command signals, and the coordination of the combat operations of attacking and destroying the enemy by air (plane) landing.

Nuclear, biological, and chemical weapons protection plans. The main contents include: the command organization of the "three defenses", the tasks of the protective preparation and implementation season, the organization of observation, reporting, reconnaissance, decontamination, fire extinguishing, rescue and epidemic prevention forces, the demand for protective equipment and its sources, etc.

War wounded treatment plan. The main contents include: the prediction of health attrition and injury analysis, the organization of health forces, the division of ambulance areas, the organization of self-rescue and mutual rescue, the location and method of evacuation of the wounded, the mobilization and use of local medical forces, and the rescue measures for pilots in distress inside and outside the field.

Wartime expansion plan. The main contents include: the wartime expansion of the command organization, the number of expansion of various professional service support personnel and equipment, and their sources. Normally, cadres, professional and technical personnel, and special equipment are assigned by superiors, and general staff and general equipment strive for local support as much as possible.

According to the different support tasks to be undertaken, it is also necessary to add support plans for emergency handling of abnormal air situations, emergency opening and opening plans for field airports and highway runways, and support plans for air force ground units stationed near the site to carry out combat missions.

3. Requirements for drawing up combat readiness plans

The air force's logistical combat readiness plan is a prediction and advance preparation for various complicated situations and major support tasks in wartime, and there are many uncertain factors in wartime; therefore, the following requirements should be met when drawing up a combat readiness plan: First, the complex and changeable war situation requires the plan to have strong environmental adaptability; second, the amount of information has increased dramatically, and the plan can be handled by automated means; and third, because the types of services to be supported by the station in wartime are constantly increasing, the number of special support plans has increased correspondingly, and the use of support forces must be arranged in a unified manner.

In order to enhance the environmental adaptability of the plan, the development and change of the situation should be fully considered when preparing the plan, and several contingency plans should be proposed. First of all, it is necessary to calculate the requirements of support forces according to the types of aircraft that may occur in the support tasks. Second, it is necessary to propose a number of possible sources or methods of raising the various support forces (materials, equipment, repairs, logistics forces, etc.) that are needed so that they can be handled randomly.

In order to facilitate the use of electronic computers for storage and revision, the plan should be standardized, formalized, digitized, and use military-language. The format, procedure and content expression method of each plan should be relatively fixed, and the same format should be used as far as possible for plans with similar nature, so as to reduce the workload of compiling software, storing and modifying. Quantitative analysis should use tables, numbers, calculation formulas, and data names to express in characters, with no or minimal use of Chinese characters. For the content expressed in Chinese characters, the unified military language should be used if the concept is the same, so as to reduce the amount of information.

Unified arrangement of support forces means that when drawing up a contingency plan, it is necessary to plan for the unified use of various support forces when several tasks are carried out at the same time, so as to avoid the emergence of one type of support force that takes care of one at the expense of the other because of the simultaneous implementation of different tasks. First, it is necessary to distinguish priorities and ensure key points. For example, when assigning other tasks to each flight support detachment, the necessary combat duty personnel and equipment should be left behind. When organizing airport defense forces, support units such as fuel, ordnance, and aviation materials should be primarily responsible for their own defense. Second, it is necessary to distinguish between priorities and urgency and ensure the needs of urgent tasks. For example, in the emergency repair plan of the airport, the main force should be arranged to quickly repair the runway and power supply facilities. Third, support forces that undertake the same tasks in different plans, such as anti-air raid and "three-defense" rescue forces, anti-airborne ground combat forces, and militia and civilian workers' forward support forces, should change their tasks in a timely manner according to a predetermined form of organization. After the combat readiness plan is drawn up, it must be approved by the immediate superior, reported to the organ at the next higher level (usually the aviation division to which it belongs), and issued to the troops in the form of an order. It is necessary to organize military drills in a planned way so that the personnel concerned are familiar with the procedures and contents of the plan, master the methods of organizing and implementing the plan, discover problems, and correct them in a timely manner. When the situation changes, it should be revised in a timely manner according to the new situation.

Section 3: Management of Combat Readiness Material Reserves and Support Equipment

1. The basis for the reserve of combat readiness materials

The reserve amount of various types of combat readiness materials at the station shall be determined by the higher authorities in the form of reserve standards in accordance with factors such as the status of the airport, the supply cycle of materials, the source of materials, and its technical stability.

The status of an airport refers to its strategic importance and stability. Airports located in different operational directions should have different material reserves due to the different aircraft types, number of aircraft, sortie rate, sortie intensity, and combat days (or total sorties) of the aviation units stationed there. For airfields in the same combat direction, the reserves of airfields with heavy support tasks are greater than those of other airfields, and the material reserves of some airfields should be able to meet the needs of multi-aircraft support. Airports that serve as support points within the network should also have the ability to support nearby airports and support the attached ground forces.

The supply cycle refers to the time required by the higher-level logistics base to supply materials to the station. Airports with long supply cycles due to long supply lines or inconvenient transportation should increase their material reserves, and vice versa, they can reduce their reserves accordingly.

The source of materials (financing conditions) mainly refers to whether they need to be supplied by the superior or can be replenished on the spot. Aviation fuel, ammunition, equipment and certain airport repair materials (such as aluminum track panels) that must be supplied by superiors should be stockpiled according to the prescribed standards. Living materials and other materials that can be raised locally can be stored in small quantities in normal times.

The technical stability of materials refers to the impact of the development of military technology on the life cycle or deployment capacity of materials. Where due to the rapid development of technology, short service life, or quality of materials that have not passed the test, the proportion of reserves should be reduced accordingly.

2. The management of reserve materials

The main tactical material reserves of the station shall ensure that the quality, quantity and variety are appropriate. It is necessary to establish the concept of an appropriate amount of reserves of materials for war readiness, and correct the one-sided concept of the past that the more reserves the better. In a period of relatively stable peacetime, it is all the more necessary to minimize reserves, speed up turnover, improve supply conditions, and enhance rapid response capabilities.

The materials that have been included in the reserve should be managed tightly.

(1) Configuration management

In order to protect the reserve materials from or reduce losses from enemy attacks, they should be evacuated and allocated in accordance with the principle of categorical matching and comprehensive storage by division, and when there is a threat from the enemy situation or at the stage of preparing for battle. Classification is to complete a complete set of various materials according to the variety, model (or specification) and its accessories. Zonal comprehensive storage refers to the division of several storage areas in a certain area at or outside the airport. A certain percentage of various materials are stored in each area, and the necessary safety distance is maintained between the districts. Oil, ammunition, and other inflammable and explosive materials cannot be stored in the same area; the material storage area should be adapted to the aircraft evacuation area so as to facilitate supply; airports with underground warehouses can store reserve materials in relatively centralized underground storage.

(2) Quantity management

Complete the reserve quantity according to the specified variety, specification, structure and time limit. And with the turnover materials separately accounted for, separate storage. Regularly check the physical objects and cards to ensure that the accounts, objects and cards are consistent. Without the approval of the superior, it shall not be used without authorization.

(3) Quality management

The acceptance system must be strictly implemented in the warehousing, and the variety, specification, quantity and quality of the varieties found in the acceptance must be seriously investigated and dealt with. The materials stored in the warehouse should be strictly guarded, maintained and inspected to prevent sun, rain, rat bites, insect moths, mildew and deterioration, loss and damage. In line with the principle of using the old and saving the new, we should adjust and update it in a timely manner to ensure the quality of the reserve materials. The distribution of materials should meet the basic requirements of quality, quantity, supporting and timeliness. With regard to the distribution of oil, ammunition, and aviation materials, it is necessary to strengthen the inspection of varieties, specifications, and quality. All materials must be distributed in complete formalities, handed over in person, and registered in a timely manner after issuance.

(4) Management of issuance conditions

In order to meet the needs of combat operations, the reserve materials should be fixed and positioned, and the responsibility should be assigned to the person. It is necessary to gradually realize the mechanization and management automation of warehouse operations, gradually realize the mechanization of loading and unloading, handling, dismantling, and palletizing work, and make the business management of storage, sending and receiving, statistics, and inquiry controlled by electronic computers.

Reserve points and warehouses should have good access roads and loading and unloading sites, and be ready to be issued and sent at any time.

(5) Safety management

In order to ensure the safety of reserve points and reserve warehouses, it is necessary to conscientiously implement the "50 Points" and "Regulations" on safety work issued by the Air Force. Strengthen inventory vigilance, implement measures such as fire prevention, explosion prevention, flood prevention, mildew prevention, and enemy sabotage, strictly abide by operating procedures, and improve labor protection conditions. When there is a threat of hostile situation, it is necessary to make use of the terrain and features, and do a good job of evacuation and concealment nearby. Reserve points and warehouses should pay attention to camouflage, and important materials, equipment, and valuables should be stored in existing fortifications or built pits, so as to improve the protective conditions as much as possible to prevent damage and natural hazards by the enemy.

3. Management of support equipment

The main part of the support equipment of the station refers to all kinds of vehicles and implements that support flights. According to their functions, they can be roughly divided into four categories: First, vehicles and machinery such as traction, refueling, refrigeration, cooling, and power supply that provide energy and power for aircraft; second, vehicles and machinery that provide weapons, ammunition, and aviation materials for transportation, loading, unloading, and handling of aircraft; third, vehicles and equipment for oxygen production, oxygenation, firefighting, and ambulance to ensure flight safety; and fourth, various equipment for maintaining flight sites. The management of support equipment at the station is mainly in three aspects:

(1) Use equipment in strict accordance with the allocated purpose, technical performance and plan

The purpose of using equipment for different support tasks is to maintain the proper support capability of the equipment undertaking different support tasks, and to prevent the degradation of technical performance and good rate due to the performance of other tasks. The use according to technical performance refers to the correct use according to the operating procedures within the scope of the equipment performance, so as to prevent damage to parts and shorten the service life due to overload use and improper operation. The use of equipment in echelons according to the plan is an important measure to consolidate and improve the rate of good equipment. The methods are: On the premise of not affecting the support tasks, reduce the amount of equipment to be used during the same period (generally it should be controlled within 80 percent of the establishment) and increase the number of sealed equipment; use equipment of poor quality and low reserve mileage (motorcycle hours) so that it can be sent for repair as soon as possible and restore its technical performance; and use the same type of equipment in echelons so that its reserve mileage (motorcycle hours) is in a stepped shape, so that maintenance and repair can be arranged in a balanced manner, so that a relatively high rate of good maintenance can be maintained on a regular basis.

(2) Strengthen the maintenance and inspection of equipment in use, so that it is always in good technical condition

The equipment in use should adhere to the daily maintenance and inspection according to the specified items, eliminate faults in a timely manner, and maintain a good technical state. Equipment that has reached the maintenance period must be maintained on time to prevent early damage due to untimely maintenance. For equipment that has reached the repair period and is damaged, repair should be arranged in time to restore technical performance. Regular maintenance should be carried out for equipment in storage and parking. In order to ensure the timely repair of damaged equipment in wartime, the station should reserve maintenance equipment and parts according to the prescribed consumption standards, allocate repair personnel and equipment according to the scope of repair, organize emergency repair training for damaged equipment, and improve repair skills and efficiency.

(3) Pay attention to the innovation and transformation of equipment

Most of the support equipment of the station is used for the maintenance of various aircraft systems, and its performance must meet the technical requirements of relevant aircraft systems. The current state of affairs is that support equipment lags behind the development of aviation technology. In order to change this situation, in addition to actively developing new types of equipment and improving the maintenance characteristics of aircraft, it is necessary to carry out innovative transformation of existing equipment to the extent possible. The focus of the renovation is to improve the technical performance of the equipment and the ability to adapt to different types of aircraft. In these areas, the Air Force logistics system has made great efforts and achieved remarkable results. Since the 80 s of the 20th century, the air force's logistics system has successively made more than 2,700 scientific research achievements in the field of support equipment, of which more than 100 have been included in the equipment system of the whole army, and has completed the research on supporting the new equipment for flight support at 26 types of aircraft. As long as we all attach importance to this work, we will certainly be able to improve the technical performance, adaptability, and combat readiness of the station's flight support equipment more quickly and effectively.

Section 4: Construction, Management and Maintenance of Logistics and Combat Readiness Facilities

The combat readiness facilities of the station include support facilities and protective facilities. Continuously improving and perfecting these facilities is the only way to adapt to the modernization of aviation equipment and comprehensively enhance the support capability of the stations.

The construction situation in this area is an important aspect that reflects the combat readiness of the station. The construction of combat readiness facilities at stations and stations must follow the principles of combining peacetime with wartime, improving efficiency, facilitating troops, and ensuring safety and economy.

1. Construction of support facilities

The support facilities of the station include two parts: the outfield and the infield of the airport.

The construction of field support facilities should be aimed at improving support efficiency and ensuring flight safety, improving and perfecting facilities such as field lighting signals, fixed refueling, starting power supply, aviation materials and fuel supply, and improving the living conditions of field duty personnel. The construction of field lighting equipment should focus on improving the lighting effect, conversion control speed and reliability. The construction of outfield pipeline refueling facilities should adapt to the increase of aircraft fuel consumption and the modification of fuel system, improve the pipeline fuel flow, automatic control (pressure and metering) ability, model adaptability and operational flexibility of derrick and oil gun, and shorten the aircraft refueling conversion time. Installing aircraft starting power supply equipment on the take-off line is conducive to improving the reaction capability of the air force. Its disadvantage is that it is inconvenient to organize dispersed ground preparations, and it is easy to be damaged by attacks, so it is only suitable to build airfields in the depth of the rear. The living support facilities for the personnel on duty in the field should be practical and simple, and the scale of construction should be controlled. In order to ensure safety, important field support facilities should be built underground as much as possible to reduce the exposed part of the ground.

The construction of infield support facilities should be aimed at improving the ability to provide continuous support and rapid response, and improve and perfect the facilities for material storage, equipment repair, power supply, medical treatment, and administrative life support. Warehouses for oil, ammunition, and aviation materials should gradually expand their capacity in accordance with the standards for combat and training reserves, improve their layout according to the requirements of allocation, improve their storage, maintenance, and security equipment according to the characteristics of their materials, and improve their ability to prepare, receive, load, and unload materials and move them in accordance with the requirements of rapid supply. In the area of equipment maintenance, it is necessary to continuously improve maintenance, maintenance, and repair facilities, enhance the ability to maintain quickly, expand the scope of repairs, and reduce dependence on the rear. In the construction of power supply facilities, it is necessary to continuously improve the power supply capacity and the ability to automatically control power supply along with the modernization of weapons and the increase in daily electricity consumption. The standby power supply system should enter the cavern, and the critical parts (such as command posts and outfields) should be equipped with standby generators separately, and the transmission trunk should use underground cables. In the construction of medical facilities, it is necessary to gradually equip the airport with modern equipment in accordance with its position, so as to enhance the ability to treat the wounded and sick.

In the construction of living support facilities, it is necessary to improve the supply of food and production equipment, especially the living conditions of air crews, along with the improvement of the living standards of the troops. It is also necessary to adapt to the characteristics of the air force's extensive mobility, and gradually equip it with mobile life support equipment such as cooking vehicles, mobile barracks, and tents.

2. Construction of airport protection facilities

The construction of protective facilities and the improvement of the protective conditions of airfields are the basic measures for enhancing the ground survivability of the air force. It is also a measure of strategic significance to maintain the sustained combat capability of the aviation forces.

(1) Key points of protection

Personnel, aircraft, command systems, and various support facilities are the basis for the combat effectiveness of the air force. In order to maintain the sustained combat capability of the air force, first of all, it is necessary to preserve the flight personnel and aircraft; second, to ensure the safety of the command system; and third, to ensure that the combat materials, equipment, and facilities that are directly supported by the flight will not suffer any or less losses. These three are the focus of airport protection.

(2) Protective measures

The current airport protection measures at home and abroad are mainly evacuation and concealment, construction of shelter fortifications and construction of additional flight sites. Evacuation and concealment, including the construction of permanent aircraft evacuation areas, the use of terrain to repair materials, equipment evacuation shelter points, and the adoption of various camouflage measures. After evacuation and concealment, the consequences of the enemy's attack can be effectively mitigated because the target is scattered and not easy to be detected. Camouflage not only conceals the target, but also has an anti-radar effect. According to test statistics, the use of camouflage nets, tree branches, straw, etc., to cover the target, can reduce the radar reflected radio waves by 70 to 90 percent. For anti-radar camouflage of runways and key facilities, metal and lens-reflecting devices have begun to be used abroad. The principle is that by taking advantage of the different characteristics of the various facilities at the airport to reflect radio waves, the reflective ability of some targets will be enhanced and the reflective ability of others will be weakened through the reflection devices, so that it will be difficult for the radar of enemy aircraft and radar-guided attack weapons to distinguish targets. The construction of shelter fortifications is the focus of improving the protective conditions of the airport. The main shelter fortifications include caverns, excavated underground vaults, shelters, bunkers, etc.

The cave is a tunnel-type protective fortification constructed by using natural mountain-digging to cover aircraft, command facilities, power stations, repair institutions and oil, ammunition, aviation materials and other combat materials. The excavated underground reservoir refers to the underground protective fortifications constructed in the airport in the plain area, and its function is the same as that of the tunnel. Shelter generally refers to the protective fortifications of aircraft (single or double) and important equipment built of reinforced concrete or metal materials. The shelter is an underground or semi-underground type of personnel protection fortification. A bunker is an earthen nest built in an evacuation area. At present, the aircraft protection fortifications of Western countries are mainly single-plane shelters, and the NATO bloc has basically realized the shielding warehouses. The shelters at German airfields were not destroyed when 500 kg of bombs exploded in their vicinity, and the French Air Force shelters were able to withstand direct hits from 400 kg of bombs.

Increasing the number of flight sites refers to the construction of two or more runways in airports and the expansion of highway airstrips by highways. Its function is to allow aircraft to take off and land on several runways at the same time, and to continue combat activities when one runway is damaged. With the development of vertical and short take-off and landing technologies, the option of increasing the number of flight sites will become more feasible.

(3) Planning and construction of protection projects

The scale and project of the airfield protection project shall be planned by the higher authorities in a unified manner according to the status and topographical conditions of the different airfields in each combat direction. Important aircraft located in the main combat direction should adopt a variety of protective measures in a comprehensive manner. For example, the construction of aircraft shelters, underground warehouses (including the establishment of necessary repair facilities in the warehouses), and the construction of aircraft evacuation areas, shelters for vehicles on duty, and shelters for personnel on duty. When it is not possible to build a hole or underground reservoir due to terrain conditions, the shelter reservoir should be repaired. Command systems (including communication and navigation facilities), warehouses for fuel, ammunition, and aviation materials, and power stations should also be equipped with caverns or semi-underground fortifications. For the construction of protection projects, large-scale projects (caverns) are usually completed by the construction troops sent by the superiors, and other supporting projects are constructed in phases and batches by the station according to the unified plan.

3. Management and maintenance of the airport and its ancillary facilities

The airport and its ancillary facilities are an important combat readiness project of the station. It mainly refers to the flight site, power supply and field lighting equipment, and various protective fortifications. Strengthening the management and maintenance of airports and their ancillary facilities is a necessary measure to enhance the reaction capability of the aviation forces and ensure flight safety.

Flight site management and maintenance: the focus is on the correct use of the airport in strict accordance with the airport level, prohibiting the take-off and landing of aircraft exceeding the allowable carrying capacity, conscientiously implementing the inspection and cleaning system of the field, timely filling of joints, and timely repair of damaged parts. For the soil pavement, it is necessary to cultivate and protect the grass layer, mow the grass in a timely manner and level the rolling. For the drainage system, it is necessary to check the dredging in a timely manner, and keep the drainage equipment in good condition frequently. Management and maintenance of power supply and field lighting equipment: for power supply facilities, we must adhere to the maintenance and overhaul system, regularly carry out standby generator trial operation and preventive test of substation equipment to ensure that the power supply can be fast and reliable when the external power is interrupted, and implement the daily, weekly and monthly maintenance system for the field lighting equipment, and repair the damaged lamps and cables in a timely manner; strengthen the maintenance in the rainy season to ensure that the lamps and lanterns do not enter water and are not corroded. Management and maintenance of protective fortifications: the focus is to do a good job in the greening and camouflage of caverns and other underground fortifications, fire protection, "three preventions" and the maintenance of water, electricity and air conditioning equipment, as well as drainage, leakage, moisture prevention and other work. Underground fortifications should be used regularly. In order to ensure flight safety, it is also necessary to manage the clear space area in accordance with the regulations issued by the State Council and the Central Military Commission on protecting the clear space of the airport.

Section 5: Logistics Combat Readiness Training and Scientific Research

Logistics combat readiness training and scientific research are both important ways to develop intelligence and cultivate capability in terms of the quality of officers and men, to enhance military and economic returns under the existing material conditions, and to enhance support and defense capabilities. In order to do a good job in combat preparedness and develop and advance under the current conditions of relatively tight military spending, depots must meet the requirements of actual combat, rely on training and scientific research to enhance various elements of logistics and their overall functions, and enhance their support and defense capabilities.

1. Logistics and combat readiness training

Logistics combat readiness training is a general term for the training of logistics organization and command, specialized technology, and related military subjects. With the modernization of aviation weapons and equipment and the development and change of combat methods, the flight support activities of stations and their command and control have become increasingly complex, and higher requirements have been put forward for the quality of support personnel.

In order to fulfill the task of providing combat flight support under high-tech conditions, air force stations must strengthen combat readiness training, rapidly raise the professional and technical level of all support personnel, and enhance the organizational and command capabilities of station leaders and headquarters. In order to mobilize the militia to participate in the flight support of the station and the defense of the airport, it is also necessary to organize militia training.

(1) Professional training

Professional training refers to the operational and technical training of the station's service support units. It is mainly composed of officers and soldiers of various types of business and technology. The basic content of professional training is: the business and technical theories of each specialty, the relevant scientific and technological and cultural knowledge, the performance, structure and storage, maintenance, operation and repair technology of the materials and technical equipment under management, and the procedures and methods of various service support.

Specialized training is usually organized and carried out by each service unit of the station according to the unified arrangement of the station headquarters, and the methods of collective training, regular on-the-job study, on-the-job training, and service support drills are adopted to organize and implement it on their own. The head of the station and the staff officer of the headquarters should learn the basic content of each specialty, the performance and principles of the main combat materials and equipment, and the logistics support methods through self-study or participation in the training of various service units, so as to lay a good foundation for the overall coordination and organization and use of the support forces of the station.

(2) Logistics command training

The purpose of command training at stations is to train and improve the ability of station leaders and headquarters to organize and use station support forces and command and control support activities. In order to carry out correct organization and command, station chiefs and staff officers must understand the requirements and impacts of modern high-tech warfare on the flight support of aviation units, and be familiar with the laws and groups of the station organization and flight support itself.

It is also good at using advanced command means to control support activities. To this end, the organization, command, and training of the depots and stations should include three aspects: First, military knowledge, mainly the strategic principles of our army, knowledge of modern warfare, knowledge of the services and arms, history of warfare, the combat use of various arms of the Air Force, the training program of the air force, and the tactics and technical performance of the main aircraft types; second, the organization and command of the station's flight support, including the station's regular warfare, preparations for battle, organization and command of combat flight support, and organization and command of combat transition and mobile support;

The third is modern scientific and technological knowledge and management knowledge, mathematical statistics, computer applications, etc.

The organization and command training is organized by the station command. The training methods are: theoretical learning; Commanders of stations, headquarters, and responsible cadres of service units participate in predetermined operations or drills using virtual tools; and participate in predetermined operations and live military exercises of air units.

The focus of logistical training is on the training of cadres. In addition to actively organizing on-the-job training for cadres, the station should also select and send outstanding cadres to study in colleges and universities inside and outside the country in a planned way. Cadres who have graduated from academies and universities and returned to the military should become the backbone of on-the-job study.

(3) Militia training

Militia training refers to military theory education and combat skills training conducted by the station for militia organizations. In order to enhance the militia's combat capability and reserve soldiers with military qualities in wartime, the depot and the local armed forces department should divide the mobilized militia into two categories: professional and technical militia and airport defense militia, and include the organization and training of the two types of militia in the militia work plan, and conduct regular training within the designated scope. The focus of professional and technical militia training is on vehicle driving, repair of support equipment, emergency repair of airports and sanitation operations, as well as storage and supply of materials. The training of the airport defense militia is mainly based on the techniques and tactics of airport vigilance and ground defense. The training methods should be flexible, so that the concentration and decentralization are combined, the invitation to come in and the dispatch are combined, and the theoretical study is combined with the actual operation.

2. Logistics scientific research

Scientific research is the pioneering work of creatively applying the knowledge mastered to a certain discipline or a certain work practice, so as to make discoveries, inventions, and advances. The main task of conducting scientific research at the station is to study and improve various logistical support work from both academic and technical aspects, and to enhance the efficiency and effectiveness of the station's organization and command.

Air force logistics support is a comprehensive support activity composed of a variety of services. In order to accomplish the support tasks, it is necessary not only to do a good job in various operational and technical tasks, but also to realize the organic combination of various services and the command and control of the support process. Therefore, the focus of scientific research on stations is to innovate and improve the performance of station support equipment and facilities, as well as their management and use methods; the construction of airport protection projects and the emergency repair of damaged airports;

It is necessary to improve the organization of the station's support forces and the ability to command and control the support activities under complex conditions, so as to accomplish the support task in the shortest possible time with the least amount of manpower and material resources; an important topic in the current scientific research at the station is to study the methods of support and training on the basis of the study of tactics. Stations with the right conditions should study the application of the command automation system, and use computers to deal with problems in organization, command, and operational management, so as to realize the automation of command and management.

For the scientific research of the station, the station headquarters usually proposes a rough line research project first, and then the specific research topics are drawn up by each business department and group, and then the station scientific research plan is formed. The scientific research plan of the depot should be coordinated with the scientific research plan of the relevant departments at the higher level and the air force unit, and key scientific research topics should be included in the scientific research plan of the higher level, so as to obtain financial support and technical guidance from the higher level.

In scientific research work, we must adhere to the principle of combining theory with practice, and through practical work or organizational drills, sum up support methods and methods that meet the needs of actual combat or inventions and creations that bring into play the potential of support equipment.

In order to promote logistics scientific research, it is necessary to form a "microclimate" conducive to scientific research and enhance the compatibility of the working environment of the station with the main body of research. In terms of understanding, the leaders of the stations should get rid of the tendency of attaching importance to practical work and despising scientific research; in terms of work methods, they should devote themselves to enhancing the masses' sense of creativity and cooperation, and encourage and support activists who are enthusiastic about scientific research; and they should organize the evaluation, application, trial, and popularization of scientific research results in a timely and responsible manner.

Chapter 5: Aviation Logistics Professional Service Support

The high technology and diversification of aviation weapons have made the status of the aviation units more prominent, and the role of the aviation units' logistics professional services has become more and more important. The aviation unit's logistics professional service support includes finance, military quartermasters, airport barracks, security services, transportation, and fuel. When station chiefs and organs organize aviation logistics support, they must clearly define the content of the aviation unit's specialized logistics support, understand the basic knowledge of professional logistics and the tactical and technical performance of the main support equipment (facilities), and be familiar with the main methods, organizational points, and relevant rules and regulations of professional logistics support.

Section 1: Financial Support

The financial support for the logistics of the air force refers to the activities of fund raising, supply, accounting, and supervision carried out by the logistics of the air force in order to meet the financial needs of the troops' work, training, and other tasks, improve the efficiency of the use of funds, and maintain good financial and economic order. In order to accomplish all construction tasks, the aviation units are inseparable from funds, and this has created a demand for funds, and organizing the raising and supply of funds and supervising the use of funds are the basic contents of the financial support activities of grassroots units. Only by providing timely and effective financial support can we ensure the development of combat training and other tasks of the air force, promote the modernization and regularization of the troops, and enhance the cohesion and combat effectiveness of the troops.

1. Tasks, characteristics and requirements of financial support

(1) The task of financial support

The basic tasks of the air force's logistical financial support are to implement the party's and the state's financial and economic principles and policies as well as the unified financial laws and regulations of the whole army, organize the supply of funds, carry out financial accounting, and conduct financial control.

The specific tasks are:

In accordance with the troops' construction plans, plans, and annual work tasks, they should draw up budgets, monthly expenditure plans, and final accounts, and organize and supervise their implementation; promptly handle the relationship between the supply of funds for collective and individual transfers, and accurately grasp the supply strength; promptly handle bank account openings, apply for funds raised, strengthen fund allocation, reserve cash in accordance with regulations, and do a good job in cash management; organize the supply of funds to the units and individuals they are supplied, and also be responsible for the local support personnel after the troops have accepted them, as well as the uprisings, defections, and other personnel who have been accepted by the troops in wartime. The supply of funds for the captives; responsible for the work of sorting out, settling, accounting, and supervising the collection and reporting of income and expenditure, and taking the initiative to coordinate with the relevant departments in handling the valuation and accounting of materials; supervising and helping the grass-roots units to settle their accounts and prepare the final accounts and accounting statements on time; taking the initiative to study with the relevant departments on special expenditures other than the standard system, putting forward opinions on how to deal with them, and promptly reporting to the chief or the logistics and financial department at a higher level. In wartime, in accordance with the troops' combat tasks, logistical support plans, and the relevant regulations of the higher authorities, they should promptly formulate or revise financial support plans and organize their implementation; organize the deposit of cash savings and personal remittances on behalf of the troops; and receive, keep, and dispose of goods, gold, silver, jewelry, and other valuables seized in battle. We should go deep into reality, investigate and study, sum up experience, and improve our work.

(2) Characteristics of financial support

In addition to the general characteristics of the army's financial security, the logistical financial support of the air force has its own characteristics because it is different from the units of other services and arms.

1. The aviation unit is highly mobile and has a special method of financial support. The combat training activities of the aviation units are extensive and mobile. Therefore, air force aviation units generally do not have logistics organs, and the funds and materials required by them are supplied by the air force stations where they are stationed in the form of base support or accompanying support. The depot is the base for the financial support of the aviation troops.

2. There are many high-tech weapons and equipment facilities for the air force, and the expenditure is large. There are many kinds of special weapons and equipment, equipment, and supporting facilities for the air force, and their supporting facilities, the technology is complex, the value is high, the cycle of purchase, construction and use is long, the amount of capital investment is large, and the maintenance cost is high. The armament includes various types of aircraft and their engines, aviation ammunition, airborne radar, air traffic control, communication and navigation, meteorology, umbrella, four stations, field services, and other equipment.

There are also various airports, caverns and special supporting facilities such as aviation refueling and aircraft repair, which have a large demand for funds and frequent expenses.

3. There are many types of funds and complex standards. There are many types of funds for the supply of air force stations, which involve most of the items in the army's budget. On the other hand, there are many categories of personnel to be provided with, including air crew, ground crew, and ordinary supply targets, and there are also various types of specialties, and the supply standards are different; and the funding standards for different types of equipment are also different. As a result, funding security is more complicated. In wartime, the standards for the provision of various funds will also be adjusted.

(3) Requirements for financial support

In order to ensure the successful fulfillment of the combat readiness, training, and combat tasks of the air force units, to achieve effective support, and to promote the full transformation of financial resources into combat effectiveness, it is necessary to make efforts to do a good job in financial support in light of the characteristics of financial security.

1. Improve the timeliness of financial guarantees. It is necessary to apply for and raise funds in a timely manner according to the tasks, rationally dispatch and scientifically arrange funds, ensure that funds are guaranteed to the units and personnel provided in a timely, full, and accurate manner, and enhance the initiative and timeliness of fund supply. Handle the clean-up, settlement, reimbursement and final accounts of funds in a timely manner, reduce the stay time of funds in all links, speed up capital turnover, and improve the efficiency of financial security. According to the budget, the funding indicators allocated by the superiors, the quota and the monthly expenditure plan, take the initiative to do a good job in the supply of funds. Equipment maintenance and management expenses should be supplied and settled on the doorstep, and constructive funds should be provided in accordance with the plan and the progress of the task. It is necessary to grasp the law of expenditure of funds by military units and public institutions, and ensure that funds are supplied in a timely manner without backlog funds and materials. We should keep abreast of the supply strength at all times, do a good job in the supply of personal funds, and pay wages in a timely manner; we should coordinate well with the departments concerned to do a good job in collecting and distributing flight allowances, aircraft maintenance subsidies, night meal subsidies, subsidies for special posts, insurance funds, and retirement allowances.

2. Ensure the effectiveness of the use of funds. The purpose of financial support is to meet the needs of the troops' work, training, and other tasks, and to promote the fulfillment of undertakings and tasks and the development of army building. To this end, financial security must emphasize the effectiveness of the use of funds. It is necessary to use scientific management methods and means to strengthen the scientific management of funds, so that there is prediction in advance, control in the matter, and assessment after the event;

if there is already a funding standard, it must be provided and managed according to standardization. It is necessary to carry out comprehensive financial plan management, conscientiously bundle budgetary funds, extra-budgetary funds, and stockpiled materials, make overall arrangements, and do a good job of comprehensive balance. The use of funds should adhere to the principle of keeping income within the limits of income, saving expenditures, reducing waste, and using them effectively. We should persist in arranging expenditures in accordance with the approved budget plan, strictly control unplanned expenditures, persist in doing everything diligently and thriftily, make careful calculations, strengthen supervision and control, and do more and do better things with less money, so as to ensure the effectiveness of the use of funds.

3. Strengthen the standardization of financial security. Financial security should have a scientific basis. First of all, it is necessary to strictly follow the standard system and the targets and quotas issued by the superiors. This is a prerequisite for the correct and rational implementation of funding provisions. In order to correctly and rationally ensure the funding needs of all quarters, it is necessary to conscientiously implement the standards for the supply of funds and the relevant systems, so as to ensure that there are standards for supply, a scope for expenditure, and a system for management. The supply of funds other than the standard system must be strictly in accordance with the funding targets or approved quotas issued by the superiors, otherwise they cannot be supplied. Secondly, it should be based on the budget and plan. The budget is drawn up in accordance with the tasks of the unit or department, the intention of the chief, and the financial situation, and the items and quantities of revenue and expenditure are provided through investigation and demonstration and approved by the party committee, and are provided on the basis of them, which is scientific and reasonable. The expenditure plan is the decomposition and concretization of the budget, and the provision of funds accordingly is conducive to improving the accuracy of the provision of funds.

2. The way of financial support

The financial security method refers to the way in which the financial department provides funds to the object, handles the supply procedures, and implements financial activities such as fund settlement.

(1) Methods of funding guarantees

It can be divided into base support, accompanying support, emergency mobile support, troop self-support, superior vertical support, and local support.

1. Base support. It refers to the way in which the financial security institution is allocated unchanged, based on the station, and implemented in accordance with the normal supply relationship and channels. The logistics of the air force is deployed at the airport, the stall is large, the equipment and facilities are numerous, and the financial department has opened a fund account in the bank where it is stationed, thus objectively forming a logistics support base of a certain scale.

Therefore, in general, financial security mainly takes the form of base security.

2. Accompanying Guarantees. In peacetime, there are many cases in which special tasks, exercises, and rotational battles are carried out, and in wartime the battlefield is changed more frequently and is highly mobile. In order to ensure that the funds are provided in a timely and effective manner, when the troops carry out tasks such as mobile combat training, the financial department should send one or two people to follow the troops in their actions and carry out accompanying support.

3. Emergency mobile support. Emergency mobile support is generally used in two situations: First, when the troops carry out the task of mobile combat training, but the task is not clear, the direction is uncertain, and the accompanying support is not taken in advance and the funds are urgently needed afterwards; second, when the troops carry out mobile combat training and other tasks, and the task direction is clear, but the financial department lacks the support force to carry out the accompanying support, and the troops need financial support. When an aviation unit is far away from the station and is in urgent need of financial support when it is carrying out a mobile combat training mission, the financial department should dispatch an emergency mobile support force to provide support.

4. The troops are self-supporting. When the troops carry out mobile combat training and other tasks far away from the airport station, the financial department is not prepared to adopt the accompanying support method, and in order to prevent the troops from cutting off the supply of funds, the personnel of the troops can carry part of the funds and provide their own support. To adopt self-protection, it is necessary to designate a special person to be responsible for the management of funds, and clarify the relevant regulations on use. Timely settlement after the fact.

5. Vertical support from higher levels or local support. In the event of various special difficulties such as the interruption of funds and supply, and the financial department of the station loses its ability to provide support, and is unable to provide base support or accompanying support to the troops, it may request the financial department at a higher level to skip the vertical support. In case of an emergency and an urgent need for funds, you can seek financial support from the local people's government, financial department or nearby troops with a letter of introduction from a unit at or above the regimental level. The funds borrowed locally and nearby should be repaid in a timely manner after the supply is restored by the superiors.

The specific form of financial guarantee: when the unit has an account in the resident bank and the configuration position is fixed, it should be guaranteed by transferring funds through the bank. If the unit does not have a bank account, it shall be guaranteed by cash supply. In special cases,

military negotiable coupons printed by the highest military authority in the theater may be used as a means of internal cash replenishment and settlement, but they are prohibited from circulating in the market.

(2) Methods of settlement of funds

After the supply and use of all funds, it must be settled. According to its management requirements, the fund settlement method can be divided into four ways: centralized settlement, decentralized settlement, mobile settlement and agency settlement. Centralized settlement refers to the centralized settlement of funds of various departments and units to the logistics and financial departments at the same level. Centralized settlement is conducive to reflecting all the economic activities of the armed forces in a centralized manner, and is convenient for the centralized management and unified monitoring of the financial departments. Decentralized settlement refers to the settlement activities of funds, which are organized and implemented by each unit and department on their own. The advantage is that it is convenient for all units and departments to use the funds, but the disadvantage is that it is easy to get out of the supervision and control of the logistics and financial departments, and the phenomenon of chaotic settlement order and violation of financial and economic discipline occurs. Mobile settlement refers to the implementation of accompanying settlement or roving door-to-door settlement following the operation of the troops. Settlement on behalf of the agency or other units generally refers to the settlement of the agency or escrow funds entrusted by the superior authority or other units.

3. Procedures for financial support

(1) Procedures for ordinary financial support

1. Prepare and adjust the budget. Budget refers to the planning and arrangement of income and expenditure of a unit or department within a certain period of time. It is the basic basis for the application and supply of funds. Itemized budgets and unit budgets are usually included. The preparation and adjustment of the budget is an important part of financial security and the starting point of the whole process of financial security activities.

After the reform of the budget preparation method, the budget preparation cycle has been advanced by one year. The specific procedure is as follows: In the first step, the financial department shall organize the relevant public institutions to convene a budget preparation work meeting in accordance with the instructions of the higher authorities on the preparation of the budget, issue a notice on the preparation of the budget, and put forward the requirements for the preparation of the itemized budget. In the second step, the public institution department will investigate and find out the business tasks of the year, and make project arrangements according to the task situation, funding standards, funding indicators or quotas notified by superiors, and the intention of the head of the party committee. In this step, the business department should pay attention to the report to the supervisor for instructions and strive to obtain the consent in principle,

at the same time, pay attention to coordinating with the financial department, grasp the requirements of relevant policies and regulations, and make the budget arrangement in line with the spirit of the policy of the superior. In the third step, the financial department will review and check the itemized budget plan according to the chief's intention and financial resources, weigh the priorities, distinguish the priorities, and adjust, balance or compress the budget through consultation as needed, so as to make the budget more reasonable, and finally summarize and prepare the draft budget of the unit and submit it to the party committee. In the fourth step, the party committee convenes a special meeting to study and discuss the budget. It is necessary to proceed from the overall situation of army building, consider the balanced and coordinated development of various undertakings, check the budget in an all-round way, and prudently decide on the direction and amount of funds to be invested. After the Party committee has reviewed and approved, it shall be reported to the Party committee of the unit at the next higher level for approval before implementation.

During the implementation of the budget, if there is no provision for the budget and there is a real need for expenditure in the current year, it can be resolved by adjusting the budget. The budget adjustment is generally carried out in August ~ September of the current year.

2. Prepare a fund expenditure plan. The fund expenditure plan is usually prepared in the "month" stage, also known as the monthly fund use plan, which is the concretization and segmentation of the fund budget, with the purpose of enhancing the planning of fund guarantee and use, and facilitating supervision. The monthly expenditure plan shall be prepared by the public institution department according to the progress of the business task, and shall be sent to the financial department at the same level for review and filing, and the financial department shall allocate loans according to the monthly expenditure plan. The content of the monthly expenditure plan should be specific, and the items, contents, and amounts of expenses to be spent in the current month should be listed one by one.

3. Handle the pre-allocation of funds and the supply of personal funds. After the approval of the budget plan, the business department will carry out the business tasks in strict accordance with the budget plan, and the financial department will guarantee the funds according to the budget plan. When the business department needs to spend, it shall fill in the loan form, and after submitting it for approval according to the prescribed approval procedures, it shall go to the financial department to handle the loan. When handling the allocation of loans, the financial department should examine whether the loan is in line with the scope of the budget plan, whether it has been approved by the leadership, whether it conforms to the provisions of the relevant financial system, and should provide personal living expenses and funds required for official business in full and in a timely manner in accordance with the prescribed standards and time.

4. Inspect and supervise the use of funds. First, it is necessary to inspect and supervise the revenue and expenditure activities of funds to see whether they conform to the contents set in the budget plan and whether they meet the objectives and requirements of the guarantee. The second is to inspect whether there is any violation of financial and economic laws and discipline to see whether there is any encroachment on the state and

troop assets, serious losses and waste, and other serious violations of financial discipline. Third, it is necessary to inspect the efficiency of the use of funds and see the economy and efficiency of the use of funds.

5. Timely settlement of funds. There are three types of fund settlement: the first is direct reimbursement settlement, also known as original document settlement. This method of settlement is mainly used for the settlement of business expenses and the funds collected and reported by grass-roots units on behalf of others. The second is the final account reimbursement settlement. This is a settlement method in which a grass-roots company reimburses expenses in the form of final accounts to the financial department at a higher level or the financial department at the same level to the financial department at the higher level. The third is to allocate a fixed amount and take the initiative to settle it. The lump sum funds allocated by the higher level are generally settled by the higher level financial department according to the number of quotas allocated to the lower level in June and November each year in two installments of the "Notice of Approval of Final Accounts", and the lower level units no longer report the final accounts to the higher level.

(2) Wartime financial support procedures

Wartime financial security is different from peacetime financial security, and the main work content and steps of the wartime financial work mechanism are:

1. Formulate a financial security plan and issue financial security instructions. After the advance operational order is issued, the financial department should revise and improve the wartime financial support plan on the basis of the support plan formulated in peacetime. Its contents mainly include: the organization of the support organization, the location of the deployment, the division of tasks, the forecast of the demand for combat funds, the channels for raising funds, and the supply support plan. The basis for the revision is the combat tasks undertaken by the troops, the requirements for financial support in the logistics support plan at the corresponding level, the instructions of the logistics chief, the relevant regulations of the financial department at the higher level, and the financial support capability at the same level. The wartime financial security plan can be combined with the financial security plan, but the content and measures must be specific and detailed and operable. In order to make the supply units more explicit in their guarantee and use of wartime funds, they should issue instructions on financial support in the name of the head of the unit or the head of logistics in light of the instructions of the higher authorities and the needs of the wartime situation, and clearly define the relevant regulations on the guarantee and use of wartime funds.

2. Prepare and report the budget for combat expenses and apply for fund-raising. Broadly speaking, combat expenses are the funds required for operations, and all funds used for operations in wartime can be called combat expenses. In a narrow sense, combat expenses refer to the part of the additional expenses that cannot meet the needs of operations because normal funds cannot meet them.

After the advance order for operations is issued, the financial department, in conjunction with the public institution departments, should promptly investigate and calculate the funds required for the operation, draw up a budget for combat expenses as soon as possible in line with the principle of seeking truth from facts, and report it according to the organizational system after obtaining the approval of the head of the unit. It is necessary to promptly apply to the higher authorities for funds, implement the war reserve fund, reduce all unnecessary expenditures, concentrate all funds that can be concentrated, and withdraw the necessary amount of cash. We should take the initiative to establish contacts with local finance and financial departments, broaden financing channels, and form reserve financial resources.

3. Handle the supply relationship in a timely manner, straighten out the supply channels, and organize the guarantee of funds. Formed units and individuals transferred in and out of the country should go through the formalities of transferring and receiving supplies in a timely manner; they should keep abreast of the combat missions, deployment locations, and direction of action of the units they are supplying, as well as changes in the location of local financial institutions, so as to facilitate the withdrawal of funds and the supply of funds. In wartime, the central or key stations will also undertake the task of providing financial support to the ground forces of the air force stationed in the vicinity of the airfield, and it is necessary to communicate with them to create conditions for the implementation of the supply of support on behalf of the air force or for seeking financial support.

Before the war, it is necessary to quickly replenish funds in accordance with the balance of funds of the units they are supplied, appropriately increase the amount of appropriations in accordance with the orders of the higher authorities or the instructions of the chiefs, ensure the needs of public institutions in a timely manner, and do a good job in the supply of personal funds. During the war, it is necessary to keep abreast of the combat consumption and damage of the troops through various information channels, find out the urgent need for the funds of the public institutions, and ensure them in full and in a timely manner; take advantage of the interval between operations to pay personnel salaries, allowances, various subsidies, injury pay, and insurance money, so as to enhance the mental combat effectiveness of the troops.

4. Do a good job in clearing and accounting for funds, and implement financial inspection and supervision. Before the war, it is necessary to sort out all kinds of funds and deal with all kinds of arrears in a timely manner; during the war, it is necessary to do a good job in accounting for the income and expenditure of all kinds of funds, and it is necessary to take advantage of the gap in the battle to handle the settlement of unit and individual expenses; after the end of the war, it is necessary to organize the liquidation of funds in a timely manner, settle the creditor's rights and debts as soon as possible, handle all kinds of operational compensation in accordance with the policies and regulations, and draw up final accounts for combat expenses in a timely manner. Implement a wartime mechanism, simplify the procedures for receiving and reporting expenses and approving reimbursements, reduce the number and content of reports, and improve the efficiency of support.

It is necessary to attach importance to wartime financial management and strengthen the planned use and dispatch of funds.

We should economize on the use of funds, improve the efficiency of the use of funds, and truly allocate limited funds to the places where operations are most needed. Persist in financial supervision, do a good job in financial inspection, ensure the reasonableness, accuracy, and timeliness of the scope, target, and amount of funds, prevent omission, miss-supply, oversupply, and undersupply, stop losses and waste, and resolutely correct corruption and misappropriation and other violations of law and discipline. Improve the methods of guarantees, implement measures to ensure that financial security capabilities are enhanced, and that safeguards are effective.

Section 2: Munitions Support

Aviation logistics and military support refers to the professional work of procuring, storing, and supplying military supplies and providing food and beverage support for the troops, and is an integral part of the logistics support of the air force. The quartermaster department of the air force station is responsible for the implementation of the logistics and munitions support of the air force. In modern warfare, the consumption of military supplies has increased, it is difficult to raise supplies, and the tasks of military support have changed dramatically, making the work of providing military supplies more complicated and heavy. The leaders of the depots and stations must know the operational intentions of the unit leaders at all times, and demand that the quartermaster departments make full preparations, make careful plans, and ensure the troops' operational needs for military supplies in a timely, active, accurate, and uninterrupted manner.

1. The tasks, characteristics and requirements of munitions support

(1) The task of military quartermaster's support

Military support is mainly responsible for the planning, storage, replenishment, and management of military supplies such as supplies, supplies, clothing, equipment, and daily necessities. Specifically, it includes the following:

Organize and implement the supply of military supplies. Supply work is one of the main tasks of munitions support. Munitions departments must conscientiously publicize and earnestly implement the relevant principles and policies of the party and the state, and organize and implement the supply of general-purpose and special-purpose munitions supplies in accordance with the unified rules and regulations of the whole army and in accordance with the joint logistics regulations. Especially in wartime, it is necessary to ensure that the supply can be provided and the supply is good.

Organize and implement the management of military supplies. Properly managing munitions and supplies is a regular task of munitions support. Under the leadership of the party committee and the head of the station, the quartermaster department should rely on all officers and men to strictly manage the materials in the warehouse, the materials in use, and the materials for war readiness.

It is necessary to actively organize the collection, repair, utilization, and handing over of old waste materials; establish and improve various rules and regulations, and strictly handle accounting and reimbursement, so as to strengthen the management of military funds and materials, strictly practice economy, and ensure supply.

Organize and guide the production of agricultural and sideline industries in the troops. Agricultural and sideline production is extremely closely related to the life of the troops. In accordance with the party's principles, policies, and the will of the party committees of the stations, the munitions departments must actively do a good job in the production of military industry and agriculture, and the munitions departments of the stations must give priority to the amateur production of the companies, guide and help the companies raise pigs, grow vegetables, run small workshops, and do a good job in supporting living facilities.

Organize and guide the livelihood support of the troops. Organizing and guiding the troops' livelihood support is an important task of military quartermaster support. In the area of livelihood support, the quartermaster departments should conscientiously implement the standard system set by the higher authorities, guide the troops in rationally adjusting their livelihoods and actively improving their living standards, do a good job in saving food, fuel, and food expenses, and ensure that the troops can eat, eat, and eat well.

Do a good job in preparing for war in the field of munitions support. Quartermaster combat readiness is the focus of military support. In accordance with the intentions of the head of the air force unit and the depot support plan, the munitions department must do a good job in material support plan, ensure the implementation of reserves, do a good job in supporting the equipment, and enhance the wartime support capability.

Organize and implement professional training for quartermasters. In accordance with the requirements of the training program for quartermaster support personnel and in light of the actual situation of quartermasters, a training plan should be drawn up, and practical methods should be adopted to organize and implement training in a timely manner to improve the ability of military quartermaster support.

(2) The characteristics and requirements of military support

Military. Military quartermaster support is a professional service that ensures the needs of the troops' daily life, training, and operations in terms of food, clothing, and clothing, maintains and enhances the physical fitness of the officers and men of the troops, and consolidates and enhances the combat effectiveness.

Economical. The economy of munitions support is characterized by the fact that munitions (provisions, clothing) must depend on state resources. The state of the national economy directly restricts and affects the ability to provide military support. According to the development of the national economy and the strategic needs, the state allocates an appropriate amount of military supplies to the army;

These supplies are then redistributed within the army through the quartermaster department.

Service. The serviceability of military support is determined by the following aspects. First, it is determined by military consumption. The production, planning, storage, and supply of military supplies are all for war consumption, and must be aimed at serving war readiness. Second, it is determined by the logistics service. Third, it is determined by the nature of military support. The nature and purpose of the work determine not only the supply and management of the military supplies allocated by the state, but also the direct service to every member of the army through further work to meet the needs of every commander and soldier in their daily life, training, and operations. The essence of military supply is to properly manage, supply, and use military supplies to serve the troops.

Technological. Munitions support is highly technical. First, many aspects of munitions work are technical in nature. Such as the storage and maintenance of materials, the processing and production of food, the accounting statistics required, etc. Second, judging from the development of modern science and technology, military equipment is becoming more and more modern, management methods are becoming more and more automated, and military supply is becoming more and more technical.

Complexity and enormity. The complexity and arduousness are mainly manifested in the following: Munitions support has the dual characteristics of military and economic; munitions support is economical in time, with food and clothing, three meals a day, all year round, continuously, and cannot be separated from at any time; munitions supply is extensive in space, and munitions support involves every unit and every person, and is inseparable from many points and everywhere; munitions support is diversified in content, and munitions work is in charge of food, wear, and production.

Therefore, quartermaster support personnel should have a strong political quality, excellent military quality and professional skills, and a work spirit of hard work and hard struggle.

2. Military material support plan

The military material support plan includes two parts: the supply material support plan and the loaded material support plan. Among them, the general equipment and supplies support plan shall be reported to the joint logistics department and reported to the higher-level logistics department for the record, and the air force's special equipment and supplies support plan shall be submitted to the higher-level logistics department for approval and reported to the subordinate joint logistics department for the record. The steps for drawing up a plan for the supply of munitions are as follows:

(1) Clarify the instructions and relevant regulations of the higher authorities and the pre-war prescribed reserves

The pre-war reserve included the amount of carrying, operation and enlargement.

(2) Estimated consumption

Including: the number of consumption at the stage of combat readiness and the stage of implementation. The replacement uniforms and martyrs' cloths in the loading materials are expected to be based on the combat attrition rate and casualty ratio. Supplies are expected to be in accordance with the standard and quantitative.

(3) Calculate the existing number

Including: the number of units on hand and the number of troops in stock.

(4) Calculate the number that needs to be supplemented

The number of replenishments = the number of pre-war reserves + the estimated consumption - the number of existing numbers

The number of materials to be replenished shall be calculated separately for the percentage and number of copies of replacement bedding and martyr's cloth, as well as the total volume (cubic meters). The number of supplies to be replenished shall be calculated separately as the number of daily servings, staple food, non-staple food, fuel weight and total weight (kg). Once the number of bedding, provisions, consumption and replenishment has been calculated, it can be listed in tabular form.

(5) Determine the supply method

The method of supply shall be determined in accordance with the regulations of the superiors, the instructions of the head and the actual situation of each unit. It usually includes the method of raising materials, the means of supply, the time limit for completion and related precautions.

3. Procurement of military supplies

The method of raising military supplies for the combat operations of the aviation unit is to combine rear supply with local supply. Among them, the rear supply is the mainstay, and the use of available waste materials is fully utilized, and if possible, it is necessary to actively organize the troops to produce self-sufficiency.

(1) Rear supply

There are usually two methods of rear supply: one is the planned supply by the superiors. The higher-level quartermaster department formulates a munitions supply plan on the basis of the supply strength, reserve indicators, and existing material situation of each unit, and the logistics department at the higher level will supply the subordinate according to the plan. This method is suitable for normal material consumption and is the main method of supply to the rear. The second is the subordinate application.

According to the actual needs of the troops, the lower-level quartermaster department prepares an application plan and takes the initiative to apply to the superior. This method is generally used in the case of abnormal consumption, such as the loss of materials or additional consumption and other special circumstances.

(2) Local delivery

Local delivery is usually done in two ways. The first is to rely on local pre-support institutions to raise funds. It is mainly staple and sideline foodstuffs, fuel, and daily necessities (including military supplies allocated by the state). The second is local procurement. In the case where the troops are concentrated in the station, or the supply of materials is tight, and it is difficult for various catering units to procure in a decentralized manner, the method of unified procurement is usually adopted to solve the problem of troop supply. The troop garrisons are relatively scattered, and it is not difficult for each catering unit to procure supplies on its own, and it can purchase supplies on its own.

(3) The use of waste materials and the organization of military production

The use of waste materials and the organization of production by troops are the glorious traditions of our army and an important measure for overcoming difficulties and assisting supply. Therefore, under the principle of not affecting the battle, it is necessary to extensively carry out the repair of the old and the use of waste and to organize the troops to carry out agricultural and sideline production in accordance with local conditions.

(4) The use of seized materials is a way to compensate for rear supplies

Seized materials to be used should be carefully inspected and decontaminated with the assistance of the anti-chemical and health departments. Then, it can be used in a planned manner according to the regulations.

4. The reserve of military supplies

The tactical reserve of aviation logistics and munitions supplies is carried out by the quartermaster department of the air force station. Tactical reserves include the carry-on, operational, and augmented reserves that troops regularly maintain.

(1) The amount of military supplies and tactical reserves carried

The amount of travel is the amount of materials carried with personnel, weapons, vehicles, etc. according to regulations. Its purpose is to ensure the living needs of the troops during a certain period of operation. According to the current regulations, the amount of goods carried is: 2 days of staple food, 3 days of non-staple food, and 1 person of clothing, usually including backpacks (backpacks), satchels, water bottles, dry food bags, raincoats and other materials.

(2) The operation volume of military supplies and tactical reserves

The operating volume is mainly the amount of military supplies carried during the transfer, replenishment and mobile support.

Normally, for supplies, regiments and divisions each maintain a 2-day supply of staple food and 2 days of non-staple food. Replacement uniforms, mobile equipment, and martyr's cloth for the loaded materials shall be operated according to the unified distribution base of the whole army. The stretcher is prepared according to the station and runs 20 sets. In addition, a certain amount of daily necessities should be operated, the variety and quantity of which are determined at the discretion of each unit.

(3) Increase the reserve of military supplies

The increase in the reserve of military supplies is the increase in the material reserves of the troops in addition to the carrying and operating volume according to the needs of the support tasks and transportation conditions. The varieties and quantities are usually prescribed by the superiors, but they can also be applied for by the troops according to their needs and established after approval by the superiors. In addition, in order to cope with unexpected situations and meet urgent needs, a certain amount of reserve materials is usually controlled in the troop warehouses, and the determination of the quantity and the timing of its use are decided by the head of the troop.

5. Military support during troop maneuvers

The military support when the troops are mobile mainly refers to the military support when the air force is moving to the field. Military support for the mobile transfer of aviation units, including military support when aviation units are transferred in and out, and when aviation units and stations are transferred at the same time. The head of the station should inspect all aspects of the munitions support work according to the different circumstances of the transfer, give timely guidance and assistance, and successfully complete the munitions support tasks of the transfer.

(1) Military support for the transfer of aviation units

When an aviation unit is transferred in, it should immediately learn about the situation related to military supply and actively raise supplies while compiling an application plan. The allotment of the quilt is divided on its own initiative. Add new stoves and do a good job of eating. Take the initiative to introduce the situation and connect the supply relationship.

(2) Military quartermaster support when the aviation unit is transferred out

When the air force is transferred out, it should take the initiative to settle accounts at the door and do a good job of handing over the personnel; properly organize the food supply for the personnel who have been transferred from the ground; and properly arrange the livelihood of the personnel left behind.

(3) Military support when the aviation unit and the depot are transferred at the same time

There are usually two situations in which an aviation unit and a depot are transferred at the same time: First, the depot is transferred together with the aviation division (regiment), and the other is that the air unit and the depot are transferred to different airfields. The depot was transferred to the same airfield as the aviation division (regiment), and the quartermaster personnel were transferred to the field in two groups. The first batch is the advance personnel;

after arriving at the destination with the first echelon of the station, they quickly connected the supply relationship, raised supplies, opened a room and canteen, and made preparations for the follow-up troops. The second batch of personnel transferred to the second echelon of the same station.

When air force units and stations are transferred to different airports, the stations should first ensure that all aviation divisions (regiments) are transferred out (adopting the method of providing military support when aviation units are transferred out), and then the quartermasters should act with the second echelon of the station. When the depot is transferred out, it is necessary to conscientiously handle the handover procedures with the troops stationed at the site in accordance with the regulations, and give a briefing on the local situation; if the time is tight and it is too late to go through the handover procedures, personnel who are familiar with the situation should be appointed to stay and handle it properly.

6. Food and drink support in the flight outfield

The living conditions in the field are poor, and the air and ground staff have high physical exertion and high dietary requirements. Therefore, the station should make overall planning, scientific arrangement, do a good job in the construction of outfield food security, and improve the ability of outfield food security.

(1) The organization of out-of-town food security

The outfield food guarantee is organized and implemented by the supply attendant under the unified plan of the flight support command room. The supply watchman is usually the head of the Quartermaster Unit or the supply assistant (canteen manager). Its main tasks are to participate in the field flight day support preparation meeting and receive the task of food security; notify the time, number and place of the meal and water delivery on the flight day of the stove watchmen; put forward the requirements and precautions for doing a good job in the food security work, supervise and coordinate the preparation of food and the supply of boiled water, and ensure the number of food (water). Quality and safety, timely inspection of the implementation of food (water) security; timely listen to and convey the instructions of the superior commander, coordinate the relationship with relevant departments, timely handle and solve the problems in food security; participate in the flight field support appraisal meeting, report the food security situation, listen to the comments; convene a meeting of relevant personnel or disperse to convey the summary of the field food security, and make comments.

(2) Methods of food protection in the field

The main methods of food security in the field are: meal delivery guarantee, field stove guarantee, cooking car (van) guarantee and picnic guarantee or dry food guarantee in case of emergency. Meal delivery guarantee is a guarantee method that is processed and prepared by the in-field stove and sent to the out-field for supply.

This method of protection is suitable for stations that are close to the inner and outer fields.

Outfield stove support is a method of setting up a new stove in the outfield and specifically implementing food and drink security during outfield flight. This method of protection is suitable for stations with far away internal and external fields.

Cooking cart (van) support is a method of implementing motorized food security by fixing the cooking kitchen to the car. There are two types of cooking vehicles for the Air Force: one is a self-propelled cooking vehicle, which is suitable for the outfield flight food support of the station, which can be supplied at a fixed point and can also be provided with mobile support, with high efficiency, good maneuverability and strong support capacity. However, drivers and vehicles account for the establishment, and the operation and equipment maintenance are complex and the cost is high. The second category: trailer-type cooking trucks, no full-time drivers, trailers are easy to manufacture and maintain, economical and durable, low price, and good mobility. Cooking trucks can provide hot food, such as rice, steamed buns and stir-fried vegetables, as well as biscuits, bread, etc., both locally and on the move. It is not only highly efficient, but also conducive to the integration of peacetime and wartime, and is a battlefield food guarantee method that meets the requirements of modern warfare and has a promising future. In recent years, great progress has been made in the research and development of the Air Force's cooking vehicles; at present, some air force stations have used cooking vehicles to provide food and beverage support in the field, and the relevant departments of the General Headquarters have successfully developed field vans, which are equipped with machinery and equipment, and can produce continuously from flour to bread, and some stations have been equipped.

In addition to the above-mentioned dietary security methods, in wartime emergencies, the method of providing support by means of picnic support and dry food support can also be adopted.

Section 3: Airport Barracks Support

Airport barracks support includes airport support and barracks support. The main contents of airport support include field service support, airport emergency repair, retention (caretaker) airport opening and civil airport requisition. Airport repairs, retention (guarding) airports and civil airport requisitions have been specifically discussed in other chapters. Barracks support is divided into peacetime barracks support and wartime barracks support, and the content of support is basically the same. To this end, this section focuses on field support and wartime barracks support.

1. Field support

The content of field support in peacetime and wartime is basically the same, but the difference is mainly reflected in the different support environments, and the pressure on field support in wartime is greater, the tasks are heavier, and the situation is more complicated.

(1) The task of field service support

1. Field protection

The main content is the inspection and cleaning of the manual pavement and the inspection and leveling of the soil pavement.

(1) Manual pavement inspection and cleaning

The inspection and cleaning of artificial pavement is a guarantee activity to remove stones, debris, sundries, ice, snow and other foreign objects on the pavement to ensure the cleanliness of the pavement and check the damage to the pavement so that it can be dealt with in time. The inspection and cleaning of the artificial pavement is generally carried out before and after each flight (or morning and evening), and a comprehensive inspection is carried out once a month. The main methods are: mechanical cleaning, manual inspection and cleaning, mechanical and manual joint inspection and cleaning. When the pavement is cleaned by machinery, the number of sweepers and the cleaning method should be determined according to the cleaning requirements and completion time. For the pavement with more fragmentation, after mechanical inspection and cleaning, it is necessary to use 2 to 3 people for re-inspection. When manually inspecting and cleaning the pavement, the person should be determined, positioning, and the responsibility should be clarified, and the width of each person should be about 8 meters per inspection, and the width of each inspection should be appropriately reduced for the pavement with serious damage. After each inspection of the pavement, it should be registered as required, and the damaged pavement should be recorded in detail and plotted on the warehouse diagram.

(2) Soil pavement inspection and leveling rolling

The inspection of the soil pavement of the grass airport should be carried out before, after the flight and after the heavy and heavy rain, focusing on the flight site to be used on the day, to see if there is a new collapse, and whether the original filled culverts and caves are sinking, and whether the site is flat and solid. If the flight field changes due to a change in wind direction, it should be re-inspected. Artificial pavements can usually be combined with monthly inspections of road facilities. After rain and intermittent flight is long, the soil pavement should be comprehensively inspected, hidden dangers should be found, and eliminated in time. In spring and autumn every year, the soil pavement must be comprehensively leveled and rolled. In the process of use,

it should also be leveled and rolled according to the pavement conditions and flight needs, using the flight gap. In wartime, in order to meet the needs of the air force for emergency take-off and landing, it is necessary to level and roll the dirt road surface during the preparation stage for war and after the airfield is damaged by the enemy.

2. Lighting guarantee

According to the installation method, the field lighting equipment is divided into two types: fixed type and movable type, and the fixed lighting equipment adopts fixed ground marking lights and underground power cables. The movable lighting fixtures feature movable floor markers, cable inserts and mobile rubber cables. On the day of the flight and the airport that is on duty and the task of alternate landing, it is necessary to check the lighting equipment every day, inspect the runway, taxiway, apron and T-shaped lamps, test run the standby generator set, and check the lighting equipment of the field road frequently according to the guarantee regulations, so that it is always in good condition and ensure that it is turned on at any time.

3. Blocking guarantees

It is mainly the blocking net guarantee and the blocking sand guarantee. The inspection of the aircraft blocking net is mainly carried out before the flight, check the components, especially the mesh body, whether there is any human damage, whether the anchor bolts are connected and fastened, whether the braking pressure of the braking system is normal, check whether the liquid level height of the water meets the requirements, whether the warning sign of the shear clutch falls off, replace the shear pin if necessary, carry out the vertical net and net release test, and check whether the electrical system is working normally. The abrasive belt and sand flat should be loosened at least once a season, and should be loosened once after heavy rain, before freezing, and before the war.

4. Fire protection

It is mainly the support of fire trucks and firefighting equipment. It is necessary to strengthen the maintenance and overhaul of the fire truck, to ensure that it can be driven at any time, the firefighting equipment on the car should be fully equipped, wiped and maintained in time after use, and anti-freezing measures should be taken in the severe cold season to ensure that it plays a role in flight support. According to the regulations, the carbon dioxide fire extinguishers of the take-off line, apron, test apron and regular inspection and repair plant shall be equipped and handed over to the maintenance personnel for safekeeping and use. Strengthen the management of airport fire-fighting equipment, so that "three haves, two determinations, and one implementation", that is: there are protective measures, registration, seals, positioning, regular inspections, and the implementation of custodians. Adhere to the daily inspection, weekly inspection, and monthly weighing system, so that the fire-fighting equipment is often kept in good condition and sufficient to ensure emergency use.

5. Flood control guarantee

Strengthen the inspection of the drainage system, remove the silt and debris in the inspection wells, water collection wells and ditch pipes in a timely manner, and keep the drainage system unobstructed. Before and after the rainy season and after thawing and snow, the drainage system should be thoroughly cleaned, and the drainage situation should be inspected during heavy (blushing) rain, and the drainage should be dredged in time if the water is not smooth. For the damage to drainage facilities, it is necessary to repair and strengthen them in a timely manner, so that there is no erosion, no collapse, no siltation and no blockage, and the drainage is smooth. Strengthen the inspection and maintenance of various equipment of the drainage station, and always keep the pumping machinery, gates and outlets in good condition. Airports that may be harmed by flooding should keep abreast of changes in weather and water conditions before the flood season, understand local flood prevention plans, make suggestions on flood prevention problems involving airports, conscientiously inspect flood prevention facilities, eliminate caves and other hidden dangers, and strengthen embankments, renovate drainage facilities, and dredge outer trenches as needed. During the flood season, it is necessary to strengthen the inspection of embankments, rescue and drain floods in a timely manner, and ensure the safety of airports. After the flood season, do a good job of cleaning up the aftermath and repair the damaged facilities.

(2) Organization and implementation of field service guarantees

Under the unified leadership of the head of duty in the field of the station, the field service detachment shall dispatch cadres on duty to organize and implement the field support work for training and combat flights. The leading cadres of the field affairs detachment must strengthen leadership, organize it closely, dispatch all kinds of personnel on duty on time in accordance with the unified regulations of the station, and participate in the flight day duty to discover and solve problems in a timely manner. In peacetime, a comprehensive inspection of the flight site should be organized once a month, and in wartime, it is necessary to make full use of the combat interval in light of the damage to the flight site, strengthen inspections, and improve the efficiency and quality of field work support.

1. Flight preparation stage

Field support work in the preparation stage of the flight is usually carried out before the flight. When flying in combat, it is carried out immediately after receiving a combat order (advance order). In the case of continuous flight, the field maintenance support work in the flight preparation stage and the flight evaluation stage can be combined. The main tasks in the flight preparation phase are:

(1) The on-duty cadres of the field service detachment participate in the flight logistics support preparation meeting, convey the support tasks to the relevant personnel in a timely manner, and put forward specific requirements.

(2) Inspect and clean the flight site, completely remove the debris on the pavement, find damage, repair it in time, and prepare materials, machinery and tools for emergency maintenance.

(3) Check the technical condition of vehicles, equipment, machinery and aircraft blocking facilities, prepare fire-fighting equipment, and be familiar with various emergency plans.

(4) When ensuring flight at night and under complex meteorological conditions, it is necessary to carefully inspect, repair and electrify the lighting equipment of the field, run the lighting backup generator set, and prepare for emergency use.

(5) When supporting flights in the severe cold season, anti-freezing measures should be taken for fire trucks and various support machinery.

(6) After the preparation is completed, the on-duty cadres of the field service detachment should report to the field attendant in a timely manner.

After receiving the notice (order) of flight approach, the personnel on duty, vehicles and machinery must arrive at the designated place on time and do the following main work:

(1) Complete the review and cleaning of the flight site on time, ensure that the pavement meets the flight requirements, and make preparations for the aircraft blocking the net.

(2) Carefully review the technical condition of fire trucks and various support machinery, and arrive at the designated place on standby.

(3) When ensuring flight at night and under complex meteorological conditions, it is necessary to carefully review and electrify the lighting equipment on the field, and test run the lighting standby generator set.

(4) When ensuring flight on rainy days, the water on the road should be cleared in time.

(5) When ensuring flight in the hot season, the pavement can be sprinkled as needed.

(6) After the preparation is completed, the on-duty cadres of the field service detachment should report the preparation to the field attendant in a timely manner and sign in.

(7) Request the field duty chief and flight commander to review the pavement preparation before the flight.

2. Flight implementation phase

During the implementation phase of the flight, the cadres on duty of the field service detachment must go deep into each duty point to supervise and inspect and solve the existing problems in a timely manner.

The officers on duty should do the following main work:

(1) According to the instructions of the flight commander or the head of the field shift, implement field service support, use the flight gap to inspect the pavement, and quickly remove debris.

(2) Firefighters should stick to their posts, carefully observe the take-off and landing of the aircraft, and be ready to dispatch at any time.

(3) According to the instructions of the flight commander or the head of the field on duty, set up and release the aircraft blocking net.

(4) When ensuring flight at night and under complex meteorological conditions, it is necessary to switch on and off various marker lights and adjust the brightness of lights in accordance with the instructions of the flight commander or the head of the field duty, observe the lighting conditions of various instrument indications and lamps, find faults, report them in time, and deal with them quickly. Once the power supply is interrupted, the power supply of the light standby generator set should be started quickly.

(5) In case of special circumstances and new tasks, it is necessary to implement the guarantee in a timely manner according to the instructions of the head of the field on duty.

3. Flight Commentary Stage

The main tasks of the flight evaluation stage are:

(1) According to the instructions of the head of the field on duty, organize the personnel on duty, vehicles and machinery to leave the site.

(2) Carefully inspect and clean the flight site, repair the damaged parts, and ensure that the pavement is clean and intact.

(3) Inspect and maintain the vehicles and machinery that have exited the site to maintain good technical condition.

(4) Knock down the aircraft blocking net, and carry out inspection and maintenance.

(5) At night and after the flight of complex weather, inspect and maintain the field lights and light standby generator sets.

(6) The cadres on duty in the field of the field service detachment shall report the security situation to the head of the field on duty, and participate in the evaluation of the station and the quality of support.

(7) Organize the field service team to comment and fill in the security documents. The number of bad sessions guaranteed by the field service should be reported on the same day as required.

2. Barracks support

The content of barracks support in peacetime and wartime is basically the same. In peacetime, the facilities and equipment provided by the barracks are solid and fixed, the construction period is long, and the support conditions are relatively good. In wartime, the facilities and equipment provided for barracks support are temporary, mobile, and rudimentary, and the time limit for support preparation is short, so the first focus is on satisfying basic needs. This section focuses on wartime barracks support.

(1) The task of barracks support

The main tasks of barracks support are housing support, lighting support, water supply support, and heating support, as well as material support for field barracks, opening of field warehouses, emergency repair and firefighting of barracks in wartime, and management of the original barracks of troops.

1. Housing security

In peacetime, the housing guarantee for the troops is guaranteed by fixed barracks facilities, and all kinds of barracks needed for the construction of troops are carried out through engineering construction procedures, and their area standards include the "Chinese People's Liberation Army Barracks Building Area Standards" and "Supplementary Standards for the Construction Area of Various Barracks (Trial Implementation)." In wartime, housing support is based on timely and rapid support for the housing needs of the troops, and provides necessary command, living quarters, and camp equipment.

(1) Methods of wartime housing security. The main ones are:

- (1) Use the original barracks, such as vacated office, living, warehouse and other buildings.
- (2) Borrowing public housing and private housing, such as hotels and private houses.
- (3) Use standard camping equipment, such as tents, steel frame houses, and canopies.
- (4) Build temporary housing, such as building straw sheds, adobe houses, digging ground nests, etc.
- (5) Use fortifications, such as tunnels, shelters, etc.
- (6) Use of large equipment, such as vehicles, etc.
- (7) Make use of favorable terrain features, such as natural rock caves.

(2) The need for wartime housing security. According to the camping conditions available in the camp, the tasks undertaken by the troops, and the logistical support capabilities of the troops, the minimum requirements for housing support in wartime are:

Temporary housing area = 2.5 square meters / person X number of combatants. Generally, the tent is 25 square meters per class and can accommodate 10 people.

Room area = 0.4 square meters / person X number of participants

Toilet area = 0.2 square meters / person X number of participants

Bathroom area = 0.2 square meters / person X number of participants

Plank (marching bed) (block) = number of participants

Activity table (sheet) "The number of cadres participating in the battle in command organs and medical units/2

Movable chairs (handles) = the number of cadres participating in the command and medical units

Maza (small stool) = number of participants

In addition, according to the need, the (brigade) and regimental command posts can be equipped with one command tent, the division hospital can be equipped with three sanitary tents, the division (brigade) and regimental health teams can be equipped with two sanitary tents, and each catering unit can be equipped with one cooking tent.

2. Lighting guarantee

In peacetime, the troops' lighting support and barracks support are combined, and the support is carried out with fixed facilities, and the construction of facilities is carried out in conjunction with the construction of barracks, most of which use one or more local power supplies, and some have one or several sets of self-provided power supply systems to meet the needs of wartime. In wartime, lighting support is reliable and available, providing necessary support for the command and life of troops.

(1) Wartime lighting support methods. According to the power resources of the troops' camps and the nature of the combat missions undertaken by the troops, the focus of lighting support is on command organs and medical rescue units at all levels. The main ones are:

(1) Use local power sources. When the troops are assembled in the area, they mainly use the local civilian power supply to organize support.

(2) Self-power generation. When the local power supply is insufficient and conditions permit, mobile generator sets can be used to generate power by themselves.

(3) Distribute simple lighting equipment. Such as horse lanterns, candles, flashlights, etc., and at the same time, troops can also be organized to make their own simple lighting equipment.

(2) The amount of lighting equipment required in wartime. According to the needs of the troops to undertake tasks and the troops' logistical support capabilities, the requirements for lighting equipment can be calculated and raised according to the needs. Usually:

The command post and hospital need 2 generators with a total power of 6KW.

Horse lantern (lamp) = number of combat squads + 2x (number of cooking squads + number of company units + number of government departments)

The amount of flashlight required (one) = the number of cadres above the company + 2, the number of government departments

The amount of candles required (branches) = the number of participants is 0.5 candles/person, and the day is X30

Daily kerosene requirement (kg) = 0.1, number of horse lanterns X estimated number of combat days. 0.1 kg of kerosene is used per lantern per night, and the use in the tunnel is doubled.

3. Water supply security

In peacetime, the water supply guarantee of the troops is combined with the support of barracks, and the support is carried out with fixed facilities, and the construction of facilities is carried out in conjunction with the construction of barracks, and most of them are supported by self-provided wells. In wartime, water supply is a key link in the support of barracks in wartime, and is an important factor affecting the morale and combat effectiveness of the troops.

(1) Wartime water supply guarantee mode. There are four main situations:

(1) Use of existing facilities. When the water resources of the campsite are sufficient and the water supply facilities are complete, it is necessary to make full use of the original water supply facilities and quickly organize the water supply guarantee.

(2) Open up water supply points. When the water source in the camp is insufficient, a new water supply point should be opened nearby to supply water to the troops in a timely manner.

(3) Use of water supply equipment. When the water source is sufficient, but it is difficult to transport water, it is necessary to do a good job in ensuring the supply of water supply equipment according to local conditions. There are mainly water bags, buckets, water tanks, buckets, etc., and you can also apply to your superiors for water supply vehicles as needed.

(4) Rely on water supply detachments. When there is a serious shortage of water in the camp, and it is difficult for the barracks department to independently complete the task of water supply, it should be suggested that the higher level should be assigned to a water supply detachment to carry out accompanying and mobile support.

(2) The need for water supply in wartime. The amount of water supplied in wartime is determined according to the minimum physiological needs of the human body, usually 1.5~10 liters per person per day, when 1.5~2 liters per person per day, no more than three days, 40 liters per person per 10 days for laundry, and 30~40 liters per person every 7~10 days for bathing.

4. Heating guarantee

In peacetime, the troops' heating support and barracks support are combined, and the support is carried out with fixed facilities and equipment, and the construction of facilities and equipment is carried out in conjunction with the construction of barracks. Heating in wartime is of paramount importance, and logistics chiefs and barracks departments must pay close attention.

(1) Heating method. The use of coal and wood dual-purpose stove, ground fire dragon, fire wall and other scattered soil heating methods. Make full use of local resources such as coal, firewood, hay, horse manure, etc. If there are conditions or due to special needs, liquefied gas stoves, kerosene stoves, electric stoves, etc. can also be used for heating. In addition, in order to make the heating guarantee more effective, it is also necessary to select campsites, improve the thermal insulation performance of housing, supply heating fuel in a planned way, and implement a quota for consumption.

(2) The demand for heating stoves and fuel. Units camped in cold areas, and those who live in public, private, or temporary houses are given one set of heating stoves for each 25-square-meter shift (the original house is not equipped with heating equipment); and those who live in tents are assigned one set of tents for each shift. Taking into account the differences in the thermal insulation performance of various types of houses, it can be flexibly mastered in the actual distribution. When using coal as fuel, each set of stoves can be dispensed with 50 kg of coal per day and night.

Stove requirement (set) = (area of public housing and barracks + area of residential housing + area of temporary housing) / 25 + number of tents

Heating coal requirement (kg) = number of coal burned per day and night X number of stoves X Estimated number of days of operation

5. Material support for field barracks

The material support of field barracks refers to the work of raising, storing, distributing, managing, adjusting, replenishing, and withdrawing from the barracks department to provide the troops with standard field barracks materials and equipment such as housing, lighting, heating, and water supply.

Field barracks materials belong to the army's general combat readiness materials. There are five main categories: camping equipment, lighting equipment, activity camping equipment, heating stoves, and water supply equipment. Camping equipment includes: squad tents, command tents, sanitation tents, reconnaissance tents, repair tents, movable house racks and inflatable tents, movable vehicle houses, camping cabins, etc.

Lighting equipment includes: horse lanterns, candles, flashlights, generator sets, and camping lighting car power stations that can be used to temporarily equip troops.

Activity camp equipment includes: marching beds, planks, movable tables and chairs, etc.

Heating stoves include: field heating stoves for squads, oil-fired heating stoves for plateaus, etc.

Water supply equipment includes: water pipelines, back water bags, back buckets, water storage tanks, etc.

The materials for field barracks shall be stored in two levels by the General Headquarters and the Air Force in accordance with the proportions determined by the General Logistics Department, and the pre-war units shall be calculated according to the sum of the standard distribution, the estimated consumption, and the increased reserve when applying to the higher authorities. The standard distribution amount is determined in accordance with the "Measures for the Distribution and Supply Management of Wartime Barracks Materials" issued by the General Logistics Department. The estimated consumption is determined by taking into account such factors as the combat mission of the troops, the natural conditions of the assembly area, the combat season and the duration of the operation, the consumption pattern of various types of wartime barracks materials and equipment, and the instructions and requirements of the superiors. The increase in the number of reserves is set by the command organ at a higher level, and is usually controlled at about 5%-8% of the standard allotment.

In addition, the establishment of field warehouses, temporary storage and turnover of war supplies supplied in the rear, emergency repair and firefighting of barracks in wartime, and management of the barracks where the troops live are also important contents of barracks support in wartime.

(2) Organization and implementation of barracks support

The organization and implementation of barracks support in wartime is carried out under the leadership of the head of the unit and the head of logistics, and generally goes through four basic stages: preparation for battle, assembly of troops, conduct of battle, and evacuation of battle.

1. Preparation for battle

Preparations for battle are generally carried out in the barracks of the troops, and the main tasks to be done by the barracks department are:

(1) Quickly organize troops to take stock of barracks materials and equipment, and find out the existing support capacity.

(2) Prepare a barracks support plan, and request for distribution of field barracks materials and equipment.

(3) Clarify the type and quantity of materials and equipment to be carried in the barracks, and make a transportation plan.

(4) Clarify the responsibilities of the left-behind personnel and formulate a management plan for the original barracks.

(5) Quickly dispatch an advance force to arrive at the assembly area before the troops arrive and organize housing support.

2. The troop assembly stage

The barracks support during the troop assembly stage is very heavy, and the contradiction between supply and demand is prominent, so the main tasks to be done well are:

(1) Quickly adjust the residential facilities, organize the supply of residential equipment, and solve the problem of military camping as soon as possible.

(2). Connect the water and electricity of the city, and do a good job in supporting living facilities.

(3) Organize inspection and guidance, find problems, and solve them in a timely manner.

(4) Improve the system, strengthen management, and put forward management requirements for the troops to borrow local public and private houses and use barracks materials and equipment.

(5) During the emergency maneuver, get in touch with the military stations and troops along the way, try to squeeze the barracks of the troops along the way, fully estimate the various difficulties on the way, and do a good job in ensuring water supply on the way.

3.The battle is in progress

The barracks departments should listen to the opinions and feedback of the troops in the barracks support work in a timely manner, sum up experience and teach them in a timely manner, and improve the daily supply and support work in wartime. Mainly do the following work:

(1) Guide the troops to camp during the war.

(2) Adjust the support plan according to the deployment changes.

(3) Highlight the guarantee of water and electricity supply.

(4) Replenish barracks materials in a timely manner.

(5) Do a good job in the implementation of various management systems, and continuously improve the living environment and living conditions.

4. Evacuation of the combat phase

After the troops withdraw from the battle, the main tasks to be done in the barracks support are:

(1) Do a good job of handover and settlement.

(2) Recycling barracks materials and equipment.

(3) Welcome the troops back to the barracks.

(4) Collect data and summarize experience.

Section 4: Medical Support

Health support is the guarantee implemented by logistics agencies in the service of health professions. The health department is mainly responsible for the adoption of organizational and management measures and medical, scientific and technological measures to directly prevent and treat injuries and illnesses among military personnel in order to ensure their health. It includes the treatment of war wounded, aviation hygiene, health and disease prevention, medical care, and the supply of medicinal materials. Health security is unique among all professional guarantees, and other guarantees are directly acting on "things, but health security directly acts on people." Human life is at stake, life phenomena are infinitely mysterious, and flight personnel are extremely valuable combat effectiveness, which makes the security support have distinctive characteristics of a high degree of service and high technology. The following article focuses on the treatment of the wounded in wartime at the station.

1. Medical service support plans and health service support suggestions

(1) Health service support plan

The Guards Support Plan is a military document formulated to guide the preparation and operations of the Guards and Logistics Support. It is a concrete embodiment of the determination of logistics chiefs in the field of health and logistics support, and is the basis for organizing and implementing health and logistics support activities. The basic basis for drawing up a health support plan is the operational intent of the military chief, the determination of the logistics chief to provide support, the instructions of the higher-level security organ, and the actual situation of the health support capability. The basic requirements for drawing up a health support plan are: proceeding from reality, making careful plans, highlighting key points, taking into account the general, being clear and specific, concise and to the point, being prudent and flexible, and leaving room for improvement. The contents of the health protection plan include:

Estimated attrition of health personnel: the combat attrition rate of conventional weapons and the number of casualties (if necessary, the combat attrition rate and the number of casualties of nuclear and chemical weapons are projected), the proportion of casualties, the rate of disease attrition and the number of sick people, and the number of casualties and sick people of flight personnel are listed separately.

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- The division of the ambulance area and the positioning of rescue personnel.
- Search and rescue of parachuted and forced landing pilots.
- The organization, deployment location, treatment tasks and work requirements of the health service organization.
- Organization and implementation of the evacuation of the sick and wounded.
- Flight hygiene measures.
- Hygiene and epidemic prevention and hygiene protection measures.
- Stockpiling and supply of war-saving medicinal materials.
- The use of security forces supported by superiors.
- Organization and coordination of military-civilian medical rescue work.
- Matters that need to be resolved by the leadership of the unit and the higher-level security agency.
- The command position and communication liaison of the leading cadres of the health service.
- Coordinate with all relevant departments.
- Vigilance and defense.
- Health service reporting requirements.

(2) Suggestions for health and service safeguards

The logistical support proposal is the opinion of the logistical leader on the aspect of operational logistical support. It is usually presented orally or in writing at a meeting convened by the head of logistics, and the purpose is to provide information on the aspects of health support for the head of logistics to make a determination and to receive relevant instructions from the head of logistics. The main contents of the recommendations are: the number of health attrition that may occur, the extent to which the existing health support forces can complete the support tasks, the main measures of the health service, and the problems that need to be solved by the head and the higher-level health service agencies.

2. Attrition

(1) Concept

1. Total attrition

The reduction in the number of military personnel due to various reasons is called total attrition. Both combat attrition and non-combat attrition.

2. Combat attrition

The reduction of personnel due to the reasons of the fighting is called combat attrition. Including wounded, killed, captured, missing, etc.

3. Non-combat attrition

A reduction in personnel due to non-combat reasons such as illness or accident is called non-combat attrition. Including sickness, non-combat trauma, accidental death, etc.

4. Sanitation attrition

The wounded, sick, and non-combat wounded who were sent to the regimental ambulance center for treatment at the regimental ambulance center during the attrition were called sanitary attrition. Some people refer to health attrition as recoverable attrition. Obviously, the casualties, accidental deaths, captures, disappearances, etc., are irreversible attrition.

The attrition has seriously weakened the combat effectiveness of the troops. Correct operational command and superb military technology can obviously reduce the attrition rate, but the important role of good security support in reducing the attrition rate and restoring the combat effectiveness of the troops cannot be overlooked. Timely and efficient treatment of war wounded can reduce the number of casualties and casualties, scientific and efficient health protection can reduce the incidence of nuclear, chemical, and biological weapons casualties, and good health and disease prevention can greatly reduce the morbidity and attrition due to illness. The wounded and sick have been cured and returned to the service through the treatment of the security organs, which is of great significance to restoring and consolidating the combat effectiveness of the troops.

(2) Attrition analysis

It is of great significance to analyze the composition of attrition and discuss the law of various attrition in order to take targeted measures to reduce the attrition rate. The analysis of health attrition, especially the analysis of the wounded, is of great significance for formulating a wartime health support plan and implementing effective treatment of war wounded.

1. Death analysis

Those who died immediately at the scene of the battle, or those who were wounded and were rescued by the company or battalion, but were not sent to the regimental ambulance station and died in the guard service organization, are said to have died in battle. The main causes of death were blows to vital organs such as the skull and heart, as well as heavy bleeding due to heavy damage to large blood vessels. Normally, there are more casualties in combat attrition, and the casualty ratio is about 3 to 4:1. However, on the contrary, the number of casualties is about 1:3~4.

2. Casualty analysis

Including injuries, injuries, injuries, injuries, etc.

Injury category refers to the category of the cause of injury to the injured person. Distinction is usually made by the causative weapon and the causative factor. It mainly includes blast wounds, gunshot wounds, blade wounds, crush injuries, burns, frostbite, impact injuries, compound injuries, chemical weapon injuries, nuclear weapons injuries, biological weapons injuries and new concept weapon injuries.

Injury, also known as injury, refers to the severity of the injury. It is usually determined according to the extent of tissue damage, the length of treatment required, the degree of threat to life, whether there is a disability after recovery, and the degree of impact on combat, work, and life. It is divided into three categories: mild, moderate, and serious. Minor injuries, minor injuries that can be cured within 30 days, accounting for about 30~40% of the total number of wounded, although not life-threatening, take a long time to heal, about 1~2 months, and some of the sequelae cannot be returned to the team, accounting for about 30~35% of the total number of wounded; Serious injuries, serious life-threatening injuries, long treatment time, mostly more than 2 months, most of them have sequelae, some have serious disabilities, and the return rate is low, accounting for about 25~30% of the total number of wounded.

The wound is the part of the wounded person. It is usually divided into cranial and neck injuries, chest and back injuries, waist and abdominal injuries, spinal injuries, pelvic injuries, upper limb injuries, and lower limb injuries according to the anatomical parts of the body.

Wounded death refers to the death of the wounded in the regimental ambulance facility. The casualty rate directly reflects the level of treatment for war wounded. Doing everything possible to improve the quality of rescue work on the ground and emergency treatment at regimental ambulance stations is of great significance to reducing the casualty rate.

3. Patient analysis

In wartime, the conditions are arduous, the regularity of personnel activities is abnormal, the mental and physical exertion is great, diseases, especially infectious diseases, are prone to occur and become epidemics, the incidence rate of troops is markedly higher than that in peacetime, and attrition due to illness occurs from time to time. If the war lasts for a short period of several days or even a few days, and there are not many troops participating in the war, the attrition due to illness is often not obvious, and the number of sick people is generally less than the wounded; if the war lasts for a long time, several months or even years, and there are many troops participating in the war, the attrition due to illness is obvious, and the number of sick people often exceeds the rate of attrition due to injury.

(3) Estimated health attrition

The health attrition projection refers to the prediction of the number of health attrition that may occur in future operations. It is an important basis for formulating wartime security support plans and planning and using security forces, and is one of the indispensable contents of the organization and command of health services. The main basis for predicting the reduction of health personnel is the number of combatants, combat missions, the duration of operations, the density of troop deployment and the intensity of fortifications, the level of health and disease prevention and management education of the troops, the comparison of forces between friend and foe, data on attrition in previous wars, and various attrition data on current theoretical research. Since the scientific research department of China's air force has specially studied and demonstrated the problem of health attrition of air force units in future wars, and has obtained important data such as the combat attrition rate of air and ground personnel and the attrition rate due to illness, the health service organs at all levels mainly base their calculations on the basis of these data when making estimates of health attrition.

1. Flight personnel health attrition is expected

Casualty projections: The combat attrition rate of flight personnel is directly related to the rate of aircraft battle losses. Before the war, the combat department must make an estimate of the aircraft loss rate. In fighter aviation, the combat attrition rate of battle-damaged aircraft crews is about 60~70 percent, of which about 30~40 percent are wounded; in attack aviation, the combat attrition rate of battle-damaged aircraft crews is about 70~80 percent, of which about 30~40 percent are wounded; and in bomber aviation, the combat attrition rate of battle-damaged aircraft crews is about 70~80 percent, of which about 20~30 percent are wounded.

Formula for calculating the casualty of the pilot:

Number of casualties = number of aircraft sorties X aircraft battle loss rate X combat attrition rate of battle-damaged aircraft crew X percentage of casualties X number of single aircraft crew

Attrition due to illness is expected to be as follows: In future operations, the battlefield environment will be harsh, the intensity of flight personnel will be high, the mental and physical exertion will be large, and the incidence rate of day and night will be high, up to 10%. About 10% of them were attrition due to illness.

The formula for calculating the attrition of pilots due to illness is as follows: the number of pilots due to illness = the number of pilots participating in the battle X the incidence rate of day and night X the proportion of the number of pilots who are attrition due to illness X the number of days of operation

Non-combat injuries in attrition are generally infrequent and are usually not anticipated.

2. Ground personnel attrition is expected

Estimated casualties: Under the conditions of conventional weapons, the station is attacked by an enemy air raid (about 100 tons of bombs), and the combat attrition rate is about 5~10%, of which the wounded account for about 80~90%.

Calculation formula for casualties on the ground:

Number of wounded = number of participants X combat attrition rate X percentage of wounded

Attrition due to illness: Short-term operations usually do not make an estimate of the number of patients. If the duration of the operation is long, it must be expected. In wartime, the incidence of day and night incidence in troops is often significantly higher than in peacetime, reaching $3\pm 5\%$. About 10% of them were attrition due to illness.

Calculation formula for attrition of ground personnel due to illness:

The number of people who are attrition due to illness = the number of people participating in the battle X the incidence rate of day and night X the proportion of the number of people who are attrition due to illness to the number of people who are sick x the number of days of operation

Non-combat injuries are generally infrequent and usually not anticipated.

3. Treatment of the wounded on the ground

(1) Rescue tasks

The treatment of the wounded is the central task of wartime security and logistics support at the station. The treatment of the wounded in wartime is organized and implemented in accordance with the principle of graded treatment, that is, stepwise treatment. That is, the treatment institutions at all levels should treat and evacuate the wounded in accordance with the prescribed scope of treatment, organically combine timely and effective treatment with rapid and reasonable evacuation, and maintain the continuity and effectiveness of treatment in the process of complete treatment and evacuation, so as to reduce the death rate and casualty rate to the greatest extent and restore and consolidate the combat effectiveness of the troops.

The treatment tasks of the station security service organization are: first aid, emergency treatment, early treatment, hospitalization and safe delivery. First aid refers to the on-site emergency rescue of the wounded, mainly the fire line (position) rescue, including hemostasis, bandaging, fixation, transportation and emergency resuscitation. Emergency treatment refers to the emergency rescue and treatment of the wounded carried out by the station ambulance station, and does everything possible to save the lives of the critically injured. It is mainly to provide supplementary first aid to the injured who have been rescued at the scene, to carry out emergency life-saving surgery for the life-threatening wounded, and to take emergency anti-shock and anti-infection measures for the critically injured.

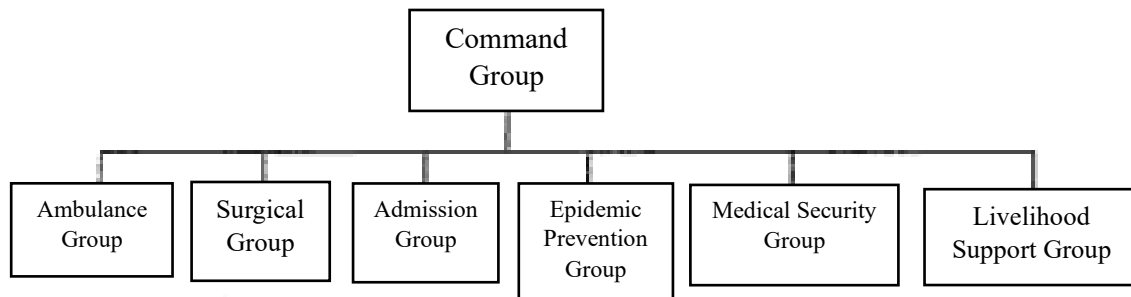
Early treatment refers to the implementation of further deterministic and systematic treatment of the wounded, including timely various surgeries for the seriously injured, thorough correction of shock, systematic anti-infection, and early debridement surgery for the wounded with open wounds.

Hospitalization refers to the systematic and regular treatment of the lightly injured and some moderately injured and returned to the team as soon as possible.

Safe transfer refers to the safe transfer of the wounded who need to be treated by a higher-level hospital, so that the wounded can receive definitive specialized treatment as soon as possible.

(2) The use of security forces

In wartime, the station guard organization can be organized as follows:



Tasks for each group:

Command group (3 people): responsible for the organization and command of health support.

Ambulance team (10 people): A number of rescue teams are organized into several rescue teams, which are distributed in the designated on-site rescue areas and are responsible for on-site rescue work. It is also necessary to determine 1~2 mobile ambulance groups to carry out temporary rescue tasks, including the search for rescue personnel who parachute and make forced landings. After the on-site rescue mission is completed, the personnel can be enriched to other groups.

Surgical team (8 people): 2 operating tables are deployed to be responsible for the surgical treatment of the wounded.

Admission team (8 people): anti-shock room, serious injury room, minor injury room, isolation room, etc., responsible for the admission and treatment of the wounded.

Epidemic prevention team (2 people): responsible for wartime health and epidemic prevention work.

Medical security team (6 people): composed of pharmacy, laboratory and X-ray room, responsible for the supply of medicinal materials, laboratory examination and X-ray examination.

Life Support Team (3 people): responsible for food and beverage for the wounded.

When a health service force with support from a higher level, such as a specialized surgical team, arrives, it is usually not mixed with the health service detachment, but is carried out in the form of maintaining the original structure.

(3) Organization and implementation of the treatment of the wounded

On-site rescue. In order to rescue the wounded in a timely manner, according to the distribution of personnel stationed at the site, the whole station can be divided into a number of rescue areas, each rescue area is equipped with 1~2 health personnel and appropriate means of transport, once the wounded appear, the health personnel and the unit rescue team immediately rescue. For some key targets and areas, such as command organs, areas where flight personnel are active, and areas where support personnel are concentrated, military doctors should be dispatched to participate in on-site rescue. A well-organized on-site rescue is of great significance to reducing the casualty rate and casualty rate. At the critical season, the relevant leaders of the station and the leaders of the guard detachment should personally go to the scene to organize and command. The wounded who have been rescued at the scene should be quickly sent to the station security organization for further treatment. If there is a garrison hospital nearby (within 1 hour of the car journey) or a local hospital with better conditions, the seriously injured can be sent directly to the hospital for treatment, but only on the premise of avoiding death on the way.

Emergency treatment for the critically injured. Critically injured people who are brought to the ambulance must be treated in a race against time to save their lives. Two operating tables must be deployed at the same time in the operating room to carry out life-saving operations for life-threatening patients such as major vascular injuries, craniocerebral injuries, and severe chest and abdominal injuries. Shock is an important cause of early death of the wounded, and the anti-shock room must immediately take various anti-shock measures to remove the threat to the life of the wounded who have already developed shock; and for the wounded who have a tendency to shock, various preventive measures must be actively taken to stop the occurrence of shock.

Early treatment. On the basis of a clear diagnosis, further treatment should be given to the critically injured to stabilize their injuries and create conditions for safe transfer to the hospital, and initial surgical treatment ~ debridement surgery should be carried out early (within 6~8 hours after injury) for various open injuries, which is the most important treatment measure to prevent wound infection and promote wound healing. Due to the relatively concentrated distribution of troops stationed at the site, the wounded can be delivered to the station treatment institution within a few minutes to dozens of minutes after being injured,

therefore, it is necessary to make full use of this favorable condition and strive to perform debridement surgery on more casualties as soon as possible.

Minor injuries and some moderate injuries were retained. Because the environment of the station is relatively stable and the conditions for treatment are relatively good, and there are many technical personnel at the airport, it is not easy to train, and it is difficult to temporarily replenish them, so the station treatment institutions should try to keep as many wounded as possible. In general, all lightly injured people are treated and efforts are made to keep some moderately injured people in care. Through active and effective treatment, the wounded can be healed and returned to the unit as soon as possible, which is of great significance to restoring the combat effectiveness of the troops in a timely manner.

Organize and implement the transfer of the wounded to the hospital. In accordance with the provisions of the scope of treatment, the seriously injured and some moderately injured need to be sent to the hospital in a timely manner for further specialized treatment after a certain amount of treatment by the station treatment institution. The station should set up a leading group for the evacuation of the wounded, led by the leaders of the station and including personnel from the combat service, health, and transportation departments, to formulate a plan for sending the wounded to the hospital, and to properly arrange the transfer of the wounded to the hospital. It is necessary to give full play to the advantages of our air force in air transport and strive for air evacuation as much as possible, which is of great significance to winning time and saving the lives of critically wounded personnel. Health service organizations should set up a special evacuation team for the wounded, determine the list of the wounded to be sent to the hospital, review the wounded one by one, and make necessary medical treatment before sending them to the hospital. Those whose injuries are unstable and whose lives are in danger on the way to the hospital are not allowed to be evacuated. When transferring the wounded in batches and the seriously injured to the hospital, they should be escorted by health personnel and carry the necessary first-aid medicines and equipment so that the wounded can be handled at any time and ensure the safety of the wounded on the way to the evacuation.

4. Treatment of injured flight personnel

(1) Search for the flight in distress

The ability to find the injured pilots in distress in the shortest possible time is the key to treating the injured pilots. It is difficult to predict the landing (water) location of the pilots who are in distress parachuting or forced landing, which brings great difficulties to the search and treatment work. It is important to have a variety of search and rescue plans in place, to be ready at all times, and to act immediately if the situation arises. In accordance with the provisions of the "Chinese Regulations on Aviation Health Work of the Air Force of the People's Liberation Army of the People's Liberation Army", the station security service organization shall set up an outfield ambulance team, whose task is to rescue the injured flyers in distress at and near the airport.

Search and rescue of injured pilots in distress far from the airport shall be carried out by the search and ambulance unit of the higher level in accordance with the provisions of the Regulations. The key to the search for pilots in distress is to equip them with high-tech search equipment, and of course, the establishment of a joint military-civilian search and rescue network is also an important supplementary measure.

(2) On-site rescue of injured pilots

Once the location of the injured pilot in distress is determined, the ambulance personnel must arrive at the scene as soon as possible and immediately carry out the rescue. First, the injured pilot is quickly removed from the danger zone to prevent further injury, and then first aid is administered. First aid measures include stopping hemorrhage, relieving asphyxia, restoring cardiac pulsation, and emergency anti-shock. To this end, ambulance personnel must have skilled first-aid skills, equipped with sophisticated first-aid medical equipment and efficient transportation and communication tools.

(3) Medical evacuation of injured pilots

Pilots who are injured near the airport are usually quickly transported to the station security service for first aid. Seriously wounded are to be transferred to the Air Force Hospital after their condition is stabilized, and those who are critically injured can be sent to a nearby garrison hospital for treatment as appropriate, and then transferred to the Air Force Hospital when the situation permits. When it is far away from the air force hospital, it is necessary to carry out air evacuation, and uninterrupted medical care should be carried out on the way to ensure the safety of the wounded. For those who can be cured and return to the flight in a short period of time, they should be treated by the on-site guard and service institutions. Injured pilots in distress who are far away from the airport are usually rescued by the superior ambulance team and then quickly airlifted to the Air Force Hospital for further treatment.

Section 5: Transportation Support

Military transport support refers to the military's professional work of transporting personnel, goods, and equipment through the use of various means of transport. It is an important element of logistical support. In operations under modern conditions, the status and role of military transport are becoming more and more important, and station leaders must be familiar with the contents and methods of military transport support in order to more effectively organize and implement military transport support work. The military transportation support of the air force station includes railway military transportation support, flight vehicle support, vehicle technical support, etc.

1. Railway transportation support

Railway military transportation refers to the mode of transportation in which the military uses railway trains to transport personnel and materials. It is the backbone of China's transportation forces, the main means of transportation for the strategic (campaign) mobility of the troops, and an important means for logistics to accomplish support tasks.

(1) Declaration of the scope, grade, and plan of military transportation by rail

1. The scope of military transportation by rail

When examining the plan, logistics leaders must strictly grasp the prescribed scope and must not include materials that do not belong to military transportation in the military transportation plan, so as not to cause economic losses to the state. The scope of this is as follows:

Personnel transportation: the transfer of units (detachments), the relocation of military organs and academies, the recovery of soldiers, the evacuation of the wounded and sick, the transportation of militia and migrant workers participating in the war, and the repatriation of prisoners of war.

Material transportation: It includes military materials for operations, emergency rescue and disaster relief, foreign aid, and imports, ordnance, ammunition, oil, vehicles, needs, equipment, and camp equipment that are replenished, transferred, stored, repaired, and handed over; machinery and equipment of military factories affiliated to the army and the finished military products produced thereof; timber, cement, and steel from the army's stockpiles for the construction of national defense projects and barracks; and grain and oil crops produced by the troops that are uniformly allocated by the general departments and higher authorities or transported back to the troops from the production bases.

The starting mileage of railway military transportation: personnel shall not be less than 100 kilometers, materials 50 kilometers, tracked tractors 20 kilometers, and automobiles 200 kilometers.

2. Railway military transport grade

According to the tasks and types of materials, it is divided into three types: special level, key level and general transportation.

Special class transportation, i.e., important or urgent transportation. For example, the evacuation of the wounded and sick, the transportation of personnel and materials for combat, emergency rescue and disaster relief, and the transportation of personnel and materials for national defense advanced secrecy, foreign aid, imported materials, and special permission to enter restricted areas. Heavy-level transportation, that is, personnel other than special transportation, vehicles equipped with precision instruments, equipment, various weapons, ammunition, drugs, and aviation fuel (gas) fuel across military regions.

Equipment and material transportation for additional loading and unloading, etc. General transportation, that is, the transportation of materials that does not belong to special and key transportation.

3. Declaration of transportation plan

In peacetime, the basic form of the troop transportation plan is the monthly transportation plan, also known as the monthly basic plan. It is prepared according to the instructions and requirements of the superiors, the intentions of the chief, and the transportation tasks of the month. The date of declaration of the plan shall be handled in accordance with the regulations of the military transportation department of the military region where it is located. At present, the application for the monthly plan of the air force and its support units is the responsibility of the logistics and military transportation department of the air force of the military region. The logistics and military transportation department of the air force of the military region shall review the monthly application plans submitted by various units every month, and then fill out the plans that need to be applied for and submit them to the military transportation department of the large military region for examination and approval, and only then can they organize transportation.

The temporary shipping plan is a supplement to the monthly shipping plan. When there are temporary emergency transportation tasks, such as operations, emergency rescue and disaster relief, and emergency tasks temporarily issued by superiors, a temporary transportation plan can be submitted to the military transportation department that accepts the monthly transportation plan 20 days before the loading month. As a general rule, we do not undertake temporary transportation plans for the month in the second half of the month.

(2) Drafting and implementing the plan for the transportation of the troops by railway for combat readiness

In order to ensure that the air force and its support personnel, equipment, and materials can be mobilized at any time by rail, in peacetime, the troops should draw up a plan for transporting the air by railway for combat readiness in accordance with the instructions of their superiors, the combat mission, and the conditions for transporting them; flight academies, test bases, and air force stations in the front-line areas of the air force should also draw up emergency plans for the transportation by railway for combat readiness. The railway transportation plan for combat readiness of the troops includes: transportation plan, train echelon loading plan, loading area map and transportation support plan.

1. Conveying plan

The transportation plan is the general arrangement for the formation of the troops' transportation sequences, transit routes, and train echelons, as well as the types and quantities of vehicles used, and is the basis for the organization, coordination, and transportation of troops, railways, military transportation, and other relevant departments.

2. Train echelon loading plan

The train echelon loading plan is the specific arrangement for the loading of each train echelon according to the transportation plan, and is the basis for the troops, railways, and military transportation departments to organize loading.

The loading plan of the train troops is usually prepared by the relevant personnel organized by the regimental and station headquarters, and military representatives can also be invited to participate. When formulating, according to the strength of the train echelon specified in the transportation plan, in accordance with the actual situation of the loading station and the loading standard, the personnel, equipment and materials are implemented in each car, indicating the unit, name, type of car and carriage length. Then fill in the "Train Echelon Loading Schedule" and the marshalling sequence table. After the train echelon loading plan is prepared, it will be reported step by step and issued to each detachment.

3. Select the mount region

The area where loading is carried out when the troops are transported is called the loading area. It consists of more than 1 loading station, waiting (assembly) area, and interconnected roads. The number of loading stations depends on the conveying volume, the conveying progress and the size of the loading capacity of the loading station. In the case of a dedicated railway line, there should normally also be 1 reserve loading area.

(3) Organization and implementation of railway transportation for troops

In the process of railway transportation, the situation changes rapidly, there are many random factors, and any problem in any link will directly affect the completion of the transportation task. Therefore, leaders at all levels have gone down to inspect and guide the troops' preparations and strengthen the organization and command of the loading, operation, and unloading stages. In order to ensure the time, safety, rapidity and concealment of the troops.

1. Preparation before the railway transportation of the troops

The first is to prepare and issue delivery documents. Advance orders are issued. In order to make the headquarters (sub-divisions) quickly prepare for transportation, the headquarters should issue advance orders in a timely manner orally or in writing in accordance with the intentions of the superiors and the determination of the chiefs. Its content is generally as follows: a brief situation, the environment, the purpose, task and direction of the transmission. Give a delivery order. The contents of the book include a brief overview of the enemy's situation; instructions from higher levels and the determination of the chiefs; a clear definition of the loading stations, marching routes, transport sequences, progress, time limits for completing tasks, and persons in charge of the train echelons of each unit (detachment); the composition of the loading (unloading) command posts, the time and place of their establishment; the requirements for combat support, communication and liaison, security and confidentiality, and logistical support; and the composition, location, and contact methods of the forward command posts and basic command posts at all levels during the transportation process.

The second is to survey the loading area. When there is no dedicated railway line at the airport,

according to the transportation task and combined with the loading area map, the relevant personnel should be organized before the transportation, together with the military representative and the person in charge of the station, to conduct a detailed survey of the original loading area before the loading.

The third is to establish a train echelon organization and prepare for loading. The train echelon is the basic unit organized according to the type of train when the troops carry out railway transportation. Each train echelon should be designated by the superior train echelon leader and political commissar, and the head of the train echelon should designate the train echelon on duty, administrator and carriage leader, so as to facilitate the organization and leadership and ensure the successful completion of the transportation task.

2.Loading of the troop rail transport

The first is to open a loading command post. Before loading, a joint loading command post should be formed by the leaders of the troops, the heads of the railway departments, and military representatives to lead and direct the loading work in a unified manner. The main thing for the railway military representatives is to organize the coordination of all aspects and guide the loading of troops. The railway department is mainly responsible for locomotives, vehicles and other technical support.

The second is to approve the loading plan and accept the vehicle. Before loading, the head of the train echelon and relevant personnel should go to the loading station to approve the loading plan together with the military representatives. The main contents of the approval are: the number of types of vehicles, the order of marshalling, the departure time and number of loading vehicles, the number of loading and unloading equipment, reinforcement equipment, etc., and fill in the "railway military freight post-payment voucher."

The third is the loading of equipment and materials. The loading of equipment and materials should be carried out in the order of first difficult and then easy, heavy first and then light, first equipment materials and then personnel, so as to shorten the loading time as much as possible. The loading time of the train echelon is generally 40-50 minutes for aviation and stations, and 90-120 minutes for materials. The loading of the car, the car loading has two kinds of sequential loading and straddle loading, and the general car does not need to be bundled and loaded. Special vehicles such as radar vehicles, communication vehicles, cars equipped with precision equipment, engineering vehicles with a high center of gravity, cranes and cars with special requirements should be bundled and loaded. Material loading, material loading is generally carried out in line with the method of first heavy and then light, first large and then small, size matching, and light and heavy matching. The loaded materials should be placed flat, and the regulations on loading and transportation of materials should be strictly observed.

3.Unloading of the railway transport of troops

The first is to open an unloading command post. Usually, military representatives, troop leaders, and station leaders jointly form a joint unloading command post to organize and direct the unloading work in a unified manner.

The personnel of the troops participating in the joint unloading command post should survey and understand the situation in the unloading area with the assistance of military representatives and the person in charge of the station, make arrangements for the unloading and related support, issue unloading instructions, organize the unloading and advance to the predetermined location, and deal with the problems that occur in the course of unloading and driving in a timely manner.

The second is to organize uninstalation. After approaching the unloading area or receiving the unloading forecast, the train echelon should convey to the relevant personnel the enemy situation, social situation, conditions of the unloading station, the estimated time of arrival at the unloading station, unloading requirements and precautions. Unloading should be carried out in the order of easy first and then difficult, light first and then heavy, and personnel first and then equipment and materials.

2. Flight vehicle support

The support of aviation combat and training flight vehicles is an important part of flight logistics support, and is also an important link in flight logistics support. Therefore, it is necessary to ensure that it is safe, thorough, proactive, safe and coordinated.

(1) Procedures for supporting flying vehicles

1. According to the flight support plan and the notice of the flight support command room, organize all kinds of vehicles to enter the field, take position, and sign in to the field attendant; according to the arrangement of the field attendant and maintenance cadres, organize the vehicles to tow the aircraft according to the regulations, fill with fuel, etc.; supervise the drivers of umbrella cars and food delivery trucks to the umbrella room, The munitions unit has done a good job of coordination and dispatched vehicles in a timely manner according to the plan; organized other vehicles to carry out support tasks in accordance with regulations; organized vehicles to be parked in order at designated locations after completing the preparatory work, and reviewed the vehicles in a timely manner; reported the preparatory work to the field attendants; participated in the field logistics support preparatory meeting; and put forward specific requirements and precautions for the field support personnel in accordance with the spirit of the preparatory meeting.

2. According to the flight support plan and the requirements of the flight support command room and the departments of aircraft maintenance, munitions, machinery, and fuel, do a good job in vehicle deployment, and organize transportation support work such as traction, refueling, parachute transportation, food (water), and bomb transportation in an orderly manner; Actively coordinate and deal with problems that arise in a timely manner with the flight support command room, the maintenance brigade and its support units, keep abreast of the downward dynamics, listen to opinions, accept instructions, adjust vehicles, and implement support; inspect and supervise the vehicle service personnel to stick to their posts, perform their duties, strictly implement various rules and regulations and operating procedures, and drive according to the prescribed routes and speeds to ensure safety;

Before the end of the flight, arrange in advance the vehicle for the departing aircraft and the vehicle for the post-flight maintenance inspection.

(2) Flight Vehicle Support Plan

The formulation of the flight vehicle support plan involves many contents, such as flight units, flight subjects, types of aircraft dispatched, flight sorties, number of aircraft, flight time, completion of preparation for flight, air detention time and end time, as well as the number of support personnel, support vehicles and equipment, and the time and place of entry. On the basis of understanding and grasping the above situation, the flight vehicle support plan should focus on the following two points: First, the support task: The flight vehicle support task is usually to record the contents related to the logistics support task in the troop flight day plan or combat sortie plan. For example, the flight unit, the time required to complete the preparation, the planned start and end time, the type and number of aircraft dispatched, the main flight subjects, the total number of planned flights, the total time in the air, etc. The second is the number of people and vehicles on duty and their arrival time and place. Duty vehicles usually include: support vehicles (command vehicles, air vehicles, tractors, power supply vehicles, force (transport) oil trucks, vehicles, food delivery (boiling) vehicles, ammunition vehicles, cooling vehicles, oxygenation vehicles, power vehicles, emergency vehicles (rescue vehicles, fire trucks, ambulances, tractors, etc.) and communication vehicles (tower vehicles, light trucks, etc.). The personnel on duty usually include: all kinds of vehicle drivers, air conditioners, oxygenators, firefighters, field maintenance personnel, telephone operators, telephone operators, lamp bearers, medical personnel, umbrella guards, oil laboratory technicians, ordnance keepers, electricians, flight sentinels, weather forecasters and cadres on duty in various units.

(3) Forms and methods of support for flying vehicles

The form of flight vehicle support is determined by the form of flight logistics support. Understanding and mastering the form of support for flying vehicles is of great significance for improving the support speed and rapid response capability.

1. The form of flight vehicle support

"Three-line" guarantee. The "three-line" support refers to the support of the take-off line, the landing line and the refueling line. Before the flight, the tractor tows the aircraft from the collective apron to the apron of the take-off line, and implements refueling, oxygenation and cooling for the aircraft at the apron of the take-off line, and implements maintenance support at the same time.

Then the aircraft taxied to the main runway to take off; after landing, it was towed by the tractor to the refueling line for refueling, and then oxygenated, refrigerated, etc.; and then towed by the tractor to the apron of the take-off line, and the maintenance personnel carried out the next flight cycle.

"Second-line" guarantee. The two-line support focuses on the two lines of refueling line and take-off line.

"First-line" guarantee. All guarantees are done at the landing line (or take-off line).

2. Flight vehicle support methods

Flight vehicle support methods mainly include: straight-line traction, fixed (active) refueling. Cyclic traction, fixed refueling. The plane taxied in a straight line and refueled the event.

(4) Problems and countermeasures that are likely to occur in the support of flying vehicles

In the process of support, because the vehicle is often in motion, coupled with many support points, the organization and coordination are not good, and problems and even accidents are easy to occur.

1. The main timing, place and reason for the collision. Night flight support, driving vehicles at night, poor line of sight, difficulty in observation and judgment, personnel are easy to get sleepy, is a frequent opportunity for accidents; large flight density, many sorties, frequent vehicle scheduling, driver workload increases, emotional impatience, easy to collide; hot season, summer weather, personnel are easy to fatigue, the temperature in the cab is high, the driver is slow to react, cannot concentrate, the probability of collision is relatively large; the take-off line apron, because the aircraft placement interval is small, and there is a power supply, If the turning angle of the tractor is not properly controlled, the taxiway is generally narrow, and when the tractor passes through, other vehicles are easy to collide and hang. The reasons are: First, ideological paralysis. Some drivers have a weak sense of safety, believing that there will be no major problems when driving in the field, so they relax their vigilance and blindly drive fast; some drivers chat with people while driving, listen to the receivers, and distract themselves; some comrades do not pay attention to rest during night flights and large-scale flights, and they lack energy during the support, so that they start blindly, hang up the wrong gear, and cannot deal with special situations in a timely manner, resulting in problems. The second is to violate the regulations. When approaching the plane, the distance is too small, the speed is fast, the map is convenient, and the route is not according to the prescribed route, which is the main reason for hitting the plane. The third is poor driving skills. Some drivers usually do not pay attention to the learning and improvement of driving skills, self-satisfaction, low observation and judgment ability, unskilled operation, and rush when encountering problems.

Fourth, the vehicle performance is poor. Due to the old model, poor performance, narrow field of vision, poor rear vision and other problems, it brings many inconveniences to the driver's operation.

2. Measures

In order to prevent the occurrence of vehicle security problems and improve the quality of vehicle security, the leaders of the station should do a good job in the safety education of drivers. We educate drivers on "safety is life" and take regular safety classes to analyze and analyze the problems that occur. Do it often, grasp it all the time, ring the alarm bell often, and change the "sense of superiority" and "urgency." The second is to continuously improve the technical level. We have carried out appraisals of "red flag cars" and "red flag car driving," organized various forms of on-the-job training activities, and aroused the enthusiasm of those who love cars to learn martial arts. The third is to establish a formal security order. Conscientiously implement the regulations on the driving and parking of towing aircraft and outfield vehicles in the "Regulations on Flight Logistics Support", and stipulate the driving route and parking location of vehicles according to the characteristics of the field. Drivers participating in the security should perform their duties, go their own way, and act according to the regulations.

3. Vehicle technical support

Vehicle technical support is a general term for the technical measures taken to maintain and restore the good condition of the vehicle. It is an integral part of the logistical support of the aviation forces. Well-organized technical support for vehicles is of great significance to maintaining and restoring the support capability of air force stations, ensuring the fulfillment of the flight and transportation tasks of air force units at any time, and winning combat victories.

(1) The basic tasks and requirements of vehicle technical support

1. The basic tasks of vehicle technical support. Maintenance of all kinds of vehicles assigned by the aviation units in accordance with technical requirements. It is necessary to ensure that the vehicles are always in good technical condition; organize and carry out the repair and evacuation of damaged vehicles, and quickly restore the technical performance of the vehicles; and replenish the maintenance equipment for the troops in a timely and appropriate amount to ensure the smooth progress of the maintenance work.

2. Requirements for vehicle technical support. The first is to ensure the reliable use of vehicles. The reliable use of vehicles not only requires the vehicle to have a high intact rate, combat readiness rate, and more reserve mileage, but also to have a high degree of reliability. The second is to implement rapid support. In wartime, the aviation units have heavy flying tasks and very tight logistical support. Repair as many damaged vehicles as possible in the shortest possible time.

The third is the priority of protection. In wartime, the use of logistical support vehicles of the air force is intense and the damage rate is high; there are few technical repair personnel for the vehicles at the depots and stations, and the repair conditions are poor; and it is difficult to supply equipment in a timely and effective manner, so that the contradiction between the technical support tasks of the vehicles and the technical support capability is very conspicuous. Station leaders should always grasp the key points of flight support.

(B) the organization of vehicle technical support

1. Organization of vehicle maintenance. Vehicle maintenance should be carried out in accordance with the characteristics of each stage of the combat and training tasks of the aviation units. Under normal circumstances, according to the technical condition of the vehicle and the use of the vehicle, the echelon arrangement, the daily maintenance of the vehicle and the necessary regular maintenance are carried out regularly. In wartime, in the stage of preparing for combat, it is necessary to complete all regular maintenance, and strive to maintain vehicles that are close to regular maintenance in advance; in the stage of combat implementation, it is necessary to make full use of the interval between battles to carry out routine maintenance and necessary regular maintenance of vehicles. In peacetime, when there is an emergency task or during the combat implementation phase, the organization of vehicle maintenance can usually take the following forms: First, centralized maintenance and decentralized maintenance can be combined; second, regular planned maintenance is combined with surprise rectification; and third, one-time maintenance is combined with phased maintenance.

2. Organization of vehicle repairs. Vehicle repair is to troubleshoot, repair the damaged part, and restore the technical performance of the vehicle. Timely and effective repair of naturally damaged and battle-damaged vehicles is one of the important measures to improve the combat readiness of vehicles. Repair classification. Vehicle repair is divided into three categories: vehicle minor repair, vehicle medium repair and vehicle overhaul. The repair of war-damaged vehicles in wartime is usually divided into three types of vehicles: mildly damaged, moderately damaged and severely damaged. In peacetime, the Air Force Air Force can basically accomplish its tasks by relying on its own repair force to provide technical support for vehicles in peacetime; in wartime, it organizes and mobilizes all available forces to participate in the repair and repair of damaged vehicles.

3. Prediction of technical support tasks and calculation of support capabilities of vehicles in wartime

Two prominent problems in the technical support of vehicles in wartime are: correctly predicting the technical support tasks that may be undertaken by the vehicles and analyzing the technical support capabilities that may be achieved. Vehicle technical support tasks are expected. Wartime vehicle technical support tasks, including the emergency repair of war-damaged vehicles and naturally damaged vehicles, and the regular maintenance of vehicles.

According to the development of modern war tactics and technology and the experience of previous local wars after World War II, it is estimated that the vehicle damage rate in future wars may reach more than 30% of the total number of equipment, and the daily damage rate may reach 2~4% of the total number of equipment. Air force airfields are one of the key points of the enemy's attack, and the support vehicles are mostly in the field, the activities are concentrated, the targets are fixed, and the vehicle battle loss rate at the main airports is not less than 30%. The percentages of scrapped, severely damaged, moderately damaged, and lightly damaged vehicles in the total can reach 30%, 15%, 25%, and 30% respectively. The above estimates should also be analyzed in detail in the light of the actual conditions of both the enemy and us in wartime. The formula for calculating the maximum damage to a vehicle is:

- Vehicle damage (units) = number of vehicles participating X maximum damage rate of vehicles in the battle phase or
- Vehicle damage (units) = number of vehicles participating X average daily damage rate X number of days of battle
- The formula for calculating the various types of damaged vehicles is:
- Slightly damaged vehicles (units) = amount of vehicle damage X mild damage rate
- Moderately damaged vehicles (units) = amount of vehicle damage X moderate damage rate
- Severely damaged vehicles (units) = amount of vehicle damage X serious damage rate

Calculation of vehicle technical support capability. The wartime technical support capability of the repair detachment is the repair capability that can be realized under the influence of wartime operational factors. It is expressed in terms of daily repair capacity, that is, the number of units that can be repaired per combat day. There are five main factors that determine the repair capability of a repair detachment: the strength of the repair detachment, the ability of individual soldiers, the influence coefficient of the vehicle model, the daily working hours, and other factors affecting it in wartime.

Strength of the repair detachment: refers to the effective number of workers in the repair detachment. The number of effective workers includes auto mechanics and professional co-workers (excluding trainees). According to the assessment of the troops' live exercises and field repair training in recent years, the current 24-hour operation capacity of the automobile repair detachment is 2.5 units per soldier for repairing lightly damaged Jiefang CA-141 trucks.

Working hours per day: Generally, 12 hours per day. The duration of the operation is long, and the daily working hours can be shorter, and the combat duration is short, and the daily working hours can be longer.

Model influence coefficient: the vehicle model is different, the structure is different, and the man-hours consumed to repair a car are different. Under normal circumstances, the difficulty of repairing the model of the Jiefang CA-141 car is set at 1, and other vehicles shall prevail on this basis, and the coefficient specified according to the difficulty of its repair is called the model influence coefficient. Due to the complexity of the models of the vehicles equipped with the air force air station, in order to facilitate the calculation, the average model influence coefficient is usually taken as 1.3, and the daily repair capacity calculated by the sample no longer takes into account the influence of the model. Other influencing factors in wartime include transfers, enemy attacks, attrition, and the degree of equipment support.

Impact of transfer: In addition to dispatching accompanying repair personnel or roving repair teams in the event of emergency transportation missions and combat flight support tasks, the deployment location is relatively stable under normal circumstances, but in case of emergency, it should be transferred to a preparatory place to carry out operations. Generally, the value is 0.8.

The impact of enemy attack and harassment: When the repair station is carrying out operations, it is often inevitable to be interfered by the enemy's air raids and small bandits, and it is necessary to devote a certain amount of time and energy to the counterattack and disturbance struggle, which is related to the airport's defense capability and repair and protection conditions, and the general value is 0.75.

The degree of equipment support is affected. In wartime, the rear traffic may be damaged by the enemy, and the transportation will be interrupted, so the supply of equipment will inevitably affect the timely repair of war-damaged vehicles, and the general value is 0.8.

Wartime attrition impact: Under conventional weapons conditions, the attrition effect of the repair shop is 0.9.

To sum up, the wartime repair capability, under the influence of other factors, is only equivalent to about 43% of the basic repair capability. Under the above-mentioned predetermined conditions, the formula for calculating the daily repair capacity of the automobile repair station of the air force station in wartime is as follows:

$$\text{Day repair capacity} = \frac{(\text{Individual operation capacity} \times \text{effective number of workers} \times \text{working hours per day})}{\text{Average model impact factor} \times 0.8 \times 0.75 \times 0.8 \times 0.9}$$

Suppose according to the above example, there are 24 repairers (including 1 director and 3 technicians) and 12 professional co-workers in a certain unit's automobile repair, in the case of continuous combat for 4 days;

A certain repair detachment calculates the repair capacity of lightly damaged vehicles, and the result is:

$$\text{Repair capacity of the vehicle} = (2.5 \times 36.12) / (1.3 \times 24) \\ \times 0.8 \times 0.75 \times 0.8 \times 0.9 \times 4 = 60 \text{ (vehicles)}$$

Section 6: Oil Support

The logistical fuel support of the air force is an important part of the logistical support of the air force. All kinds of aircraft, vehicles, and all kinds of power machinery and equipment of the Air Force must have sufficient quantity and qualified quality of fuel in order to give full play to their combat might. With the continuous improvement of aviation weapons and equipment, the continuous improvement of the degree of modernization, and the continuous improvement of the status of the aviation units in warfare, the task of providing logistical fuel supply for the aviation units will become more and more arduous. Properly organizing the procurement, storage, and supply of fuel needed for air force operations is of great significance to enhancing the air force's logistical support capability and fulfilling its support tasks.

1. Aviation fuel support

Aviation fuel support refers to the professional work of procuring, storing, and supplying aviation fuel and fuel equipment and providing technical support for aviation fuel for the aviation units to complete their combat and training tasks. It is an integral part of the logistical support of the air force and is carried out by the fuel department of the air force station. Its main tasks are: organizing and implementing the procurement and storage of oil and equipment needed by the air force units and the supply of fuel during flight; drawing up a wartime oil support plan and doing a good job in war preparedness; organizing and carrying out inspections and tests on the quality of oil; guiding the troops in the correct use of oil and strictly managing oil; strengthening the construction of oil depots, doing a good job in the collection and storage of oil and the maintenance and repair of equipment and equipment, so as to prevent accidents; organizing professional training for oil personnel, carrying out technological innovation, and constantly improving support capabilities.

The main characteristics of aviation fuel support in aviation operations under modern conditions are: large consumption, high quality requirements, and difficulty in supply. Air force fuel accounts for one-half of the total military fuel volume, of which more than 90 percent is aviation fuel. With the development of aviation weapons and the increase in the scale and intensity of air combat, the consumption of aviation fuel will increase dramatically.

Aviation flights have very strict requirements for the quality of fuel, once unqualified oil is added to the aircraft, it will cause the plane to stop in the air, not only will it lose the fighter, but it will also not be able to complete the combat mission, and it will even endanger flight safety, resulting in serious flight accidents. Air force stations are mainly used to ensure that the fuel used for flight is transported and replenished in advance. In wartime, transportation is very busy, and transportation lines may be damaged by enemy attacks, and transportation will be interrupted from time to time; oil transportation is not only a large quantity, but also requires special means of transport, loading and unloading equipment, and storage containers, which will cause difficulties in replenishing oil in wartime. Because air operations rely heavily on fuel, both sides attach great importance to destroying each other's fuel supply systems. The oil depot at the airport has a large area and poor concealment, and the oil department has the characteristics of being flammable and explosive, and it is also very vulnerable to sabotage by the enemy; in wartime, oil supply will be carried out under the conditions of frequent three-day air raids, anti-airborne landing, and anti-sabotage. The station commander should understand the general knowledge of aviation fuel and the general rules of aviation fuel service, strengthen the leadership of fuel support, and care for and support the fuel department to do a good job in aviation material support in a timely, high-quality and safe manner.

(1) Aviation fuel reserves

Aviation fuel reserves are to store a certain amount of fuel in advance to ensure the combat flight of aviation units. Stockpiling a certain amount of aviation fuel is one of the important material conditions for ensuring the combat flight of the aviation unit at any time and winning victory in battle.

Aviation fuel reserves for the tactical logistics of the Air Force are tactical reserves. The standard for tactical reserves is determined by the General Staff Department and the General Logistics Department in accordance with the state's comprehensive consideration of various factors, such as the production capacity of aviation fuel, the types of aircraft of the aviation units stationed on the field, the position of the airfield in the theater, and the capacity of the airfield's fuel depots. Usually, the measurement is based on the base of the regiment as the reserve. The amount of tactical reserves of aviation fuel cannot be used arbitrarily in normal times. If it is necessary to use it, it must be reported to the Air Force of the Military Region for approval or the approval of the Joint Logistics Division, and reported to the Air Force or the Joint Logistics Department of the Theater for the record, and it shall be quickly re-established after use.

According to different storage methods and uses, the tactical reserve of aviation fuel can be divided into soul reserve and pre-war increased reserve.

Evacuation reserves. In wartime, in order to prevent the consumption depot of the base from being destroyed by the enemy, the fuel supply will be interrupted, and in order to ensure that the aircraft in the evacuation area can supply fuel nearby, it will take off in time to fight,

part of the aviation fuel stored in the evacuation depots established in the aircraft evacuation areas or aircraft caverns. The amount of evacuation reserves should be determined according to the terrain conditions, the conditions for the storage of fuel, the number of aircraft that may carry out tasks in the evacuation area, and the combat deployment of the entire airfield.

Increase reserves. In accordance with the needs of the combat mission of the aviation units, the reserves increased in addition to the peacetime tactical reserves. The increase in the number of reserves is generally prescribed by the superior commander assigned to the combat mission during the pre-war preparation phase. However, before the higher-level head makes a stipulation, the head of the station and the station command should put forward specific suggestions for increasing the number of reserves according to the capacity of the airport's oil depot and the law of consumption. The determination of increasing the reserve should be determined in accordance with the consumption of the aviation units in combat flights during the war, the conditions for supplementing aviation fuel during the war, the amount of reserves before the war, and the law of consumption of aviation fuel by combat flights of the aviation units.

The principle of oil reserves: First, it should be matched. Aviation fuel oil is matched with aviation auxiliary fuel, aviation fuel is matched with fuel equipment, single type of fuel is matched with multi-type oil, and aviation fuel is matched with ground vehicle machinery oil. Second, the reserve of oil and oil equipment should be stored in the new and old, high-quality and reused, so that they can be replaced and updated in a timely manner, so as to maintain the good quality of the reserve oil and equipment, and the number of varieties in accordance with the regulations. The third is concealed evacuation, easy to keep and supply.

(2) Aviation fuel replenishment

Aviation fuel replenishment is a supplement to the flight fuel consumption and fuel loss of the aviation unit. It is an important part of aviation fuel security. In wartime, oil is consumed rapidly, and uninterrupted oil supply can only be implemented if a steady stream of supplies is obtained.

1. Requirements and methods for aviation fuel supplementation

The requirements for aviation fuel replenishment are timely, appropriate and accurate. In time, it is to replenish to the airport in a timely manner according to the fuel supply plan, and cannot be advanced, otherwise the capacity of the airport oil depot is limited, and the backlog of oil tankers or the special platform cannot be unloaded; Appropriate amount, that is, the amount of replenishment should be expected according to the consumption of oil, not too much or too little. Accurate, mainly refers to the supplementary oil and oil equipment varieties to be complete, to meet the needs, quality in line with the regulations.

Methods of replenishment of aviation fuel. Aviation fuel is mainly replenished from the rear.

It is usually a combination of the higher-level plan for replenishment and the timely application plan of the depot, due to the large consumption of aviation fuel, the method of direct replenishment is generally adopted. The so-called direct supply refers to the oil depot of the refinery or logistics base according to the oil transportation plan issued by the superior, using tank trucks, oil tankers, and oil pipelines to directly transport to the airport oil depot.

2. Application for aviation fuel

In order to enable the higher-level oil department to replenish the oil consumed at the airport in a timely, appropriate and accurate manner and to fabricate a plan for sending fuel, the station must report the fuel consumption and inventory situation to the superior in writing, telephone or telegraph according to the regulations, and submit the oil application plan in a timely manner.

The following factors should be considered in the declaration of aviation fuel plan: the replenishment plan from the current inventory of fuel to the remaining fuel in this replenishment cycle and the amount of fuel expected to be consumed, the amount of fuel that may be consumed in the next replenishment cycle, the capacity of the fuel depot in the next replenishment cycle and the mobile capacity of the oil depot, etc. In normal times, the replenishment cycle of aviation fuel is usually about one month. Factors such as flight plans, flight subjects, meteorological conditions, etc., should also be taken into account when predicting fuel consumption for the next replenishment cycle.

The factors that should be considered in the wartime declaration plan are: the estimated combat consumption during the campaign, the amount of reserves that should be reached before the war, the number of possible consumption before the war, the number of oil reserves that should be reached according to the regulations in order to ensure the fuel needs of the next campaign at the end of the campaign, the number of oil reserves in stock, the capacity of oil depots, etc. The wartime fuel application program is divided into a pre-war fuel replenishment program and a wartime fuel replenishment program.

Pre-war requisition replenishment quantity = pre-war oil reserves that should have been reached - (current oil stocks - pre-war projected consumption).

Amount of oil reclaimed during the war = Estimated combat consumption + Reserves to be maintained after the war - Actual oil reserves before the war

In order to ensure the timely and accurate plan for applying for fuel, the head of the station should promptly convey to the oil department the operational intentions of the head of the unit, strengthen contacts with the unit headquarters and other relevant departments, keep abreast of the combat training tasks and combat development and changes of the air force units, and grasp the changes in the local seasonal climate and the law of fuel consumption. When transportation is interrupted,

when the oil sent by the superior is blocked in the area near the airport, it is necessary to use the oil transportation tools at the station to organize the transportation. When the supply in the rear is interrupted and cannot be restored in a short time, it is necessary to actively contact nearby airfields, the logistics of friendly and neighboring troops, and localities in order to seek support.

3. Aviation fuel consumption forecast

In the above fuel replenishment formula, the pre-war and intra-war fuel consumption refers to the amount of fuel that the aviation unit is expected to consume within a certain period of time or when completing a certain task. The predicted value of fuel consumption is actually a random value. It is an estimate under the assumption that the conditions such as combat duty, attrition probability, combat time, and battlefield environment are basically clear or relatively fixed. Accurate forecasting is critical to the completion of flight logistics support tasks.

Oil base. The oil base is the unit of calculation of oil allocation. According to the technical performance of an aircraft or a vehicle and the general consumption law of a base oil quantity is called an oil base quantity, or oil standard.

The fuel base is divided into a single machine (bicycle) base and a troop base. The quantity of fuel that fills the main and auxiliary fuel tanks of an aircraft (or a vehicle) is called a single machine (or single vehicle) fuel base. The amount of fuel that fills all the fuel tanks of the troops' aircraft (or vehicles) is called the troop fuel base.

The fuel base reflects the continuous working time (mileage) of the aircraft (vehicle). In wartime, the use of oil base as the unit of measurement can more clearly express the degree of oil support than in liters, cubic meters, kilograms, tons, etc., which is convenient for the general calculation of oil support and easy for commanders to grasp. The quantity of oil base refers to the weight or volume of oil represented by an oil base. Usually calculated by weight. It is calculated as follows:

Number of oil bases per engine (kg) = The capacity of the main and attached fuel tanks of a certain type of aircraft x specific gravity of oilseeds

The number of fuel bases of the troops (kg) = the number of fuel bases of a single aircraft (vehicle) x the number of aircraft (vehicles)

When calculating the quantity of fuel base for troops, it should be calculated separately according to the type of fuel used by aircraft and vehicles. The base numbers of different fuels (e.g., jet fuel and petrol) cannot be added.

It is also important to note that the amount of fuel base in the troops should vary according to the types and quantities of aircraft and vehicles equipped with the troops.

There are two methods for forecasting aircraft fuel consumption:

Forecast by aircraft sorties. This method is based on the fact that the higher authorities stipulate the total number of sorties of aircraft in a certain battle (battle) as the main condition. It is suitable for predicting the oil used by aviation units in wartime, and is not suitable for the combat consumption of aircraft in the campaign direction. Calculation formula:

$$\text{Estimated fuel consumption (kg)} = \text{number of single aircraft base} \times \text{fuel consumption rate} \times \text{total number of aircraft sorties} \times (1 + \text{fuel ground loss rate})$$

where:

$$\text{Total number of aircraft sorties} = \text{number of aircraft} \times \text{attendance} \times \text{intensity of sorties} \times \text{number of combat days}$$

The main basis for making a forecast based on the total number of sorties made by aircraft is that it is consistent with the method of using the forces of the air force; because the flight altitude and speed are different at the same time, and the fuel consumption varies greatly, it is more reasonable than the calculation in flight hours; In addition, the fuel consumption forecast of the air forces of the United States, Russia and other countries is also calculated based on the total number of sorties.

In the above formula, the fuel consumption rate refers to the ratio of the allowable consumption per sortie to the base number of the single machine. It is determined by the combat department, and is generally set at 85 percent for our army; and the rate of fuel loss on the ground refers to the fuel and wear and tear used by aircraft on the ground, which is generally set at 10 percent. Forecast by aircraft engine operating hours. This method is based on the prediction of aircraft engine operating hours and their fuel consumption standards. It is generally suitable for the estimation of fuel for training flights or individual missions.

$$\text{Calculation formula: Estimated fuel consumption (kg)} = \text{comprehensive fuel consumption standard} \times \text{flight hours}$$

2. Fuel support for aviation flights

Air units must rely on airfields for training and carrying out combat missions, so the methods and procedures for providing fuel for flights are basically the same in wartime as they are in peacetime. However, in wartime, the consumption of oil is large, the time limit is urgent, the rear transportation is usually destroyed by the enemy, and the oil depot is an important target for the enemy's attack and destruction, so the oil supply is more complicated and difficult than in peacetime.

Therefore, the head of the station should focus on the following tasks in the flight fuel support:

(1) Conscientiously make preparations for war

On the basis of peacetime combat readiness work, and in accordance with combat missions, we should quickly complete all preparations for oil supply for immediate war.

The first is to issue support tasks in a timely manner and revise the oil support plan. In accordance with the operational orders of the higher authorities, the instructions of the head of the aviation unit stationed at the field, and the requirements of the operational departments at the higher levels, the head of the depot should promptly issue tasks to the oil department. The contents usually include: the type of troops, the number of troops to be stationed, the attendance rate, the intensity of sorties, the fuel consumption rate, the duration of the operation, and the time limit for completing the preparations; the regulations and requirements of the higher authorities on the oil reserves and supply relations; and what kind of support methods will be adopted at that time.

After the oil department has clearly defined its tasks, it is necessary to revise the action plan for oil support in a timely manner in accordance with the support tasks and the requirements of the higher authorities, including: the wartime oil support plan and the emergency support plan under special circumstances, the oil depot protection and wartime emergency repair plan, and the oil depot transfer and opening of the field oil depot plan.

The second is to urge the oil department to submit a report and formulate an oil guarantee plan. The head of the station shall request the oil department to provide the following information quickly: the quantity and quality of the oil in stock, the supporting situation of the main and auxiliary fuel, aviation fuel, and ground fuel, the quantity and quantity of oil storage and refueling equipment and the quantity that needs to be replenished, the amount of fuel replenishment, the amount of support work that can be completed by the oil and refueling equipment in stock, and the emergency repair force of the oil support equipment. The head of the station should guide the oil department to formulate the oil guarantee plan. Its contents include: the strength of the troops and the amount of fuel consumed; the amount of support work that can be completed with oil and refueling equipment; measures for oil support and the division of labor among personnel.

The amount of support work that can be completed by the oil in the stock is the combat consumption of the aviation units stationed at the site for how many days can be guaranteed under the condition that the existing fuel at the station is assumed to be temporarily not supplied by the higher authorities.

Support combat days = the amount of fuel in stock / the sum of the daily consumption of each type of aircraft

Among them, the daily consumption of a certain type of aircraft = the base number of a single aircraft X air consumption rate X (1 + ground loss rate) X the number of daily sorties of this type of aircraft

The amount of support work that can be completed by refueling equipment mainly refers to the amount of fuel supplied by a good refueling (transporting) vehicle to be dispatched at one time, and how many combat flights can be guaranteed by the troops currently stationed at the scene. It is calculated as follows:

Fuel truck support workload (flight) = number of fuel trucks x good rate X safety capacity of fuel truck / base number of single machine X fuel consumption rate

When there is pipeline refueling equipment at the airport, because the pipeline refueling equipment can supply fuel continuously, there is no need to consider the fuel transportation time, and the amount of fuel support work that can be completed is expressed as the sum of several refueling guns refueling at the same time (calculated in the unit of flow per minute of each refueling gun). At present, the refueling of some stations has been automatically controlled by microcomputer, which saves manpower, reduces the labor intensity of support personnel, and greatly shortens the refueling time.

Third, it is necessary to carry out pre-war training and carry out various preparatory work. Organize oil support personnel to familiarize themselves with the relevant contents of the "Wartime Oil Support Plan," study the characteristics of oil support for the newly stationed aircraft, and conscientiously carry out all preparations before the war. We should pay close attention to replenishing oil and keep the oil depots fully filled and maintain the prescribed reserve base; before and during the battle, we will receive large quantities of oil and make good preparations for sending and receiving oil without power supply or lights; we must pay close attention to repairing and replenishing oil storage containers and refueling equipment and equipment; we should make good preparations for opening mobile oil filling outlets; when it is necessary to expand the capacity of oil depots, we should choose a good location, level the site, and We should build roads, make good preparations for installing oil tanks, make good preparations for testing large quantities of oil and conducting field tests of oil for testing, and make good preparations for emergency repair and rescue of oil depots in case of fire.

(2) Flexible use of refueling methods

The refueling of aircraft fuel oil during flight usually takes two methods: active refueling and stationary refueling.

Cheer for the event. First park the oil truck in the evacuation shelter or on the side of the taxiway to standby, at the same time as the plane lands, the oil truck begins to dispatch, and after the plane is stopped, the oil truck drives to the aircraft parking place to refuel the aircraft. In wartime, if the aircraft is ready in the evacuation area, the tanker can quickly go to refuel.

The use of active refueling methods, with great mobility and good organization and command, can shorten the refueling time. However, it is necessary to organize and command closely to ensure safety.

Fixed refueling. It is to use the pipeline to refuel or fix the oil truck on the fuel line, and the tractor will tow the aircraft to the fuel well or oil truck for refueling. The method of fixed refueling is adopted, which is convenient for command and maintenance of outfield order, and improves the refueling speed, but the mobility is poor.

When the amount of support tasks is large, fixed refueling or activity refueling should be flexibly determined according to the specific situation. Refueling with oil trucks can be done across the bridge to refuel, two vehicles and four guns at the same time to refuel an aircraft, as well as the nearest refueling well to fill oil, etc., to improve refueling efficiency, shorten refueling time, but to be equipped with a good car.

In short, in order to achieve rapid refueling and shorten the ground preparation time for take-off again, it is necessary to flexibly adopt refueling methods, reasonably dispatch vehicles, and complete refueling tasks in a race against time.

Aviation ancillary fuel is usually delivered on a circuit and supplied at a fixed point.

Touring and sending down. That is, when the maintenance department is carrying out maintenance work, the auxiliary oil supply vehicle is dispatched to send the oil directly to the working site of the maintenance personnel. This method can reduce the workload of the maintenance personnel to the oil depot to collect fuel, which is convenient for the troops. Due to the timely supply, the maintenance squadron can store less or no fuel. Therefore, it is conducive to ensuring quality, avoiding backlog, and can grasp the consumption law of auxiliary oil, so as to better organize the supply of auxiliary oil.

Fixed-point supply. That is, an auxiliary fuel supply station is set up at an appropriate location in the outfield or aircraft evacuation area so that the maintenance personnel can pick it up at any time. This method is suitable for seasonal inspections of aircraft or when preparing for evacuation.

(3) Quickly restore the capacity of oil support

The head of the station should guide the oil department to carefully formulate and submit the oil application plan in a timely manner, report the oil income and consumption to the higher authorities in a timely and accurate manner, do a good job in oil allocation, and ensure the smooth progress of the supply work. The flight support command room attendant should timely command the oil truck echelon to fill the oil according to the number of landing aircraft and the oil storage situation of the oil truck, and the oil depot should determine the number of oil filling ports according to the needs of the oil truck in the field to ensure that the oil truck is filled at any time to avoid backlog.

In addition to relying on the higher authorities for supply, the head of the station should take the initiative to contact the relevant departments to expand the source of oil supply. When transportation is interrupted and the delivery of oil by the higher authorities is blocked in the area adjacent to the airport, it is necessary to use the means of transporting oil from the depot to organize the transportation; when the supply to the rear is temporarily interrupted, it is necessary to get in touch with the joint logistics department or the joint logistics subdivision in a timely manner or take the initiative to coordinate with the nearby airfield, the navy's logistics department, and the local oil storage department to obtain support. At the same time, it is necessary to understand the regulations on the exchange and substitution of oil products between China and foreign countries and the reference indicators for the use of oil in wartime, so as to facilitate emergency use.

In wartime, after the equipment of the oil depot is damaged by an enemy attack, it is necessary to quickly organize emergency repairs to ensure the continuous receipt and supply of oil; when the task changes or there is a combat attrition, the support force should be adjusted in a timely manner, and when necessary, the support of the professional militia should be requested to smoothly complete the oil supply task.

3. Opening a field oil depot

Field oil depots refer to institutions that are temporarily opened to reserve and replenish oil under field conditions. Field oil depots should be opened when the oil depots at airports are to be evacuated or damaged during wartime, or when fuel supply needs to be provided for flights at field airports and highway runways. Mainly in accordance with the determination of logistical support and the oil supply plan, it is necessary to receive and store a certain quantity and variety of oil and oil equipment, so as to ensure the uninterrupted replenishment of oil to the troops. The leaders of the station should supervise and inspect the oil department to do the following work.

(1) The selection of the storage site

The location of the field oil depot must be selected in such a way as to accommodate combat deployment, facilitate the organization of fuel supply, and ensure safety. The specific requirements are:

Favorable protection. The depot site should be at a safe distance from the runway of the airport and the troop station, but not too far away, so that it is convenient for both supply and receiving fuel from the higher authorities; there should be a convenient water source, but it should avoid floodways and low-lying areas.

The location is appropriate. The size of the ground mainly depends on the storage capacity of the oil depot and the terrain conditions, generally according to the requirements of decentralized configuration, should ensure that the equipment can be placed, and is convenient for loading and unloading operations.

Convenient transportation. The storage site should be selected near the railway and highway as much as possible. The reservoir area should have convenient roads so that vehicles can pass unimpeded, and as far as possible, it should have the conditions for opening up preparatory roads and constructing roundabout roads in the reservoir, so that when the situation changes, evacuation or transfer can be organized in a timely manner.

Easy to protect. The warehouse should have concealed terrain and camouflage conditions, avoid obvious targets or areas threatened by the enemy, and facilitate the organization of vigilance and defense.

The geology is good. The soil quality and groundwater level should be suitable for the requirements of the fortifications, and the reservoir should be built with local materials as much as possible.

(2) Configuration of equipment

In order to achieve the purpose of convenient supply and ensure safety, the layout of the oil depot is required to be reasonable. All kinds of equipment and equipment at field oil depots should be distributed in a dispersed manner so as to conceal and narrow their objectives; they should be stored in a comprehensive and coordinated manner in different zones so that all certain oil and equipment will not be damaged when the oil depots are attacked and their support will be affected; and they should be good at making good use of the natural terrain that can be loaded and unloaded automatically, and the canned and barreled oil should be arranged separately.

(3) Installation and equipping of equipment

Installation of oil tanks. The opening of a field oil depot requires rapid installation and can be put into use in a short time, so it is not possible to install and fix large oil tanks, usually using small metal oil tanks and rubber oil tanks. The capacity of our army's supporting reserves of field combat-ready oil tanks is 700 cubic meters and 1,400 cubic meters, and the size of the oil depot at field airfields should be determined according to the needs of combat missions. Metal oil tanks should be buried in the ground and should be treated with anti-corrosion, while rubber oil tanks should not be buried in the ground, but they should be camouflaged by making full use of the terrain. In order to facilitate the sending and receiving of oil, it is best to use pipelines to connect the reservoir area, so as to achieve self-flow sending and receiving as much as possible.

Equipped with an oil pump. Field oil depots generally have no power supply, or the power supply is not guaranteed, so only internal combustion engine oil pumps and hand pumps can be used. Each set of field combat readiness fuel equipment is equipped with two internal combustion engine oil pumps of 100 mm, six of 75 mm, and two of 25 mm. Establish a field oil laboratory and equip it with laboratory instruments that can complete the testing task. When the situation is urgent and it is too late to establish an oil laboratory, a field laboratory can be used for testing.

Chapter 6: Preparations for Combat in Aviation Logistics

The situation of future wars is complex and changeable, and uncertain factors are increasing, and it is inevitable that there will be a certain gap between the war preparations we are carrying out in peacetime and the requirements of future wars, and it is very likely that there will be situations that are incompatible or not completely compatible. Therefore, before the outbreak of war, it is necessary to make necessary preparations in accordance with the objective conditions on the ground at that time, the enemy situation, and the requirements of the support task. The logistical preparations for the aviation unit for immediate combat are the emergency preparations made by the field on the basis of peacetime combat readiness in order to change from peacetime to wartime state as soon as possible and to ensure the operation of the aviation units. It is usually carried out after the advance order of the higher authorities has been issued and before the start of the operation. There is a big difference between war preparation and peacetime war preparation work in terms of time and content, and the preparation work is more targeted and purposeful, and the requirements are higher.

The main tasks of the aviation unit's logistical preparations for combat are: issuing advance orders and arranging various preparatory work; making decisions on logistics support; formulating support plans; organizing logistics support preparations; organizing coordination; and organizing combat training and inspections. Under the conditions of modern warfare, the logistical preparation tasks of the air force are heavy and the work is complicated, and the leaders of the stations should seize the time to organize the organs to make overall arrangements for all the preparatory work. It is necessary to pay attention to grasping the key points, divide the work and responsibilities, and cooperate closely. Strengthen inspection and guidance, and do a good job in the implementation of all tasks. It is necessary to promptly and quickly organize the support detachments to move from a state of peacetime to a state of imminent battle, and to do a good job in preparing for war in an intense and orderly manner.

Section 1: Issuing Advance Orders and Arranging Various Preparations

In order to satisfactorily complete the preparations for battle, after receiving the advance order from the superiors, the station should quickly issue support tasks through the headquarters, and scientifically plan and rationally organize all support work.

1. Issue advance orders, report on the situation of the imminent battle, and propose possible support tasks

After receiving the task, in order to gain time for preparation and enable the troops to prepare for battle as soon as possible, the head of the station should immediately instruct the station headquarters to issue advance orders in the name of the station to the station organs and detachments in accordance with the tasks he has received and the relevant requirements of his superiors. The main contents usually include: a brief description of the enemy's situation, relevant instructions from the superiors, the support tasks that the station may undertake, the preparations that must be carried out immediately, and the time limit for the completion of various preparations.

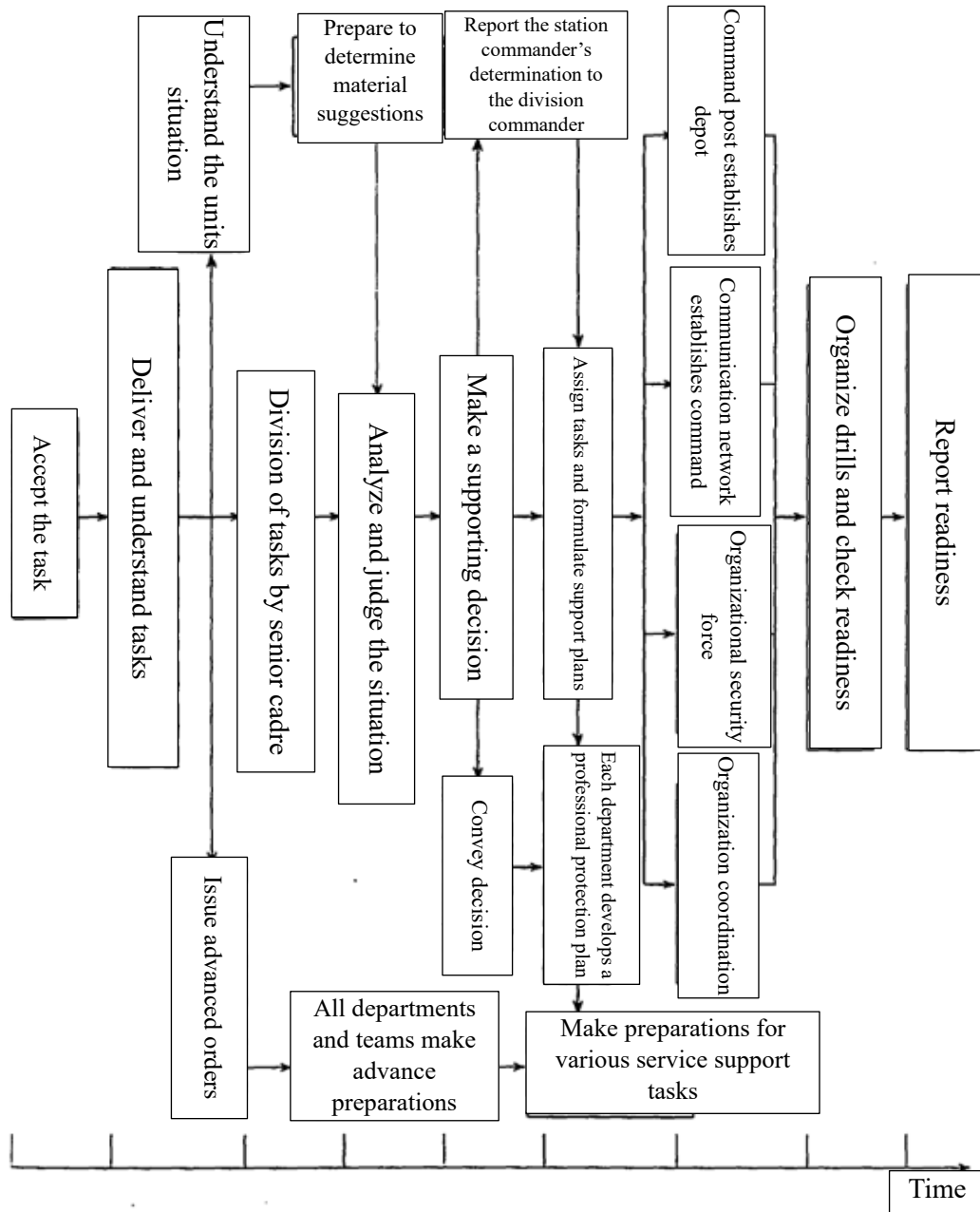
2. Arrange the work schedule, clarify the time limit for work, and quickly carry out various support preparations

In order to ensure that all preparations for the whole station are carried out in an orderly manner, the head of the station should instruct the headquarters to make specific work schedules according to the support tasks, the time limit for completing the preparatory work, and the priority of the work. The work schedule is the basis for controlling the preparation activities and checking the progress of the preparation work. Therefore, the work schedule should be scientific and reasonable, and strive to leave more preparation time for subordinates. As shown in Figure 6-1.

3. Gather support personnel, carry out pre-war mobilization, and build confidence that we will win if we dare to fight

After receiving the advance order, all support units at the station should immediately recall all outsiders to ensure that the logistics support personnel are in place. At the same time, in accordance with the instructions of the superiors, the personnel of the whole station should be mobilized before the war, convey the spirit of the higher authorities on combat support, clarify the tasks, unify thinking, carry forward the revolutionary spirit, boost morale, and establish confidence in daring to fight and win.

Figure 6-1: Diagram of the Command Procedures of the Station Commander and the Headquarters in the Preparation Stage for Battle



4. Organize pre-war expansion, adjust supplementary forces, and clarify responsibilities of support personnel

Due to the readjustment and increase of combat support tasks, the existing support forces cannot fully meet the needs of the support tasks, so it is necessary to supplement and adjust the support forces in accordance with the instructions and requirements of the relevant departments at higher levels. The station should coordinate with the relevant departments at the higher level and the local support forces in a timely manner, implement the expansion plan according to the needs of the support tasks they undertake and the possibility of supplementing the support forces, conduct combat training for the expanded personnel, adjust and supplement them to each support unit, and clarify their support responsibilities.

The expansion is carried out on the basis of need and possibility. In terms of personnel and equipment, we should persist in combining the replenishment of the higher levels with local mobilization; in the appointment of cadres, the troops should be the mainstay, and the localities should be the mainstay.

In accordance with the instructions of the higher authorities and the need to undertake support tasks, the plan for the expansion of the personnel should be compiled and reported; when the personnel are replenished on the spot, they should be mobilized from the relevant specialties; when cadres are appointed, the next level should be appointed to the next higher level, and outstanding soldiers should be appointed as cadres. In special cases, it can also be selected from the local reserves.

5. Revise the safeguard plan, be familiar with the course of action, and master the procedures and methods of action

The revision of the war readiness plan is an important part of the preparations for war. The main thing is to supplement and revise the war preparedness plan in a timely manner in accordance with the special situation of the wartime season and the relevant requirements of the higher authorities, so that it becomes a specific and definite action plan, and to implement every task of the action plan to a specific person, so that everyone is familiar with the basic procedures and methods of action.

Section 2: Make Support Determinations

The determination to provide support is a decision made by the head of the station on the basis of his analysis and judgment of the situation on both sides of the enemy and the enemy, and on the organization and use of the support forces of the station. It is a policy decision made by the head of the station to implement the operational determination of the head of the air force and fulfill the support task, is the basis for the implementation of command and organization of various support units, and is the basis for drawing up the support plan. At the same time, it is also the basic criterion for organs to inspect their preparations for war, and is the main goal of the work of various support departments.

Whether the determination is correct or not is directly related to whether the support task of the station can be successfully completed. In terms of time, the decision to provide logistical support was made after receiving a clear support task. Making a timely determination to provide support is the basic function and the most important task of the station commander in the wartime preparation stage. Setting up the determination to provide support is the creative labor of the head of the station, the crystallization of the commander's will, knowledge, wisdom, experience, and courage, and an important indicator of the organization's command ability.

1. The basis for making a support decision

- The combat determination of the head of the aviation unit.
- The tasks and composition of the aviation units stationed on the ground (including other combat units that may be stationed at the airfield).
- Instructions from the head of the higher authorities and possible reinforcement of the support forces for the station.
- The extent of possible damage to the airfield by the enemy.
- The station's support and defense capabilities.
- The terrain, roads, protective facilities and weather seasons inside and outside the airport.
- The resources in the area around the airport and the extent to which local support is likely to be received.

2. The content of support determination

(1) Logistics deployment

Logistics deployment refers to the task distinction, grouping, and allocation of support forces at stations. Its contents mainly include:

1. Establishment and configuration of command posts. The command post is the organization and place where the head of the station organizes and directs the logistics support of the aviation unit in wartime. In wartime, basic command posts and reserve command posts are usually established. In accordance with the functions and tasks of the basic command posts and reserve command posts, the organizational setup of each command post and the division of its tasks, the composition of the command team, the location of the command and the time limit for completing the opening shall be determined. The basic command post is the main activity place for the station commander to carry out the command, and the equipment is relatively strong, and it is generally set up in or near the outfield flight support command room. The reserve command post is a standby command post, which is generally deployed in the infield, ready to take over the basic command post at any time to carry out uninterrupted command. When the basic command post is in normal operation, the reserve command post may also be assigned other tasks, but the principal command personnel may not leave the reserve command post or be assigned to other purposes.

2. Grouping and configuration of flight support forces. The organization of support forces mainly depends on the strength of the aviation units stationed at the site, their combat dispatch plans, the stability of the support tasks of the stations, the allocation of the support detachments, and the support strength of the stations. The basic requirement is to be able to accomplish the support task, save the support force as much as possible, respond sensitively, and be highly efficient. There is no fixed mode of grouping, and it can be flexibly disposed of according to the objective situation. The organization of flight support forces at depots usually adopts the methods of temporary dispatch of fixed quota formation, comprehensive support team, and combination of formation and temporary dispatch.

3. Evacuation configuration of materials and technical equipment. Decisions are mainly made on the basis of the conditions of the enemy in front of the enemy, the amount of protective fortifications, the amount of material reserves, and the terrain of the airport, the number of various materials stored in the caverns and evacuation points, the emergency evacuation of personnel and equipment in the field during the battle, the renovation of the evacuation and concealment sites, and the time limit for completing the evacuation tasks.

(2)¹ Material support

It mainly clarifies the amount of replenishment of various combat materials before and during the war, the time limit for completing the replenishment of materials, and the focus, methods and requirements for raising materials on the spot.

(3) Health security

Decisions are made mainly on the basis of the anticipation of the reduction of health personnel, the organization of health support forces, the division of ambulance areas at airports, the organization and allocation of ambulance forces, the rescue measures of pilots in distress, and the regulations on the treatment and evacuation of the wounded.

(4) Technical support

In accordance with the relevant regulations and requirements of the higher authorities and the prediction of the repair tasks, it is necessary to clarify the good rate of technical equipment that should be achieved before the war, the grouping of repair forces and the distinction between tasks, the repair methods, and the principles of evacuating for repair.

(5) Transportation support

According to the requirements of the transportation task for the transportation force, the principles for the use of various transportation forces, the organization and task distinction of the transportation capacity, and the organization and use of loading and unloading forces are clarified.

(6) Field and road guarantees

It is mainly for the preparation of manpower, machinery and materials for emergency repair of the airport, the organization of emergency repair forces, and the expansion and renovation of airport protection facilities.

¹ Ed.: there is no (1) in the original text.

(7) Airport defense

When the logistics forces of the aviation units participate in airfield defense operations, the division headquarters will organize and implement them in a unified manner when the aviation division headquarters is stationed at the scene. When only the aviation regiment is stationed at the site, it is jointly organized and implemented by the station and the aviation regiment. When making a decision, the main thing is to clearly define the source and composition of defensive combat forces, the division of defense zones, the allocation of various defensive forces and the division of labor in operational command, and the key targets to be defended.

(8) Mobilization and use of local support forces

Decisions are mainly made on the basis of the needs of the support tasks of the stations and the degree of possible local support, the amount and distribution principle of local manpower and material mobilization, the methods and command relations of the militia and migrant workers participating in the war, and so on.

(9) Livelihood guarantees

There are two main points to clarify: first, the methods and requirements for the procurement and storage of staple and non-staple foods; The second is the adjustment of food units and the distribution and use plan of barracks.

(10) The timing of the control and use of reserve forces

The reserve force of the depot refers to the fact that when the flight support force is organized, part of the force should be retained as a maneuver, so that it can be strengthened and supplemented when the support task changes, and the friendly and neighboring units temporarily come to the field to fight and the personnel and equipment are damaged in battle.

(11) The time limit for the completion of the preparatory work and the requirements for reporting

The time limit for the completion of the station's readiness for battle is usually set by the head of the aviation unit. Due to the different preparation workloads of each detachment at the station, the head of the station should set a time limit for its completion. In the process of preparing for war and after the completion of the preparations, it is necessary to promptly report to the relevant departments at higher levels the progress of all preparatory work and the problems encountered, and actively strive for the guidance and support of the relevant departments at higher levels.

3. Set the requirements for support determination

(1) Be swift and decisive to ensure the timely and effective determination to safeguard it

Only when the head of the station quickly makes a decision on the security of the station can all departments and detachments act in a coordinated manner under a unified order.

If, at an urgent juncture, the head of the station is indecisive and fails to make a timely decision, the subordinate departments and detachments will lose the goal and direction of their actions, and they will not be able to effectively ensure that the aviation units stationed at the site will take to the air in a timely manner. The head of the station quickly and decisively made up his mind to allow more time for his subordinate departments and detachments to prepare.

(2) Clear goals, in line with the determination and intent of the superior head

Ensuring the realization of the determination of the leaders of the aviation units is the basic purpose of the support at the stations. Conforming to the intentions of the higher-level leaders and making the support forces of the upper and lower levels form a whole is an important condition for the station to complete the support task. Therefore, the head of the station should make a determination on the basis of the operational determination of the head of the aviation unit and the instructions of the logistics chief at a higher level, and formulate strong measures to ensure the successful realization of the determination. To accomplish this, the head of the depot should conscientiously understand the intention of his superiors, truly understand the determination of the head of the air force and the goal to be achieved in the campaign and battle, and clearly define the support objectives of the depot.

(3) Do what you can, and comprehensively consider the support strength of the station

Station support is based on objective material conditions, and without objective material conditions as the basis, the completion of the support task by the station is just empty talk. Therefore, the determination to provide support should be based on the reality of the station, so that the determination to support should be based on a reliable material foundation. In this regard, the head of the station should be familiar with the existing support capabilities of his subordinate departments and detachments, and understand and grasp the relevant information such as the forces that may be strengthened by the higher authorities, the local support forces, and the resources available in the area around the airport. Only when we are well aware of these situations can we determine our determination to protect ourselves based on these objective material foundations.

(4) Make the right choice and determine the content of the determination as needed

The content of the determination mentioned above is in general. When dealing with each specific problem, the head of the station should add or subtract from it according to the nature and needs of the problem, as well as the circumstances at the time. In this way, we can not only concentrate on the key points, but also improve the efficiency of decision-making.

(5) Adapt to changes and flexibly use various decision-making methods

At present, the quantitative analysis method that people pay more attention to is a scientific decision-making method, and it is also an important method for us to deal with problems. It can solve problems that people couldn't solve in the past by making decisions based on experience.

However, in many cases, it is also necessary to use the experience of the past and combine qualitative and quantitative analysis to make realistic decisions. On the basis of the real-time information of the aviation unit's flight support, the commander of the station should flexibly apply a variety of decision-making methods, so that he can adapt himself to the complex and ever-changing situation of wartime support and make his determination to provide support both correct and timely.

(6) Pooling wisdom and giving full play to the positive role of "think tanks."

The head of the station should organize the headquarters to recruit experienced comrades to form a decision-making "think tank" to scientifically demonstrate and evaluate the determination and proposal for logistical support. Giving full play to the positive role of "think tanks" in scientific decision-making is one of the important methods for scientific decision-making. The role of the "think tank" is as follows. The first is to make scientific predictions on the support activities of the station on the basis of extensive and in-depth investigation and research, and take the initiative to put forward action suggestions to the head of the station. Second, when the head of the station encounters a major problem that is difficult to solve, the head of the station asks for advice on how to make decisions. The third is to put forward the review opinions on the various guarantee determinations submitted by the head of the station to collect the effect of brainstorming. Fourth, after the decision of the head of the station, according to the requirements of the chief, put forward a specific implementation plan that can be selected.

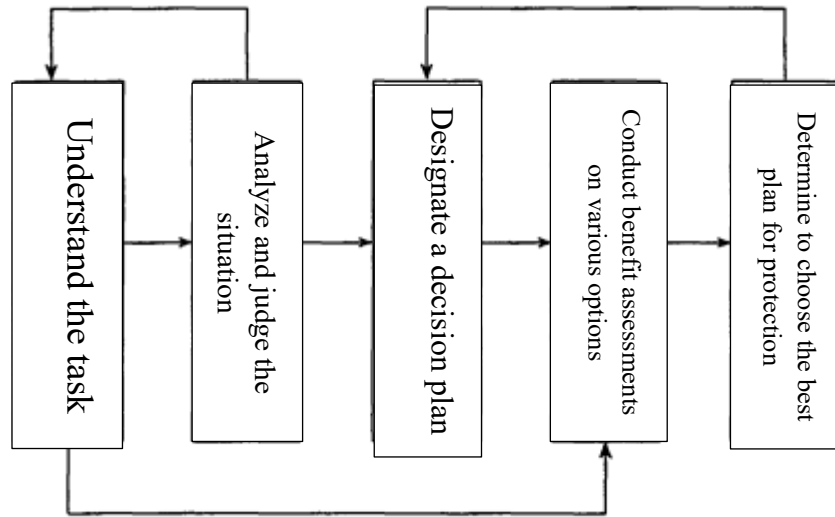
4. The process of making a support determination

The correct determination of the guarantee must go through a logical and step-by-step scientific decision-making process. First of all, it is necessary to clarify the objectives of the guarantee and the problems to be solved; then analyze and judge the relevant circumstances required to achieve the goal; formulate a number of plans, analyze whether the effects of each plan can achieve the expected goals; and finally make a determination to act in a certain way. That is, the "five-step decision-making method" of understanding the task, analyzing and judging the situation, formulating a determination plan, conducting benefit evaluation, and determining the best plan. This decision-making process is of universal significance in military command. Understanding the task is the premise, analyzing and judging the situation is the key, and making a decision is the result.

In making scientific logistical decisions, we must pay attention to the following issues. First, logistical decision-making is always aimed at achieving a set goal, and there is no way to make decisions without a goal. Second, logistical decisions always have to be implemented, and decisions that are not prepared to be implemented are redundant. Third, logistics decision-making is always to find optimization goals and achieve them optimally under certain conditions, and logistics decision-making is meaningless if optimization is not pursued.

Fourth, logistics decisions are always made in a number of valuable options, and there is no way to choose one plan. There's no choice, there's no optimization. In short, logistical decision-making is the selection of a number of options for preparing actions in order to optimally achieve the goal. All four links are indispensable. To this end, it is necessary to strictly implement scientific decision-making procedures in order to make scientific logistical decisions. It is necessary to rely on experts to apply scientific decision-making techniques. At the same time, the head of the station must use scientific thinking methods to make decisions. Figure 6-2 shows the process of making a decision to protect the security.

Figure 6-2: Schematic Diagram of the Decision-Making Process



(1) Understand the task

Understanding the task refers to the process of correctly understanding the task of receiving support. From the perspective of information theory, it is the process of inputting and sorting out information on various support tasks. The purpose of this is to find out the position and role of the station in the war, to further understand the tasks undertaken by the station, to clarify the content and workload of the station to make support preparations in the stage of preparing for war, and to make the support task organized and concrete. Understanding the task is a prerequisite for the head of the station to make a decision. By understanding the task, we can analyze and judge the situation later, set a determination and clarify the goal, and lay the foundation for qualitative and quantitative analysis. Therefore, after receiving the task, the head of the station and the headquarters should conscientiously study the combat orders of the superiors, the orders of the rear, the operational determination of the heads of the troops stationed on the field, and other relevant documents and instructions,

and summarize and sort out the support task information related to the station. For issues that are not yet clear, they should take the initiative to ask the troops stationed at the scene or the relevant departments at a higher level for instructions.

The station leader understands the main content of the task, including the following five aspects:

1. Be clear about the situation of friend or foe

The posture of the enemy and us refers to the framework formed by the deployment and actions of the main forces of the enemy and us. As far as the depots are concerned, the focus will be on clarifying the deployment of air forces and other air attack weapons on both sides and their possible actions. Only when we are familiar with the situation of our enemies and friends can we find out the position we stand in the direction of this campaign, so that we can make a correct judgment of the enemy's situation and take corresponding defensive measures.

2. Clarify the operational intentions of the superiors

The combat intention of the superior refers to the operational goal that the superior wants to achieve. When understanding the combat intentions of the higher authorities, the main thing is to find out the combat tasks of the troops stationed on the field, and the changes in the types of aircraft and troops stationed on the battlefield in the course of the operation. Only by being familiar with the above situation can the head of the station predict the support tasks at each stage as a whole.

3. Clarify the support tasks of the station

The main contents include the types of troops, the number of aircraft, the combat sortie rate, the intensity of the sortie, the day of the operation, and the plan of the combat sortie of the troops stationed on the ground at present and in the future. These data are the basic basis for the station's material, technical and equipment preparation and various service preparations.

4. Clarify the reserve standards and consumption limits of major combat materials, and estimate the loss of health personnel and weapons and equipment in battle

The material reserve standard is a reserve quota formulated by the higher authorities in peacetime according to the combat mission, technical performance of equipment, and the law of material consumption of the troops. In the preparation stage for battle, the higher authorities will increase or revise the material reserve standards of certain stations according to the adjustment of troop deployment. The consumption limit is the maximum allowable consumption of materials set by the higher authorities on the basis of operational needs, equipment and technical performance, the military quality of flight personnel, and the support capability of the station. The standard of material reserves and consumption limits are an important basis for organizing the replenishment of materials and the use of transportation forces in the preparation stage for war and during the war. Health attrition is expected to be the basic basis for the organization of health security.

The estimated battle damage of weapons and equipment is the basis for preparing and repairing equipment and technical support.

5. Clarify the methods of logistics deployment, supply system and material supply at the higher level

To understand the logistical arrangements of the higher authorities, the main thing is to find out the specific locations of the logistics bases at the higher levels, especially the logistics support units in the direction of the operation, including warehouses, hospitals, repair, transportation, engineering emergency repairs, and other institutions and units. The supply system is mainly to clarify the supply channels of general-purpose materials and special-purpose materials, the types of materials that are supplied by the troops, and the division of labor in service support. The material supply method is mainly to clarify which of the various materials required by the station are sent by the superiors, which are collected by the station, and which need to be raised and guaranteed by the station on the spot.

6. Clarify the support force that may be strengthened by the superior

For certain stations in the main operational direction that are moderately located or have heavy support tasks, the relevant departments at a higher level may dispatch mobile detachments for medical treatment, repair, engineering emergency repair, and "three defenses" to strengthen them. When understanding the task, the head of the station mainly ascertains the type, quantity, and scope of support given by the superior to the reinforcement force of the station, so as to determine the location of its deployment, the method of use, and the establishment of operational synergy.

7. Clarify the time limit for completing safeguard preparations

After learning about the task, the head of the station should promptly convey it to the personnel of the station headquarters and command post, put forward the requirements for preparing the determination materials and the content of the advance order, and arrange the work schedule in the preparation stage. At the same time, the relevant situation should be reported to the local pre-support agency.

(2) Analyze and judge the situation

The right determination comes from the right judgment. Judging the situation is the core of military decision-making and the key to determining the determination of logistical support. Analyzing and judging the situation means analyzing the favorable conditions and unfavorable factors for accomplishing the tasks in terms of the enemy's situation, our feelings, friendship, local support forces, and the natural environment in accordance with the support tasks undertaken by the stations, making correct judgments on major problems affecting the overall situation of the station's support, and finding out the correct ways and methods to solve the problems, so as to pursue advantages and avoid disadvantages when making decisions, and to be in an invincible position.

1. The main content of analyzing and judging the situation

(1) Judgment of the enemy situation

First of all, it is necessary to analyze the degree of threat to the airport according to its position, role, and the situation of friend or foe. In wartime, airfields are threatened mainly by enemy air, airborne and ground attacks. The focus of the analysis judgment is on the threat of air attacks by the enemy. The contents of the analysis and judgment are the likelihood, timing, means, and scale of the enemy's air attack, the casualties that may be caused by an enemy air attack, and the degree of damage to the roads, materials, and technical equipment. Based on this, the forces required for the treatment of the wounded, emergency repairs at the airport, and equipment repairs are judged.

Another aspect of judging the enemy's situation is to analyze and judge the degree of threat the enemy poses to our rear lines of communication. The focus is on analyzing and judging the possible difficulties in the transportation of materials in the rear, the wounded and sick, and the damaged loading and evacuation, so as to further consider the methods of retaining the wounded and sick, receiving and transporting materials, and repairing equipment on the spot.

(2) Our situation judgement

It is mainly based on the support tasks undertaken by the station and the support strength of the station, and the quantitative analysis is carried out, and the degree of support that can be achieved by the existing strength and the support force that needs to be strengthened are judged. The focus is on the following areas:

Analysis and judgment of personnel and equipment strength. The main purpose is to analyze the number of existing personnel, the quality of military and political personnel, and whether the equipment can undertake the established support tasks, and make judgments on the types and quantities of personnel and equipment that need to be replenished.

Analysis and judgment of material support capabilities. It is mainly based on the reserve standards and consumption limits of major combat materials such as fuel, ammunition, and aviation equipment, as well as the inventory situation of the depots, to analyze and judge the amount of materials to be replenished in the campaign preparation and implementation stages. In addition, in order to reduce rear resupply, estimates were made of the types and quantities of general-purpose supplies that could be raised locally.

Analysis of equipment repair capabilities. Based on the equipment damage estimate made during the analysis of the enemy situation, the existing repair force can be analyzed to complete the repair task, and the repair force that needs to be strengthened is judged.

Analysis of transport capacity. According to the preparation stage and the implementation stage to complete the task of material delivery and delivery to the field, analyze the demand for transportation force (including transport vehicles, machinery, and loading and attracting force), and make judgments on the timing and quantity that may be strengthened by the superior or local government.

Analysis of health security capacity. According to the health attrition forecast made during the analysis of the enemy situation, analyze whether the existing health support force can complete the medical treatment task, and analyze the possible ways to strengthen the health support force of the station. Analysis of the support capacity of the field. The main judgment is made on the basis of the degree of damage to the airfield by the enemy in the judgment of the enemy situation and the needs of the emergency repair task in the stage of preparing for battle, and to judge the source of the emergency repair force (including personnel, equipment, and materials).

(3) Friendship judgment

It is mainly based on the logistical support capabilities and tasks of the units of other services and arms in the vicinity of friendly neighboring stations and airports, and to analyze and judge the content and extent of their support when necessary. At the same time, it is also necessary to analyze the possibility and scope of support for friendly and neighboring stations and other friendly and neighboring forces.

(4) Judgment on the strength of the local support

In particular, it is difficult to accomplish the tasks of emergency airport repair and airfield defense operations by relying only on the strength of the station and the troops stationed at the station, and it is necessary to closely rely on the support of the local government. Therefore, when the head of the station analyzes and judges the forces of the local support front, he mainly analyzes the aspects that may be solved by local support on the basis of the local manpower and material resources that he has in peacetime, as well as the various difficulties found in the analysis of the enemy situation and our situation.

(5) Analyze the impact of the natural environment on the station security

The natural environment refers to the natural conditions such as weather, seasons, topography, and features. These objectively existing things may not only provide convenience for station support work, but also increase difficulties. For example, the valleys, caves, and forests near the airport provide natural evacuation places for people and materials, and rain, snow, and floods will bring disadvantages to the transportation of materials and the emergency repair of the airport. Therefore, when judging the situation, the impact of the natural environment on the station security should be fully considered.

Analyzing and judging the situation is closely linked to the determination to provide protection. Without analytical judgment, there will be no correct determination. Because all kinds of information needed to make a decision are processed by analysis and judgment;

the formation and identification of the determination plan is completed by analysis and judgment, and the selection of the best plan in the determination is also determined by analysis and judgment. Therefore, whether the analysis and judgment of the situation is correct or not will directly affect the formation of the entire determination and its advantages and disadvantages, which is a crucial issue in decision-making, and must arouse the great attention of the head of the station.

2. Analyze and judge the basic requirements of the situation

In order to analyze and judge the situation quickly and accurately, the head of the station must have scientific thinking and master certain methods. The specific requirements are:

(1) Grasp the key. The so-called grasp of the key means, first, to grasp the situation directly related to the current support task; second, to grasp the main contradiction from the relevant situation. That is to say, from a wide range of situations and a large amount of information, we will filter out those situations that are not relevant to the current mission, and firmly grasp the situations that are related to the current mission, and then grasp those issues that have a major impact and are crucial to the current mission from these relevant situations. For example, in the stage of preparing for an anti-air raid, it is first necessary to grasp the enemy's situation for analysis and judgment, and this is the key. This is because all our anti-air raid plans and plans are determined by the enemy's situation, and the situation is the basic starting point. In the key issue of the enemy's situation, it is necessary to first grasp the main contradiction of the enemy's air attack attempt. Depending on the enemy's air attack attempt, the targets attacked, the forces invested, the means used, and the degree of damage to airfields will vary.

(2) Comprehensive thinking. Comrade Mao Zedong pointed out that "the correct deployment of commanders comes from correct determination, correct determination comes from correct judgment, and correct judgment comes from thoughtful and necessary reconnaissance and thinking about the integration of various reconnaissance materials." Comprehensive thinking means not to look at some information obtained in isolation, but to link the relevant factors of various aspects of things, and think about them as a whole, so as to determine the interaction of the various parts of the whole, and to prevent one-sidedness when analyzing the task.

(3) Recognize the essence. The essence of understanding is to not only look at the superficial phenomena of the various information obtained, but also to show the real enterprises hidden by these phenomena through analysis. In ordinary times, people's understanding of a certain thing, through observation, investigation, understanding, etc., is generally said to have few false elements, so it is not difficult to form a correct judgment from this.

This is not the case in wartime, because war is a conflict between two living forces, a confronting of armed living people. In order to create the illusion and surprise of the other side, the enemy and the enemy will use various means and methods to try to confuse the other side and conceal its essence so that they can win the battle. Therefore, in the process of analyzing and judging the situation, we should not only verify it from various aspects and channels, distinguish the false from the true, but also pay attention to analyzing and judging the essence of the situation through various manifestations and draw correct conclusions from the analysis and judgment.

(3) Formulate a resolution plan

On the basis of understanding the task, analyzing and judging the situation, and listening to the reports and suggestions of the subordinates, the head of the station weighs the pros and cons of all aspects and prepares a determined plan after comprehensive analysis. To a large extent, the quality of the guarantee will be directly affected by the quality of the program. The development of a determination plan should be based on the decision-making objectives, and there should be several determination options to choose from.

(4) Conduct benefit evaluation

Evaluating the benefits of each of the alternative solutions is the key to determining the determination of the guarantee. Practical evaluation criteria should be developed. Theoretically speaking, the optimal solution should be to ensure large benefits, less consumption of manpower and material resources, strong reliability, and low risk. However, it is very difficult to find a model that conforms to the ideal in the practice of combat flight support for aviation units, and it is often necessary to maintain a reasonable ratio between efficiency, cost, and risk according to the requirements of the support task, and adopt a satisfactory standard. Through the demonstration of alternatives, the selected options are compared, or the advantages of several options are combined to form the optimal plan, which is the initial determination of the station leader.

(5) Determine the final plan

After the initial determination of the head of the station is formed, it should be submitted to the party committee of the station or the enlarged meeting of the party committee for discussion in a timely manner, and the opinions of the committee members and the responsible persons of the relevant departments and detachments should be fully listened to, and the decision to provide support should be finally made. Due to the large amount of preparation for battle, the preparation time is limited. Therefore, the time for convening the Party committee should be short, the issues to be discussed should be concentrated, and as long as there are no differences of opinion in principle on the preliminary decision of the head of the station, it should be adopted quickly. The support determination made by the head of the station should be reported to the head of the aviation division for approval before it can be implemented. At the same time, it should be reported to the higher-level logistics and equipment organs for the record.

The contents of the determination that need to be jointly carried out by the aviation units and the stations stationed at the field, especially the relevant provisions and requirements in the rear orders of the higher authorities, should be attached to the determination of the aviation division commander or issued in the form of orders.

Section 3: Develop a Support Plan

The logistics support plan of the air force is a comprehensive command document that embodies the determination of the head of the field station to provide support, is the concrete embodiment of the determination of the support, and is the direct basis for the organization and implementation of the support at the station. Therefore, after the head of the station has made up his mind to provide support, he should instruct the headquarters to quickly and carefully formulate a support plan.

1. The main content of the support plan

(1) Force deployment

It mainly includes the organization of logistics support forces and the division of tasks; the personnel organization and command of the command posts and the deployment plan of communication equipment; the renovation measures for the evacuation and concealment of materials and equipment, and the specific evacuation and allocation plan.

(2) Material support

It mainly includes plans for replenishing combat materials, specific measures for receiving, supplying, and managing materials, and requirements for raising local materials.

(3) Health security

It mainly clarifies the expected reduction of health personnel and the amount and source of health support forces; the organization of service forces; the division and allocation of forces in the airport rescue area; the rescue measures, treatment, and evacuation of the wounded and sick, and the search for rescue measures for flight personnel in distress; and the requirements for the preparation of medical equipment and war rescue materials.

(4) Technology to guarantee

The main tasks are to determine the organization and use of repair forces, the distinction of repair tasks, the preparation requirements for repair equipment and tools, the repair methods and measures, the organization of the evacuation of damaged equipment, and the management requirements for equipment maintenance.

(5) Transportation support

The main task is to determine the organization of the transport force, the distinction between the tasks of the depot and the local support front transport force, the quantity and source of the loading and unloading force, the preparation of the loading and unloading sites and facilities such as special railway lines or ports and wharves, and the formulation of a plan for the transportation of major combat materials.

(6) Field and road guarantees

The main tasks are to determine the organization plan of the emergency repair force (the division of labor between the command organization and the command personnel, the organization of the emergency repair detachments of various specialties, the allocation of emergency repair equipment, etc.); the method of replenishing the emergency repair materials and the organization of the transportation force; the emergency repair action plan (the scope of emergency repair, the sequence of pit repair, the daily emergency repair progress, the quality requirements, etc.); the safety and security measures in the emergency repair (air alert, personnel evacuation and concealment, etc.); and the renovation plan of protective facilities and highway runways.

(7) Livelihood guarantees

Clarify the number of days that should be reached by the main and non-staple food reserves of the on-site personnel, the supply guarantee requirements for the transfer personnel, and the standards for the distribution of picnic utensils in each catering unit.

(8) Airport defense

In addition to concretely implementing the operational tasks of ground defense at airfields assigned to depots and stations by air divisions, the plan should also determine the establishment of outposts, warning ranges, and warning signals for each key defense target; the organization of military-civilian joint defense, and the regulations on the division of defense areas and coordinated operations.

(9) The use of reserve forces and local support forces

It is necessary to clarify the principles for the composition of various reserve forces, the distinction of tasks, and the use of them; and to enrich and revise the plan for the mobilization and use of local support forces in accordance with the needs of combat missions and the changes in the local support front forces.

(10) Clarify the time limit for completing all preparatory work

Mainly in accordance with the instructions and requirements of the head of the aviation unit, the time limit for the completion of the preparatory work of the station is determined.

2. The main form of the support plan

It is usually in the form of a combination of text and tables. Explain the contents of the protection plan in words, display relevant data in tables, etc. When necessary, the contents of the guarantee plan can be plotted and annotated on the map (important map) in the form of annotation on the map (important map).

For content such as command procedures, network diagrams can be used to represent them in a concise form.

3. Methods for formulating a support plan

There are many ways to formulate a support plan, and there are three commonly used methods: parallel operation, sequential operation and comprehensive operation.

(1) Parallel operation method

The parallel operation method means that the head of the station understands the task, judges the situation, and makes a preliminary determination to carry out the work simultaneously with the station headquarters to draw up the support plan. This method can shorten the time for drawing up the plan, so that the business departments and detachments of the station have more time to directly prepare for support. In order to ensure the smooth progress of the parallel operation, the head of the station should promptly convey the relevant situation to the staff of the headquarters and inform them of his intention after receiving the advance order and receiving the task. In this way, the staff of the Headquarters will be able to understand the situation related to the support mission and provide information and recommendations for the determination of the head of the station, and on the other hand, to draw up a preliminary plan according to the intention of the head of the station. Once the head of the station has made up his mind, the command staff can quickly make corrections and additions to the initial plan.

Parallel operations, that is, without waiting for the headquarters to completely solve the problems related to support, all operational departments and detachments can start to revise and formulate their own professional support plans on the basis of the original support plan and in light of the new situation at the time of war. However, when this method of operation is adopted, the station headquarters should create operational conditions for all specialized units, and inform all operational departments and detachments of the relevant situation (especially important data) and the initial ideas of the leaders and headquarters.

(2) Sequential operation method

The sequential operation method means that after the head of the station has made a decision, the station headquarters will then organize and plan according to his determination. This top-down sequential operation method is relatively safe and reliable, and is generally adopted when there is sufficient time to prepare for battle.

(3) Comprehensive operation method

The comprehensive operation method is based on the actual situation of drawing up the support plan at that time, and combines the parallel operation method with the sequential operation method. This method can give full play to the advantages of the parallel operation method and the sequential operation method, overcome its shortcomings, and can be flexibly used according to the situation, which can save time and achieve better benefits.

4. The requirements for formulating a support plan

The wartime support of midfield stations in modern warfare has put forward higher requirements for the thoroughness, accuracy, and reliability of the support plan. When formulating and formulating a protection plan, the following should be done:

(1) Thorough and feasible

The support plan is the basis for the organization and implementation of wartime support by the head of the station and the command, and its content must be consistent with the operational plan of the air force and the intention of the head of the station, and in line with the objective reality. Able to take care of all stages and aspects of the development of campaign battles. It is necessary to closely integrate the need with the possibility, the present with the future, the key with the general, and the overall with the local. Distinguish priorities, coordinate the overall situation, reasonably organize the use of support forces at the station, and improve the feasibility of the plan.

(2) Be difficult and strict

The support plan should base itself on the most difficult base point, proceed from the most arduous and difficult situation, and be ideologically, organizationally, and materially prepared to deal with all kinds of complicated situations. It is necessary to fully anticipate the various situations that may arise in the course of the campaign and battle, formulate a variety of support plans and support plans for various situations, and enhance the adaptability of the plans.

(3) Be concise and standardized

The preparation time of the protection plan should be kept as short as possible. The content should be concise, concise, accurate and reliable. Text and charts should be clear and clear, accurately plotted, and annotated in a standardized manner. The format of the plan should conform to the normative requirements of the operational documents.

(4) Stability and adaptation

After the support plan is approved by the head of the station, it should be resolutely implemented and cannot be changed at will to maintain the stability of the plan. However, in the course of implementation, if it is found that the plan does not conform to the objective reality or that the support task changes, the plan should be revised according to the new situation to adapt it to the new situation.

The head of the station should strengthen the leadership of the plan preparation.

It is necessary to give a clear explanation to the subordinates about their intentions and answer the questions raised by the staff officers in a timely manner; fully study the feasibility of the various service support measures proposed in the plan; and coordinate well the relationship between the comprehensive support plan and the service support plans of various specialties.

Section 4: Organizational Preparations for Support Forces

1. Set up a station command post

The station command post is established by the station command. The main tasks are: Determining the plan for the organization of command posts and setting up various specialized command groups; communicating and liaising with the command posts of the troops, the logistics command organs at higher levels, and all units of the stations, and equipping them with command and communication tools; formulating the command work system and the duty schedules of the leading cadres of the stations, and sorting out command documents and combat service materials.

2. Organization of combat flight support forces

"Combat flight support force" refers to the personnel, equipment, and organization and management mechanisms that directly support combat flights. To organize combat flight support forces, first of all, the support force organization method determined by the head of the station is to organize personnel and equipment such as traction, refueling, refueling, refueling, oxygenation, and power supply support in combat. Second, in accordance with the requirements of combat flights, it is necessary to readjust and enrich the field command groups, revise the duty system and the organization and command procedures for support at all stages of the flight, and organize support drills in light of the situation. The above-mentioned organizational work is the responsibility of the station command.

3. Organization of airport emergency repair forces

The airport emergency repair force shall be organized by the airport emergency repair committee in accordance with the revised emergency repair plan or emergency repair plan. The focus is on setting up a command organization for emergency repairs, organizing professional emergency repair detachments, replenishing emergency repair materials and equipment, and envisaging the handling of special situations in emergency repairs.

4. Service support preparation

"Service support preparations" refers to the material and technical preparations made by various service departments for the completion of support and defense tasks.

(1) Material preparation

Aviation ammunition, fuel, and equipment are the main combat materials of the air force, and whether or not the supply can be guaranteed has a direct impact on the combat effectiveness of the troops. And due to the large consumption, transportation and reserves are relatively complex. For this reason, the relevant service departments and detachments of the depots and stations should focus on three things in the preparation stage for battle: First, they should submit a material replenishment plan to the higher-level operational departments as soon as possible in accordance with the various material requirements determined by the determination. The second is to take the initiative to contact the shipping unit and the carrier department to accurately grasp the situation of material delivery; the third is to do a good job in advance of the warehouse and material evacuation sites, arrange the transportation, loading and unloading forces, and take practical measures to strengthen the management of materials.

(2) Preparation of technical equipment

The technical equipment of the station is the main means of implementing the flight support of the aviation forces. Relevant units shall, in accordance with the equipment integrity rate index stipulated by the higher authorities, complete the maintenance and repair tasks of the equipment in a timely manner. The focus is on tractors, refueling vehicles, vehicles, and equipment. In accordance with the estimated battle damage of equipment and the task of repairing equipment, it is also necessary to organize repair forces, supplement repair equipment, and carry out technical training in original parts, replacement parts, and dismantling and repair.

(3) Preparation of roads and protective facilities

The preparation of the roadway is mainly the maintenance and expansion of the runway, taxiway and apron, the leveling and rolling of the forced landing road and the flat area, and the maintenance of the light signal and power supply system of the road; Refurbishment of road runway pavement, apron, vehicle bypass, field oil depot, ammunition and aviation materials, technical equipment deployment sites. The preparation of protective facilities is mainly the maintenance of ventilation, poison filtration, dehumidification, fire-fighting and other equipment of various underground fortifications, the reinforcement and expansion of aircraft shelters and shelters in evacuation areas, and the camouflage of protective facilities; and the setting up of field oxygen production, refrigeration, and charging places.

5. Mobilization preparations for local support forces

The local forces supporting the front are an important force for accomplishing logistical support tasks in wartime. In order to obtain timely local support in the course of operations, the station headquarters should, under the unified leadership of the higher authorities, work with the local people's armed forces departments to revise the plan for the mobilization and use of the forces supporting the front. Since the technical militia participating in the war is usually assigned to various specialized units, when revising the mobilization and use plan, it is necessary to have clear stipulations on the number of people to be mobilized, the method of participating in the war, the time of participation in the war, the command relationship after participating in the war, and the management of daily life.

For the front-line forces temporarily participating in the emergency repair, transportation, and rescue tasks of the troops, the liaison signals and assembly areas should be clearly stipulated.

Section 5: Organizational Collaboration

Coordination means that the head of the station organizes the station organs, detachments and relevant units to act in coordination according to the task, time and place according to the unified support purpose and plan of the station. In order to quickly complete the support preparations in the stage of preparing for battle and lay a good foundation for the support in the stage of campaign and combat implementation, the key lies in twisting the relevant support forces inside and outside the station into a rope to form a tremendous joint force and act in a coordinated manner under a unified plan. In this regard, coordination should be tightly organized.

Coordination in the preparatory stage for combat should be centered on completing the preparations for station support, with material reserves as the focus, and organized in accordance with the operational determination and operational plan of the head of the aviation division, the instructions and requirements of the logistics chief at a higher level, and the support determination and support plan of the head of the station.

1. The content of collaboration

Since the support preparations in the stage of preparing for war involve a wide range of areas, there are many objects of organization and coordination, and the content is also relatively extensive.

(1) Coordination between the station and the maintenance department of the troops stationed at the site

Usually organized by the command of aviation units. The main contents are: the mutual coordination of various logistical support activities (aircraft towing, refueling, inflating, supply of aviation materials and ammunition, etc.) under various combat sorties; the rescue of war-wounded aircraft and flight personnel inside and outside the field; and the evacuation and concealment procedures and locations of aircraft and vehicles at the scene during the battle.

(2) Coordination of logistics between the station and friendly air force units

It mainly refers to the coordination with friendly neighbor stations, the logistics of the ground forces of the Air Force, and the logistics of the airborne troops. It shall be presided over by the logistics chief at or above the level of the Air Force, or jointly consulted in accordance with the orders and instructions of the rear of the higher authorities. The content of logistics coordination between stations and between stations and ground forces of the Air Force is as follows:

Mutual support in material supply, transportation, equipment repair, treatment of war wounded and emergency repair of airports, as well as the establishment of a supply relationship. The coordination between the depot and the airborne troops' logistics is mainly the loading and unloading of materials and the livelihood of personnel when the airborne troops board and depart, and then when they are airlifted and resupplied.

(3) Coordination of logistics between the station and friendly neighboring army and naval forces

In accordance with the regulations of the joint logistics support and the relevant departments at higher levels, the following matters shall be negotiated: the supply of general-purpose materials, the repair of general-purpose equipment, the mutual support of transportation forces, the rescue of the wounded and sick, medical treatment, evacuation, etc., or the implementation of regional supply; and the search and rescue of off-site (sea) flight personnel in distress.

(4) Internal coordination of stations

Organized by the station headquarters, the main contents are: the distribution of transportation and loading and unloading forces required for receiving materials before and during the war, the distinction between equipment maintenance and repair tasks, the task of airport vigilance and the allocation of troops, the distribution and use of material evacuation and hidden places, and the distribution of manpower for emergency repairs at airports.

(5) Coordination between the station and the local support agency

It shall be carried out in accordance with the unified regulations of the theater joint logistics agency and the local government. The main content is to clarify the plan for the distribution and use of local support forces. For example, the type and quantity of local materials available for use at the station, the number of transport vehicles, the number of medical personnel and the number of wounded and sick people treated, the number of militiamen and migrant workers and their livelihood support, etc.

2. Methods of organizational collaboration

Due to the different contents and objects of collaboration, different collaboration methods can be adopted according to the actual situation. Such as planning coordination, document and telecommunications coordination, meeting coordination, on-site coordination, mutual representatives, joint office, individual consultation, etc. Collaboration within the station is usually based on conference collaboration.

3. Requirements for organizational coordination

Due to the short time and heavy tasks in the preparation stage for battle, higher requirements were put forward for the organization and coordination of the station.

(1) Strengthen forecasting, efficient and fast

The contradiction between the short preparation time for the midfield station and the large amount of preparatory work in the midfield station of the future war requires that the organization and coordination must be carried out efficiently and quickly, so that the enthusiasm of all quarters can be quickly mobilized, a powerful joint force can be formed, and joint efforts must be made to accomplish the set goals. Therefore, when the head of the station begins to consider the determination to provide support, he should also consider the relevant matters of organization and coordination, scientifically predict the situation that may require coordination, and promptly instruct the headquarters and relevant operational departments to make preparations for organization and coordination in advance; strengthen the predictability in work, understand information from all sides through various channels, create conditions for timely organization and coordination, make full use of advanced command equipment and tools, and improve the efficiency of organization and coordination.

(2) Grasp the key points and highlight the key points

Pay attention to those key synergistic actions that have a decisive impact on the completion of station preparation. For example, the combat operation support plan of the stationed aviation unit, the emergency repair plan of the airport, the airport defense plan, and the support plan for key operations that have a decisive impact on the course of the campaign and battle. It is necessary to organize meticulously and make efforts to solve the problem of coordinated action in all fields. In general, the headquarters and other operational departments can organize and implement the specific organization, and the station head will give the necessary guidance.

(3) Focus on the present and take into account the future

The current action is the work that has begun or is about to start preparations for the station. How well these tasks are done will have a significant impact on subsequent preparations. Therefore, the coordinated actions of all relevant units at each stage of the current coordination must be clearly stipulated, precise arrangements should be made, and strict organization should be carried out to reduce mistakes. As for the coordination of subsequent actions, since it is difficult to make accurate predictions of changes in the situation, it is possible to make a rough plan for coordination on the basis of knowing the general situation, and then revise it in detail according to the changes in the situation.

(4) Take into account the overall situation and take the initiative to coordinate

Political unity, centralization and unity of command, and the overall idea of doing everything for the sake of the air force and everything for victory are the basis for doing a good job of coordination. It is required that the departments and detachments participating in the coordination must establish a concept of the overall situation, carry forward the spirit of mutual assistance, cooperate closely, and take the initiative to provide support. It is necessary to strictly implement the coordinated plan, coordinate actions according to the predetermined purpose, time, and place, and give full play to the power of the overall support.

(5) Sustained and stable throughout

The preparation stage for war will be full of complex contradictions from beginning to end, which requires the head of the station and the headquarters to resolve these contradictions through coordination to ensure the smooth completion of the preparation work of the station. At the same time, due to the continuous development and change of the situation, the original coordination plan will also be destroyed, and in order to ensure the smooth progress of the station's preparations for battle, it is necessary to organize new coordination according to the development and change of the situation. Therefore, organizational collaboration will be integrated throughout the preparation phase.

Section 6: Organize Combat Training and Inspections

Combat training and inspection is an important link in the preparation for battle, and plays an important role in enhancing the logistical support capability and promoting and facilitating the troops' completion of various preparatory work.

1. Organize combat training

Organizing combat training is an important measure to enhance the station's support capability and airfield defense capability. In particular, in local wars under modern high-tech conditions, after the mobilization and expansion of some stations on the front line, the personnel and equipment have increased by a large amount, and these newly added personnel come from all directions, have complex compositions, have different levels of professional familiarity, and lack wartime support experience, and there is a process of adaptation in cooperating with each other to accomplish tasks; the newly supplemented technical equipment has not been tested, and its technical performance, operation methods, and work reliability are not fully understood, and it needs to be used on a trial basis. Therefore, while making various preparations, the field should seize all available time to organize combat training. The training content should be targeted. In view of the combat targets, support tasks, and defense tasks, in light of the quality of the support personnel, and in line with the principle of training what is done and making up for what is lacking, we should focus on command training and applied technology training in accordance with how the air force units are dispatched in combat and how they are provided with support at stations, so as to ensure that one soldier can be used for multiple purposes and one specialized in multiple functions; and do a good job in night support technical training and field operation technical training, so as to enhance the work ability of support personnel under various complex conditions.

In organizing combat training, it is necessary to proceed from reality and organize it flexibly. For training subjects that need to be popularized, such as self-help and mutual rescue, common sense of the "three defenses," airport defense, and organization and command, the station headquarters should draw up a unified training plan and arrange training.

The professional training subjects belonging to each business department and detachment shall be arranged by each unit according to the actual situation. In combat training, it is necessary to pay attention to practical results, strive to achieve relatively obvious training results in a relatively short period of time, and prevent going through the motions.

2. Check and report readiness conditions

In order to satisfactorily complete all the work of the station's preparations for battle, the head of the station should promptly organize and lead the personnel of the organs to go down to the grassroots level to inspect and guide, and grasp the implementation of the determination and plan. The inspection work should be carried out with a focus on the key points and in a purposeful manner. The items to be inspected usually include: the degree to which the grass-roots units understand and carry out the orders and instructions of their superiors; whether the work plans and arrangements of each unit conform to the determination of the station leaders and the requirements of the support plan, whether the various support measures are effective; the degree of progress in the preparatory work, and the ideological state of the troops. The problems found in the inspection should be solved in a timely manner, and good experience should be summarized and promoted.

In order to keep the head of the aviation unit on track of the progress of the station's preparations, the head of the station should report on the state of readiness on a regular basis. After the completion of the preparations for battle, the head of the station should instruct the station headquarters to collect and sort out the completion of the preparatory work and the training for the battle, and report the preparations, existing problems, and problems that need to be solved by asking for instructions to be solved to the head of the air force and the relevant departments at a higher level.

Chapter 7: Aviation Flight Logistics Support

Flight logistics support refers to the general term for all logistics support activities organized in a unified manner to support the aviation units and flight academies in carrying out flights. Usually, under the unified command of the flight commander, the flight support command room of the station and the regimental station of the flight academy will organize and implement it in accordance with the three stages of flight preparation, implementation and evaluation. The main contents are: organizing and carrying out the cleaning and maintenance of the flight site and its ancillary facilities; organizing the ground traction, refueling, bomb supply, inflating, power supply, and replenishment of materials and equipment for aircraft; and organizing medical treatment, ambulance, and livelihood support. It is the core of the logistics support of the air force. All the work carried out by the station on a daily basis is to prepare for the flight, and it must be checked through the flight logistics support. Therefore, flight logistics support is a concentrated embodiment of the logistics support of the air force and is the central task of the station.

Section 1: Characteristics and Requirements of Flight Logistics Support

1. Characteristics of flight logistics support

In addition to the general characteristics of logistics support, flight logistics support also has the following particularities:

- (1) The support task is sudden and changeable, and there are many uncertain factors

In today's era of rapid development of military technology, electronic warfare and information warfare weapons and attack weapons with high speed, long range, and high strike accuracy have been introduced one after another, greatly enhancing the concealment and suddenness of future wars, the frequent changes in offensive and defensive rhythms, the rapid changes in the battlefield situation, and the many uncertain factors. In order to seize fleeting advantageous fighters and gain the initiative in the overall situation, the air force units are often ordered by emergency situations or critical moments, and there are more and more cases of dispatches at the call,

so that the logistics support is also hastily implemented in the frequent changes in the task. The main manifestations are as follows: First, due to the uncertainty and variability of combat missions, flight logistics support tasks are in constant change. For example, there are frequent changes in the types of aircraft participating in the war, the number of aircraft sorted, the number of sorties, the sortie time, and the plan for the use of ammunition, so that the objects and contents of logistical support will also change, and this will bring great difficulties to the organization and use of logistical support forces. Second, the frequent and extensive maneuvers of the air force have kept the logistical support tasks of the air force in constant change. One of the characteristics of local wars under modern high-tech conditions is that the battlefield is becoming more and more transparent. In order to conceal combat attempts and achieve the suddenness of combat operations, aviation units must carry out long-term and frequent maneuvers on a wide scale, so that the depots may have the task of supporting the incoming and outgoing of the aviation units at any time; due to the urgency of the combat transfer of troops, the depots may at any time withdraw a certain amount of personnel and equipment from the fixed support to accompany the support, or accept some of the support personnel and equipment of other fraternal units to be stationed in an emergency, thus making the uncertainty of the support tasks more prominent. Third, the accuracy of future high-tech local war strikes and the extraordinary nature of damage will make flight logistics support tasks constantly in a state of change. Due to the dependence of the aviation units on airfields and the extensive application of modern precision strike and long-range strike weapons and equipment on the battlefield, airfields have become the key targets of the warring sides, and their destructiveness to airfields has also been greatly enhanced. In wartime, while undertaking the task of providing normal flight support, the field station will be faced with the bombing of the runway and the need to activate the backup runway and the highway airstrip at any time, or urgently open a field airfield support unit to carry out combat duties, or organize personnel to carry out battlefield rescue and emergency repairs to the damaged runway, and at the same time ensure that the planes in the field can take off forcibly. These tasks may alternate or be carried out at the same time, and the task transition is quick, thus greatly increasing the uncertainty of the support task.

(2) The requirements for the timeliness and accuracy of safeguards are particularly stringent

Whether it is a peacetime training flight or a wartime combat flight, the aviation unit has particularly strict requirements for the timeliness and accuracy of its logistical support. Modern aviation forces have a quicker pace of operations, and sometimes an air battle can be completed in a matter of minutes. For example, in the Gulf War, the US-led multinational force carried out the first large-scale air raid of more than 700 sorties in the "Desert Storm" stage, which took only three hours;

the two US air strikes on Libya took 17 minutes and 30 minutes respectively, and the Israeli Air Force took six minutes for the assault on the Bekaa Valley in Syria, three minutes for the PLO headquarters, and two minutes for the Iraqi nuclear reactor. These facts show that for aviation units, "time is the army" and "time is victory." Time can make the active party more active, and it can also make the passive party turn active, and the key lies in the use and grasp of time. Any delay may result in the loss of fighter planes or the loss of favorable attack positions, thus losing the initiative in combat, and may even cause even more serious consequences. Whether or not the air force can quickly take to the air depends to a great extent on whether the logistical support can be rapid, timely, and accurate. Moreover, this kind of support is not just the logistical support of a certain specialty, but the comprehensive support of various logistics specialties and links, and any problems in that link will directly affect the fulfillment of combat missions. In particular, under the conditions of joint operations, it is necessary for all types of aircraft and units to coordinate closely, and if the planes fail to take off on time due to delays in support, it will certainly affect the overall combat effectiveness and even cause irreparable losses. Therefore, flight logistics support requires that the stations must complete all preparations within the specified time to ensure that the aviation units can enter the battle in a timely manner. The requirements for the timeliness and accuracy of this kind of support are particularly prominent in the logistics support of combat flights in wartime.

(3) It is difficult to organize and direct support

Under the conditions of high-tech warfare, the combat forces of the air force are composed of multiple clusters and diversification, the battlefield environment is special, the struggle is fierce and complex, and the intensity of flight logistics support has greatly increased, making it more difficult to organize and command the support. First, the multi-model support task has been increased. In the future, the number of airfields in the main operational directions of our army will be limited, and in addition the combat radius of most of our army's combat aircraft will be limited, so the number of troops stationed at the airfields in the wartime combat area will be multiplied. On the one hand, the depot must provide equipment, materials, and technical support for many troops stationed on the field, and on the other hand, it must also undertake the task of providing support for the aviation units that come to the field temporarily, thus making the contradiction between supply and demand more prominent. Second, the threat of the enemy situation is great, and the task of emergency repair and rescue is heavy. Due to the widespread use of precision-guided and long-range attack weapons, future air operations will be more brutal, and airfields are also facing the threat of serious blows.

Therefore, on the one hand, the task of rescuing the injured and forced landing plane and rescuing the parachuted pilot in a timely manner is more arduous; on the other hand, in order to ensure the smooth progress of the ground preparations of the air force and reduce the losses caused by the enemy's air raids, the method of scattered preparation is often adopted, which makes it necessary to disperse the deployment of logistics support forces and constantly adjust the use of support forces according to the progress of the support work. If an airfield is blocked by the enemy and threatened by an air attack, the depot should not only ensure that the air force can take off forcibly and smash the enemy's blockade, but also quickly organize forces to evacuate and conceal the unprepared planes and all kinds of support personnel and equipment at the airfield. This has greatly increased the difficulty of organizing command and logistical support. Third, the task of emergency mobile support is heavy. In wartime, in order to conceal a combat attempt, or when the main runway of an airfield is damaged by an enemy air raid, the aviation unit stationed at the field will use the guard airfield, field airfield, or road airstrip to carry out combat missions. In this way, on the one hand, the station must quickly organize support forces and transfer materials, equipment, and support equipment to a new support location to carry out emergency mobile support, and on the other hand, it will organize the rescue of the wounded and the emergency repair of the airport according to the predetermined plan, and it will be very difficult to organize and command.

2. Requirements for flight logistics support

Modern warfare has put forward higher requirements for the logistical support of aviation flights. Economically and rationally organizing and using logistical support forces, strictly and rapidly carrying out all kinds of logistical support, using the least amount of manpower and material resources to complete the pre-flight and re-dispatch in the shortest possible time, and ensuring that the troops take to the air in a timely manner to fight, are the objective requirements put forward by the combat flights of the air force for logistical support. Therefore, it is necessary to emphasize the "two benefits" when organizing flight logistics support. The first is to emphasize military efficiency. It is necessary to quickly implement various service supports, and complete pre-flight and re-dispatch preparations in the shortest possible time. Second, on the premise of emphasizing military efficiency, it is also necessary to emphasize economic efficiency. That is, it is necessary to use the least manpower and material resources to complete the preparations for the first dispatch and the second dispatch of the aviation unit. In order to fulfill this requirement, it is necessary to strengthen the organization and command of all stages of combat flight logistics support and meet the following requirements:

(1) Strive to shorten the logistical support time for aircraft ground preparation

The ground preparation of the aircraft is mainly towing, refueling, inflating, loading and hanging weapons and ammunition and other service support work. All of these tasks must be strictly operated by procedures,

on the premise of ensuring safety, it is necessary to speed up the speed of various service support, improve the efficiency of support, and shorten the time for ground preparation. It can be seen from the sorties of the air forces of the countries concerned in the recent local wars that shortening the ground preparation time of aircraft is an effective way to increase the intensity of air sorties and their combat effectiveness. In the Fourth Middle East War, Israel had only one-third of its combat aircraft in the Arab countries, and was clearly inferior in numbers. However, due to the short time for the Israeli army to prepare on the ground (the average time for re-preparation is only 10-15 minutes, and the fastest time is only 7 minutes), the logistics support is highly efficient, and the intensity of aircraft sorties has been increased (the average daily sortie intensity is 4-5 times, and the maximum is 12 times), making up for the lack of aircraft, and finally ending the virtual dispute with the Arab countries being forced to accept a ceasefire. In the Anglo-Argentine Battle of the Falklands, British aircraft made an average of six sorties a day, and each sortie took no more than 30 minutes to prepare for each sortie.

In order to shorten the logistical support time for aircraft ground preparation, it is necessary to make economical and rational arrangements for the use of logistics personnel and equipment through qualitative and quantitative analysis, so that the limited support forces can undertake more support tasks; it is necessary to select correct support methods in light of the different combat plans of the troops; it is necessary to organize well the coordination in the support process, including the coordination between logistics and aircraft maintenance support, and the coordination between various logistical support forces, so as to ensure the normal operation of various logistical support forces; and in light of changes in the support situation, it is necessary to adopt adjustment measures, adjust the support forces in a timely manner, change the support methods, and quickly deal with the complicated and difficult situations that arise to ensure the flight of the troops.

(2) Adaptability to different combat missions

Due to the complex and ever-changing situation on the battlefield, aircraft often cannot be dispatched according to the predetermined plan, for example, they may change from a planned sortie to a call-on sortie, and the number of aircraft, the time of sortie, and the intensity of sortie may change at any time. These circumstances will have a direct impact on the use of logistical support forces, and therefore the logistical support work of the stations must have the ability to adapt to different combat situations. First, it is necessary to strengthen the organization and command of support forces. The depot must analyze the impact on logistical support according to the judgment of the head of the unit on the change in the combat situation, calculate the number of various logistics support forces dispatched based on the needs of the maximum dispatch intensity, and make timely adjustments according to the changes in the situation.

Second, it is necessary to formulate a plan for the distribution and use of support forces for support flights on the main runway and emergency take-off runway and aircraft for ground preparation at various dispersion points, and make preparations in advance for the field and the attached support facilities for the aircraft; third, it is necessary to make various preparations for fraternal troops to temporarily land at their own airfields and to transfer from a single aircraft to multiple aircraft support.

(3) It has the ability to provide emergency support in the event of an enemy blockade or attack on the airport

Assaulting airfields and destroying and suppressing enemy air forces is an effective way to seize air supremacy. In future wars, especially under the condition that the enemy is strong and we are weak, it is inevitable that the airfield will be attacked by the enemy's air. Aviation flight logistics support will be carried out under the threat of the enemy, so having the ability to carry out emergency support in the event of an enemy blockade or attack on an airport is another important requirement for the flight logistics support of the station. First, it is necessary to do a good job in the protection of airports and reduce losses to a minimum. Second, it is necessary to have an action plan to ensure the forced take-off of on-site aircraft and ground evacuation (including ground equipment). Fourth, it is necessary to have an emergency repair plan for the airport, organize manpower for emergency repairs, and make good preparations for the machines (tools) and materials needed for emergency repairs. Only by being fully prepared can we not be afraid of danger and not be alarmed.

Section 2: Logistics Support during the Flight Preparation Phase

Logistics support in the flight preparation stage refers to the logistics support work from the time of receiving the task to the beginning of the implementation of various service support work prepared for the first sortie at the flight site to the time before the flight. Its command procedures are: understanding the tasks and analyzing the characteristics of the support; drawing up a combat flight logistics support plan and issuing support tasks; organizing the preparation of combat flight logistics support forces; agreeing with the aircraft maintenance department on coordinated support matters; organizing the support forces to enter the field and providing support before the flight.

1. Understand the tasks and analyze the characteristics of support

(1) Understand the task

Understanding the tasks is the basis for the station commanders to make a determination to provide logistical support for flights, and is a prerequisite for the rational use of logistical support forces.

Due to the different subjects or combat missions of each flight, the number of planes dispatched, the size of the batches, the length of the interval, and the types of ammunition used, the methods, contents, characteristics, and intensity of support are also different. Therefore, only by conscientiously understanding the tasks and carefully analyzing the various situations related to the support tasks can we provide an accurate basis for formulating the support plan. Understanding the task should focus on the following four areas:

The first is to understand the enemy's situation. When the support units are flying on combat missions, it is necessary to find out the extent to which the airfields are threatened by the enemy and the complicated situations that may arise in the course of completing the support mission.

The second is to understand the specific support tasks. It is necessary to find out the nature of the air force's flight training subjects or combat missions, the types of aircraft, aircraft types, sorties, the intensity of sunrises, the time of sorties in batches, and the duration of training or combat.

The third is to understand the relevant regulations on ground preparation. The place, start time and time limit for the preparation of the first sortie;

Fourth, understand the relevant regulations on material supply. The main thing is to find out the ammunition loading and hanging plan of the troops, the loading and hanging requirements of the auxiliary fuel tanks, and so on.

The main way to learn about the above content is through attending the flight training meeting or combat meeting of the unit, consulting the flight training plan or combat plan and combat sortie plan of the unit, and learning directly from the unit headquarters or the chief.

(2) Analyze the characteristics of safeguards

On the premise of having a clear task, the head of the station should seriously analyze the characteristics of the support, and only by firmly grasping its characteristics can the situation be clear, the tasks clear, and the formulation of the support plan be targeted. Specifically, it is necessary to make analysis and judgment from the following three aspects.

First, it is necessary to analyze the characteristics of support from the perspective of the impact of the enemy's threat on logistical support. The analysis of the impact of the enemy's situation on logistical support is mainly based on the situation of the enemy and us, the strategic location of the airfield, the types of aircraft to be supported, the performance of the enemy's air attack weapons, and the combat state in which the airfield is located, so as to analyze and judge the possibility of the airfield being attacked by the enemy, as well as various complex and difficult situations that may arise in battle, such as finding and rescuing pilots in distress, ensuring the emergency landing of war-wounded aircraft, ensuring the evacuation of aircraft and personnel, emergency repairs at airports, and battlefield rescue work.

Second, it is necessary to analyze the characteristics of support from the perspective of the impact of troop training plans or combat operations on logistical support. Generally speaking, the larger the scale of the troop's training or combat, the more arduous the logistical support tasks, the more complicated the organization and command, and the greater the difficulty. For example, the size of the batch, the length of the interval, and the degree of dispersion of the preparation sites have a direct impact on the organization and use of support forces and the adoption of support methods.

Third, it is necessary to analyze the characteristics of support from the perspective of the impact and constraints of natural conditions on logistics support. "When the weather is right, the situation is in place, and the interests of the people are followed" is not only an important method for carrying out operations, but also an important basis for implementing flight logistics support. For example, meteorology is an unstable natural environmental factor, and although it is not enough to hinder logistical support work at all times, severe meteorological conditions, such as severe cold, scorching heat, rain, snow, and sandstorms, will have a great impact on the troops' flight logistical support activities and the quality of support.

2. Formulate a flight logistics support plan and issue support tasks

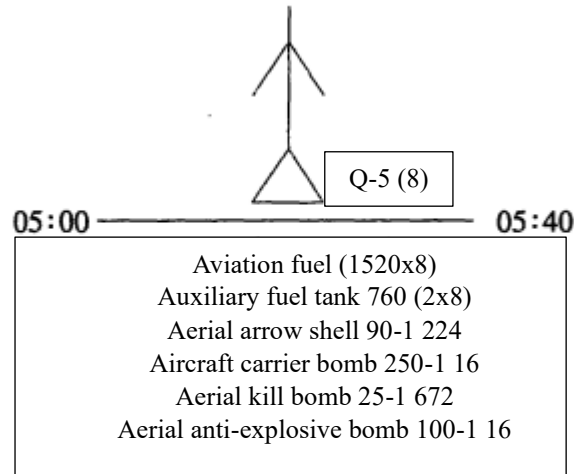
The flight logistics support plan is the basis for the station to organize and implement the flight logistics support. The requirements for drawing up a plan are: a combination of qualitative and quantitative analysis, the former is used to judge the nature of the support task and put forward the support measures, and the latter is used to determine the amount of materials, technical and equipment required. The content of the plan should be expressed in tables and data as much as possible, and all forms used for data processing should be able to reflect the calculation process. The main contents of the plan are: support tasks; the requirements for major combat materials and the time and place of their delivery; the requirements for major technical equipment and the time and place of arrival at the scene; and the organization of command measures.

(1) Support tasks

The flight logistics support task is to record the logistics-related contents of the troops' training and combat plans, including: the units to be supported and their combat and training tasks; the types (types), number of aircraft, and batches; the time and intensity of sorties in each batch; the time limit and place for preparing for the first sortie; the amount of refueling for a single aircraft; the plan for the use of ammunition; the type of auxiliary fuel tank; and the place, time limit, and method for preparing for another sortie.

The above can be expressed in tabular form or, where possible, by annotation on the airport map. This expression is simple, clear and easy to use. Figure 7-1 shows the annotation expression.

Figure 7-1: Schematic Diagram of the Support Task



The picture shows that in a certain preparation site, there are 8 strong five aircraft, from 50 minutes to 540 minutes to complete, the content below the time line indicates that the batch of aircraft single refueling capacity is 1520 liters, each aircraft needs to hang 760 liters of auxiliary fuel tanks 2, a total of 16. Eight Q-5 aircraft need to supply a total of 224 90-1 aircraft bombs, 16 250-1 aircraft carrier bombs and 672 2.5-1 aircraft carrier bombs and 16 100-1 aircraft killing bombs installed in this batch of aircraft carrier bombs.

If there are multiple groups of aircraft to be prepared, they should be marked separately at their respective preparation sites, and if the mission for the second sortie is clear, different colors can be used to mark them on the same map.

(2) The amount of major combat materials required and the time and place of transportation

In the support plan, the estimated consumption of aviation fuel, ammunition, auxiliary fuel tanks, and other major combat materials required for flight training or combat flights and the amount of prepared supply for the first sortie should be calculated separately in the support plan. The estimated consumption on the day of the flight or the day of the operation is the basis for the preparation of materials at the station, and the amount of preparation and supply for the first sortie is one of the bases for arranging the transport force in the pre-preparation stage. It is calculated as follows:

The first dispatch requirement of a material = the demand for a single aircraft x the number of aircraft prepared

The daily consumption of a material = the base number of a single machine x the consumption rate x the total number of sorties per day

Through calculations, we can basically grasp the material requirements of the troops on a certain flight day or combat day, so that all support units can make full preparations in the advance preparation stage, and it is also convenient for the stations to rationally deploy support forces.

The place of delivery of materials shall be determined according to the place where the aircraft is prepared for the first dispatch and the second sortie. The time of transportation, the first preparation of the required materials, usually before the start of the maintenance preparation, and the handover procedures with the maintenance personnel; the delivery time of the materials required for the re-dispatch preparation in principle does not affect the aircraft maintenance to prepare for the re-departure, but under normal circumstances, the aircraft should be transported to the aircraft preparation place before the return landing.

(3) The amount of main technical equipment required and the time and place of arrival

Flight logistical support is mainly carried out through various logistical and technical support equipment, and therefore, the economical and rational dispatch and use of all kinds of logistical and technical support equipment required for each combat and training flight is an important condition for the successful completion of the support task. The combat and training conditions of the air force are changeable, and the requirements for logistical technical support equipment vary greatly from flight mission, the number of aircraft sorties, the number of sorties, the formation of echelons, the situation of the enemy in the air, and the methods of ground preparation. In order to ensure that aviation units of different types of aircraft can be dispatched at the same time and with high intensity, it is necessary to strive to increase the utilization rate of equipment and enable the limited support equipment to shoulder more support tasks. At the same time, in order to reduce losses in the event of an enemy air attack, it is required to reduce as much as possible the personnel and equipment present at the scene. Therefore, when drawing up a flight logistics support plan, it is necessary to accurately calculate the amount of equipment required according to the flight mission, and strive to complete the support task within the specified time with the least amount of equipment.

A variety of methods can be adopted to determine the number of logistical support equipment to be dispatched for combat and training flights, and the most commonly used methods include the proportional dispatch method, the computer simulation method, and the overall planning method.

The proportional dispatch method is based on the practical experience accumulated by station commanders and staff officers and the law governing the distribution and use of support forces, and the proportion of logistics and technical support equipment dispatched after qualitative and quantitative analysis. The main factors that determine the proportion of logistics technical support equipment dispatched are usually the intensity of aircraft sorties, the urgency of support tasks, and the way in which aircraft are prepared on the ground.

The computer simulation method is based on a flight support mission, through a mathematical model with a computer simulation, to calculate the requirements of various technical support equipment. It is a scientific method for determining the use of logistical support forces.

Practice tells us that the determination of equipment requirements depends on three main factors: support tasks, ground preparation time frames, and equipment utilization rates. Support tasks refer to the amount of work to be completed within the specified time limit in flight preparation and flight implementation, such as the number of aircraft that need to be towed, or the number of trains that need to transport materials. Equipment utilization rate refers to the amount of work that each support equipment can complete within the specified time limit, such as how many planes can be towed, how many materials can be transported, and so on. The time limit set for the completion of the ground preparation of each batch of aircraft is usually the time limit set by the head of the aviation unit. The relationship between these three factors and the number of equipment dispatched is as follows: the heavier the support task, the greater the amount of equipment required, the higher the utilization rate of equipment, the smaller the number of equipment required, and the shorter the time limit for completing ground preparation, the greater the equipment required. Not only that, but the three elements also influence and restrict each other. Therefore, when conducting simulations, it is necessary to think holistically and analyze comprehensively.

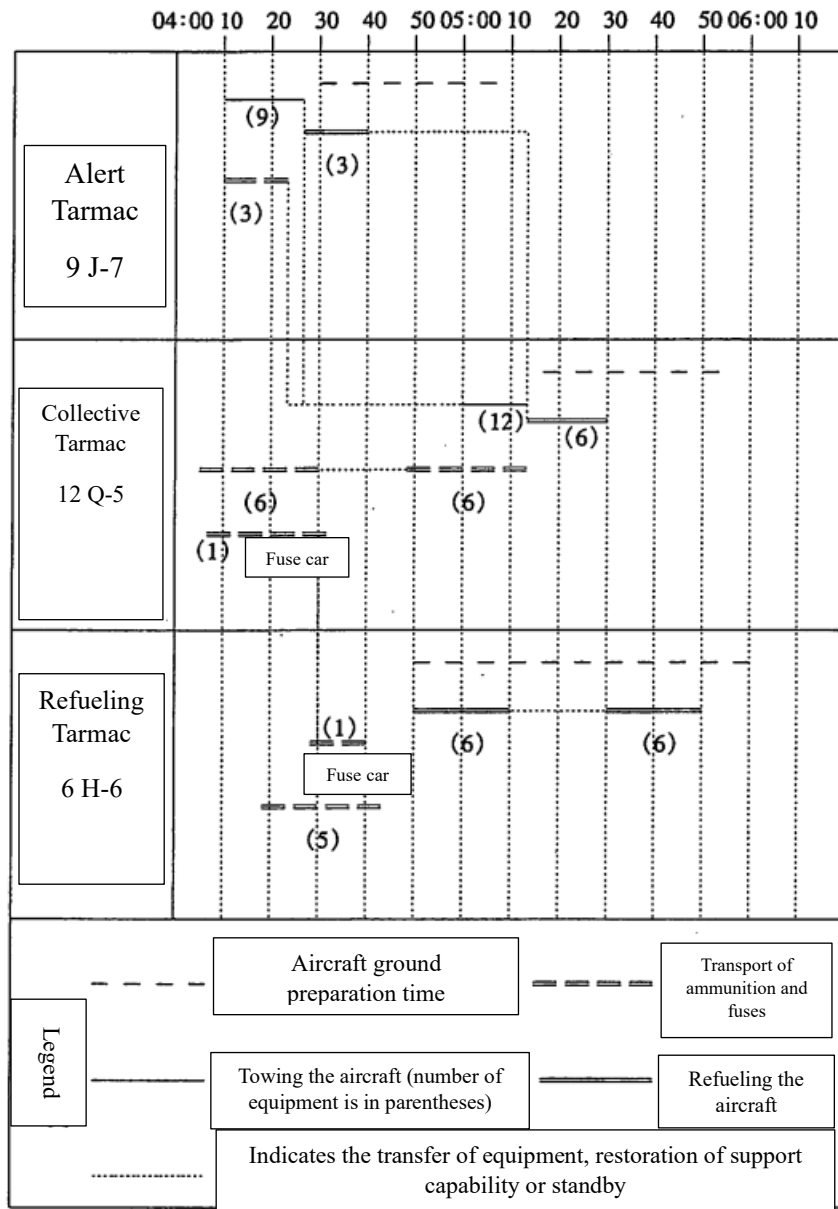
The overall planning method is a method that uses the resource optimization principle of the overall planning method to calculate the demand for support forces. It can more intuitively reflect the whole process of completing the flight logistics support task and the relationship between various tasks, and can make reasonable arrangements for various professional support and seek a better plan, so as to achieve the purpose of effective use of time and rational use of manpower and material resources.

The Gantt chart planning method is a commonly used method in the overall planning method. It is relatively intuitive and easy to grasp the need for planning support equipment. Figure 7-2 describes the operation method.

Some equipment is not easy to represent on the Gantt chart, such as power supply vehicles, cooling vehicles, oxygenation vehicles, etc., and the number of dispatches and use methods can be explained by means of text annotation.

The time and place of the entry of the logistical technical equipment participating in flight support shall be determined separately according to the nature of the work of the various types of equipment and the method of ground preparation. The time and place of the vehicles used for maintenance preparation (leading, refueling, cooling, oxygenating, power supply and ammunition, auxiliary fuel tank transporters) are determined by the place and sequence of random service preparation. Aircraft of combat units are usually parked in evacuation areas or caves;

Figure 7-2: Example of a Gantt Chart



In most cases, pre-flight ground preparation takes place after the aircraft has been towed to the outfield.

Occasionally, preparations such as refueling, inflating, and energizing may be carried out in the evacuation parking area, and then towed to the outfield to hang ammunition to reduce the time the aircraft stays in the outfield. In the event of an emergency take-off from the evacuation area or from the apron outside the cavern using the emergency take-off runway, all ground preparations are carried out in situ. When all the aircraft preparations are carried out in the field, the tractor should arrive at the evacuation area or cavern at the specified time when the aircraft towing starts, and the refueling, cooling, oxygenation, power supply vehicle, ammunition transport vehicle, and missile tractor shall arrive at the scene at the same time as the first batch of aircraft. If ground preparation is carried out in the aircraft evacuation parking place, except for the ammunition transport vehicle, other vehicles used for aircraft maintenance preparation and maintenance personnel arrive at the evacuation area or cavern at the same time. In the event of an emergency take-off, all vehicles that are ready for maintenance must arrive at the evacuation area or cavern at the same time. In the above three cases, the bomb and arrow bomb transport vehicles must arrive at the ammunition depot at the specified start time for transporting bombs, and at the same time as the ordnance personnel of the maintenance department are present, the bombs and arrow bombs required for the first sortie will be transported to the outfield. The auxiliary fuel tank is generally only replenished when preparing for the second sortie, so the auxiliary fuel tank transporter can complete the delivery task before the first sortie.

Command and personnel transport vehicles (command vehicles, tower vehicles, flight personnel vehicles, etc.) are generally required to pick up and drop off command personnel and flight personnel to the outfield half an hour before departure.

Safety support vehicles (firefighting, rescue, ambulance, etc.) arrived at the outfield at the same time as the first batch of aircraft.

After the amount of equipment required and the time and place of entry are determined, they should be filled in the dispatch plan of service support forces.

(4) Organize command measures

The organization and command measures are an important basis for the head of duty in the field of the station to exercise command and control over the logistics support at all stages of the flight, and its main contents are as follows:

1. Organization and use of support forces

With regard to the organization of combat flight logistics support forces, although there is a pre-organized plan in the general logistics support plan, the organization and command measures of the flight logistics support plan should be clearly defined in the organization and command measures of the flight logistics support plan in accordance with the support tasks.

The main factors influencing the organization and use of support forces are: troop combat and training tasks, and the mode and intensity of sorties.

Different combat and training tasks (such as fighter units carrying out interception missions, assaulting and bombing units to assault targets), their flight profiles, air retention time, weapon use, etc., are different, which will directly affect the organization of the supply of fuel, ammunition, auxiliary fuel tanks and other materials and the use of relevant technical equipment. Different combat sorties have their own special requirements for logistical support. In order to ensure the completion of ground preparations within the prescribed time frame, special emphasis should be placed on the accuracy and timeliness of the use of support forces in the planned sortie. When dispatching at the call, it is necessary to flexibly use support forces to adapt to changes in the battle situation. During high-intensity sorties, the ground preparation time is short, and the efficiency of logistics support must be improved as much as possible, such as the implementation of double-vehicle refueling, and the use of oil tankers and outfield pipeline refueling facilities at the same time, so that the landing aircraft can be refueled in the shortest possible time; The cooling and oxygenation vehicle makes full use of the gap of other support work to complete the inflation task.

2. Command organization and on-site command division of labor

The main commanding members of the flight logistics support are the head of the duty station, the field watchman, and the political watchman, and one or two additional staff officers are assigned as needed. Each service unit that directly supports the flight shall dispatch cadres on duty, and when necessary, the outfield flight support command room shall designate leading cadres of certain service units to participate in the on-site command. The head of the duty station and the field attendant are the organizers of flight logistics support, and are responsible for formulating support plans, organizing the accuracy of support work, comprehensively grasping the support situation, adjusting support forces, and dealing with various problems that arise in the support process. The staff officers on duty and the cadres on duty of the service support units are responsible for the on-site command of all support sites and service support. In addition to being responsible for the ideological and political work of the personnel on duty in the field, political duty officers should also participate in the organization and command of logistical support. In the organizational and command measures of the support plan, it is necessary to clearly stipulate the number of commanders and the division of labor among the commands.

3. Disposal plan for complex and difficult situations that may arise

The handling of complex and difficult situations that may arise mainly refers to the handling of emergency and unexpected situations such as the transfer of training flights to combat sorties, the emergency return and forced landing of faulty planes, the forced landing of faulty airfields, and the search for ambulance by parachuting pilots during peacetime training flights; Safeguard measures in this regard are specified in the logistical support plans formulated in peacetime and in the preparatory stage for war, as well as in the relevant professional service support plans.

When drawing up a flight logistics support plan, it is only necessary to put forward which parts of these plans are to be prepared to be implemented according to the training mission or the degree of threat to the airfield from the hostile situation at that time, and remind the relevant units to make ideological and organizational preparations.

4. Regulations on maintaining the order of the field and ensuring the safety of the ground

In order to ensure the safety of the ground, the station has formulated specific regulations for maintaining the order of the field. When supporting the flight of the troops, they mainly emphasize certain regulations that have a greater impact on ground security and attach some special requirements in the organization and command measures in accordance with the arrangements for combat (training) tasks, duration, meteorological conditions, and various support activities.

After the flight logistics support plan is formulated, the support tasks should be promptly issued to all service units. There are two types of task issuance: meeting and telephone notification. A logistical support preparation meeting should be held to issue tasks for all important combat operations or flight training subjects, such as wartime fighter units resisting the enemy's surprise attack on our site in the main operational direction and covering the main deployment of our army and navy, and when strong and bombardment units support the army and navy in operations at critical times, the number of troops, sorties that need to be supported, the intensity is high, and the threat of the enemy situation is great; or the flight interruption in peacetime is relatively long, the night flight is supported for the first time this year, the unit is carrying out a flight of new aircraft modification, the stage change, the new subject, and the number of large-scale flights. General support tasks with a small number of sorties may be issued in the form of telephone notifications. When assigning tasks in the form of a meeting, introduce all the contents of the support plan, and study and solve the coordination problems of each service support work. When giving telephone notices, they should be concise and to the point, emphasizing the number of major combat materials and technical equipment to be dispatched, the time limit and place for arrival, the threat of the hostile situation to the airport, and the organizational and command measures of each service unit. When necessary, special assignments shall be given to the task of supplying ammunition to the assault and bombing units.

3. Organize various service preparations

To support troop flights, especially combat flights, it is necessary to provide a wide variety of materials and technical equipment. To ensure a medium-intensity battle between the annihilation and assault regiments, it is necessary to supply more than 200 tons of fuel, ammunition, and aviation materials, and use more than 70 units of more than 20 kinds of equipment. In order to provide the above-mentioned support forces in an accurate and timely manner, all relevant service units at the station must make full material and technical preparations in accordance with the flight logistics support plan.

The head of the station and the field attendant should strengthen the supervision and control of various service preparations, solve the problems that arise in the preparations, and ensure that the preparations are fully completed in terms of quantity and quality.

(1) Preparation for field affairs

The main tasks are to inspect and clean runways, taxiways, aprons, refueling pads, and other sites, repair damaged pavements, maintain and test the operation of power supply facilities, turn on the lights and inspect the lighting and signaling equipment of the roads, and organize emergency repair forces to prepare for emergency repairs of machinery and implements according to the degree to which the airport may be damaged by the enemy.

(2) Preparation for the supply of major combat materials

The focus is on testing the quality of fuel, inspecting and repairing fuel supply facilities; inspecting, matching, and arranging ammunition according to the proportion of ammunition types and quantities prescribed by the troops; preparing aviation equipment, organizing gas production and battery charging and discharging, and preparing auxiliary fuel tanks according to the estimated consumption; and arranging ammunition and auxiliary fuel tank transport vehicles and loading and unloading forces.

(3) Preparation of technical equipment

Focus on inspecting and maintaining the power, driving and special systems of various vehicles, troubleshooting, and restoring the support capacity of the special part, including filling oil trucks, filling gas cylinders for cold and oxygenated vehicles, replacing batteries for power supply vehicles, filling fire trucks with water and supplementing and updating fire extinguishing agents, and equipping ambulances and rescue vehicles with equipment and equipment.

(4) Preparations for life and health security

According to the number and frequency of outfield dining, the preparation of food supply, the organization of on-site ambulance and the rescue of off-site distressed pilots and the preparation of medicinal materials, etc.

4. Coordinate support matters with the maintenance department

The ground preparation of the aircraft was carried out jointly by the station and the maintenance department of the aviation unit. In order to complete the task in a coordinated manner, the station should strengthen the contact with the maintenance department. According to the intention of the flight commander, coordinate support matters in a timely manner. The main contents of coordination include: the time and place of preparation, the support forces dispatched by the required stations and the supplies and equipment; the start time and completion time limit for towing the aircraft before the flight, the place of preparation for the first and second sorties, the arrival time of the aviation materials and ammunition required for the first and second sorties, the support methods for preparing for the second sortie (aircraft towing or taxiing, refueling for activities or fixed refueling, etc.), and the handling of special situations such as on-site emergency evacuation.

The timing and method of consultation shall be determined according to the specific circumstances. When convening an operational meeting, consultations should be held at the meeting as much as possible, and if a meeting is not held, consultations can be made by telephone. Some coordination matters to be prepared for the re-dispatch can also be negotiated after entering the venue.

5. Organize support forces to enter the field and implement pre-flight support

There are two situations in which the ground preparation and logistics support before the flight is carried out in the field: First, the logistics support for the first sortie is carried out immediately after the order is issued, and the station directly enters the logistics support of the first sortie preparations after completing its own preparations; and the second is that the order is issued the day before the flight, and the advance approval is carried out first, and the first sortie preparations are made before the start of the flight the next day. Regardless of the circumstances of the flight, all preparations must be completed in the specified time and quality and quantity.

(1) The main content of the implementation of flight logistics support at the site

1. Field service guarantee

Complete the restoration and cleaning of the runway, taxiway, apron, refueling apron and other flight sites on time to ensure that the pavement meets the flight requirements; do a good job in preparing the aircraft blocking net; and check the fire truck in place. To ensure the flight at night and under complex meteorological conditions, it is necessary to carefully review and electrify the lighting equipment on the field, and test run the lighting backup generator set to ensure reliable power supply.

2. Aircraft towing

The tractor should arrive at the designated place on time. Normally, the maintenance personnel are first transferred to the outfield, and then the aircraft is towed to the take-off line according to the arrangement of the maintenance cadres. When towing an aircraft from an aircraft hangar, the station should assign cadres to assist the maintenance cadres in commanding. Before towing the aircraft, the driver should be urged to carefully check the connection of the tow bar, hook and latch of the aircraft, and confirm that the aircraft cabin is operated by maintenance personnel before towing. When towing an airplane, there must be cadres on duty present to exercise unified command, maintain good towing order, and strictly prevent the plane from colliding with it. The tractor driver should obey the command, concentrate, drive cautiously, and abide by the relevant regulations of the tractor aircraft.

3. Material delivery

When transporting the materials needed for the troops' flights, it is important to grasp the quantity and quality of the various materials needed, the places where they are delivered, and the time limit for completion. After the ammunition is delivered to the field, it is necessary to cooperate with the ordnance cadres of the aircraft maintenance department to review the quantity, quality, type and model, and handle the handover. The aviation supply vehicle should do a good job of inspection before leaving the vehicle, supplement the commonly used equipment according to different flight tasks, and quickly send the urgently needed equipment for maintenance applications to the scene. In order to improve the efficiency of material transportation, the material loading point in the reservoir area should expand the operation area as much as possible according to the needs of the task, so that more vehicles can be loaded at the same time, and the loading and unloading force dispatched should be sufficient to meet the needs of completing the loading and unloading task on time.

4. Aircraft refueling, oxygenation and power supply

To refuel, oxygenate, and supply power to aircraft, it is necessary to strictly control the quality and organize the cooperation of various professional supports. Before the start of various support work, the cadres on duty of the relevant business departments should assist the maintenance cadres to seriously check the quality of various oils, special liquids, and oxygen, and the technical condition of power vehicles and refueling equipment. In the process of implementing support, it is necessary to coordinate the work sequence of various specialties and make them closely linked, so as to shorten the time for ground preparation. In order to ensure safety, under normal circumstances, refueling, oxygenation, and power-on work are not allowed to be carried out on the same aircraft at the same time (except for special requirements).

5. Other security work

The command vehicle and personnel will pick up and drop off the command personnel and flight personnel on time. The aviation military doctor should carefully understand the health status of the pilot, report to the flight commander, and check the technical condition of the flight equipment and life-saving equipment.

After the completion of the logistical support work in the flight preparation stage, the staff officer on duty in the flight support command room should report the support situation to the flight commander and the head of the field duty and listen to the instructions on the support for the redeployment; agree with the maintenance officer on the coordination matters for the preparation for the redeployment; arrange the support tasks for the redeployment to all the personnel on duty in the field of the station, and explain the support methods and requirements.

(2) The main work grasped by the head of the field on duty

The purpose of logistics support in the flight preparation stage is to ensure that all support work meets the requirements of the flight mission.

The quality of its preparation is directly related to whether or not the troops can enter the prescribed state of readiness on time. Therefore, the head of the field duty should conscientiously do a good job in the following work:

1. Keep abreast of the flight mission and issue an approach order in a timely manner

Before organizing the troops to enter the field, the head of the field duty should take the initiative or instruct the staff officer on duty to ask the aviation unit whether there is any change in the flight mission. When there is a change in the flight plan, the support plan should be immediately revised accordingly, and the relevant service support units should be informed of the changes in the flight support plan, and all service units should be organized to make supplementary preparations; when there is no change in the flight mission, they should issue an approach order to each service support unit according to the flight support plan of the station according to the notice of the flight unit, and at the same time clarify the location of the command tower for the current field.

2. Supervise and check readiness

The head of the field duty should arrive at the field before the service support unit enters the field, so as to supervise and inspect the preparation of all kinds of support personnel, vehicles, materials and equipment, and communicate with the personnel who are on duty and on duty in the field.

3. Review key parts and key tasks

Organize all service support units to quickly implement various support work. The cleaning of runways and taxiways, the preparation of blocking nets, the quality of aviation fuel, the lighting of the yard and the preparation of rescue equipment are reviewed and the problems are dealt with in a timely manner.

4. Carry out pre-flight mobilization

According to the characteristics of the flight mission and the requirements of the flight commander, the mobilization before the flight should be carried out in a timely manner, and clear requirements should be put forward to all service support units.

Section 3: Logistics Support during the Flight Implementation Phase

The logistical support in the flight implementation stage is the logistical support work during the period from the time the flight commander sends the signal to start the flight to the time when the flight signal is issued. The logistics support in the flight implementation stage is the most intense and active stage among the various stages of flight logistics support. The main tasks of the station head and the headquarters at this stage are:

1. Understand the task and grasp the characteristics

The task of logistics support in the flight implementation stage is to organize and implement all kinds of logistical support for the preparation of another sortie, and to deal with all kinds of complex and difficult situations that may arise in the process of support at any time.

The re-dispatch support is a direct support for the ground preparation of the re-landing aircraft. It is mainly to replenish the various combat materials consumed in flight or operation, usually including refueling, replenishing ammunition and auxiliary fuel tanks, filling cold, oxygenation and power supply, and towing the landing aircraft to the preparation site as needed. When providing support for combat flights, it will also be responsible for the rescue of war-wounded planes and the rescue and rescue of wounded pilots and parachuted pilots.

Compared with the logistics support for the preparation of the first sortie, the logistical support for the preparation of the first dispatch has the following characteristics: First, the support workload is large. Because the aircraft that sorts out for the first time is generally at the end of the last battle, after the flight is prepared or prepared in advance, when the fuel tank is full and the ammunition is full, it only needs to refuel the auxiliary fuel tank, replenish the cold oxygen system, and attach and power the external weapon to meet the needs. When preparing for another sortie, the aircraft needs to fully replenish its flight or combat consumption, so the support workload is usually greater than that of the first sortie. Second, the guarantee time is urgent. Because air operations may be raging when the planes are preparing for another sortie, and the airfield may be blockaded and suppressed by the enemy at any time, it is necessary to complete ground preparations as soon as possible, so that the planes that will be dispatched again can quickly take off into the air or be ready for battle as soon as possible. However, the first dispatch, except for emergency dispatch at the call, is generally dispatched according to the plan, and the urgency of the time limit for its support is relatively small. Third, there are many complex and difficult situations that we are facing. Sortie support is carried out during the implementation of a flight or battle, and some unexpected events can occur at any time. Therefore, while organizing and implementing logistical support for dispatching again, the head of the station must be ready to deal with all kinds of complex and difficult situations at any time.

2. Control support activities according to the plan

The requirements for logistical support forces determined in the troops' flight logistics support plan are calculated on the basis of the troops' combat flight or training flight sortie plans and the support conditions of the depots, and it is premised on the fact that combat or training is carried out according to plan and that all kinds of support equipment operate normally without interruption.

However, in actual combat, due to the different enemy situations faced by each batch and each aircraft, it is impossible for combat activities to be completely consistent with the original plan, and if the personnel of various specialties cannot keep abreast of the changes in the situation, their support activities will inevitably deviate from actual needs and deviate from the predetermined objectives. Therefore, the task of logistics command is, first of all, to grasp and convey to the personnel of various specialties the information on changes in the situation in a timely manner, so that the support activities (equipment transportation) can be carried out as planned. The second is to take timely measures to correct deviations when deviations occur, so that support activities are as close as possible to the support objectives. The main measures are:

(1) Reasonably arrange the order of support on the basis of the redeployment of support tasks

In the course of combat and training flights, due to various reasons, there are frequent changes in the return time of each batch of aircraft, the number of sorties to be prepared, and the order of sorties, so in order to complete the support tasks of preparing for the re-sorties on time, the support forces should be given priority to the planes assigned to the tasks of the re-sorties, and the support should be arranged in the order of the sortie time.

(2) Ensure that the professional service support of each aircraft is connected with each other

The preparation time for the aircraft to go out again is the sum of the time for professional service support such as towing, refueling, inflating, and hanging ammunition. The interconnectedness of various specialties is an indispensable condition for each batch of aircraft to complete the preparation on time. Therefore, when the intensity of logistics support deviates from the original plan and the various professional service support cannot be connected with each other according to the predetermined procedures, the mutual connection should be achieved by rearranging the order of professional support or changing the operation method. For example, when the landing density of aircraft suddenly increases at a certain time, and the tractor does not have time to tow all the aircraft on time, some aircraft can be refueled or inflated at the landing line first, and then towed to the take-off line. When the single vehicle refueling cannot complete the refueling task on time, it can be changed to double vehicle refueling, by shortening the refueling time of the previous batch of aircraft, so that the latter batch of aircraft can start refueling in time.

(3) Make sure that the current and future tasks of each piece of equipment are linked

Improving the utilization rate of equipment and ensuring the uninterrupted normal operation of each piece of equipment is the decisive condition for completing the support task as planned. To this end, the field duty room and the "three-line" commander should cooperate closely with the maintenance department to effectively control the turnover of traction, refueling, cold and oxygenation vehicles through on-site direct command and communication tools.

When a piece of equipment completes a support mission, it will immediately give a clear working place or the number of aircraft that should be supported, so that the tasks before and after it are closely connected. For example, when a tractor tows a landing aircraft to the refueling line, it should promptly inform the aircraft that returns to the landing line to tow the aircraft that lands later, or tows an aircraft that has been refueled at the refueling line to the take-off line. When the refueling is carried out, when a refueling truck completes a refueling task, it is necessary to clarify in time which aircraft to refuel or whether to return to the warehouse for refueling. If it is found that a certain piece of equipment is at a standstill, and at the same time there is an aircraft waiting for support, the task should be given to the employee immediately.

3. Adjust support forces in a timely manner in light of changes in support tasks

In the course of carrying out a battle, the air force often needs to temporarily adjust its combat deployment and change its combat sortie plan in response to changes in the enemy's situation or changes in the determination of higher-level leaders. For example, the increase or decrease of aircraft, the change of sorties, the intensity, the time, and the place of ground preparation, the type and quantity of ammunition used, and the loading and hanging plan of the auxiliary fuel tanks will have a major impact on the logistical materials, the amount of technical equipment, the support method, and the time limit for completion. Therefore, the head of the station and the field attendant should keep abreast of the situation related to logistics support, especially the consumption of air combat materials, the situation of aircraft wounded in battle, and the changes in the plan for re-dispatching according to the changes in the support task of the redeployment of the air force, so as to take corresponding compensation and adjustment measures to supplement and adjust the support force and change the method of logistics support according to the changes in the support task of the redeployment support.

4. The correct selection of support methods

Correctly selecting support methods according to different combat situations is an important way to shorten the preparation time for another sortie. The logistical support for the preparation of the second sortie is mainly aircraft traction, refueling, and inflation. The so-called guarantee method is a combination of these three professional services. The traction, refueling, and inflation prepared by our air force aviation units for dispatching again usually adopt four combination methods according to the specific situation, namely, straight-line traction, active refueling and inflation, cyclic traction, fixed refueling and inflation, aircraft taxiing, active refueling and inflating, and aircraft taxiing, leading and combining with fixed refueling and inflation. The combination of aircraft to be used for each flight depends on factors such as the number of aircraft, the intensity of sorties, the type of ground readiness (dispersed or concentrated), the type of aircraft (single or multi-aircraft), and the enemy situation.

The organization and implementation of the above four methods and when to use them are described below.

(1) Straight-line traction, active refueling and inflation

Straight-line traction and active refueling and inflation refer to the tractor towing the landing aircraft directly to the apron of the take-off line at one time, and the refueling vehicle and the refueling and oxygenating vehicle take the initiative to approach the aircraft and give refueling and inflation before or after the aircraft is towed to the take-off line (see Figure 7-3). In the support process, according to the landing situation of the aircraft, two methods are usually implemented alternately: first towing and then refueling and inflating, and first refueling and inflating and then traction. In principle, as long as the tractor has time to tow, it should be towed first and then refueled and inflated. When there are many landing planes at the same time, and some aircraft cannot be towed in time, they can be refueled and inflated first and then towed.

This method is more efficient, more flexible, and convenient for vehicle scheduling. However, in order to make the aircraft get traction and refueling in time, more tractors and refueling vehicles are needed, and the vehicles are difficult to meet the needs under the condition that the number of aircraft is large and the dispatch intensity is large. When two or more types of aircraft are dispatched in battle at the same time and are preparing for divisions, this support method is not suitable because some types of aircraft need to taxi on the taxiway and cannot be towed by planes at the same time. Therefore, the timing of the use of this method is: the number of aircraft is small, the single aircraft type is combat, and the different aircraft types with similar models are engaged in the same field operation.

(2) Circulating traction, fixed refueling and inflation

Circular traction refers to the tractor towing aircraft between the landing line and the refueling line, between the refueling line and the take-off line, and between the landing line, the refueling line and the take-off line according to the landing and refueling conditions of the aircraft. Fixed refueling and inflation refers to the use of pipeline refueling equipment or the oil truck fixed on the apron of the refueling line, and at the same time the cold and oxygen filling vehicle is fixed at a certain point in the third line, and the tractor will tow the landing aircraft to the refueling well (or oil truck) of the pipeline refueling equipment and the side of the cold and oxygen filling vehicle for refueling and inflation (see Figure 7-4).

The key to improving support efficiency and shortening the preparation time for another sortie is to organize a good cycle of traction so that the landing planes can reach the refueling line in a timely manner and the refueled planes can reach the take-off line in time to load ammunition. The specific method of cyclic traction is as follows: when a tractor tows a landing aircraft to the refueling line, it may return to the landing line as the case may be, and tow the aircraft that has landed later to the refueling line, or tow the aircraft that has been refueled on the refueling line to the take-off line,

when you reach the take-off line, either return to the refueling line and tow another refueled aircraft to the take-off line, or go straight back to the landing line and tow the aircraft that landed later to refuel. In order to ensure the normal progress of circular traction, the field duty room and the "third line" commander must keep abreast of the landing and refueling situation of the aircraft, and designate the circular route for the tractor driver in time.

Organizing fixed refueling is also an important part of shortening the preparation time for another sortie. The method is usually as follows: when using oil trucks, generally one aircraft is parked next to each oil truck, when using pipeline refueling equipment, one aircraft is parked on both sides of each refueling well or derrick, and two aircraft are refueled at the same time with 2-4 oil guns. When using oil trucks for fixed refueling, sufficient oil trucks should be equipped to ensure that the fuel trucks can work uninterruptedly.

Applicable timing: This support method has the following characteristics: First, it is conducive to improving the towing efficiency of the aircraft, so that the landing aircraft can be towed in time. Its reason is: when circulating the bow 1, the turnaround time between the tractor and the refueling line is one-half of the turnaround time of a straight-line traction, and two airplanes can be pulled away from the landing line at the same time, so the towing task of more sorties can be completed with less tractor. Second, it is conducive to improving the efficiency of refueling. The reason is that oil trucks can be used to transport oil, which reduces the number of times that fuel trucks return to the warehouse for oil filling. Third, the order is better guaranteed. The reason is that the work of refueling, oxygenation, and loading ammunition is carried out in different locations, and the support sequence is fixed, so as to avoid mutual interference or waiting of various specialties. The disadvantage is that the flexibility is poor, and it cannot be used when a single model is prepared in a partition, or when different models with large differences in models are guaranteed for the same session.

This method is usually used under the conditions of a large number of aircraft, a single type of combat with high sortie intensity, and a small threat of enemy situation.

(3) Aircraft taxiing, activity refueling and inflation

Aircraft taxiing, activity refueling and inflation, refers to the aircraft landing, taxiing to the take-off line or other ground preparation sites, refueling vehicles and refueling and oxygenating vehicles take the initiative to approach the aircraft, refueling and inflating. After completing the preparations for another sortie, it still taxied and took off (see Figure 7-5). When the aircraft is taxied and refueled and inflated, all support work must be carried out in the same place because the aircraft cannot change the ground preparation site.

When flying a single aircraft, it is usually taxied to the landing line apron for various ground preparations, and when it is necessary to take off urgently, it can also be ground prepared on the landing line apron and take off from one end of the landing line. When a single aircraft or different aircraft types are prepared for re-sorting, they are usually carried out at the collective apron and fuel refueling apron at both ends. During combat flights, the aircraft must first retreat in the bomb withdrawal area after returning home, and after the bomb is withdrawn, it still needs to be towed by a tractor to the place where it is ready for another sortie.

Timing of application: This support method has great flexibility and can adapt to various combat situations. For example, centralized preparation and partition preparation for a single model, partition preparation for different models, etc.

(4) The combination of aircraft taxiing and traction with fixed refueling and inflation

The guarantee method of aircraft taxiing, towing and fixed refueling and inflation refers to taxiing to the refueling pad for refueling after the aircraft landing. After the refueling is finished, the tractor will tow the refueled aircraft to the side of the refrigerated and oxygenated vehicle for inflation, and then tow it to the take-off line or other preparation sites. The characteristics of this method are: first, it can shorten the time for aircraft ground preparation, second, it can reduce the number of tractors dispatched, and third, it can give full play to the role of airport pipeline refueling equipment.

When to use it: This method is usually used when the airport has pipeline refueling equipment and the threat of an enemy situation is low.

The above are the four basic combination methods of aircraft traction, refueling, and inflation in the preparation for another sortie. In a support session, usually according to the intensity of support and other factors, a certain support method is the mainstay, and other combination methods are used in combination according to changes in the situation. For example, in the case of fixed refueling, cyclic traction is implemented during the phase with high dispatch intensity. The dispatch intensity can be changed to straight line traction, that is, the tractor will not remove the tow bar after the aircraft is towed to the refueling line, and continue to be towed to the take-off line after the aircraft has been refueled. When a certain refueling method cannot complete the task, fixed refueling and active refueling can be implemented at the same time. When circulating traction and fixed refueling, active inflation can also be implemented. If the combat time is short and the oxygen consumption is low, the aircraft may not be oxygenated after landing, and the oxygenation vehicle does not have to be fixed, but the aircraft that needs to be oxygenated is oxygenated.

5. Correctly handle complex and difficult situations

Aviation flights, especially combat flights, arise with all sorts of complex and difficult situations. In order to ensure the smooth progress of the flight, when the following situations are encountered during the implementation of the flight, the head of duty at the station shall, in accordance with the instructions of the command post of the aviation unit or the head of the unit, take corresponding safeguard measures, and cooperate closely with the maintenance department to fully complete the support task.

(1) Handling of situations when switching from a training flight or combat duty to a combat sortie

When receiving an order from an aviation unit to change from a training flight to a combat sortie or a combat sortie by a combat duty aircraft, the head of duty at the station should instruct the staff officer on duty to clarify the support task as soon as possible, adjust the support force, and promptly notify the units concerned to deliver the materials needed for the unit's operations to the outfield.

(2) Handling of the situation of the temporary combat arrival of the aircraft group of the fraternal troops

In the course of ensuring the combat flight of the troops stationed on the field, a group of fraternal troops suddenly comes to the field to land and make preparations for sortie, which is a common and complicated situation in wartime. When such a situation arises, it is necessary to quickly ascertain the combat mission, fulfill the time limit for preparing for combat sorties, the use of ammunition, and so on, and organize forces to make timely material preparations; and rationally distribute support forces according to the order and number of sorties dispatched by all units present at the scene, so as to fully fulfill their support tasks.

(3) Handling of situations in which injured or faulty aircraft are forced to land and pilots parachute

The rescue work shall be carried out in an organized and orderly manner in accordance with the instructions of the flight commander: the head of the station shall immediately direct the emergency vehicles and the logistics personnel responsible for the rescue task to carry out the rescue work quickly. In the case of an injured plane that is forced to land, it is necessary to first rescue the personnel on board and extinguish the fire, and at the same time, assist the maintenance personnel to quickly take effective measures such as cutting off the power supply and oil circuit, preventing the guns from igniting and the explosion of ammunition, and pulling the plane away from the runway as soon as possible to avoid affecting the combat operations of the troops and the safety of other aircraft. When making a forced landing or parachuting off-site, a rescue team should be dispatched quickly according to the predetermined plan, and the local troops and local units should be notified to assist in finding and rescuing.

(4) Handling the situation when switching to a dual-runway or emergency take-off runway for take-off or landing, after receiving an order to switch to a dual-runway or emergency runway to support the take-off or landing of an aviation unit,

the head of the station should promptly notify the reserve forces to enter the field and set up a temporary tower, quickly organize traction, transfer ammunition, auxiliary fuel tanks and other combat materials, and organize personnel and equipment into corresponding support groups to implement divisional support, so as to ensure that the troops can complete the preparations for dispatch in a timely manner. In the process of task change, it is necessary to strengthen on-site organization and command, maintain good order in the field, and prevent errors and ground accidents.

(5) Handling the situation when an air raid siren is heard and it is necessary to evacuate and conceal

After hearing the air raid siren, all support personnel at the station must obey the unified command of the flight commander. First of all, ensure that the aircraft enters the predetermined evacuation site, and then organize personnel and equipment to evacuate and conceal. In order to ensure the timely resumption of flight and rescue activities, the tractor should be evacuated with the aircraft, and the emergency vehicles such as firefighting, ambulance, and rescue should be concealed in an appropriate position that is convenient for carrying out rescue activities. The field attendant should stick to his post 1 and maintain close contact with the flight commander and pay attention to the command signal.

(6) Handling of situations where the airport is blocked or attacked by the enemy and our plane forcibly takes off

When an airfield is blocked or attacked by an enemy, aircraft that have been prepared on the ground may take off forcibly, and aircraft that have not completed their preparations usually go into evacuation and concealment. When such a situation occurs, it should be under the unified command of the flight commander, and the logistics commander should firmly direct the personnel on duty in the field to go all out and carry out the support bravely and calmly. At the same time, it is necessary to quickly organize the rescue of the wounded, the emergency repair of aircraft and equipment, the removal of unexploded bombs, the rush to repair the road, and the restoration of support capability as soon as possible according to the predetermined plan.

Section 4: Logistics Support in the Flight Evaluation Stage

After each flight, the air force should seize the flight gap to restore its logistical support capability as soon as possible, so as to ensure that the troops are quickly ready for another operation.

1. Organize the troops to make logistical preparations for another battle

Under the conditions of continuous operations, all kinds of support and preparations after the flight, that is, preparations for the next operation. The main contents of logistics support in the flight evaluation stage are:

Aircraft refueling (fuselage fuel tank), oxygenation, replenishment of guns and shells, evacuation and concealment, provision of power supply, fuel pump, pumping and other vehicles required for aircraft maintenance and inspection, supply of aircraft maintenance and repair equipment and equipment. The logistical preparations of the station itself include: Ammunition matching, platoon, and auxiliary fuel tank preparation in accordance with the combat attrition and re-operation support tasks; inspection and maintenance of the flight site and its ancillary facilities; maintenance of technical equipment and replenishment of materials and equipment on board. Aviation military doctors should have a comprehensive understanding of the health of the flight personnel.

2. Restore support capacity

Restoring support capability refers to making up for casualties, losses, and attrition in battle, and restoring all logistical support capabilities to their proper level. After each combat flight, the field duty room should quickly ascertain the casualties, material consumption, equipment and road damage, and report to the head of the unit and the logistics of the superior. The head of the station should make a timely decision on restoring the support capability, including applying for replenishment of personnel, materials, and equipment, rescuing, treating, and evacuating the wounded and sick, and rushing to repair the roads and facilities.

3. Summarize and report the logistics support situation

In order to improve one step after another, it is necessary to conscientiously sum up the experience of providing support after each battle. The focus will be on the experience of ensuring that the aviation units take to the skies in a timely manner under different circumstances and shorten the time for preparing for logistics support for another sortie; the organization and preparation of logistics support forces under various operational conditions; on-the-spot command and control methods for various specialized service support; methods for handling various complex and difficult situations; and the laws governing casualties, material consumption, and equipment damage.

In order to draw lessons and lessons in a timely manner, after the flight, the head of the station should conscientiously organize all departments and detachments under the station to conduct an evaluation of the support situation and a daily evaluation of high-quality safety guarantees. It is necessary to comment on the security situation to the personnel on duty, praise good people and good deeds, and criticize shortcomings. The logistical support situation and data of each flight should be recorded in the support log.

In order to enable the heads of air units and the logistics departments at higher levels to grasp the logistics support situation in a timely manner, it is necessary to organize the preparation and submission of reports on the logistics support situation and materials for summing up experience in a timely manner.

Figure 7-3: Schematic Diagram of Straight-Line Traction and Active Refueling and Inflation

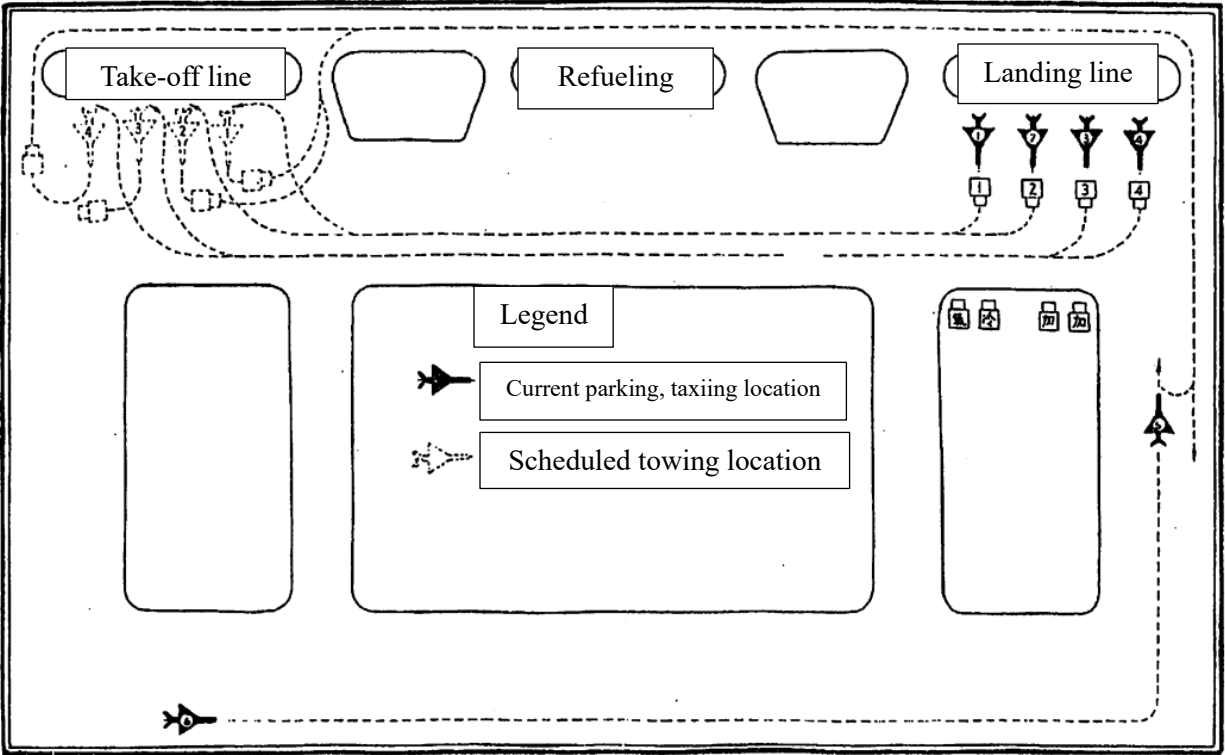


Figure 7-4: Schematic Diagram of Circulating Traction and Fixed Refueling and Inflation

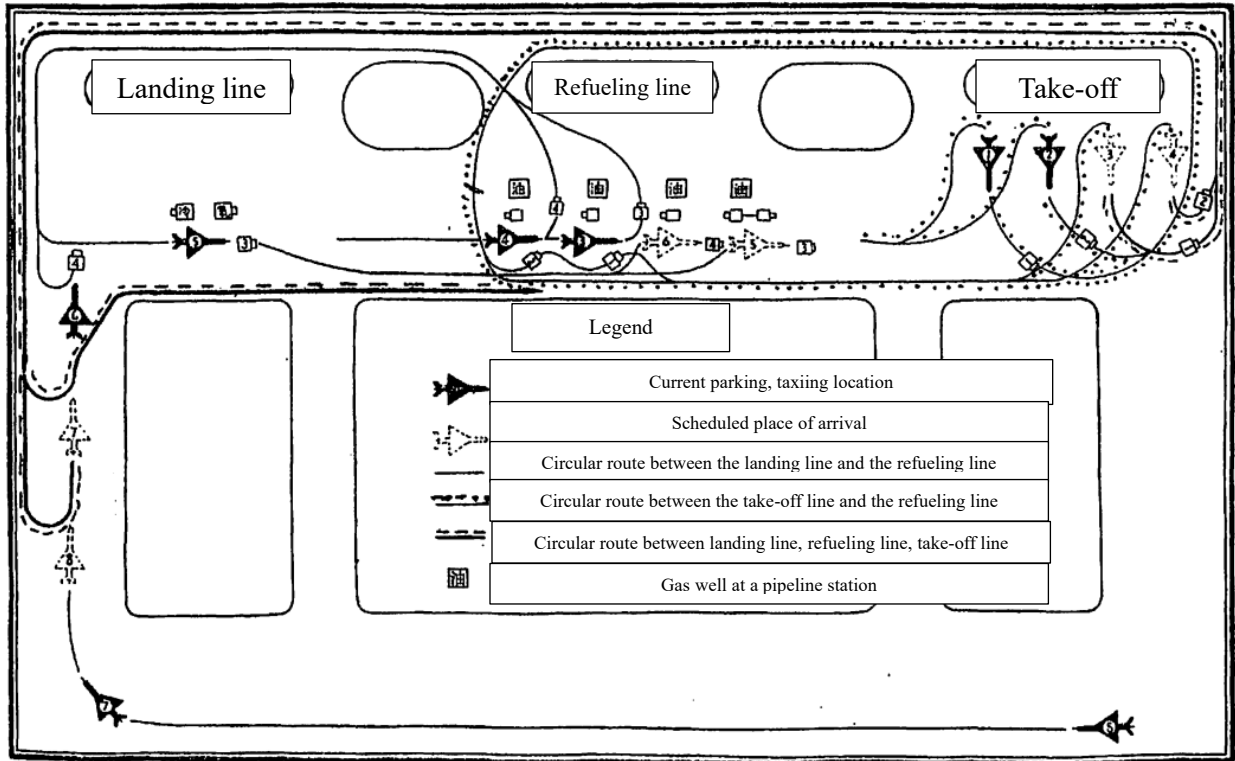
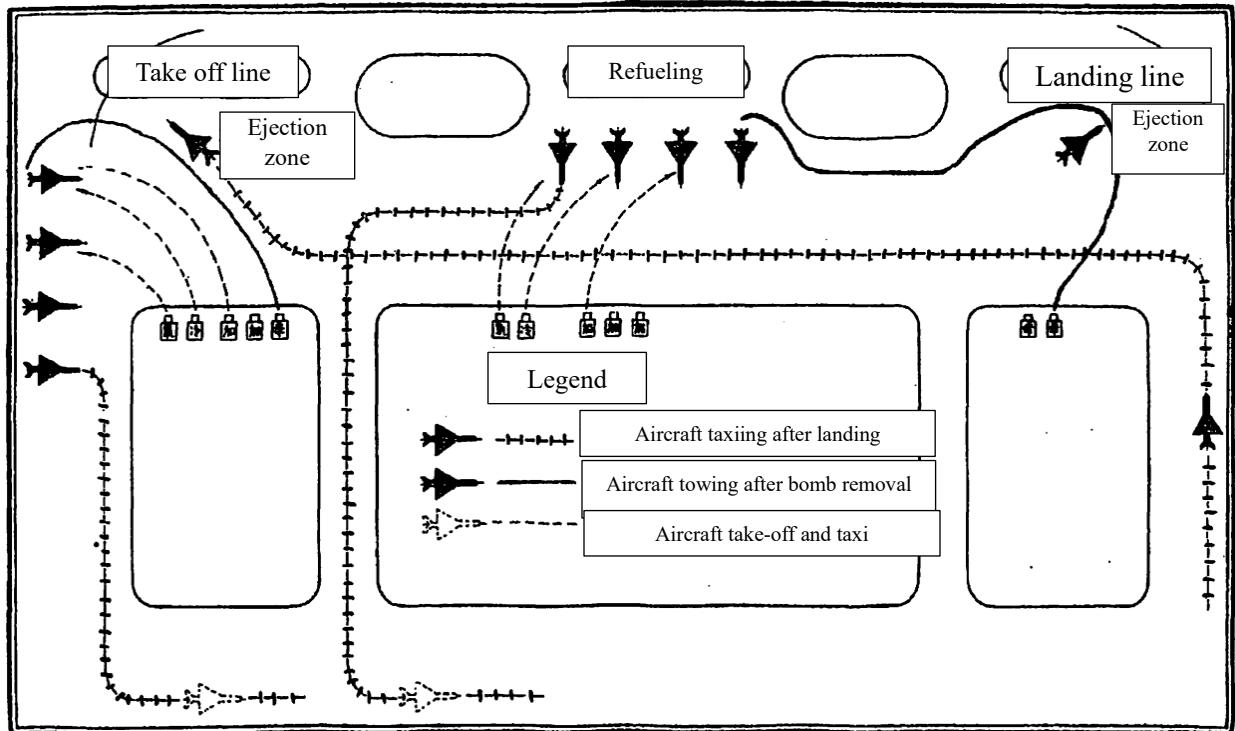


Figure 7-5: Schematic diagram of taxiing and active refueling and inflating



Chapter 8: Multi-Aircraft Flight Logistics Support for the Air Force

Multi-aircraft flight logistical support refers to the logistical obstacles implemented by air units of two or more types of aircraft when they are carrying out combat and training tasks at one airfield one after another or at the same time. In future air force operations, joint operations of various types of aircraft units without regard to performance will often appear. Even in a single battle, different types of aircraft may be used at the same time to form a combined formation with attack, cover, interference, reconnaissance, support, and command. Whether it is for the purpose of concentrating forces to strike at the enemy, evacuating troops to preserve themselves, or adjusting the deployment of troops in order to adapt to changes in the battlefield situation, air force units usually have to organize a wide range of battle transitions, so that there are often situations in which units of different types of aircraft are stationed at the same airfield one after another or at the same time. At about the same time, the various types of aircraft participating in the war may urgently need the stations to complete the replenishment of various combat materials and provide other logistical support. Therefore, the station is required to meet the needs of logistics support for future air force operations and have a strong multi-aircraft support capability. At the same time, it is also necessary to be prepared to send support detachments to advance support along with the units of the original aircraft and to form a variety of support capabilities with the support forces of the new airport.

Section 1: Characteristics of Flight Logistics Support for Different Types of Aircraft

Air force aviation units are divided into fighter aviation, strike aviation, bomber aviation, transport aviation, and reconnaissance aviation according to the nature of their tasks and the types of aircraft they are equipped with. In order to better understand the characteristics of multi-aircraft support, it is necessary to be familiar with the tasks that each type of aircraft may undertake, the characteristics of combat operations, and their impact on logistics support.

Only by understanding their characteristics can we flexibly and proactively implement logistics.

1. Characteristics of flight logistics support for fighter aviation

Fighter aviation is an aviation unit that uses air combat as the main means to carry out combat missions. It is responsible for seizing air supremacy, defending the country's political and economic centers and other important targets, and supporting army and naval operations. Combat missions are frequent, sudden, sorties are intensive, and the endurance is short. Therefore, its logistics support has the following characteristics:

Logistics support activities are frequent and intense. Fighter air units often carry out combat missions in small formations or in multiple batches, and because they are limited by the technical performance of their aircraft, they have a relatively short time to stay in the air, and their support activities are frequent. In addition, fighter air units are often ordered to operate at an emergency moment, and there are more opportunities to be called out and dispatched, which has aggravated the tension in logistical support. Therefore, it is required that the station must improve the efficiency of all logistical support as much as possible, shorten the time of logistical support, and complete all preparations for combat dispatch in the shortest possible time.

The required security equipment is complex. Due to the need for high-altitude and high-speed flight, some safety and security equipment has been added to the high-performance fighter plane, such as high-altitude compensation equipment and belt-free seats. Therefore, it is necessary to set up high-altitude rooms, regular inspection workshops for seats, alkaline battery charging rooms and other facilities. Air-to-air guides are the main weapons of fighter planes, and their maintenance and storage requirements are high, and they must have special service units, special work rooms, and warehouses.

High requirements for the cleanliness of the road. The jet engine installed by the fighter is working, and a large negative pressure (i.e. suction) is created at the mouth of the air intake. For example, the J-6 aircraft engine works in the ground rated state, the average speed of the air flow can reach 154 meters per second at the minimum section of the air intake, and the average air flow speed at the lip of the air intake is 126 meters per second. The suction force of the air flow at the mouth of the air inlet is more than 500 kilograms, and the suction force at a distance of 1.5 meters from the entrance of the air intake is 2 kg/cm². At present, the fighters equipped by the troops generally have short landing gear, and the engine air intakes are relatively close to the ground. Moreover, in order to increase the air intake of the engine, there is no dustproof equipment in the intake duct, and some aircraft also have auxiliary air intakes in the lower part of the fuselage. If there is a slight negligence in cleaning the runway and taxiway, it may suck in foreign objects during take-off and landing taxiing, and even serious flight accidents may occur.

Therefore, when ensuring the flight of fighter aircraft, the cleanliness of the field road is required. In addition, in order to prevent the aircraft from sliding or tipping over during the ground test or calibration gun, it is necessary to set up anti-slide blocks and tethering rings on the aircraft test apron and target apron.

2. Characteristics of flight logistics support for striker air units

Strike aviation is an air force that carries out combat missions by approaching and attacking ground and water targets at low altitudes and ultra-low altitudes. It is mainly used to attack small mobile targets in the enemy's tactical depth and shallow and close campaign depth, to directly support army and navy operations, and to participate in the struggle to seize air supremacy, and to carry out air combat missions when necessary. The characteristics of this support are: Attack planes use a wide variety of weapons, and they often carry bombs (less than 250 kg), rockets, and artillery shells at the same time, and the requirements for preparing and supplying ammunition are the same as those for bombers; the interval between the various formations during combat sorties is short, so the support intensity for preparing for another sortie is great; at present, the Qiang-15 planes equipped with the troops use more air-conditioning mechanical systems, and the consumption of air-conditioning is large, and it is usually necessary to replenish air-conditioning for every take-off and landing.

3. Characteristics of flight logistics support for bomber aviation

Bomber aviation is an air force that uses bombing as the main means to carry out combat missions. It is used to destroy and destroy ground and water targets in the enemy's depth, to participate in the struggle to seize air supremacy, and to support army and naval operations.

Bombers can be divided into heavy, medium and light bombers according to the amount of bomb carried by a single aircraft (see Table 8-1).

Table 8-1: Classification of bombers by bomb load

Bomber type	Heavy	Medium	Light
Bomb load per aircraft	More than 10 tons	6-10 tons	3-5 tons

According to the size of the bomber's combat radius, bombers can be divided into long-range bombers, medium-range bombers and short-range bombers (see Table 8-2).

Table 8-2: Classification of bombers by combat radius

Bomber Type	Long range	Medium range	Short range
Combat radius	More than 4500 km	More than 1800 km Less than 4500 km	Less than 1800 km

It is not difficult to see from the table that the bomber has strong assault capabilities and long-range combat capabilities, and has a long endurance. Thus, when bombing aviation is on combat flight, logistics support has the following characteristics:

The consumption of materials is large, and the logistics technology and equipment required are large. To ensure the flight of bombers, fuel, ammunition, gas, power supply and other materials are consumed, and the workload of logistics support is large. For example, the fuel load of a H-6 aircraft is 14 times that of the J-7 aircraft, the carrying capacity of aerial artillery shells is 19 times that of the J-7 aircraft, and the bomb load is 4.5 times that of the J-5 aircraft. With the increase of the loading capacity of a single aircraft, the material consumption of bombers during combat is significantly higher than that of other aircraft. In order to shorten the preparation time for combat sorties, the stations are required to complete the work of matching ammunition, quality inspection, and transportation as far ahead of schedule; at the same time, it is necessary to use a relatively large number of refueling vehicles, tractors, bomb trailers, and high-efficiency oxygen production equipment to ensure the bombing aviation during operations, and some models also need to be equipped with liquid oxygen filling equipment and carbon dioxide gas filling equipment, resulting in an increase in the types and quantities of logistical technical equipment used to ensure the combat flight of bombers.

The take-off and landing weight of the bomber is large, and the load resistance of the field road surface is high. The maximum take-off weight of the aircraft is 14.8 tons for the J-8 aircraft, 10 tons for the J-5 aircraft, 23 tons for the Su-27 aircraft, and 75.8 tons for the H-6 aircraft. Due to the different take-off weights of the above-mentioned models, the load on the pavement during takeoff, landing, and taxiing is also different, and under normal circumstances, the load on the pavement of the bomber is greater than that of the J and the strike aircraft.

In addition, in order to ensure the landing safety of the aircraft, the landing weight of the aircraft is strictly regulated. The maximum landing weight of the -6 aircraft is specified at 55 tons. For example, after the aircraft takes off with full load, when it returns early due to meteorological changes, it is necessary to release fuel in the air and drop bombs, which not only causes a waste of fuel and ammunition, but also prolongs the time for the aircraft to stay empty,

in order to prevent the elastic deformation of the aircraft and maintain the good flight performance of the aircraft, some aircraft cannot be fully loaded with fuselage fuel tanks during the ground parking. For example, during the ground parking of the H-6 aircraft, the fuel tank of the aircraft shall not exceed 14 tons. If the fuel tank is filled up before the flight, when the flight mission is canceled due to weather changes, each aircraft needs to pump 20 tons of fuel, resulting in a shortage of logistics work.

4. Characteristics of the flight logistics support of transport aviation units

Transport aviation is an aviation unit that carries out air transportation tasks. It is used to ensure the air mobility, airborne operations and aviation mobility of ground troops, and can undertake tasks such as air supply, air rescue, air communication and special aircraft flight. Transport aviation units have complex aircraft types and many temporary emergency tasks. Its protection characteristics are: because there are many types of transport aircraft, the difference is large, so the variety of oil used is also many, the model of power starting equipment is not the same, and the length, width and thickness of the airport and runway are very different. Therefore, when receiving the task of providing support for transport aviation, the head of the station must find out the type of aircraft to be supported so that he can make timely preparations for fuel and power supply equipment; when the troops carry out airborne combat missions, they should assist in providing the airborne troops' livelihood support and parachute support; when carrying out airlift and airdrop tasks, they should assist in packing, handling, loading, and unloading airlift and airdrop materials; when carrying out special aircraft flight support tasks, the leading group for special aircraft work at the station should strictly follow the "Regulations on the Work of Special Aircraft of the Chinese People's Liberation Army Air Force" The implementation of the provisions of the guarantee, absolutely guarantee the safety of the special aircraft.

5. Characteristics of flight logistics support for reconnaissance aviation units

Reconnaissance aviation units carry out aerial reconnaissance missions to ascertain various tactical, campaign, and strategic objectives, as well as the terrain and weather conditions in enemy areas, and to provide aerial reconnaissance and intelligence data for the combat operations of various services and arms. In addition to the normal support flight, the logistics support needs to provide aerial photographic equipment, photo interpretation equipment and sufficient water and power supply for the washing operation room in a timely manner.

Section 2: Characteristics of Multi-Aircraft Flight Logistics Support

Due to the differences in the contents and requirements of logistical support for different types of aircraft, when two or more units of different types (types) carry out tasks at the same airfield, the following characteristics of multi-aircraft support are produced.

1. Increased variety of materials and equipment models

The increase in the variety of material supplies is due to the differences in the body structure, onboard weapons and electronic equipment of each type of aircraft. First of all, the aviation materials are not common to each other, such as between the J (strong) attack aircraft, bombers, and transport aircraft, and between the turbojet, turboprop and piston aircraft of the same aircraft, there are very few common parts. For example, at present, most fighter planes use 30 mm aerial artillery shells, air-to-air missiles, and 57 mm aerial artillery shells, while most attack planes use 23 mm aerial artillery shells, bombs of various types of bombs below 250 kilograms, and 90 mm aerial artillery shells, and most bombers use bombs of various types of bombs of more than 250 kilograms and 23 mm aerial artillery shells. Thirdly, there are different types of fuel supply, such as jet aircraft using jet fuel and piston aircraft using aviation gasoline, and the oil used by the two is also very different. Due to the use of different materials and equipment for each type (type), when the station undertakes the task of supporting multiple models, the variety of materials that need to be raised, prepared and supplied has greatly increased.

The increase in the number of technical equipment models is due to the difference in the geometric size, take-off and landing weight, on-board power supply and electronic equipment of each aircraft type (type). In order to form a multi-model support capability, it must be equipped with small and large tractors, refueling vehicles, DC and AC power supply vehicles, air oxygen oxygenation vehicles and liquid oxygen vehicles, as well as various types of aircraft ground equipment (tow bars, working ladders, various frame vehicles, various professional test equipment, calibration instruments, aviation maintenance vehicles, etc.).

2. Coordination is complex

When troops of different types and types are dispatched in the same battle, the support force is required in large quantities, and the current general strength of the station is often insufficient. In order to accomplish the support tasks of various units on time with limited forces, it is necessary to carefully plan the use of various logistical support forces. First of all, it is necessary to accurately plan the amount of support forces required by each unit (support site) for traction, refueling, power supply, transportation, and so on in accordance with the combat sortie plan of each unit (the number of aircraft, the time of combat sortie, the start time of ground preparation, and the time limit for completion, etc.).

Second, it is necessary to arrange the sequence in which various support forces carry out support activities at various support sites, so that the tasks before and after are closely linked. Third, it is necessary to clearly stipulate the time limit for the completion of all professional support work at each support site. In order to ensure the implementation of the plan, corresponding on-site command measures should be formulated, the division of command and the adjustment of support forces when the situation changes, and the coordination matters should be agreed with the maintenance department.

3. Frequent transition support tasks

Most of the multi-aircraft support is formed under the conditions of mobile operations, all-round operations, or cross-regional mobile operations. In future wars, there may be cases where a certain type of aviation unit temporarily comes to the scene to carry out a combat mission and leaves; in order to increase its combat radius, an aviation unit of a certain type of aircraft needs to refuel and hang up bombs at a certain airfield, or it may land and refuel after carrying out its mission, and then leave; and the aviation unit stationed at the field may also evacuate to other airfields in order to cope with a sudden attack by the enemy. In this way, when a depot is responsible for providing support for multiple types of aircraft, it is often necessary to provide support for the transfer of several units in a short period of time or at the same time, and whether or not it can quickly and safely complete the task of providing support for the transfer has a direct bearing on the mobility capability and combat effectiveness of the air force. Therefore, making full preparations for transfer support is an important condition for completing the multi-aircraft support task.

Section 3: Preparation for Multi-Aircraft Flight Logistics Support

1. Peacetime preparations

In peacetime, the station should proceed from the needs of multi-aircraft support, make unified plans and organize the implementation of various logistical preparations, improve the multi-aircraft logistics support plan, understand the ways and means of multi-aircraft logistics support, organize multi-aircraft logistics support training in a timely manner, master the characteristics and methods of support of different types (types), and improve the organization and command ability of multi-aircraft logistics support. On the basis of the existing support equipment and equipment, the station should intensify technological innovation, gradually improve the performance of the support equipment and equipment in service, change the current single performance to multi-function, and strive to realize the multi-purpose of one machine and one multi-purpose,

in order to make the support equipment and equipment develop to be multi-functional, and meet the needs of multi-aircraft support such as annihilation, strengthening, bombing, and transportation. Stations should intensify the construction of ground support facilities, equip them with adaptable power supply, refueling, oxygen supply, and other technical equipment, build necessary support facilities, and gradually improve ground support facilities, so that support facilities will develop in the direction of generalization. The reserve of materials and equipment at the stations should be developed in the direction of comprehensive support, the inventory throughput capacity should be enhanced, and the combat materials of all major types (types) should be stockpiled to meet the needs of multi-type support in wartime.

2. Wartime preparations

(1) Clarify the task of safeguards

In order to accurately carry out preparations for multi-aircraft support, station chiefs and headquarters must separately ascertain the types (types), number of aircraft, sortie rate, dispatch intensity, and number of combat days of each unit (especially those transferred in); the organization of the flight echelon, ground echelon, and airlift echelon, the posts of air and ground crew, and command personnel when the troops are transferred in and out; and the types and quantities of materials and technical equipment to be carried.

(2) Organizational support preparations

The preparation of multi-machine support mainly includes three aspects: materials, technical equipment and life support.

Material preparation, with a focus on the application for replenishment of special aviation materials (including aircraft ground equipment), auxiliary fuel tanks and aviation ammunition, according to the mission needs of the units to be transferred. Generally speaking, when an air force is transferred to a combat site, the special aviation materials are usually brought by the troops, and the ammunition and auxiliary fuel tanks are prepared by the transfer station. Therefore, when a fighter aviation depot is transferred to a strong attack or bombing unit, attention should be paid to preparing bombs, aerial artillery shells, and rockets according to the total number of sorties and the proportion of bomb types (or bomb hanging schemes) of the transferred troops; when bombing air depots and stations are stationed in fighter units, it is necessary to pay attention to the preparation of auxiliary fuel tanks, air-to-air missiles, aerial artillery shells, rockets, and maintenance equipment.

The preparation of technical equipment is mainly to apply for the lack of special vehicles. For example, when a fighter air station is transferred to a medium-sized bomber unit, it should be equipped with a large tractor, a refueling vehicle, and liquid oxygen filling equipment; when it is transferred to a medium-sized transport aircraft unit, it should be equipped with an alternating current power supply vehicle, a large refueling vehicle, and sometimes a liquid oxygen filling equipment.

When the bombing aviation station is transferred to the combat and assault units, it is necessary to add a small tractor.

Livelihood support preparations are mainly based on the provision of food and barracks facilities in accordance with the posts of air, ground support and command personnel transferred to the troops.

Agree on synergies with the oncoming troops:

When troops of different types (types) are fighting at the same airfield, the nature of the mission and the requirements for the ground preparation of aircraft are different, which directly affects the use of logistics support facilities and equipment. To this end, the depot should negotiate with the troops arriving at the site to determine the following matters: the distribution of protective facilities such as aircraft hangars and evacuation areas; the division of the locations where the planes are to be prepared on the ground when the units are fighting at the same time; the methods of providing support for the ground preparation of the aircraft; and the principles for the distribution and use of the main logistical technical equipment, such as the proportion of personnel and the method of dispatching, and so on.

Section 4: Implementation of Multi-Aircraft Flight Logistics Support

When implementing logistics support for multi-aircraft flights, station chiefs and headquarters should make every effort to organize the use of logistics support forces and provide on-site support, so as to shorten the support time for pre-flight and re-dispatch preparations.

1. Implementation methods

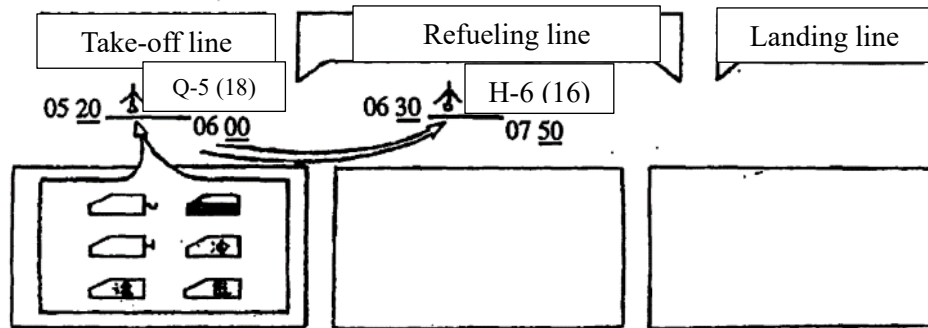
When troops of different types of aircraft carry out combat missions at the same airfield, the organization and use of the station's logistical support forces should be based on the troops, time, and deployment of aircraft at the ground preparation site, and the station's support strength, and the following methods should be flexibly adopted:

(1) Guarantee in batches

The so-called batch support refers to the method in which the station uses the same part of the support force to carry out support in batches according to the dispatch time of each type of unit or the time of ground preparation (see Figure 8-1).

Batch support has the following characteristics: First, the use of support forces is uniform. Several types of aircraft dispatched in the same field use the same support team (group), which saves support forces and has better economic benefits. Second, the guarantee work is orderly. Whichever type of aircraft is dispatched first or prepared first to provide support for which type of troops is conducive to concentrating forces on key points of support.

Figure 8-1: Schematic diagram of batch assurance



Third, the objects of protection and the place of preparation are variable. For example, after the take-off line apron is provided with the attack planes, it is necessary to immediately transfer troops to the refueling line apron to support the bombers, because people and vehicles come and go frequently, the scene is disorderly, and it is easy to make mistakes in the supply of materials. Therefore, when adopting the method of providing support in batches, the head of the station and the staff officer on duty should strengthen the planning of the support work and arrange the sequence of various service support work. It is necessary to strengthen the organization of the guarantee site, maintain the work order of the site, and ensure the quality of supply.

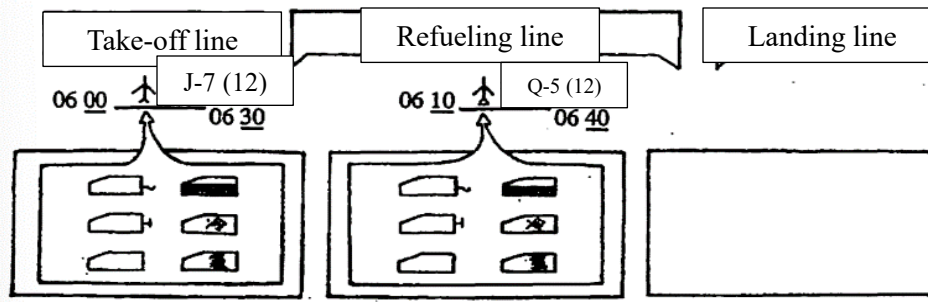
This method of batch support is usually used when different types of aircraft are dispatched on different flights, or when the same flight is dispatched but the interval between them is long, and the main technical equipment is common.

(2) Extension type guarantee

Sub-aircraft support refers to the method of organizing support forces and fixing support for each type of aircraft according to the requirements of each aircraft type for logistics support forces when different aircraft types fly in the same flight (see Figure 8-2).

As can be seen from the figure, when several types of aircraft fly in the same field, the logistics support forces are mixed into several support teams (groups) to provide support for their respective types of aircraft, and the support objects are relatively fixed, so that the stations can understand the characteristics of the support in a timely manner and grasp the situation of the support activities. In particular, the station that undertakes the task of multi-aircraft support for the first time can understand the characteristics of the support object as soon as possible, find out the support rules, improve the support method, and improve the quality of support. At the same time, the adaptability of this method is strong, and it is less affected by the length of the sortie interval and the change of the preparation location of each model.

Figure 8-2: Extension support diagram



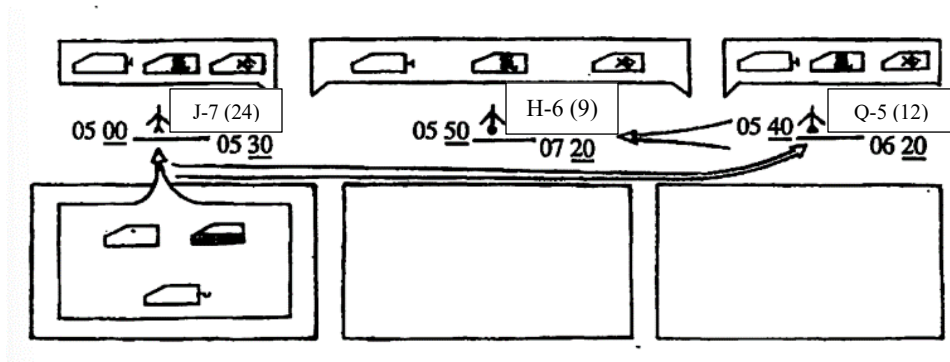
The disadvantage is that the support forces are scattered, and it is not easy to give full play to the overall support effectiveness, especially when the tasks of the troops stationed on the field are divided into different tasks, there will be an imbalance between the busy and idle forces (groups). Therefore, on the one hand, the commanders of the stations should step up the education of all personnel and foster the idea that the division of labor should not be divided into families and that the whole station should be "a game of chess"; on the other hand, they should adjust their forces in a timely manner according to the severity of the tasks of the units of various types of aircraft, so as to draw more to make up for the less, so as to slow down the emergency situation and ensure that all units take to the air in a timely manner.

Extended support is usually used when different types of aircraft are dispatched in the same battle, with a short interval between each other and sufficient support forces, or when the main technical equipment is not common despite the long interval time.

Due to the unequal quantity of various technical equipment at the station and the difference in the size of the support capacity, therefore, in some cases, it is not possible to fully implement the extension type of support. As shown in Figure 8-3, the units of the three different types of aircraft, namely, J [fighter], Q [attack], and H [bomber], are dispatched in the same battle, and there are sufficient vehicles for cooling, oxygenation, and power supply, which can be used on a fixed basis by different types of aircraft, while the number of traction, refueling, and transport vehicles is insufficient, so it is impossible to adopt sub-types of support. In this case, a combination of extension guarantee and unified scheduling can be adopted. That is, for the refrigeration, oxygen, and equipment with sufficient support forces, the method of supporting by different types can be adopted; for the parts where the support force is insufficient, the on-site commander will give unified command and carry out the support in batches according to the order of the dispatch time of each type of aircraft.

In this way, it not only reduces the amount of activity of the on-site vehicles, is convenient for maintaining the on-site order, but also gives full play to the role of the existing equipment and alleviates the contradiction between supply and demand.

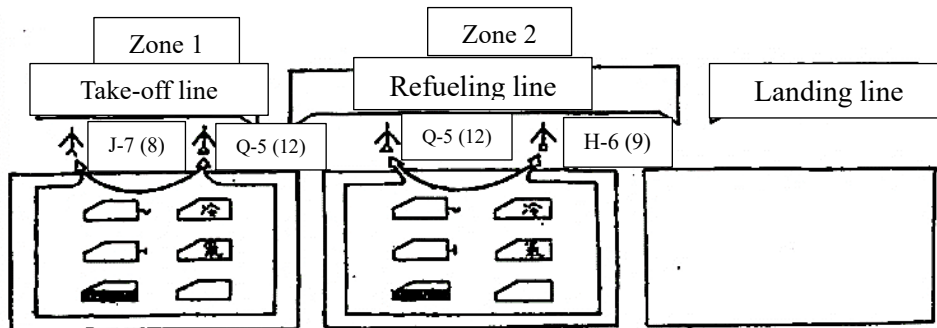
Figure 8-3: Schematic diagram of the support method combining extension support and unified scheduling



(3) Zoning safeguards

Zonal support refers to the method of different types of aircraft being dispatched in the same combat at the same time, and the aircraft of different types being mixed in the same preparation location, and the stations can be divided into several support areas according to the parking situation of the aircraft in the field, and the support forces are organized separately according to the needs of the support tasks in each area, and the support is implemented in different divisions (see Figure 8-4).

Figure 8-4: Schematic diagram of zoning safeguards



Divisional support not only facilitates the unified command of various districts, but also saves support forces; reduces the flow of vehicles, and ensures orderly outfield support. However, in adopting this approach, care should be taken that the safeguard areas should not be overly demarcated. It is usually better to divide a preparation site into a support area, otherwise the significance of zonal support will be lost.

Divisional support is usually used when different types of aircraft are dispatched in the same combat at the same time, with a short interval between them, and when the planes of various units are mixed in several preparation locations and the support force is sufficient. Of course, in the case that some of the forces are sufficient and the other part of the forces are insufficient, the method of combining zonal support and unified dispatch can also be adopted, as is the case with the extension type of support.

2. On-site command

In the on-site command of logistics support for multi-aircraft combat flights, it is necessary to pay attention to the adjustment of support forces, the coordination between various support sites and various support activities, and the on-site order.

When multiple types of aircraft are dispatched in the same battle, especially when supporting army and naval operations, the sortie time, sorties, and ground preparation locations of various units are often temporarily changed due to changes in ground combat operations, enemy situation in the air, and meteorological conditions. For this reason, the on-site logistical support personnel should adjust the support forces in a timely manner according to the changes in the above-mentioned situation.

Therefore, it is necessary to carefully organize coordination among various support sites and among various support activities, so that after completing the support tasks of one unit, various support forces can be transferred to the support of another unit in a timely manner, and all support activities can be coordinated with each other.

When implementing multi-aircraft support, it is often necessary to carry out work at the apron of the take-off line, refueling line and landing line at the same time, and aircraft taxiing and personnel and vehicle activities often overlap. To ensure ground safety, in addition to supervising the logistics personnel to strictly implement the safe driving regulations and technical operation procedures, they should also make corresponding provisions for maintaining the order of the field according to the specific conditions at that time.

Chapter 9: Logistics Support for Aviation and Station Transition

In order to meet the needs of high-tech local wars, air force aviation units usually have to concentrate, disperse, or transfer their forces in their own theaters, and sometimes in order to strengthen their combat forces in key areas or major directions, they also need to carry out cross-regional mobile operations. In this case, the aviation forces will carry out frequent combat transfers, and if necessary, entire stations will be transferred with the troops or individually. Rapidly, covertly, and safely accomplishing the logistical support work of transferring and transferring a field is an important link in enhancing the rapid reaction capability and mobile combat capability of the air force.

Section 1: Logistics Support for the Transfer of Aviation Units

The transfer of the air force is the implementation of the air force to the predetermined airfield for the purpose of carrying out combat missions. It is usually carried out when adjusting the operational deployment. The transfer of aviation troops is divided into three forms: transfer of airfield, maneuver and landing in the field. The transfer of an airfield refers to the transfer of a station for the purpose of changing the deployment of an aviation unit. Combat maneuvering refers to the temporary transfer to a designated airfield in order to concentrate or disperse troops or to carry out a mobile combat mission during a certain combat phase, and return to the original station after completing the mission. Landing in the field refers to temporarily landing at other airports for the purpose of carrying out the whole operation, or if it is impossible to return to the station due to changes in the situation after the combat sortie. Combat maneuvering and field landing have been discussed in the chapter on emergency maneuvering support for aviation logistics,² and this chapter focuses on logistics support for aviation units when they are transferred to airfields.

Aviation transfer airports are usually composed of advance teams, flight echelons, ground echelons and air transport echelons. The advance team is composed of the commander of the unit and a small number of maintenance personnel, carrying the necessary command and service support equipment,

² Translator's note: it is unclear which chapter this is referring to.

arrive at the designated airport by transport aircraft or ground transportation in advance to prepare for the flight echelon and the ground (air) echelon. The flight echelon is generally transferred out (in) after the arrival of the advance team. The ground (airlift) echelon is composed of most of the troops, carrying a specified amount of materials and technical equipment, and departing after the flight echelon takes off.

The following characteristics are shown in the following characteristics: First, the transfer of troops from and from the air force may be carried out separately or at the same time; second, the transferred and transferred troops may be of the same type (type) or may belong to different types (types); third, most of the ground personnel, materials, and equipment are transferred from ground to ground and by air; and fourth, the action is swift and concealed, and the preparation time is short. These characteristics show that the logistical support work for the transfer is heavy and extensive, the tasks are complex, and the time is pressing, and in order to ensure the smooth transfer of troops, it is necessary to make careful plans, make full preparations, and strengthen on-the-spot command. The procedure is shown in Figure 9-1.

1. Organizational plan for transfer logistics support

In order to correctly organize and use the transfer logistics support force, it is necessary to carefully understand the tasks and revise the transfer support plan before the transfer.

When understanding the transition support task, the following should be clarified:

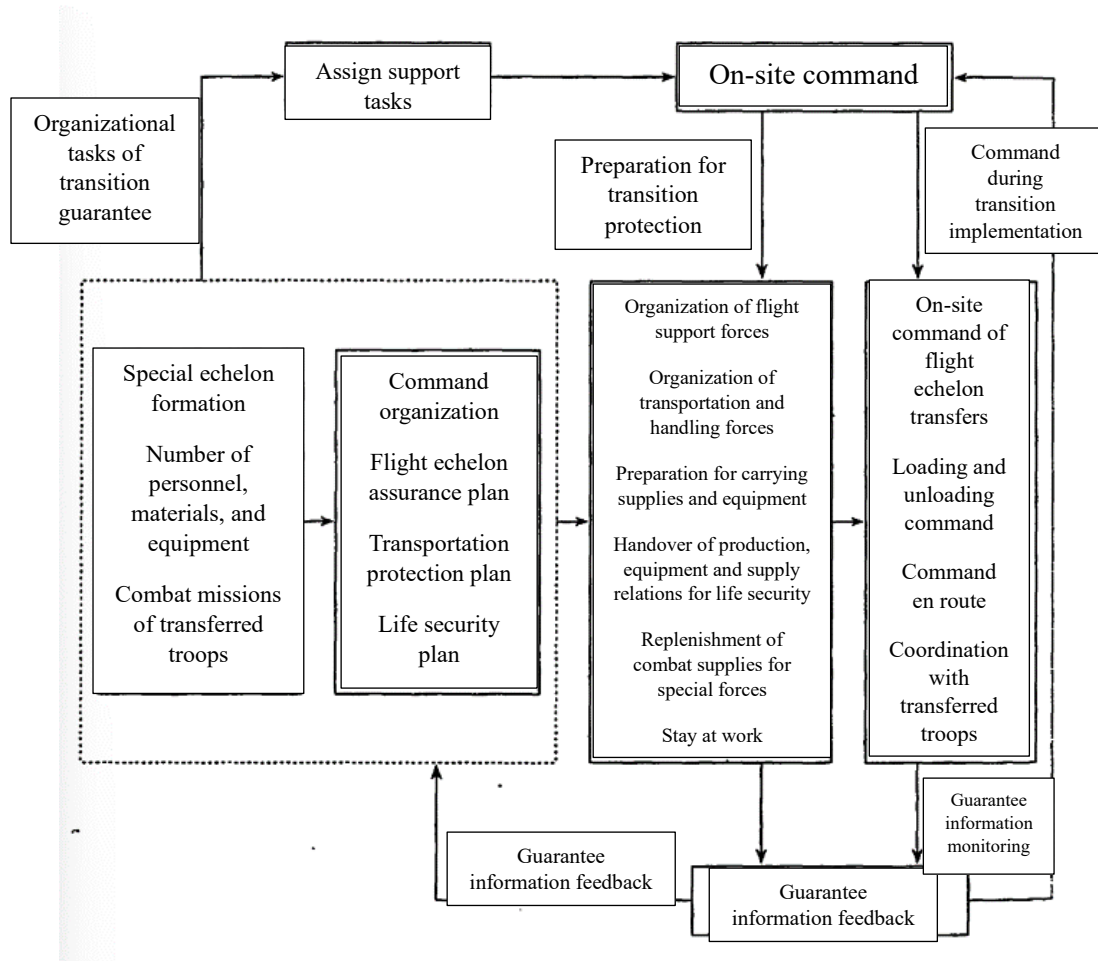
Transition echelons are formed. The formation of different echelons has a direct impact on the organization and methods of support forces. For the advance team and the ground (air) echelon, it is necessary to find out the type of transport type, the number of aircraft, the number of train wagons and ships, and the time of transfer out (arrival). For the flight echelon, it is mainly necessary to find out the aircraft type, the number of aircraft, the batch, the interval between each batch and the time limit for completing ground preparation.

The number of personnel, materials, and equipment. In order to arrange transportation, loading and unloading forces, and prepare for railway lines and wharves, it is necessary to find out the number of personnel, materials and equipment transported by air and railway and waterway.

Transferred to the combat mission of the troops. In order to ensure that the transferred troops complete their combat preparations in a timely manner, they must understand their combat plans as far in advance as possible, so that they can apply for and replenish materials and technical equipment as soon as possible.

The main elements of the transition protection plan are:

Figure 9-1: Command Procedures for Air Force Transition Support



Command the organization. When an aviation division or regiment transfers, the division or higher-level organ usually takes the lead and forms a transfer command group with the participation of leading cadres of the transfer troops, stations, and transport units to give unified command over the transfer operations. The command group consists of transportation support, flight support, livelihood support and supply relations, and business and property handover.

Flight Echelon Support Plan. The main purpose is to determine the demand for each professional service support force and the time and place of arrival. When the transfer in and out is carried out at the same time, the demand for support forces should be calculated separately according to the composition of the flight echelons (including air transportation) of each unit, and the support tasks should be assigned separately.

Shipping Security Program. It includes two parts: the transportation of troops transferred out and the on-site pick-up and drop-off when transferring in (out). The transportation plan for the transferred troops is revised by the troop headquarters in accordance with the plan, and the main contents are: the number or tonnage of various means of transportation (transport aircraft, railway trains, automobiles, ships), the formation of the transportation echelon, and the support on the way. The on-site pick-up plan is mainly to determine the amount of transportation and loading and unloading force required for the pick-up and drop-off of personnel and materials between the airport and the station and the port terminal, the transportation force grouping and task distinction, the loading and unloading sequence and the completion time limit. For the application of conveyors, the transport aircraft shall be the responsibility of the transfer unit, and the railway, highway, and waterway conveyance vehicles shall be the responsibility of the depot.

Livelihood Protection Plan. Mainly on the basis of the organization of the transferred troops, the plans and measures for the distribution of camp property, the establishment of food units, the raising of supplies, and on-site sanitation are determined. This plan should be more specific and thorough when the depot of troops is stationed for the first time, or when the composition of the transferred troops is larger than that of the transferred troops.

2. Preparation of logistical support for the transition

Grouping of flight support forces. When the troops transferred in and out of the unit are transferred to the field separately, the support force is organized according to the requirements of a single type of flight. When the transfer in and out is carried out at the same time, and it belongs to different types (types), the support force should be grouped and used according to the support requirements of multiple models. Organization of transportation and loading and unloading forces. The first is the preparation of transport vehicles and loading and unloading forces in accordance with the transport plan. When the transport vehicle is insufficient, it can be assisted by a tractor, and if necessary, it can be requested to support the superior or the local government. In principle, the materials and tools of the organs and maintenance units should be loaded and unloaded by the troops themselves, and the combat materials carried by the units should be loaded and unloaded by the stations. The second is to correctly allocate the means of transport and loading and unloading forces according to the number of people and the tonnage of materials of each unit in the transfer site. Third, in order to improve the efficiency of loading and unloading, loading and unloading drills should be organized when conditions permit, and the distribution of loading and unloading forces should be adjusted through drills.

Preparation of carrying materials and equipment. The materials and equipment to be carried by the troops in transit shall be determined in accordance with their combat missions, the relevant regulations of their superiors, and the support conditions for arriving at the airport. When it is necessary to take away the general-purpose materials and technical equipment that have been handed over in accordance with the regulations, it shall be approved by the theater joint logistics department within the military region and reported to the military region's air force for the record. When it is necessary to take away the special materials and technical equipment of the Air Force that have been handed over in accordance with the regulations,

within the scope of the military region, it shall be approved by the air force of the military region and reported to the joint logistics department of the theater for the record, and when the transfer is made across the region, it shall be reviewed by the air force of the military region and approved by the air force. The carrying materials must be complete and packed according to the shipping requirements. The technical equipment taken away should be maintained according to the regulations to ensure that the technical condition is good.

Preparation for livelihood support. For the transferred troops, it is necessary to prepare the quarters and the main and sideline food according to the number of people and the type of stove, make arrangements for the barracks and camping equipment, and tidy up the indoor and outdoor hygiene. For the units to be transferred, it is necessary to eat and drink accurately on the way according to the method of transfer, the distance, and the military stations along the way. The ground echelon is transported by rail, and the food and drink are usually provided by the military stations along the way, and the troops only need to prepare a certain amount of dry food for emergency needs. When marching by road motorcycle, prepare the main and sideline food and cooking utensils for self-fire.

Handover of supply relationships. The main items to be handed over are finance, carry-on supplies, property, salaries and military supplies. The handover must be carried out in strict accordance with the rules and regulations. In order to make the accounts clear, the procedures are complete, and to prevent omissions and losses, the handover items should be inspected and cleaned up before the handover. The aviation materials, ammunition, and all public items carried by the transferred troops should be handed over to the depots for safekeeping in accordance with regulations.

Transferred to the replenishment of combat materiel of the troops. Before the transfer of troops, if there is a shortage of materials and technical equipment at the station and the troops are unable to carry due to different types (types) of aircraft, especially aviation materials, equipment and ammunition from the four stations, they should apply to the equipment department in advance for replenishment as planned.

Stay-at-home work. When the air force moves to the airfield, especially from the rear to the forward airfield, the family members, some non-combatants, and the wounded and sick will remain at the original airfield, and the unit should set up a left-behind organization according to actual needs and discuss with the station the administrative life and management of the left-behind personnel.

3. Logistics command in the implementation of the transfer

On-site command of the flight echelon pick-up. In order to ensure that the transferred troops take off on time and that the transferred troops quickly make accurate combat sorties, the organization and command of logistics support should rationally dispatch and use logistics support forces in accordance with the combat tasks of the transferred troops and the take-off and landing sequence of each batch of aircraft. If the transferred unit is to refuel and load ammunition for the purpose of carrying out the whole operation, priority should be given to ensuring that it completes its preparations for combat sorties.

On the other hand, if the transferred unit is on an urgent combat mission, and the transferred unit is temporarily not on combat duty, priority should be given to ensuring that the transferred unit completes its preparations for combat sortie. If the two situations are the same, they can be guaranteed in the order of take-off and landing. When the transfer in and out are carried out separately, the protection shall be implemented separately according to the respective benefit plan.

Loading and unloading command. In order to successfully complete the loading and unloading task, the transport command group must carefully organize the coordination between the transfer troops, the transport units (transport units, railway and military transport departments, boats, automobile detachments, etc.), and the loading and unloading organizations, and carry out loading and unloading in strict accordance with the predetermined plan. When loading and unloading air transport materials, transport planes taking off and landing in the same batch should be parked as much as possible, and transport vehicles must arrive at the parking point with the designated aircraft number on time and load and unload under the command of the crew. The loading and unloading of railway trains and boats should be carried out under the command of the military transport department and the boat detachment, in strict accordance with the prescribed order, car (ship) number, and the loading and unloading requirements of different materials and equipment. In order to ensure safety, on-site vigilance and traffic command should be strengthened.

Command on the way. For the transfer of the ground echelon, escort personnel should be dispatched to cooperate with the person in charge of the echelon to organize the inspection of life, health security and administrative management on the way, as well as the mooring and bundling of materials and equipment, so as to ensure the safety of operation. The transfer command group should maintain close contact with the transfer echelon, keep abreast of the operation of trains and boats, and solve problems in operation in a timely manner.

Coordination with transferred troops. After the troops are transferred in, the depots should take the initiative to do a good job of coordination with the troops. First, they will brief the troops on the support capabilities of the airport's facilities, materials, and technical equipment, as well as the local social, political, and economic conditions; second, they will further understand the troops' current and future combat missions, the methods and requirements for ground preparations at all stages of combat flight, and study the coordination of logistical support and aircraft maintenance support; and third, they will assist the troops' organs and maintenance departments in familiarizing themselves with the airport's terrain, roads, and the distribution of various service units at the station.

Section 2: Logistics Support for Site Transfer

The transfer of depots may be carried out with the aviation units to the same airfield or to another airfield alone. There are several types of transitions:

First, all personnel will be transferred and moved, and materials and technical equipment will not be moved; second, personnel, materials, and movable equipment will be transferred; and third, some personnel, special materials, and technical equipment will be transferred. The first situation is usually that the two stations are stationed, the second situation is usually to move to a new airfield, and the third situation is generally to accompany the troops to another airfield to carry out mobile combat missions. The third case has been discussed in Chapter 9 Emergency Mobile Support,³ and this section focuses on the first and second cases.

The organizational and command procedures for the transfer of depots and stations are basically the same as those for the transfer of aviation units, but in the first and second cases mentioned above, due to the lack of support capability at the arrival airport (or the depot has been transferred out, or the depot has not been stationed in the past), the organization and command of the depot transfer should be strengthened in the following two aspects:

1. Organization of the transfer echelon

In the first and second cases mentioned above, it is better to organize the transfer of depots, and it is better to form an advance team and two transfer echelons.

The advance team is composed of one or two station chiefs, cadres of some departments and government organs, and a small number of logistics support personnel, who carry the necessary command tools and go to the new airport with the advance team of the aviation unit or alone. Its main tasks are: to understand the status of the flight site and various support facilities, the social, political, and economic situation, and the epidemic situation; to receive materials, equipment, business property, and airport archives; to set up a station command post and to communicate with internal and external communications; to put forward a proposal for the organization of the transfer echelon of the station according to the support capacity of the new airport; and to formulate a plan for the distribution and use of barracks, camp, equipment, and rooms.

2. Deployment upon arrival at the new airport

Immediately after the first echelon entered the field, it was put into preparation to meet the flight echelon and the ground echelon of the aviation force. The preparations for the flight echelon are mainly to arrange for the field to be on duty, to prepare materials and technical equipment according to the transfer flight plan, and to inspect and maintain the flight site and aircraft evacuation and concealment, field lighting, power supply, and other facilities. The preparations for the ground echelon of the troops were mainly to inspect and clean the barracks, allocate camp equipment, raise staple and sideline foodstuffs, and prepare cooking facilities. Carry out sanitary quarantine and disinfection.

After the station transfer is basically ready, quickly complete the following tasks:

³ Translator's note: unclear where in the book this is referring to.

Formulate logistics support plans and various professional service support plans. After the transfer of troops to the new airfield, their organization and combat missions will change, and the original plan will be partially or completely unadapted to the new support tasks. To this end, it is necessary to revise or reformulate the logistics support plan and various specialized service support plans in light of the number of aircraft, sortie rate, sortie intensity, and number of combat days of the troops in the current campaign stage, and reorganize the logistics support forces according to the new plan.

Apply for supplementary materials and technical equipment. When a depot is stationed at a newly built airfield, it is usually impossible to receive all the combat materials and equipment it needs. Even if two stations exchange stations, they may carry each other due to the different types of aircraft they support and when they are transferred, resulting in a situation where the support force and the support mission are not suitable. In addition to the factors of changes in the combat missions of the troops, it is inevitable that there will be shortages of certain materials and technical equipment. Therefore, after the station is transferred, it should apply to the higher-level logistics department for materials and technical equipment according to the new support plan, so that it can meet the specified reserve and equipment standards.

Organize airport vigilance and defense. Airport vigilance and defense are organized by aviation divisions. The tasks of the depot in this regard are: to determine the guard posts at the airfield, to renovate the defense and protective fortifications according to the plan of the aviation division, and to organize the defense and protection of the depot itself.

After the transfer of the depot, the transfer situation should be reported to the head of the aviation division and the logistics of the higher level.

Chapter 10: Flight Logistics Support for Aviation Forces under Different Natural Conditions

Different natural conditions have a great impact on the technical performance of logistics support personnel and equipment, as well as the physical and chemical properties of materials and equipment. Therefore, attaching importance to the study of aviation flight logistics support under different natural conditions is of great significance to improving the aviation force's logistics support capability and environmental adaptability and ensuring the aviation unit's combat victory.

Section 1: Logistics Support for Night Flights

The advancement of night vision technology has not only enabled people's vision to extend to the time and space shrouded by night in the past, but has also caused the decision-makers of modern local wars to choose most of the timing of their first surprise attack at night. Since the 80s of the 20th century, there have been seven typical examples of air raids in the world, six of which were carried out at night. The "right to control the night" allows the spatial advantage to be extended in time. In a sense, night air strikes are more effective in striking and deterring than daytime air strikes, and night strikes are safer against the side that has the advantage at night. With the continuous development of active infrared technology, low-light technology, thermal imaging technology, and millimeter-wave radar technology, a large number of night vision equipment is equipped with aviation weapons, which has significantly improved the combined combat capability of multiple types of aircraft at night. Multi-model at night. Combined operations have become an important form of aviation operations in modern local wars. Therefore, we must conscientiously study and solve the problems related to the logistical support of air forces flying at night in accordance with the needs of modern high-tech warfare aviation operations.

1. Characteristics of logistics support for night flights

- (1) Poor nighttime vision, seriously affecting the quality of safeguards

The quality of the air force's logistical support for night flights is determined by the logistical support personnel and their night vision capability.

Under night conditions, the implementation of aviation flight logistics support, due to poor visibility, resulting in a corresponding shortening of the visual distance, inconvenient observation, and more difficult coordination than during the day; Personnel are inconvenient to move, which poses a threat to flight safety; due to poor visibility and difficulty in judging the situation, the accuracy of personnel's movements decreases, and the possibility of accidents increases; due to poor visibility, the number of objects that can be seen clearly is relatively reduced, and the battlefield environment during the war is complex and changeable, and sometimes it is necessary to carry out continuous support across day and night, and the eyesight is easily fatigued, so that the endurance of support is reduced. At night, the ground visibility is very poor, sometimes the target is difficult to see clearly, and due to the increase of air humidity at night, a certain amount of water vapor will be condensed on the equipment glass, resulting in a further reduction in night vision, and the target outside the cab cannot be seen clearly, which affects the judgment of distance, and brings great difficulties to the implementation of aircraft traction, refueling, inflation and other support activities, visual inspection of oil quality, etc.

(2) Covert adaptation affects the ability of support personnel to observe, and interferes with the actions of support personnel

Common sense tells us that when we enter a darkroom from daylight, we cannot see anything clearly at first, and it takes a while for us to gradually regain our vision. This is because the pigment is bleached under bright light, making it less sensitive to light. In low light, bleached retina gradually regenerates, increasing sensitivity to light. This process of change is known as dark adaptation. It is generally believed that the quality of night vision of support personnel depends on whether the dark adaptation is normal. The longer the dark adaptation time, the greater the interference. It is possible that the logistics support personnel of the night flight may suddenly be directly irradiated by strong light such as headlights, searchlights, flares, bomb explosions, and fires, so that the environment to which they have been fully adapted to the darkness will be damaged, and they will not be able to see the target clearly for a while, and even cause stinging in the eyes or create an illusion due to the irradiation of strong lights, which will cause great inconvenience and great interference to the support line.

(3) Night blindness affects the night vision of support personnel and is prone to security accidents

Temporary night blindness (loss or loss of night vision) can occur if the support personnel fly continuously for several days in the field in daylight or in the snow for several days. Of course, there are also logistics support personnel who suffer from a certain degree of night blindness. This is potentially dangerous for support operations at night and in complex weather after flights. If the driver of the vehicle and the operator of the equipment have night blindness,

improper handling of situations during flight activities can sometimes lead to accidents.

(4) In wartime, airport lights are easily exposed, and targets are threatened by enemy air raids

The take-off and landing of its planes mainly depends on hundreds of lamps and lanterns of different brightness and color, such as airport marker lights, approach lights, field boundary lights, safety road lights, runway end lights, and "T" lights, as well as cables and wires more than 10 kilometers or even tens of kilometers long. In order to ensure that planes take off and land on time, all kinds of ground support equipment shuttle back and forth to and from various preparation sites at the airport; although there are strict regulations on the control of lights and fires for all kinds of equipment and equipment in wartime, and the headlights are not allowed, in order to prevent the support equipment from colliding with the aircraft and the collision between vehicles during operation, the air defense lights with relatively weak lights are generally turned on. The above-mentioned kinds of lights, which are dazzling from the air, are very easy for enemy reconnaissance weapons to discover their targets and be attacked by enemy air raids, posing a serious threat to the security of the airport.

2. Logistical support measures for night flights

In view of the above-mentioned characteristics of night flight logistics support, the head of the station should strengthen the organization and command of night flight logistics support, strengthen the education and training of logistics support personnel, and adopt practical and feasible measures in order to successfully complete the night flight logistics support task.

(1) Take measures to improve the night vision ability of support personnel

Night vision refers to the ability to observe objects in the dark. People have a certain ability to see at night. At nightfall, some animals are significantly less able to see objects, while others are only able to see objects at night. People can see objects at a certain distance, whether they are day or night. This is the basic condition for logistics support personnel to carry out the task of logistical support for night flights. Medical studies have shown that proper vitamin supplementation can greatly improve the night vision ability of security personnel by eating more vitamin-containing foods and strengthening physical exercise.

(2) Conduct dark adaptation training

When carrying out night flight logistics support, logistics support personnel should be completely adapted to the flight before the flight support. To do this, stay in the dark for a few minutes and use red light with a wavelength greater than 620 nm for illumination or wear red filter glasses that allow only light with a wavelength of 620 nm to pass through.

In the implementation of support, if there are strong light areas such as searchlights, large headlights, flares, etc., the support personnel should lower their heads in time, look down or into the cab, or turn their heads to the other side of the light or close one eye, so as to avoid being directly irradiated by strong light and destroying the ability to adapt to darkness.

(3) Scientifically organize support forces and overcome fatigue

Fatigue is a normal physiological phenomenon. Fatigue is something that everyone has experienced. It is mainly a state of subjective feeling of inadequacy after a certain amount of mental and physical work, which is objectively manifested as a decline in work ability. In particular, the combat flight support activities of the air force at night have a complex and tense battlefield environment, and sometimes it is necessary to carry out support activities continuously across the day and night, and the mental tension is highly tense, and it is often easy to disrupt people's biological rhythms, and it is very easy to produce fatigue phenomena, and the upper and lower eyelids "fight," resulting in blurred observations, slow reactions, and errors in judging the situation, which are easy to cause accidents. Fatigue can be completely eliminated after rest. Therefore, station commanders should rationally organize and use support forces in echelons according to the situation of night logistics support tasks, and ensure the minimum sleep and rest time of logistics personnel, so as to maintain vigorous energy and night vision.

(4) Strictly organize and implement to improve the quality of night support

When flying at night, aircraft take off and land to rely on airport lights to guide. In order to ensure flight, first of all, it is necessary to conscientiously inspect the power supply equipment and power supply lines before dusk, run the standby generator with load, and conduct a power-on inspection of the night navigation sign lights; set up auxiliary lights according to regulations, and prepare movable standby lamps and lanterns; it is necessary to dispatch electricians to be on duty at the tower and the power supply system, adjust the voltage in a timely manner, eliminate abnormal phenomena in time, and ensure normal power supply; maintain close contact with the flight control tower or flight control room, and open and close them in a timely manner. Convert all kinds of sign lights, check the lighting situation frequently, report the fault in time, and quickly eliminate it. Second, it is necessary to rationally organize support forces, and according to the support tasks, the method of organizing support teams or support groups can be adopted to relatively fix personnel and vehicles, so as to improve the degree of tacit understanding of coordination and cooperation and the adaptability of night support. At the same time, it is necessary to strictly inspect the light signal devices and braking systems of various vehicles, and clarify the regulations for the use of lights, as well as the contact signals and coordinated actions under the condition of no lighting. Third, the commanders of the stations should go deep into the support sites and organize the coordination of aircraft traction, refueling, inflation, and power supply,

supervise the vehicles to park in strict accordance with the designated position, drive according to the prescribed route and speed, and earnestly implement the night operation procedures and precautions when approaching the aircraft; pay attention to maintaining the order of the flight site, strengthen the vigilance of the flight site, especially the runway and taxiway, and ensure the safety of aircraft take-off and landing. It is necessary to strictly control the lighting to avoid exposing targets and interfering with the flight of troops. Fourth, it is necessary to organize emergency repairs and rescues. When signs of an enemy air raid are discovered, an air raid warning signal should be issued in a timely manner, and under the unified command of the flight commander, action should be taken in accordance with the night air raid plan. If the air raid causes casualties and damage to equipment and facilities, we will organize emergency repairs and rescue in a timely manner, and concentrate all efforts to restore power supply as soon as possible.

Section 2: Flight Logistics Support under Complex Meteorological Conditions

In the season of frequent occurrence of complex weather, it is very easy to have bad and dangerous weather and unstable weather, such as strong winds, thunder and lightning, heavy rain, hail, and low visibility, which have a great impact on the logistical support of combat flights.

1. Characteristics of logistics support for complex meteorological flights

(1) There are many risk factors for aircraft take-off and landing, and a large number of special circumstances may occur

When rain, snow, fog, dust and other weather occur, the ground visibility and landing visibility are generally poor, and there may be problems such as the pilot not being able to see the field and visual navigation equipment clearly during the ground taxiing and landing; Therefore, a large number of special situations may occur under complex meteorological conditions, which will increase the emergency handling and rescue tasks of the station.

(2) Sudden changes in the weather, and there is a high possibility of an emergency landing of the aircraft

Dangerous weather sometimes occurs suddenly in only a certain local area, and sometimes it is very large, and even the entire airfield in the theater is in different situations and different degrees of unstable weather or dangerous weather. In this case,

it is very likely that the weather will gradually or suddenly deteriorate after the combat take-off and the time of the return of the aircraft and it will not be able to land, at this time, the returning aircraft will not have much fuel left, and some may even be injured in battle, so they must land at the nearest airport where the weather conditions are better and the aircraft can still be received. Therefore, under complicated meteorological conditions, the station must not only do a good job in fulfilling the logistical support tasks of the combat flight of the planes in the field, but also do a good job in providing support for the emergency landing planes, and make all kinds of preparations for handling unexpected situations that may arise during the landing process; at the same time, it is necessary to properly complete the logistical support tasks of the emergency landing planes taking off and returning to their own fields or making combat sorties again in accordance with the instructions of the higher authorities.

(3) The pavement is easy to be damaged in the rainy season, and the materials and equipment are susceptible to moisture and deterioration

By rainwater infiltration, the strength of the road foundation is weakened, and the pavement is easily damaged, especially the artificial pavement edge image is seriously eroded by rainwater, and the foundation is very prone to cavities and collapses, resulting in damage to the edge of the artificial pavement. In the rainy season, the air humidity is high, metal equipment is easy to corrode, non-metallic equipment is easy to mold, medicines, cement and other materials are easy to absorb moisture and deteriorate, and the performance of insulating materials is reduced. Not only will it increase the workload of material and equipment management and maintenance of the field, but it is also very likely that the smooth completion of the combat flight support mission will be affected due to the damage to the material, equipment, and field.

2. Logistical support measures for complex meteorological flights

(1) Strengthen the maintenance of the road

Before the arrival of the summer miscellaneous meteorological season, organize forces to comprehensively repair artificial pavements and power supply and lighting equipment, roll over safety roads and forced landing roads, loosen buffer sand flats, and check the reliability of the blocking net. At the same time, it is necessary to strengthen the daily maintenance and pre-flight inspection of the road facilities so that they are always kept in good condition. Every time we fly, we must be equipped with the tools and equipment to rescue the planes that have made a forced landing and rushed off the runway in muddy areas, and we must clearly define the rescue methods. The weather suddenly turns cloudy and foggy and the visibility is low, so special attention should be paid to the inspection of the lighting equipment in the field to prevent the lamps from entering the water and the cables from getting damp, which will affect the normal operation of the lamps.

(2) Formulate a variety of support plans and adjust forces in a timely manner

As weather conditions change in the airport area, aircraft sorties and flight start and end times may change frequently. Therefore, when drawing up a logistical support plan, it is necessary to put forward a corresponding plan for the use of support forces in accordance with the various dispatch plans of the troops, and leave room for quantity. In the process of guaranteeing,

maintain close contact with the command post and flight commander of the unit, adjust the support force and change the support method in a timely manner according to the changes in the support tasks. At the same time, it is necessary to strengthen the ideological education of personnel in a targeted manner, not to slack off their will to fight because of the stoppage of flying and stopping, not to affect the quality of support because of difficult objective conditions and long hours on the scene, and not to cause chaos in the on-site order due to changes in plans.

(3) Take moisture-proof measures to ensure the quality of materials and equipment

Under complex meteorological conditions, humid air and rain and fog have great harm to the quality of technical equipment, materials and equipment, which can promote rust, corrosion and mildew of equipment, materials and equipment, and reduce the performance of insulating materials. Therefore, in the season of high relative humidity, concentrated rainfall and foggy, it is necessary to take the damp-proof work as a regular work and get a good grasp of it. It is necessary to supply moisture-proof equipment and equipment in a timely manner, and adjust the temperature and humidity of the warehouse in a timely manner according to meteorological changes. When supplying materials and equipment, we must ensure good quality. When refueling the aircraft, it is necessary to prevent rainwater and sediment from entering the fuel tank, and when inflating and energizing, the inflatable connector and power plug should be kept clean and dry, and the wires should be well insulated. Educate drivers to follow the prescribed route to prevent mud and sand from being brought into the flight field.

Section 3: Flight Logistics Support under Severe Cold Meteorological Conditions

China's severe cold regions are mainly distributed in the northeast, north and northwest regions, and their strategic position is very important. The station should conscientiously study the characteristics of flight logistics support under severe cold meteorological conditions, formulate practical preventive and support measures, and ensure the fulfillment of flight logistics support tasks in the severe cold season.

1. Characteristics of flight logistics support in severe cold weather

The temperature is low and the cold period is long in the severe cold season. The average temperature of the coldest month (January) in the severe cold region is below -30°C in the north of Heihe in the Daxing'an Mountains and the Fuyun area of Xinjiang, and -20°C in most areas of Heilongjiang, northern Jilin, northeast Inner Mongolia and Altay region of Xinjiang to -30°C . The extreme minimum temperature in the cold region ranges from -24°C to -52°C from south to north.

For example, Jinzhou, Zhangjiakou, Datong, Lanzhou, and Hami are about -25°C , Shenyang, Hohhot, and Urumqi are about -33°C , Tonghua, Changchun, and Tacheng are about -38°C , Mudanjiang, Harbin, Qiqihar, Manzhouli, and Altay are north of -40°C to -50°C , and Xinjiang Fuyun and Qinghe can reach 50°C . The average temperature in the cold area is below zero degrees Celsius, and the cold period is longer, generally 4-6 months, as long as 8 months in the Hulunbuir area of Inner Mongolia, and as long as more than 9 months in the Daxing'anling area. The snow period is long and the snow is thick. Most areas of the cold area in November of the year to March of the following year for the snowfall period, the snowfall period in some areas is as long as 8 months, the snow cover day is more than 190 days, the maximum snow depth reaches 50 centimeters, in the northern Xinjiang along the Tianshan Mountains, the Altai region 30 centimeters thick snowfall several times a year, after the heavy snowfall causes short-term traffic difficulties, such as in a large amount of snowfall and then encounter strong winds, will form a snow barrier, some up to more than one meter, resulting in traffic interruption. There are many snowfalls in severe cold areas, and some airports in northern Xinjiang can snowfall more than 30 times a year. Up to 50 times. Under severe cold conditions, some notable features have emerged in flight logistics support.

(1) It is difficult to start machinery, the failure rate is high, and the rapid guarantee is affected

Under severe cold conditions, it is difficult to start the vehicle if it is parked in the open air. Because under severe cold conditions, the viscosity of the lubricating oil increases, the crankshaft is difficult to rotate, and the mixed gas of the engine cannot form a good atomization under low temperature conditions, resulting in the inability to burn quickly after ignition, so it is difficult to start. In addition, under low temperature conditions, the engine is not easy to maintain the normal working temperature, and the power decreases, which seriously affects the performance of the vehicle. The test shows that the starting time of the vehicle at low temperature is several times higher than that under normal conditions, and when the temperature is -40°C , the vehicle cannot be started without preheating. Under such circumstances, once the air force takes off in an emergency combat situation, if it does not take corresponding measures, its rapid support will inevitably be affected. In order not to delay the entry time, some stations often start to start the vehicle at least 2 hours in advance, and even send the duty personnel to start all vehicles every 1 hour at night to maintain sufficient engine temperature.

(2) The technical performance of equipment and materials is reduced

Severe cold conditions will also adversely affect various equipment and equipment,

leads to a decrease in technical performance. For example, the efficiency of the aviation battery is reduced, the discharge time is shortened, and the electric capacity is insufficient, which affects the starting of the aircraft. The damage rate of automobile spark plugs is high, the brake gas pipe is frozen, the fuel is prone to frost, and the elasticity of rubber and plastic parts is weakened, resulting in poor sealing of parts.

(3) The difficulty of various operations in the field has increased

Most of the flight logistics support of the aviation unit is in the field, and there are no shelter conditions, and the personnel are more seriously attacked by the severe cold at the airport, while most of the flight logistics support is operated manually, and it is necessary to come into contact with the equipment control parts; because of the operation under low temperature conditions, it is easy to cause fingers to freeze after a long time, and the accuracy of the operation is reduced, and even cause personnel to suffer frostbite or make operational errors. At the same time, due to the cold and thickened clothing, personnel activities, especially getting on and off vehicles, and equipment are inconvenient, which makes the operation more difficult.

(4) Snowfall covers the airport, making it impossible for the aircraft to take off for a short time

In the snow season in severe cold areas, clearing the snow on the field is a painstaking task for flight logistics. At -20°C , it takes 6 hours for a 10 cm thick snowblower, 16 hours for a 20 cm thick snowblower and more than 30 hours for a 30 cm thick snowblower. As a practical example, the thicker the snow, the longer it takes to blow the snow away. At the same time, the speed of snow blowing is affected by the air temperature, in general, the lower the temperature, the faster the sweeping, and the slower the cleaning speed between -5°C and 15°C . This is because the snow blower uses an aircraft engine, and the engine works to emit hot air, and the high temperature can make the snow partially melt and make the blown snow stick together, or even form ice, making it more difficult to blow snow. In some airports, it sometimes takes nearly a week to clear a snow pile in early winter, resulting in the temporary closure of the airport.

2. Logistics support measures for flights in severe cold weather

(1) Strengthen the anti-freezing work of ground equipment and materials

Before entering the winter, the ground equipment should be fully changed, the clearance of each part should be adjusted, the winter lubricating oil should be replaced, and the specific gravity of the electrolyte should be adjusted. It is necessary to educate drivers and operators on the common sense of antifreeze equipment and equipment, such as the engine cooling with water without antifreeze and without heating, the garage must be drained with water, and after the water is discharged, it should be started for a short time to eliminate excess water;

Start the vehicle to heat the water first, close the shutters, start with the handle, and start with a small throttle and low speed after starting to prevent the temperature from freezing the water tank. Pay attention to the antifreeze of fuel oil. The temperature of aviation kerosene stored in underground tanks is higher than the surface temperature when the oil temperature drops to a certain extent. After that, it can dilute out the water and freeze, and if no measures are taken, it can be added directly to the aircraft. Frozen jet fuel can clog the fuel supply lines, causing poor fuel supply to the aircraft engine, or even stopping the aircraft. Therefore, it must be pre-cooled in a freezer tank for more than 24 hours before use to eliminate frost. At the same time, aviation fuel used in winter should also be added with antifreeze. In order to prevent the jet fuel in the fuel truck from freezing, it should be filled up with fuel tanks after the flight and not parked in the insulated garage. The newly inflated air-conditioner cylinder should be refilled for the aircraft only after cooling to prevent the gas from freezing on the aircraft and blocking the intake valve and causing corrosion.

(2) Strengthen driving safety under ice and snow conditions

Ice and snow conditions have brought great difficulties to car driving, such as ice and snow road surface can reduce the friction of car wheels and tires, reduce the braking effect after braking, extend the braking distance, and emergency braking will also cause direction deviation, side slip or even U-turn, resulting in vehicle off-road, rollover, and collision. Driving in severe cold areas is almost always on ice and snow, and unsafe factors are always accompanied by moving vehicles. Therefore, driving safety under ice and snow conditions has become a key point in the station support work. It is necessary to educate drivers to firmly establish the concept of safety, to drive slowly on ice and snow roads, to slow down in advance, and to slow down the brakes; to do a good job of coordination with the aircraft maintenance, in the process of towing the aircraft, the brakes of the aircraft and the car should be consistent, to prevent the towing rod from breaking off and damaging the aircraft; when picking up and dropping off the maintenance personnel, the driver should check whether the connection between the carriage board and the hook is firm, and the passengers and cadres leading the car should not ask the driver to stop the emergency park; necessary anti-skid measures should be taken. Drivers should have the necessary anti-slip items (shovels, pickaxes, sandbags, snow chains, triangle numbers). It is necessary to check and adjust the brakes of automobiles to reduce the phenomenon of turning around due to uneven braking, and it is necessary to strengthen the training of new drivers to drive on ice and snow roads and improve their ability to deal with unexpected situations.

(3) Implement cold-proof and maintenance measures for equipment and equipment

Under severe cold conditions, equipment failures increase significantly, such as due to the reduction of metal strength. The viscosity of lubricating oil increases, and the hardening of rubber and plastic products aggravates the wear and tear of vehicles and machinery, and damages parts.

At the same time, it also brings great difficulties to the maintenance work, because the troubleshooting and repair of some vehicles should be carried out outdoors, and the repair personnel are inconvenient to operate and prone to frostbite, and the operation ability is reduced, and the repair progress is slow. According to the test, repairing a damaged vehicle takes about 4 times more man-hours in cold areas than in general areas. This makes it difficult for the intact rate of vehicles and equipment in the severe cold season to meet the specified requirements, and if corresponding measures are not taken, it will affect the flight logistics support. It is necessary to organize the maintenance of equipment and equipment: First, it is necessary to strengthen the construction of the contingent of repair personnel, retain a certain technical backbone, and attach importance to the improvement of the overall technical level. The second is to adopt effective repair methods. The repair operation should be carried out indoors as much as possible, and in order to speed up the repair, the repair or replacement assembly can be replaced to shorten the time of operation in the open air as much as possible. The third is to improve maintenance tools and conditions. Mechanized or semi-mechanized operations should be implemented as much as possible, improve the repair speed, reduce labor intensity, the station automobile repair station should continue to innovate some machine tools, and the superior business department should organize forces to develop lifting and disassembly equipment suitable for various purposes of field operations, and improve maintenance conditions. Fourth, the higher-level repair shop should organize forces to go to the station to carry out roving repairs to make up for the lack of repair force at the station.

(4) Organize road de-icing and snow removal work

In order to speed up the clearing of snow at the airport, the following measures should be taken: First, mechanized operations should be adopted. Two snow jets should be assigned to each cold zone station, and new energy-efficient snowplows should also be equipped. At present, most of the snowblower engines used in some stations are turbojet-5B engines, and some stations have maintenance technology and equipment problems, and it is difficult to repair them in time in case of faults, so they have to use manual cleaning. The station should strengthen the training of maintenance technicians, and contact the equipment department to coordinate the supply of equipment. The second is to grasp the timing of cleaning. Specifically, in the case of high temperature, especially when the snow melts or the rain adds snow to the side, and the temperature has a tendency to drop, it is necessary to blow decisively, and blow part of the snow and water together with the hot air sprayed by the engine, until it does not rain or snow, so as to avoid freezing on the road; in the case of a temperature of -10°C to -20°C , it is necessary to choose the time when the temperature is low from midnight to morning to avoid blowing and freezing; in the case of heavy snowfall, reaching more than 20 cm. And when the temperature is suitable (below -15°C), it can be blown while below;

Mechanics and drivers have to choose the best route, The speed of the aircraft engine and the walking speed of the vehicle, because these three play an important role in improving the efficiency of snow clearing; the troops stationed at the field should prepare appropriate snow clearing tools, because when the snow is cleared in winter, the snow blower may break down, and at the same time, the temperature and the amount of snowfall may affect the clearing of the snow at the airport, and it is necessary to mobilize manpower and adopt the method of combining manual and mechanical work to clear the snow at the airport at the fastest speed; the station should strengthen the organization and leadership of snow clearing, and before the beginning of winter, the station should hold a special meeting to make arrangements and clarify the snow clearing tools, the preparation of machinery and the division of tasks, and the readiness is checked. The flight support command room should strictly organize the cleaning of machinery, and promptly notify the snow blowers and various vehicles to enter the field according to the temperature and snowfall conditions of the airport.

(5) Strengthen the cold-proof and thermal insulation work of personnel on duty in the field

Under severe cold conditions, the personnel on duty in the field should take necessary measures to prevent cold and keep warm, which is also an important part of the flight logistics support work in cold areas. It includes two parts: long-term construction of the outfield and life support. Long-term construction refers to the construction of infrastructure, and it is necessary to have a good rest room for ground staff and a resting place for station personnel, and increase warm facilities, so that the personnel on duty have a good environment for a short rest. The living guarantee should be aimed at the severe cold weather, providing cold clothing, antifreeze medicines, and ensuring the supply of hot meals, hot dishes, and hot water (soup).

Section 4: Flight Logistics Support under Hot Season Conditions

The weather in the southern and central parts of China is hot in summer. The leaders of the stations should conscientiously study the characteristics of flight logistics support under the conditions of the hot season, formulate practical preventive and support measures, and ensure the fulfillment of the flight logistics support tasks in the hot season.

1. Characteristics of flight logistics support in the hot season

In the hot season, the vast areas south of the first line of Shantou, Guangzhou, Wuzhou and Gejiu City in China have high summer temperatures, long hot periods and strong daily radiation. The average annual temperature is 23°C to 25°C, the highest temperature can reach more than 42°C, and the average monthly temperature is above 30°C for half a year. The summer temperature in the Gobi Desert in northwest China is as high as 41°C or more,

summers in the Chubu region can sometimes reach temperatures of 35°C to over 40°C. Affected by the radiant heat of the airport runway, the surface temperature of the runway can reach more than 70°C. Under the conditions of the hot season, some notable features of flight logistics support have emerged.

(1) Logistics support equipment, equipment, facilities, and materials are susceptible to damage and deterioration

Under the condition of continuous high temperature, the equipment is guaranteed to run for a long time, and the parts are easily damaged. The expansion of concrete slabs causes adjacent slabs to squeeze each other, which may squeeze the edge of the slab and produce concrete fragments, and even produce pavement uplift and plate rupture; asphalt pavement is easy to soften and oil, and the hardness of pavement surface is reduced, resulting in indentation and asphalt surface layer damage; rubber products and cable rubber sheets of field and road lighting equipment are damaged due to accelerated aging and deterioration, lamps and lanterns are easy to enter water, and cable insulation performance is reduced and leakage and short circuit are easy to occur; various materials, especially rubber, plastic products and chemicals, are easy to age and deteriorate, and metal materials and equipment are easy to rust; Main and sideline foods are perishable, spoiled, and not easy to preserve.

(2) Oil volatilizes quickly and is prone to accidents

In the hot season, the volume of oil in the oil truck and the open oil tank expands, and if the oil is loaded too much and the cooling is not timely, the oil may overflow and cause losses; the oil leakage of the pipeline and the oil dripping on the pavement of the field volatilizes quickly, and the oil and gas concentration in the warehouse, the aircraft parking and preparation place is large, and the fire or explosion may occur if the slightest carelessness occurs; the oil supply pipeline of the guarantee vehicle is caused by "gas resistance", which affects the smooth implementation of the guarantee work.

(3) The physical strength of the support personnel decreases, and they are prone to heat stroke and illness, and the health and epidemic prevention tasks are aggravated

In the hot season, the work intensity is high, the working environment is poor, not only the personnel are physically exhausted and prone to heat stroke, but they are also prone to delirium, poor appetite, poor sleep, physical fitness is not easy to recover, and their resistance to diseases is poor; in the hot season, mosquitoes, flies, and various pathogens grow and reproduce rapidly, and people like to eat raw and cold food, and they are very prone to dysentery, malaria, hepatitis, enteritis, and other diseases; rivers and ditches are crisscrossed, lakes and ponds are dense, there are many rainy days, and the air is more humid in the hot season. Stuffiness can easily cause rotten crotch, rotten feet and skin diseases, and the task of hygiene and epidemic prevention is aggravated.

2. Flight logistics support measures in the hot season

(1) Implement measures to prevent heat and cool down equipment, equipment, facilities and materials

In the hot season, it is necessary to strengthen the prevention and cooling of support equipment, equipment, facilities, and materials. When conditions permit, it can be arranged to be used in echelons to prevent the machine from overheating and malfunctioning; it is necessary to strengthen the ventilation and cooling of oil depots, ammunition depots, aviation material depots, especially chemical material warehouses, to prevent and reduce losses caused by high temperatures; to strengthen the inspection and maintenance of the road pavement, to sprinkle water on the artificial pavement in a timely manner to cool down, to repair the cracked concrete pavement in time, and to sprinkle sand and roll the asphalt pavement; to frequently inspect the lighting equipment of the field road, to replace the aging and deteriorating rubber pads, rubber cables and damaged lampshades in a timely manner, and to wipe and dry the water. The damp lamps and lanterns ensure the reliable use of the road and its ancillary facilities.

(2) Implement fire and explosion prevention regulations to ensure safety

Cover the tank body of the oil truck with a sunscreen cloth cover to insulate the heat, sprinkle water on the open oil tank to dissipate heat and cool down, reduce oil volatilization, and prevent oil expansion and overflow; when filling oil into the fuel truck, it is necessary to put the grounding wire and control the flow rate, and strictly prevent static fire; the oil depot and indoor oil place should keep good ventilation and exhaust facilities to avoid oil and gas overflow, and frequently check the power cord, explosion-proof lamp and power control equipment to prevent short circuit and flashover; it is strictly forbidden for any fire source to enter or approach the oil depot, oil container and oil place to prevent ignition and detonation of oil. Oil and gas: keep the oil container well sealed, reduce volatilization, eliminate leakage, strictly prohibit random spilling of waste oil, and remove flammable debris inside and outside the oil warehouse and oil site at any time, and eliminate hidden dangers in time.

(3) Do a good job in sanitation and epidemic prevention

In the hot season, set up shade shelters in the working and resting places of the personnel in the field, supply cool drinks in a timely manner, distribute heatstroke prevention drugs, and do a good job in preventing heat stroke among personnel; adjust the food according to the dietary rules and physiological characteristics of the personnel in the hot season, ensure adequate nutrition intake, and actively create conditions to ensure that the personnel rest well, so as to maintain and restore physical fitness and enhance immunity; extensively carry out publicity and education on health and epidemic prevention, strengthen inspection, supervision and guidance, and improve the compliance and implementation of health laws and regulations by all personnel. Conscientiously do a good job in investigating the epidemic situation in the station, promptly carry out sanitation and disinfection of public places, eliminate mosquitoes and flies, strictly manage the hygiene system of canteens, cut off the source of infection, reduce the incidence rate, and maintain the combat effectiveness of the troops.

Section 5: Flight Logistics Support for Islands and Coastal Areas

There are many islands scattered along China's coastline of more than 10,000 kilometers, and airports along the coast and on islands are faced with their own special problems.

1. Characteristics of flight logistics support in coastal and island areas

Whether an airfield located on a coastal or island site is engaged in landing operations, anti-landing operations, or carrying out maritime flight training, flight logistics support is affected by the geography and meteorology of the coastal areas and islands, and flight logistics support activities have many obvious characteristics.

(1) Flying at sea, it is difficult for pilots to find ambulance

In carrying out combat missions along the coast, aviation units need to carry out combat operations such as air attack, air blockade, air strike, air interception, and air cover, all of which need to be carried out across the sea or above the sea surface; most of the pilots of battle-damaged planes will parachute and land at sea; parachuting pilots are very likely to be wounded and physically exhausted, but the quantity of first-aid medicines and life-saving rations is limited, and there is also a threat from the enemy; the transmission power of the life-saving radio is small, the working time is relatively short, the sea is vast, and there are no landmarks, so it is difficult to judge the distance between the parties and the people; the weather at sea is changeable and often "true" There is no wind and three feet of waves", and the search and rescue activities are complicated, and there is no sea rescue equipment and sea crew at the station. It can be seen that the work of selling and rescuing parachutist pilots at sea will be very difficult.

(2) The airport is vulnerable to typhoons, the task of rescue and disaster relief is heavy, and the rear supply is easily blocked

There are many typhoons in coastal areas, and fixed typhoons are often accompanied by strong winds, heavy rains, huge waves and sea tides, which are likely to cause the destruction of airport buildings, power supplies and communication lines, and the flooding around the airport or the backflow of seawater will cause the water level of rivers to soar and the dam to burst, endangering the safety of the airport; Aircraft parked in the open air were overturned and moved, causing damage, and rear supplies were seriously affected by road washouts and traffic obstructions. Airports in coastal areas may have to provide logistical support for combat flights while fighting emergencies and disasters. Some stations located on islands and close to the sea may sometimes suffer casualties, a large number of materials, equipment and equipment may be damaged, and the ability to provide support may be lost in a short period of time.

(3) Marine climate has a great impact on the maintenance, storage and use of equipment, equipment, facilities and materials

Coastal areas and islands often have windy and foggy weather, heavy rainfall, high groundwater level, and humid air; water and soil are heavy and saline, and corrosive nature is strong. Under such conditions, the equipment is seriously corroded, and the maintenance workload and cost increase; the underground building is easy to leak, which affects the normal use; the underground pipeline, the line, the ground building foundation, and the surface part are eroded by the saline-alkali in the groundwater, and the strength is reduced and easily damaged, and the maintenance workload is large, and the reliability of use is reduced; the material is susceptible to moisture and deterioration, and the consumption and scrapping amount are increased due to the decline or even failure of the quality of the material.

(4) Strong support front

Most coastal areas are densely populated and rich in natural products; industrial and agricultural production is developed, medical and various technical repair forces are abundant; railways, public roads, and waterways are connected vertically and horizontally, and transportation is convenient. Many coastal areas have a good tradition of supporting the army and supporting the front, and some even have permanent organizations to support the front, and there are relatively strong forces that can be mobilized and used.

2. Flight logistics support measures in coastal and island areas

(1) Strengthen preparations for marine rescue

Stations in coastal and island areas should accurately grasp the service life of marine life-saving equipment, send it to the factory for inspection on schedule, replace and supplement it in a timely manner, and ensure that the quality of life-saving equipment is reliable; implement the rescue force at the same level and carry out training on the adaptability of marine rescue technology and maritime operations; formulate marine rescue plans in coordination with relevant departments, reserve the necessary rescue equipment and equipment, and ensure that the rescue tasks can be carried out at any time. At the same time, it is necessary to assist aviation doctors to educate flight personnel on self-rescue at sea, so that flight personnel can be familiar with the physiological characteristics of sea flight, master the use of sea life-saving equipment, and improve their self-rescue ability.

(2) Implement anti-typhoon measures

Before the arrival of the typhoon season, stations in coastal and island areas must make corresponding typhoon preparations, the main contents of which are:

Revise the typhoon prevention plan, implement the organization of the rescue and disaster relief detachment, the division of tasks and the organization and command division in the event of typhoons and floods, implement the procurement and allocation of equipment and tools required for rescue and disaster relief, and formulate the action plan for rescue and disaster relief; overhaul the aircraft mooring ring on the apron and prepare the tethering steel cable; renovate and strengthen the airfield area and each reservoir area, The flood control embankment in the camp area: All kinds of materials should be moved into the warehouse as much as possible, and they should be firmly tied and covered when they must be stored in the open air to prevent rain and strong winds from blowing away.

(3) Organize material procurement, reserve and management

In order to alleviate the impact of typhoons and floods on rear supplies and the evacuation of war-damaged equipment, stations in coastal and island areas should appropriately increase the reserve of materials before the arrival of the typhoon season to prevent supply interruptions in the middle of transportation. In addition, moisture-proof and moisture-dehumidification measures are taken to prevent rust, mildew and deterioration of materials, equipment and equipment.

(4) Strengthen the joint defense of the military, police and civilians, and improve the ability to resist disasters and provide logistical support for flights

Give full play to the advantages of industry, agriculture, science and technology in coastal areas, negotiate with the local government and the pre-support agencies, mobilize the strength of local support forces in terms of manpower, materials, equipment and technology, and support the stations to complete the emergency repair of equipment and facilities damaged by war damage and natural disasters, as well as the materials and equipment that can be procured locally to provide support and guarantee.

Section 6: Flight Logistics Support in Plateau and Desert Areas

The plateau and desert areas in western China are vast, the climatic conditions are complex, and the airports in the plateau and desert areas are faced with their own special problems.

1. Characteristics of flight logistics support in plateau and desert areas

(1) It is difficult to raise and supply materials and the cycle is long

The sparse population and weak industrial base in the plateau and desert areas have brought difficulties to the procurement of materials. Airports are generally far away from towns, and daily necessities cannot be solved locally;

It is often necessary to go to a larger city hundreds or even thousands of kilometers away to raise money. Some airports are thousands of kilometers away from the rear warehouses, and it takes several days or even more than 10 days for a round trip to transport combat materials by car, and the supply cycle is long.

(2) Inconvenient transportation and high cost

In plateau and desert areas, most of them are underdeveloped areas, and there are very few special railway lines at airports, and oil and other materials are mainly transported by automobiles, with low transportation efficiency and high cost. If the transportation distance is 1600 kilometers, calculated at 0.37 yuan per ton-kilometer, the freight cost of one ton of oil needs to be 540 yuan. A J-7 regiment needs 768 tons of aviation fuel for a month's combat flight, and if 188 tons are transported every day and transported in 20 days, 135 Yellow River brand vehicles are needed to transport it, and the freight needs to be more than 2,200,000 yuan. It can be seen that the material cost of plateau and desert airports has increased significantly.

(3) The environment is harsh and life is hard

Plateau and desert areas belong to the continental climate, due to the dry weather, coupled with the radiation of gravel, the climate changes sharply, the temperature difference is huge, the maximum temperature can reach about 50°C every year, the minimum temperature can drop to below -40°C, the daily temperature difference is large, the temperature at noon in summer is generally more than 40°C, the surface temperature of the field can reach 70°C, and sometimes it drops to about 0°C at night. Desert areas have little precipitation, a dry climate, and high evaporation. Evaporation often exceeds precipitation by several times, resulting in a scarcity of water. In these areas, there are not only few rivers, lakes, and springs, but also the groundwater level is low, generally more than 50 meters deep, some up to more than 200 meters, and even some airports cannot get water nearby, so they have to dig wells more than ten or even dozens of kilometers away from the airport, relay water supply with multi-stage pumps, and supply water regularly and quantitatively every day. The day of the wind and sand in the desert area is generally about 100 days, when the wind speed is high, it often forms a sand and dust explosion, the visibility is low, and after the wind passes, a thick layer of yellow sand is scattered everywhere inside and outside the airport barracks. Sometimes there is a "tornado", causing damage to the support facilities, due to the strong sunshine, the air is dry, the sand and dust are not easy to fall, some areas are prone to respiratory diseases, and some areas have a wide range of infectious disease transmission channels and a high incidence rate, and the task of epidemic prevention and disease prevention is heavy.

(4) The equipment is worn out and maintained

The station located in the plateau and desert area is affected by the wind and sand, and the parts of aviation technical equipment and equipment are easy to wear and tear, and the consumption of materials and equipment is large,

engine power is reduced in plateau areas, oxygen production, refrigeration, charging time is long, due to drying, sunlight, exposed rubber parts appear premature aging, seals appear dry cracks, resulting in unsealed, and will bring oil leakage, increase the difficulty of maintenance work, reduce the service life of equipment and equipment.

2. Flight logistics support measures in plateau and desert areas

(1) Increase the reserve of combat materials

Appropriately increasing the reserve of major combat materials in key operational areas or in key operational directions located in plateau and desert areas is an important measure to solve the problem of large material consumption and difficulty in replenishing materials. Depots located in plateau and desert areas should increase their reserves of necessary combat materials in accordance with the tasks they may bear in wartime, the degree of threat from the enemy, and their own support capabilities. Such as aviation materials, aviation ammunition, aviation fuel, war rescue medicines, special vehicles and equipment, airport repair machinery and materials, and daily necessities for a certain period of time. The determination of the specific number of reserves is mainly based on the estimated consumption and the supply capacity of the rear, and should usually be able to meet the needs of various combat materials consumed in one month's combat time.

(2) Strengthen protection and improve conditions

In order to alleviate the impact of wind and sand and temperature difference on the quality of materials, it is necessary to enhance the tightness of the warehouse, and the materials should be tightly packed and the quantity of ammunition unpacked should be strictly controlled. It is necessary to strengthen the maintenance of materials, remove dust in time, and ensure that the oil seal and anti-corrosion layer are intact. In order to prevent the volatilization of oil, the reduction of light components, the precipitation of lead water and the increase of impurities, it is necessary to build an underground oil depot, and appropriately shorten the test cycle and increase the number of filtration. It is necessary to adopt effective measures to prevent windblown sand and power loss in weapons and equipment. In order to reduce power loss, the air intake volume of the engine and the ignition and fuel supply device should be adjusted according to the atmospheric pressure, and the fuel with appropriate octane number should be selected, and the operation method should be improved. In order to reduce the wear and tear of equipment parts, it is necessary to prepare windproof sand sheaths and plugging covers for aircraft and ground equipment; it is necessary to strengthen wiping and maintenance, and remove dust and sand in a timely manner. It is necessary to organize the maintenance of the field according to local conditions. The artificial pavement in the plateau area is easy to be damaged, and the aircraft is easy to rush out of the runway due to the extension of the sliding distance, so it is necessary to strengthen the maintenance of the road, repair the damaged pavement in time, strengthen the smooth rolling of the safety road, and regularly turn over the buffer sand flat of the safety road at the end of the loose road.

Airports in desert areas are vulnerable to wind, sand attack, sand and dust accumulate on the road, it is necessary to vigorously build a sand prevention belt around the airport, and build sand prevention trenches for aircraft and important facilities. After the sand storm and before the flight, the sand should be removed from the road and the drainage ditch should be dredged.

(3) Organize livelihood guarantees

In accordance with the requirements of flight support and local resource conditions, the stations should actively do a good job in procuring, transporting, and storing staple and non-staple foodstuffs and daily fuels, open up and protect water sources, build water storage tanks, and equip them with means of transporting water; at the same time, they should improve their cooking methods and be equipped with high-pressure cooking utensils to overcome the impact of low air pressure on their cooking work.

(4) Strengthen health and logistics safeguards

In light of the characteristics of plateau and desert areas, stations should strengthen security and logistical support. In plateau areas, personnel are prone to altitude sickness, and will also affect their eyesight due to ultraviolet radiation, so they should actively organize troops to carry out physical exercises, enhance their ability to adapt to the hypoxic environment, and prepare necessary oxygen delivery equipment, and equip all personnel with protective glasses. In order to strengthen the anti-epidemic work, it is necessary to regularly communicate information with the local anti-epidemic departments, grasp the epidemic situation of infectious diseases, and inject anti-epidemic vaccines in a timely manner to prevent the spread of infectious diseases among the troops. In desert areas, it is necessary to be equipped with protective goggles to protect eyesight and anti-sand masks in a planned way to reduce the damage of sand and dust to personnel's eyesight and respiratory tract.

Chapter 11: Emergency and Mobile Support for Aviation Logistics

In order to ensure the smooth implementation of the air force's logistical emergency mobile support, to be able to mobilize and use it when something happens, and to play a key role in providing support, it is necessary to strengthen the study of the issue of the air force's logistical emergency mobile support. It is necessary to clarify the basic concepts, status, roles, and main tasks of the air force's logistical emergency mobile support, study the characteristics and requirements of emergency mobile support, establish correct support principles, strengthen the analysis of the situation where emergency mobile support forces may be stationed, explore effective methods of organization and command, and familiarize themselves with the basic procedures and contents of emergency mobile support.

Section 1: The Concept of Emergency Mobile Support for Aviation Logistics

1. Definition and differentiations

Aviation logistics emergency mobile support refers to the aviation logistics in the form of accompanying or pre-stationing aviation units in an emergency. It is aimed at aviation units (subunits) carrying out mobile operations, and the air force station support entities are the basic forces.

The forces that carry out emergency mobile support are usually formed in the form of temporary groups from the support forces of air stations. The types of logistical emergency mobile support forces of the aviation units can be divided into the following types according to different subordinate relationships:

The first is the Air Force Aviation Emergency Mobile Support Brigade, an aviation logistics emergency mobile support force under the strategic logistics command and control of the Air Force. That is, the emergency mobile support force of the depots is mainly composed of the guard stations designated by the Air Force, and is formed by temporarily drawing groups and appropriately expanding the number of depots according to the needs of undertaking support tasks. It is used by the strategic logistics command of the Air Force and is the "fist" of the logistics support of the air force.

The second is the air force's campaign logistics command and control of the air force's emergency mobile support force -- an emergency mobile support force drawn from the theater air force. It is mainly used to draw groups in the backbone stations. The backbone airfield is located in a certain campaign direction or a certain operational area, which can not only independently ensure the fulfillment of combat missions by various types of main combat aircraft, but also provide logistical support to other airfields in the campaign direction or operational area where it is located. Due to the strong support force of the backbone stations, there is a relatively large margin for selecting pre-organized personnel and equipment, which is convenient for rapid group drawing and maneuvering.

The third is the logistical emergency mobile support force of the Air Force's tactical aviation unit -- mainly the support force drawn from the air force depots and stations of the emergency mobile combat units determined by the Central Military Commission. That is, each air force station of the emergency mobile combat unit designated by the Central Military Commission shall specify an emergency mobile support detachment in peacetime, and carry out mobile support tasks in wartime according to the needs of operations. The detachments that are drawn can rely on the strong support capabilities of their stations to implement rapid support or accompanying support.

2. Status and role

The logistical emergency mobile support of the air force is an important means for the air force to gain the initiative in operations and win a local war under high-tech conditions, and it plays a role in providing support for the present, connecting the follow-up, strengthening key points, and striving for the initiative.

(1) Implementing logistical emergency mobile support for the air force is an important measure for realizing the strategic transformation from a territorial air defense type to an offensive and defensive one

The head of the Central Military Commission has stressed on many occasions that the Air Force should pay attention to accomplishing future air combat missions through offensive operations and strive to realize the transformation from a type of territorial air defense to a type of both offensive and defensive operations. To this end, the Air Force's strategy proposes to unify strategic defense with active offensive in campaign and tactics, and to strengthen the concept of offensive operations and mobile operations. This requires the air force to give full play to the air force's specialty of long-range and high-speed maneuver in peacetime defense and in the event of a war, quickly concentrate its forces from the whole country in the main operational direction, form an air offensive state, and realize the transition between attack and defense. Therefore, the logistics of the aviation unit must improve and perfect the organizational form and support mode on the basis of a relatively fixed base-based support network,

efforts should be made to strengthen the construction of emergency mobile support, and gradually build it into a support force capable of carrying out all-round emergency mobile support, so as to adapt to the change in the guiding ideology of the Air Force's operations.

Air force logistical emergency mobile support is an important part of the implementation of advanced preparations. In future military struggles, we will carry out a just war aimed at safeguarding sovereignty over our territory (territorial waters) and territorial airspace, and we will have the initiative in the campaign and be able to exercise effective control over the pattern and scale of the operation and the timing of the surprise attack. Therefore, targeted logistical preparations and maneuvering of support forces can be carried out in advance. According to the operational intentions of the headquarters, it is possible to preset some emergency support forces on the preset battlefield and reserve some supporting equipment and materials, so that once a situation occurs, it can carry out support in advance and create conditions for the rapid implementation of operations.

The logistical emergency mobile support of the aviation unit is the main force of the aviation force to achieve victory in the first battle. Under the high-tech conditions of the future, it is the basic principle to follow in air operations to attack the enemy first and win the first battle. In the early days of the first war, multi-arms, multi-aircraft, and battle-participating clusters will be assembled and deployed at first- and second-tier airfields in a short period of time, and the demand for logistics support for super-normal troops will increase, and it is not enough to rely on the airport's own support force alone, and it is required that the emergency mobile support force be strengthened to ensure that a huge support force will burst out in a short period of time, so as to meet the support needs of multi-aircraft, large-scale, and high-frequency combat sorties in the first battle.

(2) The implementation of emergency logistical mobile support for aviation is an objective requirement of future combat patterns and battlefield environments

In the future, air operations will be multi-arm and multi-aircraft group operations, and in particular, the scale of use of air power and the intensity of sorties will greatly exceed those of any previous combat operation. However, due to historical reasons and the impact of insufficient funds, the layout of airfields in the main operational directions is not rational enough, and the comprehensive support capability is not strong enough, and in the event of a large-scale air combat operation, it will be difficult for the theater's existing mobile forces and comprehensive support capability to fully meet the operational needs. To this end, it is necessary to vigorously strengthen the building of emergency logistical and mobile support for the air force, and to a certain extent, it will be able to effectively ease the tense situation of operational logistical support through the action of strengthening emergency response and opening airfields urgently.

The implementation of emergency logistical mobile support for aviation units is necessary to adapt to the rapid and ever-changing battlefield environment. With the unprecedented expansion of the future combat space, the combat units are moving frequently and rapidly in all directions, the battlefield situation has changed dramatically, and the center of gravity of operations has shifted frequently, resulting in the impermanence of the center of gravity of support.

Since the logistics support for the aviation training in peacetime mainly adopts the base-based support model, and most of the first- and second-tier airports can only support a single type of aircraft, especially a small number of new models of support equipment development lags behind, the shortage rate is high, coupled with the lack of high-quality support personnel, it is already relatively difficult to complete the support task in peacetime, and it is even more difficult to deal with fast-paced, high-intensity, and multi-aircraft flight support in wartime. Under such circumstances, it is difficult to complete the mission without the timely support of the emergency mobile support force.

The implementation of logistical emergency mobile support for aviation units is to meet the needs of high-frequency and high-intensity operations. With the substantial improvement of the tactics and technical performance of modern air attack weapons, as well as the bombing, bombing and assault forces of air assault forces, multiple batches and multiple echelons. The high-intensity and continuous assaults have led to a sharp increase in the consumption of fuel, ammunition, and other combat materials within a predetermined time. With the advent of wartime unknowable's, it is conceivable that the demand for war materiel and the need for timeliness and continuity of material supply is high. Moreover, in wartime, logistical support is always under the threat of the enemy's air and ground strike forces, and once it is paralyzed by the enemy's strike, it is necessary to immediately activate emergency mobile support forces to supplement and strengthen them.

(3) Implementing emergency mobile support for aviation logistics is an effective way to improve the overall logistics support capability of aviation units

At present, when the contradiction between supply and demand in army building is prominent, it is impossible to make a major adjustment to the structure of the existing air force logistical support forces, and it is impossible to comprehensively upgrade the logistics support equipment, based on the existing conditions, we should adopt the organization method of "pre-organizing and optimizing the combination" and focus on strengthening the building of the air force's logistical emergency mobile support in order to cope with future local wars and emergencies, which is an effective way to make good logistical preparations for military struggles. At the same time, the building of emergency mobile support forces can provide useful experience for the construction and reform of the logistics of the entire air force, play a good exemplary role, and help further promote the comprehensive construction of air force stations and promote the improvement of the overall support level.

The enhancement of mobile support capability can improve the dynamics and adaptability of logistics support. Emergency mobile support can effectively overcome and make up for the deficiencies in base support and greatly enhance the combat effectiveness of the air force. When the new main combat aircraft implements maneuvering operations,

realizable implementation is accompanied by follow-up guarantee to meet special needs in a timely manner. When an airfield is damaged by an enemy attack and is difficult to repair, the mobile support force can be quickly transferred to a new take-off and landing ground to provide emergency support. When the task volume of a certain airport increases and the existing support force is unable to bear it, the mobile support force can quickly provide support.

The enhancement of mobile support capability can improve the "toughness" of base support. The enemy in air combat places great emphasis on "preemptive" and "counter-control" operations, and the attack and destruction of our first- and second-line airfields will make the contradiction between heavy support tasks and few support forces very prominent; extending forward at the right time and rationally using emergency mobile support forces can effectively support and strengthen the support forces of major combat airfields, keep the support forces in line with the support tasks, and enhance the continuity of the support at the bases.

In short, the implementation of emergency mobile support for air force logistics is an important measure for the air force's logistical preparations for military struggle, an objective requirement for changes in the air force's combat pattern and battlefield environment, and an effective way to enhance the air force's overall logistics support capability.

Section 2: Tasks, Requirements and Principles of Emergency Mobile Support for Aviation Logistics

Revealing the tasks, requirements, and principles of the air force's logistical emergency mobile support will help the personnel participating in the air force's logistics emergency mobile support clearly understand their responsibilities and effectively and smoothly carry out the emergency mobile support in light of the characteristics of the emergency mobile support and in accordance with the basic principles of the support.

1. Main tasks

In wartime, in order to ensure that the air force units achieve the goal of concentrating superior forces, the logistics of the air force may sometimes carry out mobile support tasks in various forms and under different conditions. For example, it is necessary to carry out support and support tasks for airfields in use, to undertake the task of opening temporary airfields (field airfields, highway airstrips), or to carry out the tasks of accompanying support for mobile operations of aviation units.

- (1) Undertake the task of supporting and supporting the airport in use

Under the conditions of modern warfare, in order to achieve the goal of concentrating superior forces in the main operational direction or in important operational seasons, it is sometimes necessary to mobilize emergency mobile combat units to urgently station at a certain airfield, and this has greatly increased the support tasks of the station and made it more difficult. In addition, the enemy's air raids and sabotage have increased the battle loss rate of logistics personnel, materials, and equipment, and the contradiction between supply and demand of logistics support forces has become prominent. In order to ensure that the aviation units always maintain superiority over the enemy, it is necessary to constantly replenish and strengthen the support forces of the airfields in use. Therefore, the support of the in-service airport has become an important part of emergency mobile support. This kind of mobile support has great uncertainty, and the support force may be included in the support organization of the support station for support, or it may independently undertake the overall support of a certain type (type), or it may be responsible for a certain professional support task.

(2) Undertake the task of supporting the opening of temporary airports

The large-scale, large-scale aircraft group, and large-scale sortie of air force combat operations are one of the important characteristics of air force operations in modern high-tech warfare. In wartime, if an airfield is attacked or damaged by the enemy and is temporarily unusable, the air force needs to maneuver to a field airfield or highway runway to carry out a mobile combat mission or evacuate and conceal it, and the station needs to dispatch a mobile support force to provide support. In addition, during wartime, a large number of air units were stationed at front-line airfields to refuel and hang up bombs to prepare for combat, or they could directly attack from their original bases, and after completing their tasks, they would be refueled and replenished by airfields in the theater before returning to their original bases. As a result, the throughput of the airfields in the theater has been greatly increased, and the original airfields have been unable to complete their support tasks, resulting in an increase in the demand for field airfields and highway airstrips. Civil aircraft are also to be requisitioned if necessary. However, due to the limitations of the current support tasks undertaken by the existing air force stations, it is very difficult for them to spare the strength of the existing air force to undertake the support tasks of temporarily opening airfields while shouldering the heavy support tasks of the existing air force stations. Therefore, the task of opening a temporary airfield is an unshirkable task for other air force stations to carry out emergency mobile support.

(3) Undertake emergency accompanying support tasks

In recent years, a number of new types of aircraft have been equipped with units one after another, and they have become the elite force of the Air Force. In wartime, in order to ensure victory in air operations, the Air Force will deploy this new equipment in the main operational directions and important operational seasons,

However, due to the relatively new weapons and equipment and the high technical requirements for logistical support, other stations that are not responsible for their support tasks in ordinary times rarely have the opportunity to come into contact with them, let alone provide them with support. In addition, due to the constraints of various support conditions at the airports where they are stationed, most of the logistics personnel rarely receive special training to provide support for them, and it is difficult to guarantee technical problems. In addition, judging from the current situation of our Air Force, there are still many stations that do not have the capability to provide support for multiple types of aircraft, especially for new types (types). In wartime, when the aviation unit carries out mobile operations, it also needs the accompanying support of the station where it is stationed. Therefore, another task of emergency mobile support is to undertake the task of accompanying support to the combat aircraft in the field, especially the new types (types) of aircraft, to maneuver synchronously with the air force units, and to give play to its role in emergency mobile support.

2. Characteristics and requirements

With the development of aviation weapons, changes in the air force's combat style, and the expansion of battlefield space, its operations have taken on many new characteristics, and in particular, the special tasks undertaken by emergency mobile combat units have put forward higher requirements for emergency mobile support.

(1) The uncertainty of the support task requires that mobile support must be mobile and flexible

The sudden outbreak of high-tech warfare, the vastness of the battlefield, and the frequent shift of the operational focus have made the time and space of the tasks carried out by the emergency mobile support forces appear to be obviously uncertain. In terms of time, it is difficult to accurately predict the initiation and course of the war and the timing of the use of emergency support forces. In terms of space, it is difficult to determine in advance the area and direction of operations and the direction of the emergency mobile support forces. In terms of the form of mobility, it is difficult to determine the form of transportation due to the vast space of the battlefield and the uncertainty of the wartime situation. This has set higher demands on the emergency response capability of the aviation force's logistical emergency and mobile support. The aviation unit's logistical emergency mobile support must be mobile and flexible. In terms of support functions, it is necessary to base ourselves on the needs of multi-aircraft support; in terms of organizational plans, it is necessary to formulate a variety of support plans to meet the needs of emergency mobile operations in multiple directions and theaters; and in terms of organizational and command methods, it is necessary to take into account the overall situation, provide key support points, and have the ability to flexibly adapt to changes.

(2) The fast-paced nature of support operations requires that mobile support must be rapid and timely

In future local wars and emergencies under high-tech conditions, due to the influence of political and diplomatic factors, the attacking side will pursue the suddenness and timeliness of operations in order to quickly achieve its operational objectives within an extremely strict time. The combat operations of the air force under high-tech conditions will be carried out simultaneously on the ground and in the air, in the front and in depth, and will have greater resoluteness, suddenness, mobility, and quick decision. Such a fast-paced combat line requires that emergency mobile support must be more time-sensitive and that it must be synchronized with the fast-paced nature of the aviation combat units. Using a variety of advanced means and methods of transportation, quickly maneuver to the support site to implement early access and support. When carrying out accompanying support, quickly assemble support forces and quickly maneuver, keeping pace with the maneuver of aviation units as much as possible.

(3) The complexity of the support environment requires that mobile support must be highly adaptable

Protection in a complex environment mainly refers to the following two aspects. One is a variety of natural environments. It mainly includes carrying out support tasks at night or under complex meteorological conditions, under severe cold or hot season conditions, and in islands, coastal areas, plateaus, or desert areas. Flight support at night and under complex meteorological conditions is more difficult to ensure the quality of materials such as oil and various gases due to the influence of day and night temperature, humidity changes, rain and snow weather, etc. At night, due to the poor audio-visual conditions of personnel, the accuracy of the transmission and reception of various sound and light signals is disturbed. Severe cold or hot seasons will bring a lot of inconvenience to mobile support. The reserve has a greater impact. Different geographical conditions, such as islands, coastal areas, plateaus, or deserts, have inconvenient transportation, difficulties in supply, materials and equipment are prone to deterioration and damage, and insecurity factors have increased, resulting in difficulties in organization and command, and reduced work efficiency. All these situations require that the mobile support force must study practical solutions in view of the impact of different natural environments, strengthen targeted training, improve the adaptability of emergency mobile support forces to the natural environment, and reduce the impact of the adverse environment on mobile support. The second is the special battlefield environment. The air force's logistical emergency mobile support force has urgently moved to a new support environment, is not familiar with the surrounding social conditions, and the task of guarding against special interference and sabotage by the enemy is aggravated; in wartime, the enemy may take advantage of the dark night and bad weather as a cover to attack airfields.

It is very likely that it will be necessary to organize defensive operations and carry out combat flight support at the same time. This requires the air force's logistical emergency mobile support force to adopt targeted measures and make various preparations in terms of the organization and command of logistics support, the quality and efficiency of support, airport security, and emergency response methods, so as to enhance their support and self-defense capabilities in a complex environment.

(4) The plurality of support elements requires that mobile support must have the coordination of the system

In order to ensure the smooth fulfillment of mobile combat tasks by emergency mobile combat units, it is necessary to provide professional logistical support at different levels and scales such as finance, munitions, ordnance, aviation materials, oil, transportation, four stations, field affairs, logistics, guards, and telecommunications. Since the emergency combat units come from different theaters and different units, and a variety of specialized support forces are used to provide support for them, this constitutes a complex system that is diversified, multi-elemental, and multi-level. The diversification of support elements has brought about the complexity of organization and coordination in support work, and this requires that logistics organization and command must make scientific predictions, make careful plans, implement them strictly, and coordinate them closely; at the same time, they must be able to transmit information quickly, implement decisions quickly, and organize plans quickly, so that emergency mobile support can have a strong ability of system coordination.

(5) The diversity of support content requires that mobile support must be comprehensive in terms of support capabilities

In modern air operations, a single air force can no longer independently accomplish its operational tasks, and all kinds of air forces must fight together to form an overall force in order to win victory in the air struggle. This requires that the air force's logistical emergency mobile support force not only have the ability to support multi-aircraft flight logistics, but also have the ability to provide field flight logistics support and, when necessary, the ability to provide mobile support for ground logistics. On the one hand, because the aviation units (subdivisions) of mobile operations are often used in the main operational directions, at critical moments, and in the fulfillment of major or important combat missions, they are bound to become the enemy's main targets of resistance and strikes, and the number of cases in which planes are damaged in battle and air crews who are forced to parachute may increase, and the number of tasks in finding and rescuing parachuted pilots will inevitably increase in the number of air force stations to ensure the landing of war-wounded planes.

On the other hand, within the air force's emergency mobile support force, there are not only combat service support forces, but also equipment and logistics support forces, and all three forces are indispensable, so that the support content presents the characteristics of diversity. In addition, the mobile combat units of the air force are shouldering heavy combat tasks, and they must be fully prepared at any time to deal with all kinds of sudden situations and take to the air in a timely manner. In order to maintain and enhance the combat effectiveness of the troops, the logistics of the air force should promptly and actively understand the situation, actively solve practical problems for the air force mobile combat units, and create good combat readiness and living conditions for them. In short, the diversity of emergency mobile support content requires that the mobile support capability must be relatively comprehensive.

3. Basic principles

The aviation unit's logistical emergency mobile support must focus on its characteristics, follow the principle of operational guidance, take the realization of "effective support" as the base point, take the victory of the operation as the goal, take care of the most complex and difficult situation, rely on the existing battlefields, give full play to the overall support power of the military and the people, meticulously organize, carefully plan, rationally use, and focus on support, adopt a variety of support means and methods, and take the initiative to carry out emergency mobile support in a rapid, efficient, and sustained and stable manner.

(1) Overall planning and reasonable use

In view of the characteristics of a large number of arms participating in air operations in local wars under high-tech conditions, involving a wide range of areas, lasting a long time, and consuming a large amount of materials, it is necessary to make overall plans and rational use of the air force's logistical emergency mobile support forces in light of the needs of the overall situation of operational support. According to the number of different types (types) of aircraft put into operation, we should flexibly select different emergency mobile support methods, and put into operation emergency mobile support forces of corresponding scale in a planned, step-by-step, and targeted manner. While carrying out the support work, it is also necessary to actively raise and reserve combat materials in advance according to the time the operation is likely to last, so as to lay a solid foundation for the continuous support.

(2) Concentrate forces and safeguard key points

Concentrate efforts and ensure key points. First of all, it is necessary to clarify the key points of protection.

From the point of view of the objects of support, it is mainly the air units, especially the fighter aviation units, which are directly responsible for air combat missions. Judging from the course of the operation, it is necessary to give priority to solving the key problems that affect the mobility of the troops and their arrival in the designated area to carry out support. Judging from the rhythm of support, the main thing is the change of operational stages and operational patterns. Second, it is necessary to judge the degree of time, promptly and accurately grasp the changes in the key points of support in light of the battlefield situation and the change of operational priorities, and put into use different emergency mobile support forces in a timely manner, so as to quickly form a favorable support situation and provide uninterrupted support to the troops.

(3) Rely on the network and closely coordinate

The air force's logistical emergency mobile support should have the ability to coordinate as a whole, strengthen the connection and connection with the theater's joint logistics support network, pay attention to relying on the theater's joint logistics forces, give play to the overall support function, and obtain the support of the people; in accordance with the unified plan and command, with the help of the theater's military stations, warehouses, and branches, as well as the logistics forces of other services and arms, as well as the local front-line support forces, to ensure the needs of emergency mobile operations and the continuous conduct of operations.

(4) Be flexible and adaptable according to the situation

Aviation logistics emergency mobile support is the air force logistics organization and implementation of emergency and mobile support in emergency and unexpected situations. Sometimes, in order to concentrate superior forces, the air force's emergency mobile combat units will carry out extensive maneuvers and frequently change their combat missions, so that a variety of planes will be stationed in a certain direction or even at a certain airfield at the same time, and sometimes ground troops will take on air defense combat missions around the airfield. In such a situation where the task is sudden and the number of troops of all kinds increases in a short period of time, it will be difficult to achieve results by relying on traditional support methods and original support capabilities. Therefore, in addition to relying on base support, aviation logistics must also judge the hour and size up the situation, be flexible and flexible, and adapt to changes according to the situation. For example, it is necessary to capture support information in a timely manner for the urgent needs and weak points of a certain combat unit or a certain support link, promptly deploy emergency mobile support forces wherever needed, and use a variety of support methods and means to carry out rapid support.

(5) Military-civilian integration and overall support

When the logistics of the aviation unit is carrying out the task of emergency mobile support, due to the constraints of geographical, transportation, economic, and other factors in the theater, unpredictable problems may occur at any time, and it is difficult for the troops to accomplish the support task by relying on their own strength. It is necessary to establish the concept of security in the integration of military and civilian use,

in the course of carrying out the tasks, it is necessary to strengthen ties with local governments, actively do a good job in mass work, and assist the troops in providing logistical support. Materials and equipment that can be used by the military and the localities, such as housing, water and electricity, and staple and sideline food, should be raised on the spot, and the wounded of the troops can also be handed over to the telecommunications health institutions for treatment; in this way, the level of logistical obstacles and intermediate links can be reduced, the burden on the troops can be reduced, the difficulties caused by the troops' sudden actions and lack of preparation can be overcome, and the fulfillment of the logistical support tasks can be ensured.

Section 3: Aviation Logistics Emergency Mobile Support Methods

In peacetime, the air force does not have a formal establishment for logistical emergency mobile support, and in peacetime it is contained in the sequence of the establishment of the depots and stations, and in wartime, when carrying out support tasks, it is temporarily drawn in accordance with the instructions and plans of the higher authorities. Due to the uncertainties in the support tasks, support conditions, support locations, and support environment, there are obvious differences between the support methods, force formation, organizational procedures, and methods of support from base support.

1. Basic methods

(1) Fixed-point safeguards

Fixed-point support refers to the logistical support provided by the establishment of support institutions at fixed locations. It is usually used when troops are stationed. It can also be used to provide logistical support for passing troops. This method is mainly used in the preparatory stage of a campaign or battle, in accordance with the combat mission and the determination of the commander, and before the combat units arrive at the stationed flight sites, the emergency mobile support forces are quickly maneuvered to the designated flight sites and immediately deployed, so as to carry out fixed-point support and actively do a good job in the support work of the aviation units stationed in the station. This method has the characteristics of strong planning and foresight, and sufficient preparation time, and is generally used for emergency opening of guard airports, stationing in civil aviation airports and the opening of highway runways.

(2) Targeted safeguards

Directional support refers to the logistics support for the implementation of emergency mobile support forces in a predetermined favorable area. It is usually used in wartime when providing support according to the situation. This type of support is mainly based on the battlefield situation and combat missions

advance the emergency mobile support forces to assemble at the backbone airfield in the main combat direction or a certain area with convenient transportation, safety and concealment, and conducive to mobility. When the support capability of a certain airport or several airports is damaged or loses its support capability, the emergency mobile support force will rush forward to provide support or take over and quickly restore the support capability.

(3) Accompanying safeguards

Accompanying support refers to the logistical support carried out by the aviation unit's logistics emergency mobile support force along with the aviation unit (sub-unit). This support method is mainly aimed at long-range air mobility operations and new aircraft with more advanced performance, and follow-up support is carried out in the whole process before, during, and after the war. It meets the requirements of the mobility of the air force, the accompanying mobility of the logistics support force, the operation of the air force in operation, and the support force of the logistics support force at any time. This method has the characteristics of large randomness and high support requirements, and is suitable for aircraft with good maneuverability and combat performance and airfields without support capabilities. At present, when most airports do not have the ability to support advanced aircraft, this method plays an important role in quickly supporting the aviation units to take to the skies for combat.

2. Force grouping

(1) Basic principles of marshalling

The targets of the aviation unit's logistical emergency mobile support force are often emergency planes and capable aviation units (subunits) that operate lightly. While providing combat flight support, it is also necessary to undertake a large amount of non-combat logistical support work, such as battlefield construction, livelihood support, emergency repair, and rescue. It has the characteristics of heavy support tasks, poor support conditions, many support contents, and complex organizational work. Therefore, in order to establish an appropriate organization of emergency mobile support forces, it is necessary to give full consideration to the objective needs of emergency, mobile, comprehensive, and continuous support for the support targets.

The profession is complete and the division of labor is clear. The logistical support of the aviation unit has the characteristics of being multi-specialized, divided, and highly technical. In order for the emergency mobile support force to be able to independently carry out its support duties, it is necessary to form a professional and complete support force. It is necessary not only to have the logistical support forces that the stations are staffed, but also to take into account the needs of various emergency situations in wartime, and to increase a certain amount of relevant professional support forces in a targeted manner. For example:

In order to ensure the health of all kinds of personnel stationed in field airfields and highway runways of the aviation units, and to overcome the impact of the harsh environment, it is necessary to have a certain amount of anti-epidemic force. Aviation units (detachments) that are mobilized to fight at field airfields or highway airstrips do not have air (ground) cooking squads accompanying them, and the station's emergency mobile support force should be assigned a certain air (ground) service support force to meet the needs of its aircraft personnel in order to provide food and beverage support for its maintenance personnel. The special nature of these supports requires that emergency mobile support forces should have more complete support forces in order to meet the needs of different support tasks.

Reasonable grouping and reduction of levels. In the form of organizing the logistics emergency mobile support forces of the air force, it is necessary to avoid cumbersome overlapping as much as possible, and consideration can be given to organizing various support forces into corresponding squadrons across specialties, across organizational systems, and according to the classification of support work. In addition, in accordance with the decision of the head of the air force unit and under the guidance of the headquarters and armament department at a higher level, the station should do a good job in organizing the communications, meteorology, parachute service, guard, and other combat support forces and the ordnance, aviation materials, and other equipment support forces that are responsible for mobile support tasks.

Lean staff, conducive to expansion. An effective way to improve support efficiency and mobility is to build a support force with capable personnel, multi-functional support equipment (equipment), and superior technical performance. To this end, in the organization of emergency mobile support forces, it is necessary to select personnel and strive to specialize in multiple functions. During the Gulf War, the British Air Force's "tactical supply team," which was responsible for the procurement and supply of fuel, bombs, and aviation materials for 18 "Whirlwind" fighters at Dhahran Airport, had only 34 personnel. With only 8 people, the "mobile food support group" equipped with MKIII field cooking vehicles can provide food support for 450 people, including 27 pilots and 300 ground crews. Second, it is necessary to equip backbone personnel and rely on support forces. For example, only a small number of backbone personnel can be assigned to the guards, farms, and loading and unloading services, and after maneuvering to the predetermined support location, they can get in touch with the local government in a timely manner and absorb the local support forces to participate in the support.

(2) The basic method of marshalling

The organization of the air force's logistical emergency mobile support force should be based on the existing air force depots, adopt the method of modular organization in accordance with the principle of combining the formation with the integration, and take the emergency mobile support needs of the air force as a reference system for the overall design. Based on the strength of the original station, the pre-compilation is contained in.

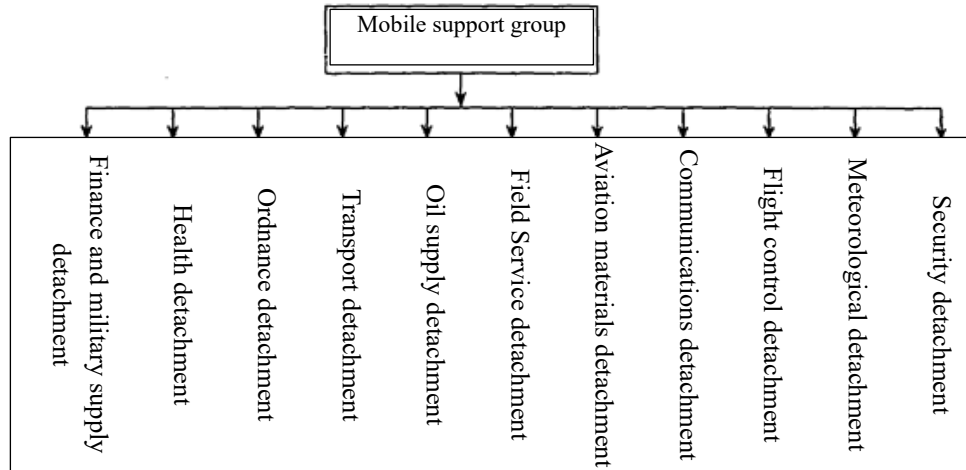
In order to facilitate the implementation of unified and effective organization and command, the organization of emergency mobile support forces should be based on the support forces of the original stations, with the same subordinate relationship and establishment level, and relatively fixed personnel, equipment, materials, and equipment, etc., which should be commanded by the units to which they belong in peacetime, which is conducive to training in peacetime and convenient for command and coordination in wartime.

Based on the original security preparation, the modules are grouped. The organization of the aviation unit's logistical emergency mobile support force should be commensurate with the tasks undertaken by the air force's emergency mobile combat force. There are two ways to marshal. First, the aviation unit's emergency mobile support force is based on a large group and consists of a number of support squadrons and support detachments. Its grass-roots support forces can be organized into a number of squadrons according to their professional nature, and each squadron may be organized into a number of detachments according to the support tasks it may undertake (see Table 1). This method of building blocks is convenient for conducting support training according to the establishment and specialization in peacetime, and scientifically combining support forces according to operational support tasks in wartime, so as to form different types of support forces. For example, traction, refueling, cooling, oxygen, and electricity support forces will be organized into flight support squadrons. The supply force of oil, ammunition, materials and other materials will be organized into a material support squadron. The forces under the unified control of the command post, such as flight control, meteorology, lifesaving and vehicle repair, and finance, will be organized into squadrons directly under the command post. as well as communication and navigation squadrons, airport barracks squadrons, guard service squadrons, life support squadrons, etc. Each squadron is then divided into a number of support detachments according to different specialties, such as traction support, refueling support, and cold-oxygen and electricity support units. Second, the support brigade is still the unit, and the command organ directly commands the support detachments. In this method, there is no support squadron, and each support unit is directly responsible for the support tasks of its own specialty, which reduces the level of command and facilitates the direct implementation of organization and command (see Table 2).

Table 1 of the grouping of emergency mobile support forces at the station

Mobile support brigade	1	Aircraft support squadron	1	Towing detachment
			2	Refueling detachment
			3	Cold oxygen electric detachment
	2	Material support squadrons	4	Oil Detachments
			5	Ordnance Detachments
			6	Aviation Material Detachments
	3	Directly subordinate squadron	7	Vehicle repair detachments
			8	Flight control detachments
			9	Meteorological detachments
			10	Sanitation detachments
			11	Finance detachment
	4	Airport barracks squadron	12	Field service detachments
			13	Barracks detachment
	5	Communication and navigation squadron	14	Communications detachments
			15	Navigation detachments
	6	Security squadron	16	First security detachment
			17	Second security detachment
			18	Third security detachment
	7	Life support squadron	19	First military supplies detachment
			20	Second military supplies detachment
			21	Third military supplies detachment

Table 2 of the grouping of emergency mobile support forces at the station



In practical application, the above two methods can be either selected, or they can be flexibly combined, or a part of the support force can be used flexibly.

3. Organizational procedures

The organizational procedures and methods of the aviation logistics emergency mobile support are roughly the same as those of the aviation flight logistics support, but there are also obvious differences in the organizational procedures and methods due to the different support conditions and support environment.

(1) Accept the task, make up the determination to provide support, and make pre-war preparations

In order to be able to complete all the preparatory work in the shortest possible time, it is necessary to clearly define the specific support tasks, accurately understand and grasp the relevant situation, and make a timely determination to provide support.

The first is to receive the task and analyze and judge the situation. It mainly includes the time and place of the ordered stationing, the ways and means of emergency maneuvering, and the time limit for completing preparations after stationing; the type (type) of aircraft to be supported, the number of aircraft, the estimated duration of the operation, the intensity of the sortie, the combat sortie plan, and the ammunition and auxiliary fuel tank loading and hanging plan. If some situations are difficult to grasp or cannot be clarified for the time being, scientific prediction should be carried out in accordance with the relevant instructions and safeguard plans of the superiors.

The second is to grasp the situation of the place where it is stationed and find out the security environment. In order to make the air force's logistical emergency mobile support force more fully prepared when stationed at a new support site, reduce blindness, and increase initiative, it is necessary to have a necessary understanding of the relevant situation at the pre-stationed location, analyze and predict the problems that may arise in the support process, and study ways to solve them in advance. The focus of the understanding is on the situation of the road, barracks facilities, water and electricity supply, support equipment (equipment), existing support personnel and support capacity at the pre-stationed site. In the process of implementing the guarantee, whether there are support forces from other stations, the local natural environment, social conditions, and the extent to which the local government can provide support, etc. Finding out the security environment of the stationed place is an important condition for targeted preparation, such as the arrangement of transportation capacity, the formation of echelons, the way of stationing and the preparation of materials, which are closely related to the specific location and related conditions of the station.

The third is to clarify the relationship between command and supply. Material preparation is an important task in preparing for war. In order to effectively carry out all kinds of logistical support work at the pre-stationed airports, it is necessary to meet the needs of the support targets in terms of the variety and quantity of materials, and it is necessary to make clear the types and quantities of materials that should be carried when making preparations. Except for a part of these materials (equipment) that are carried by the logistics of the aviation units that are responsible for mobile support tasks, a large amount of material equipment (equipment) for follow-up support needs to be supplied by the logistics departments at higher levels and the logistics departments at the relevant logistics departments. To this end, it is necessary to get in touch with the relevant logistics units and departments at the higher level in a timely manner, clarify the supply relationship, clarify the basic methods and requirements for material requisition, and clarify the material equipment (setup). The type and quantity of supply, the place and method of supply. In particular, when the higher-level department wants to send transportation forces to assist in mobile transfer or transportation of materials, it is necessary to specify the units and quantities dispatched, so as to organize the fleet according to the transportation capacity and arrange the order of material transfer. Only by clarifying the specific supply guarantee relationship and support methods can we clarify the organizational and command relationship in supply security and the basic principles and methods of coordination.

Fourth, revise the safeguard plan and clarify the distinction between tasks. When carrying out mobile support in the logistics of the air force, it is necessary to revise the emergency mobile support plan in a timely manner on the basis of the original support plan in accordance with the instructions of the higher authorities and the basic situation of the support location, to ensure that the plan is consistent with the specific situation of the support and the requirements of the support object, to clarify the command procedures and basic methods, and to enhance the adaptability, practicability, and operability of the plan.

In the modification of the plan. The specific support tasks of each support unit and individual should be specifically clarified, so that the responsibilities are clear. Implement to the person, and there should be a variety of complex and special circumstances to deal with measures.

Fifth, it is necessary to make preparations for safeguards and strengthen inspection guidance. After clarifying the specific support tasks, preparations for various support should be made in a timely manner, and detailed inspection and guidance should be given to the preparatory work. Material preparation is mainly based on the types and quantities of materials required for the maintenance of combat materials, protective camouflage equipment, life support, aviation engineering support, and logistics equipment (equipment) and maintenance determined by mobile support tasks, and timely preparation for shipment under different transportation conditions. The preparation of support equipment (equipment) includes the preparation of equipment (equipment) directly used in combat flight support, mainly for timely inspection and maintenance of traction, refueling, cooling, oxygen, electricity, and other support vehicles, as well as communications, navigation, meteorology, and other support vehicles. Ensure that it can quickly maneuver at any time and carry out support smoothly. The equipment and equipment of the field oil depot should be counted in a timely manner and the quality inspection should be strictly carried out; the motor pumps, hand-cranked pumps, and emergency power generation equipment should be kept in good condition, and all the field support equipment (equipment) specified in the plan should be well prepared for shipment.

In order to satisfactorily complete all the work of preparing for the air force's logistical emergency mobile support for war, it is necessary to promptly organize commanders to go down to the grassroots level to conduct inspections and guidance, and do a good job in implementing the support determination and support plan. The main items to be inspected include: the implementation of the orders and instructions given by the units to the higher authorities; whether the work plans and arrangements of the units conform to the determination of the leaders and the requirements of the support plans; whether the various support measures are effective; the progress of the preparatory work and the ideological state of the troops. In the inspection work, it is necessary to grasp the key points and clarify the purpose. Problems should be solved in a timely manner, and good experiences should be summarized and promoted in a timely manner.

Sixth, it is necessary to organize combat drills. Organizing combat drills is an important measure to enhance the air force's logistical emergency mobile support capability and its own defense capability. In particular, the logistics emergency mobile support of the aviation unit under modern high-tech conditions. Due to the fact that the support forces are temporarily drawn or expanded and adjusted in wartime, the personnel and equipment have increased by a large amount, the support personnel come from different formed units, their professional levels are different, they lack experience in wartime support, and their ability to coordinate and cooperate with each other is weak.

At the same time, due to the newly supplemented technical equipment, it has not been tested, and its technical performance, operation methods, and working reliability are not well understood, so it needs to be used on a trial basis. Therefore, while making various preparations, the emergency mobile support force should seize all available times and organize combat training. It is necessary to conduct targeted training in light of the targets of operational support, the tasks of support, and the responsibilities of defense, and in light of the specific conditions of the support personnel, strengthen training in organization, command, and application of technology, master the procedures and methods of emergency mobile support, and ensure that one soldier is specialized in multiple abilities and has multiple functions. In particular, it is necessary to do a good job in night support technical training and field operation technical training so as to enhance the adaptability of support personnel under various complex conditions. For training in common subjects, such as self-rescue and mutual rescue, airport defense, and organization and command, the station headquarters should formulate a unified training plan and arrange training. The specialized training subjects belonging to various specialized departments and detachments shall be arranged by each unit according to the actual situation. Combat training should proceed from reality, be flexibly organized, pay attention to practical results, and strive to achieve noticeable results in a relatively short period of time.

In order to enable the relevant departments at higher levels to understand and grasp the state of support preparations in a timely manner, they should promptly report the state of the preparations to the relevant departments and leaders at the higher level in the process of preparation, and seek instructions and help from the higher authorities. After the pre-war preparations are completed, the completion of the preparatory work and the training for the battle should be collected and sorted out in a timely manner. And report the preparations, existing problems and suggestions to the relevant departments at the higher level.

(2) Revise the plan, determine the formation of the echelon, and organize the mobile march

After clarifying the emergency mobile support tasks and making up the support determination, the mobile advance plan should be revised in a timely manner to determine the echelon organization and task distinction of the mobile advance.

When the emergency mobile support force is organized to advance, it should be arranged as a whole and reasonably arranged according to the number and time of personnel, equipment, and materials that can be used. It is usually divided into advance groups and several echelons. Among them, the formation of the first echelon should focus on the personnel, equipment, and materials necessary to quickly set up operational and logistical command posts, ensure the safe landing of aircraft, and quickly complete preparations for another sortie. In the follow-up echelon, the priority and urgency of the transportation of combat materials and support personnel, the storage of combat materials, the establishment of camps, and other livelihood support, as well as the connection between various tasks, should be comprehensively considered, and the organization should be coordinated and organized.

When the maneuvering distance is long, you should do a good job of life support on the way in.

In wartime, our mobile troops may be harassed and attacked by the enemy in various forms at any time, and for this reason, effective air raids or harassment measures should be taken to ensure safety on the way in.

(3) Strict organization, clear force allocation, timely entry and development

Whether or not the air force's logistical emergency mobile support force can smoothly enter and deploy is an important prerequisite for whether or not combat flight support can be smoothly carried out. The entry and deployment of support forces are carried out at the same time as the entry and deployment of the air force mobile combat detachments, and the locations are scattered and must be closely organized.

After entering the station, the advance team should work with the personnel left behind at the station site to inspect the field roads, facilities, flight controls, meteorology, communications, water and electricity, roads, military supplies, local support fronts, and local garrisons; dispatch sentries at the main entrances and exits around the stationing site to close the flight site; divide the areas for the deployment of various units, and set up communication lines between the command posts and the various units. Arrange for food and lodging for the follow-up troops, disinfect and sterilize the areas where the troops are deployed, conduct epidemic investigations, and make all preparations for the transfer of the follow-up troops; get in touch with the garrisons, public security departments, and local front-line support organizations around the airport, and request the relevant departments to provide necessary manpower and material support; according to the unified arrangements of the higher authorities, coordinate the stationing, unloading, deployment, and implementation of support for the follow-up troops, and organize vigilance and defense and personnel livelihood; and promptly report the situation and suggestions to the command post at the higher level.

Except for the airfields and civil airports where the support facilities are relatively complete in the areas where the logistics emergency mobile support forces of the aviation units are stationed in an emergency, there are problems of one kind or another to a certain extent in other places, and they need to be inspected and repaired in a timely manner. The renovation of the field has a bearing on whether or not the air force can carry out mobile operations smoothly, and the workload is heavy, and it involves a lot of relevant local departments. Therefore, it is necessary to take the initiative to get in touch with the local support agencies and relevant departments, and closely rely on the support of the local government and the people in terms of manpower and material resources to ensure that the renovation work of the road can be implemented and completed on time.

After the follow-up echelon is transferred, the command post at the same level should be set up in a timely manner, and each detachment shall quickly carry out support equipment (equipment) according to the position divided by the advance group, and with the cooperation of the personnel left behind at the airport, and inspect and maintain all equipment (equipment), and report to the command post at the higher level; Prepare air crew, ground crew living rooms, and carry out necessary repairs and camouflage.

When the maintenance workload is large, you can coordinate with the local government to request the dispatch of civilian workers to support, and do a good job of preparing other professional support detachments to be stationed at the airport and receive various combat materials issued by the superiors. In accordance with the instructions of the higher authorities, the personnel left behind at the airport were assigned to the support units according to their specialties and provided them with necessary training; support drills were conducted to check whether the support equipment and facilities were in good condition, and the troops were ready to receive the aviation units for transfer.

According to the instructions of the superiors, the support task is issued. According to their tasks, each detachment adjusts its support forces and enters the stage of flight preparation. Organize camps or set up tents, further improve living support facilities, and organize and implement living support.

Allocation of logistical support forces. Fuel, ammunition, auxiliary fuel tanks and other materials should usually be deployed in places with better traffic conditions, using terrain configuration, and should maintain the necessary safety distance. Vehicles such as traction, refueling, cooling, oxygenation, and power supply should be configured with or near the apron with the support personnel. (If the aircraft is parked at both ends of the runway, the above vehicles should also be parked in two groups). All kinds of emergency vehicles and tower vehicles should be deployed with support personnel or near the command post.

(4) Grasp the key points, correctly organize and command, and implement effective safeguards

Combat flight support should be carried out in accordance with the "Combat Flight Support Plan." The following points should be paid attention to in the process of organization:

First, it is necessary to correctly select support methods in light of the operational situation. Correctly selecting support methods according to the needs of different combat sorties is an important way to shorten the preparation time on the ground, especially the preparation time for another sortie. The basic support methods for the implementation of ground preparation include four methods: straight line traction, active refueling and inflation, circulating traction, fixed refueling and inflation, aircraft taxiing, active refueling and inflating and aircraft taxiing, traction combined with fixed refueling and inflation. The determination of the support method should be based on the support plan, and should be comprehensively considered according to factors such as the number of aircraft sorties, the intensity of sorties, the mode of ground preparation (dispersed or concentrated), the situation of the aircraft type (single or multiple aircraft), the situation of the field and the enemy.

The second is to control the security activities in a timely manner according to the security plan. The support plan is a concrete embodiment of the leader's determination and is the direct basis for organizing and implementing the logistical support of the air force.

When organizing logistical support for combat flights, it is necessary to rationally arrange the order of support in accordance with the support plan. Ensure that the professional service support work of each aircraft is connected with each other. It is necessary to link the current use of each support equipment with the tasks in the future.

Third, it is necessary to correctly handle complex situations in light of changes on the battlefield. The logistical support for combat flights is complex and changeable, and in order to successfully complete the support tasks, it is necessary to carry out emergency handling of all kinds of complicated situations. When a wounded or malfunctioning plane makes a forced landing, emergency vehicles and logistical personnel responsible for rescue should be immediately organized in accordance with the instructions of the flight commander to quickly carry out the rescue. At the same time, assist the maintenance personnel to take quick measures to cut off the power supply and oil circuit to prevent the guns from misfiring and ammunition explosion. The accident aircraft should be pulled away from the runway as soon as possible so as not to affect the combat operations of the troops and ensure the safety of other aircraft.

Fourth, according to the characteristics of the site, strengthen safety precautions. Although the support site, especially the field airport and the highway runway, have been renovated, after all, it is not as good as the permanent airport runway, with few ancillary facilities and poor support conditions, and it is prone to unexpected problems. If the power supply is temporarily connected, the reliability of the power supply is not strong. The surrounding people and the vehicles that should have detoured did not understand the flight safety regulations, and the unsafe factors increased. Therefore, it is necessary to strengthen the safety and security of combat flights. Emergency vehicles and personnel should strictly guard their posts, observe closely, and be ready for action at any time; they should strictly manage and inspect the quality of materials, and not let go of any suspicious points or relax any links; they should maintain close ties and coordinate closely with local power supply departments, and standby generators should be ready to supply power at any time; they should coordinate with the militia and traffic management departments to strengthen vigilance and traffic control in the flight area; and commanders should keep abreast of and grasp the situation at all times and take all necessary safety measures in a timely and decisive manner.

Fifth, effectively control the site and strengthen organization and coordination. Although there are not many planes, support personnel, and equipment, due to the relatively large flow of support personnel, aircraft, and support equipment in the new environment, problems such as disorderly order, mutual interference in various tasks, and even unexpected accidents can easily occur. Therefore, coordination within the station and between personnel from other units is particularly important, and it is necessary to strengthen organization and command and adopt effective coordination measures.

(5) Adjust forces, restore support capabilities, and make preparations again

After the end of a combat flight, it is necessary to promptly ascertain the combat consumption and damage, replenish personnel, improve the support organization, and readjust the support force; apply for replenishment of materials and equipment and restore the reserves; organize the emergency repair and evacuation of equipment and organize the emergency repair of the damaged roads and other facilities; and promptly evacuate the critically wounded and wounded flight personnel, so as to do a good job in medical rescue work. Quickly restore support capabilities and prepare for another sortie.

In order to enable the relevant departments at higher levels to grasp and understand the logistical support situation in a timely manner, they should promptly report on the logistical support situation, and at the same time, submit support requests or suggestions on relevant operational support issues.

Section 4: Implementation of Emergency Mobile Support for Aviation Logistics

In wartime, the situation is complex and changeable, and the aviation logistics emergency mobile support force may undertake the tasks of ensuring the combat flight of the aviation units, such as urgently activating guard airfields, opening field airfields or highway airstrips, stationing at airports in use, and urgently requisitioning civil aviation airports. There are quite differences in the support forces, support environment, and support conditions in some locations, so it is necessary to seriously analyze the actual situation of different places where the air force is stationed in the implementation of logistical emergency mobile support, and separately study the content and methods of its support.

1. Urgently activate the guard airport

(1) Analysis of the basic situation of the guard airport

Guarding airfields refers to military airfields that are not permanently stationed in aviation units. Guarding airfields usually have only a few dozen personnel and a small amount of equipment, and there is no or very little reserve of combat materials, and the support personnel are only responsible for guarding the airport in peacetime, and some are also responsible for alternate landings in peacetime. Due to the small number of personnel, weak technical force, and lack of support equipment (equipment) at the guard airport, the emergency mobile support force stationed in the airport will face the following situations: First, the infrastructure is poor and its own recovery ability is weak. At present, most of the existing detention airfields were built in the 50s and 60s, and the facilities, such as roads, barracks, water, electricity, and telecommunications, are not perfect and complete; in addition, after the withdrawal of the air force, most of the support equipment has been transferred, and the remaining support facilities and equipment are almost in a state of long-term idleness, and the basic facilities have been seriously damaged.

Since only a small number of guards are retained at the guard airport, they do not undertake support tasks or occasionally undertake diversion tasks for many years. The standby inspection and maintenance is not timely, and the failure rate is high. Under such circumstances, if the guard airfield is to be activated, not only will there be a large amount of barracks, water and electricity maintenance, but also a large amount of materials and a variety of materials will be required, and it will be difficult to raise them on the spot and restore the support capability. Second, there are few support forces and a low level of technical support. The guards at the airport have few personnel and are unfamiliar with technology, and they are mainly responsible for the vigilance of the camp and the task of ensuring their own livelihood. He has very little experience in undertaking support tasks, and even if he occasionally undertakes support tasks, it is very simple, and he does not have the ability to support large numbers and multiple batches, and he lacks theoretical knowledge and practical experience in flight support. Third, the preparation time is short and it is difficult to complete the task. The timing of the use of the guard airfield in wartime is very important; too early it is easy to expose the operational intent, and too late it may delay the fighters and even affect the deployment and adjustment of the entire campaign. Therefore, once the superior decides, the time for logistics preparation is very limited, and it is difficult to complete the task. Fourth, there is a lack of support materials and a large amount of transportation. Due to the withdrawal of flight units, the airfield guarding almost no material reserves, such as fuel, ammunition, and aviation materials, which are indispensable for flight support. In order to restore the support of the airport in wartime, the task of emergency replenishment of materials is heavy, and the volume of carrying or transportation is large. In short, if the various facilities of the guard airfield are not renovated, the materials and equipment are not replenished, and the personnel are not trained and adjusted, they will not be able to undertake the general flight support tasks, let alone the combat flight support tasks.

(2) The content and methods of safeguards

First, organize an advance team to be stationed in a timely manner to make preliminary preparations.

After clarifying the tasks of mobile combat support and the time of stationing, the advance team will be stationed at the support site immediately after the approval of the head of the aviation unit to carry out preliminary preparations. Mainly:

Timely contact with the remaining troops and support units to clarify their division of tasks and command relationships. Regrouping of those remaining at the airport. The airport left-behind detachment should mainly be to enrich the guard detachment, field service detachment, and quartermaster support detachment.

In coordination with local support agencies, the militia and migrant workers were summoned as planned to quickly assemble at the designated location and enter the duty post.

Inspect the runway, apron and materials and technical equipment configuration site, and carry out necessary renovations.

Inspectors are camped. When there is a shortage of barracks at the airport, it is necessary to contact the borrowed or rented houses and allocate them and organize the connection of water sources and power supplies. Procurement of staple and sideline food according to the plan and raising various support materials.

Report the progress of various work to the command post in a timely manner.

Second, organize the stationing of the first echelon.

When the work of the advance group is completed or the conditions for its entry are met, the first echelon should be organized to be stationed immediately after the approval of the head of the aviation unit. The main tasks after moving in are:

Establishment of a logistics command post. Communicate and liaise with higher-level logistics command posts, troop combat command posts, basic command posts of stations, support and support detachments, local support and front support agencies, and other relevant organizations.

Deploy police forces and close runways. Traffic command posts are set up at both ends of the runway to direct vehicles to detour from designated routes. Mobile guard posts were set up around the runway, and posts were set up at command structures, field ammunition depots, oil depots and aircraft parking sites.

Organize field staff and migrant workers to inspect and clean the runway and apron for further renovation.

The support aircraft maintenance department was rapidly deployed, and the combat flight support force quickly completed the preparations for the landing of the support flight echelon and the combat sortie.

Field oil depots and ammunition depots were opened. This includes the installation of oil tanks, oil pumps and oil pipelines. When the oil depot is close to the railway platform, the pipeline leading to the unloading station should be laid. Organize life, health and service support. Set up tents, set up rooms, and carry out medical security such as sanitary quarantine and disinfection.

Third, organize the stationing of follow-up echelons.

The follow-up echelon should depart and station on time as planned. The main tasks after moving in are:

Quickly unfolded, the preparation of various combat materials continued;

improve the protection and camouflage of combat flight support facilities and important targets;

On the spot, they are familiar with organizational and command measures, support methods, and support environment, and make comprehensive preparations for logistical support for combat flights.

2. Urgently open field airfields and highway runways

(1) Analysis of the situation of field airports and highway airstrips

A field airfield is a military airfield with only simple flight support facilities for the temporary stationing of aviation units in wartime. It is usually supplemented by a runway with prefabricated metal plates or other simple pavement, and is equipped with movable flight support facilities. Road airstrips, abbreviated as road runways. It is a section of the road that can be used for aircraft to take off and land. It is also an integral part of the airport network. The opening of field airfields and highway runways is often an urgent task, emergency operations are urgent, and the time is short. Judging from the current situation, field airfields and highway airstrips have the following characteristics: First, the conditions for field and road support are poor, and it is difficult to meet the needs of operational support for the time being. The field airfield was abolished and not used in peacetime, and the field roads were seriously damaged. Although the highway runway is managed and maintained by the relevant local departments, due to its use as a road, it may be damaged, and the pavement needs to be further repaired and sorted out to ensure the take-off and landing of aircraft. Second, there is a lack of necessary logistical support facilities, and the logistical support conditions for combat flights are poor. Field airfields, highways, and runways do not have fixed support facilities, especially water and electricity support, and other livelihood supports, and the conditions are arduous and there are many difficulties. Third, the demand for various support equipment and materials is large, which increases the difficulty of transportation support. Field airfields and highway airstrips are generally opened in wartime emergencies, and because there are no tasks in peacetime, there is no fixed support equipment (equipment), let alone any material and equipment reserves. All equipment and materials need to be transported from the station for support, and the transportation volume is large and the support is difficult. Fourth, field airfields and highway airstrips are generally far away from surrounding villages and towns, making it difficult to raise general-purpose materials on the spot, and it is quite difficult to rely on local support forces to support them. The station must not only ensure the advance of the air force from the air and the ground to the station, but also complete the advance of various logistical support forces in a timely manner, and after arrival, it must ensure that the transferred plane lands safely and quickly assume the combat mission, and promptly provides support for the livelihood of all kinds of combat personnel.

The opening of field airports and public airstrips requires swiftness and concealment, while the environment for carrying out emergency maneuvering at field airports and highway airstrips is poor, and there are many difficulties in providing support, and the organizational work is complicated. In order to shorten the preparation time for entering the field and enhance the ability of rapid response and rapid support, the air force's logistical emergency mobile support force must make all preparations in advance in accordance with the plans and plans for the air force to carry out combat missions at field airfields and highway runways.

(2) The content and methods of safeguards

First, the advance team was stationed in advance and made good preparations for its opening. After receiving the mobile support task from the higher authorities, the logistics emergency mobile support force of the air force should immediately dispatch an advance group to the support site, mainly following the following: Getting in touch with the relevant local departments and military communications departments to deal with relevant problems and situations in a timely manner; closing the flight area and marking the road for vehicles to detour to ensure the smooth flow of traffic and order at the flight site; getting in touch with the local support and front support organizations to recruit militia and civilian workers on the spot to participate in the combat support; reporting on the state of preparations and making preparations for the next step.

Second, organize follow-up echelons to enter the field and carry out various tasks. After the first echelon enters the site, it is necessary to concentrate the main forces to organize the renovation and maintenance of the pavement. Field airfields are generally completed by surprise repairs before or during the war, and they may not meet the needs of mobile operations everywhere. The highway airstrip is usually used as a highway, although the local transportation department is responsible for maintenance, but it is inevitable to cause damage after long-term use, and its apron and bypass are not used all year round, which may not meet the requirements of being available for aircraft use at any time. In order to ensure that field airfields or highway airstrips can be used at any time during the war and meet the requirements of rapid concealment, after the first echelon enters the field, it should organize the renovation of the field and road in a timely manner in conjunction with the local support front organs. The contents of the road renovation are: according to the different building materials of the artificial pavement, respectively, fill the cracks or damaged filling, or refill the joints of the pavement panel, remove the debris in the joints, sprinkle sand and roll, fill the cracks, remove the weeds on the pavement, renovate the loose metal plates, correct or replace the warped and deformed metal plates, adjust the overly wide metal plate assembly joints, remove the broken locking hooks and nails and other sundries, fasten the loose metal plates, etc.; fill the voiding and subsidence of the pavement foundation; repair, shoulder pads, aprons and ensure that vehicles enter and exit the road, drainage system, etc. Rectifying the clearance area of the runway of field aircraft and highway aircraft is also an important part of the renovation of the road.

Third, it is necessary to determine the approach configuration of support forces. After arriving at the field airfield and highway runway, the mobile combat and logistical support detachment shall complete the camping, installation, and material allocation as soon as possible, so as to ensure the implementation of the combat flight and its logistical support work in good working and living conditions. Understand and be familiar with the terrain, traffic, and social conditions around field airfields, highways, airstrips, and their surroundings, revise the deployment plan after entering the field in accordance with the requirements of convenient operations, logistical support, and ensuring safety, and make suggestions to the head of the aviation unit in a timely manner.

Fourth, organize material procurement and supply guarantees. Field airfields and highway airstrips do not have reserves of combat materials, nor do they have standard warehouses, and the large amount of combat materials required can only be temporarily transferred; in order to reduce the loss caused by open-air storage and the shortage and waste of transportation capacity caused by round-trip transportation, they should not be transported early or too often. It is necessary to determine the location of the materials needed for mobile operations on the basis of the estimated total consumption of various combat materials, whether there are supply organizations near field airfields or highway runways, and to determine the amount of materials to be stored in various types of combat materials on the basis of the estimated duration of mobile operations, the maximum consumption on a combat day, the storage conditions of field airfields or highway airstrips, and the transportation capacity, and propose supplementary implementation methods. According to the terrain, climate and other storage conditions and the degree of threat of the enemy, the storage requirements and safety measures are proposed.

Fifth, organize livelihood guarantees. The field airfields and highway airstrips lack living facilities, and they are far away from their own fields and densely populated areas, making it difficult to supply them; the tasks of mobile combat personnel are arduous and the environment is also rather difficult; it is necessary to clearly define the measures for ensuring the livelihood of air (ground) personnel and logistics personnel in light of the seasons and local resources, and promptly report to the logistics organs at higher levels, and liaise with the relevant local departments in an effort to create better living conditions and achieve the goal of ensuring the combat effectiveness of the troops.

Sixth, the mobilization and use of local support forces. The preparation and implementation of field maneuver and road-track combat flight support are far away from the bases and lack strong support from all quarters, and they need the vigorous support and assistance of local front-line support departments. The logistics emergency mobile support force of the aviation unit should formulate a plan for the mobilization and use of the local support force in accordance with the unified deployment of the higher authorities and the manpower, material, and technical strength required by the unit to complete the support task. And timely and proactively get in touch with the local pre-support agencies. Coordinate and implement the number, timing, methods, and division of labor of the mobilized and used local support forces,

organize necessary training and drills when conditions permit, clarify specific communication and liaison methods and command signal regulations, avoid accidents in the support process, and improve the overall level of local support and support.

Seventh, issues that should be paid attention to. First, in light of the characteristics of support, we should adjust the allocation of support forces in a timely manner. In order to facilitate ground preparations and take-off at both ends of the runway, the dispatch of traction, refueling, and power supply vehicles should be appropriately increased and placed at appropriate positions on the runway, as long as the wind speed does not exceed the prescribed standard, and sometimes the direction of take-off and landing is not fixed. Arrangements should also be made for the supply of ammunition, auxiliary fuel tanks and other materials at both ends. The second is to organize closely, obey the command of the flight commander, and coordinate with the maintenance personnel in a timely manner. Since there is no taxiway on the road runway, the support site is small, and the refueling, inflation, and bomb supply preparations of an aircraft can only be carried out at the same site. At the same time, the vehicle is restricted when taxiing. In addition, because only one cold-filled and oxygen-filled vehicle generally enters the field, when the ground preparation is carried out at both ends, it is inevitable to pass from the runway, so it is necessary to organize and implement it closely, closely coordinate with relevant departments and units, especially obey the command of the flight commander, and coordinate with the maintenance personnel in a timely manner.

3. Provide assistance and support to airports in use

(1) Analysis of the situation at the airport in use

In-use airfields refer to military airfields that have relatively complete flight support facilities for long-term use by aviation units. Cement concrete or bitumen concrete runways are usually built, equipped with fixed flight support facilities. Compared with the first two types of emergency mobile support, the air force's logistical emergency mobile support force has greater superiority in terms of support conditions in all aspects, and the support environment is relatively good. First, the airport in use is fully equipped and well-equipped, with many personnel in place, and all kinds of support personnel who undertake flight support tasks are familiar with the business, so the support work is formal and orderly, the support technology level is high, and the support capacity is strong. Second, the living facilities are complete, and the working and living conditions are relatively good. Third, the airport has a strong self-defense capability. All kinds of defense facilities and measures have been completed, and a relatively complete military-civilian joint defense system has been established. When carrying out mobile support, the emergency mobile support force does not need to give more consideration to the issue of airport defense, which is conducive to concentrating efforts and ensuring combat flight activities.

(2) The basic content and methods of safeguards

Under normal circumstances, when the aviation logistics emergency mobile support force performs the accompanying support and support tasks, it accepts the command of the air force station stationed at the field. Judging from the situation of support tasks, most of them undertake a certain type of aircraft or a single business support task as an independent support force.

After the advance team is stationed at the airfield to support, it should immediately get in touch with the station where it is stationed, clarify the organizational and command relationship, and understand the specific support tasks and support requirements. Actively make preparations for the follow-up echelon to enter the field.

After the follow-up echelon enters the field, they will be resettled according to the pre-resettlement plan, and after a little necessary rest, they can start the combat support work.

When the logistics emergency mobile support force of the air force is stationed at the airport to carry out the support and support tasks, it sometimes negotiates by telephone or coordinates in advance in order to gain time. According to the instructions of the commander at a higher level, according to the mobile support plan, or not according to the formation of the advance team and the follow-up echelon, a unified mobile detachment will be formed, which will move simultaneously with the aviation unit or transfer to the field before the aviation unit, and immediately carry out support according to the support plan after arrival.

In terms of support methods, a combination of base (airport) support and accompanying support is usually adopted. That is to say, general materials are mainly stationed at airports, and special materials are mainly provided with accompanying support; general support equipment is mainly stationed at airports, and special support equipment is mainly supported by accompanying support; general weapons and equipment materials are mainly stationed at airports, and new weapons and equipment materials are mainly supported by accompanying support, and emergency mobile combat logistics support is organized. In terms of transportation methods, due to the small number of special materials, special materials, and new weapons and equipment materials, and the limited volume and weight, if the maneuver distance is relatively long or cross-regional mobile support is required, the air transportation method is usually adopted to meet the needs of rapid maneuvering of aviation operations. Railways, highways, waterways, and other transportation methods can also be used for maneuvering close distances or within theater operations.

4. Emergency requisition of civil airports

(1) Analysis of the situation of civil airports

Civil airport refers to the airport that is responsible for the take-off and landing of civil aircraft.

It is under the jurisdiction of the local civil aviation department. Usually there are more advanced support facilities built, and the security environment is better. In future air operations, the uncertainty of combat time and geography will be greatly enhanced, so the requirements for emergency mobile combat support will be even higher. At present, the distribution of our army's airfields is not entirely reasonable, and some of the airfields have a single support function and cannot meet the needs of future combat support, so it is inevitable to requisition civilian airfields in wartime. With the sustained and stable development of China's national economy, the number of newly built civil airports is increasing, and it is of great significance to deeply explore and study the application of civil airports in mobile operations. Compared with the existing airports of our army, China's civil airports have the following characteristics in terms of geographical distribution and construction quality. First, it is close to the urban distribution, the geographical location is important, and the transportation is convenient. Most of the more than 130 civilian airports in the country are located on the edge of large and medium-sized cities, and all of them have good water and land transportation conditions, which constitute a radiation situation for adjacent areas, and provide favorable conditions for China's mobile combat support and material procurement in wartime. Second, the construction quality is high and the environment is good. Reconstructed, expanded and newly built civil airports are generally built in accordance with international civil airport grade standards, which can ensure the take-off and landing of large civil aircraft. At the same time, because civil airports are generally used and governed by local governments, their clearance areas are well protected. Third, the supporting facilities and equipment are advanced. Civil airport communication and navigation, flight control, fire protection, lighting and other support facilities, equipment, foreign imported products and domestic new products dominate, superior performance, and perfect system, strong support capacity. The emergency requisition of civilian airfields in wartime can meet the needs of the large-scale use of the air strike force of the air force, can greatly enhance the effectiveness of the air force in emergency mobile operations, and can meet the needs of coordinated operations of multiple aircraft and various arms of the armed forces.

(2) The content and methods of safeguards

Peacetime preparations for the requisition of civilian airfields.

The first is to strengthen organization and coordination to ensure the concrete implementation of various preparations in peacetime. Under the leadership of the air force organs of the various theaters, they should liaise with the relevant departments of civil aviation to make overall plans, incorporate the requisitioned civilian airfields in wartime into the overall plan of our reserves, straighten out the relationship between command and leadership in wartime, and selectively organize exercises such as the transfer of multiple types of aircraft, the emergency airlift of military materials, and the airlift of troops in conjunction with routine military exercises on a regular basis, so as to accumulate experience for the wartime requisition of civilian airfields. Second, it is necessary to improve various support plans based on the principle of operational needs in wartime.

In peacetime, the logistics of the air force should draw up various relevant support plans in accordance with the spirit of the relevant instructions of the higher authorities and the basic situation of the civil airports where they may be stationed. It includes the requisition and mobilization plan, the plan for the selection of various types of personnel, the plan for the deployment of leading groups and command organs at all levels, the plan for the establishment and reorganization of various professional support units, the plan for the expansion of various supporting facilities, the plan for the allocation and supply of various types of war readiness materials and equipment, and the plan for emergency repair of airport defense. In order to ensure that once it is put into practice in wartime, it can better form a support function and meet its wartime support needs.

Organization and implementation of wartime requisition of civilian airports.

Although civilian airports have many similarities with our military airports in terms of the structure of the field, the system of support forces, and the procedures and methods of support, in order to quickly form a support function for the aviation units during wartime requisition, it is necessary to do a good job in the following work in accordance with the operational plan and the plan for the requisition of civilian airports. Usually, the advance team is stationed at the civil airport first, coordinates relevant matters, and organizes the follow-up echelon to be stationed. After the follow-up echelons were stationed at the airport: First, a joint command post was quickly established. The establishment of command posts should implement the principle of "giving priority to the military and integrating the military with the civilian population." Political commanders should be military leaders, and leaders of civilian airports and local governments or departments should serve as deputy commanders to assist military and political commanders in their work. The command organs should be able to apply their functions in a lean and capable manner, and give full play to the overall effectiveness of the military and civilian support forces. Second, it is necessary to establish an efficient communications and command system. Immediately after entering the airport, communications professionals and flight control personnel should be dispatched to strengthen the wartime communications command force of the requisitioned airport, ensure that the communications of the civilian airport are included in the military communications network, and ensure that the communication between the requisitioned airport and the command organization at a higher level is unimpeded. Third, it is necessary to clearly distinguish between the joint organization of support forces and their tasks. There is a big gap between the support system of civil airports and the establishment and distribution of our military airports, and the requisitioning of civil airports in wartime needs to be reorganized in a timely manner according to different conditions, so that the civilian support forces can be combined with our mobile support forces and meet the needs of our wartime support. It is necessary to merge the operational departments in accordance with the situation in which the support units and operational departments of civilian airports are consistent with those of our military airports, and readjust and organize some operational units that are not consistent with the operational units of our military airports to form a unified logistical support force. The fourth is to organize the construction of supporting facilities. The supporting facilities mainly include aircraft maintenance engineering equipment, aircraft concealment protection facilities, aircraft and special support equipment evacuation areas, backup power supply, water supply system and medical rescue facilities.

All of these should be planned systematically and scientifically in normal times, and can be implemented in whole or selectively once civil airports are requisitioned. Fifth, it is necessary to set up an airport defense and emergency repair force. In wartime, especially in the main operational directions, civilian airfields, whether requisitioned or not, are bound to become important targets for enemy attacks, just like our military airfields. Therefore, when carrying out the requisition of civilian airports, the defense and emergency repair work of civil airports should be incorporated into our military's ground and air defense system. It is necessary to actively coordinate with the relevant local departments, establish a joint system for airport defense and emergency repair, set up a special organizational leadership organization and a professional defense and emergency repair team, make full preparations in terms of organizational planning, manpower and material resources, and ensure that positive and effective measures and means can be adopted as soon as the situation arises, so as to achieve effective defense and timely emergency repair, and ensure the smooth progress of combat operations.

5. Problems that should be paid attention to in the course of emergency mobile support for aviation logistics

(1) Be prepared in advance, and strengthen the understanding and management of the pre-stationed area

In order to be able to smoothly carry out emergency mobile support in wartime, it is necessary to conduct necessary investigations and understand the possible places to be stationed and grasp the situation when conditions permit. So that it usually has a better security environment and conditions.

The airfields in use and the guard airfields that are manned in peacetime and are used in emergencies because there are special support personnel to maintain and use them in peacetime, generally have relatively good conditions for flight support. In peacetime, the mobile support forces should take the initiative to get in touch with the airports that may carry out mobile support, learn about the relevant situation at the airports, and be well informed and prepared in advance. Field airfields were selected and opened only in wartime, and there were generally no management problems in peacetime. It is mainly the road runway that needs to be managed and maintained in normal times. The highway airstrip is a runway built for aircraft to take off and land by using the highway to widen and straighten, and some are built in combination with highway construction and used as a part of the highway in peacetime. In order to maintain its good technical condition and flight conditions, it is necessary to understand and master its use in peacetime, pay attention to studying and solving various problems that may arise from its use as a highway in peacetime, and strengthen its peacetime management and maintenance based on the idea of combining peacetime with wartime and compatibility between military and civilian use. The management of road runways mainly includes two aspects: pavement and clearance.

Pavement maintenance is mainly to ensure that the roadbed, shoulder and drainage system are in good condition, ready for aircraft to take off and land. The local traffic management department is responsible for the maintenance of all unrepaired vehicle bypass roads and runways used as highways in normal times, and the troops should strengthen supervision and understanding of their management. If there is a bypass and the runway is often closed, the station under the division of labor is responsible for maintenance, or the maintenance task is contracted to the local government. In order to protect the clearance area, the station should strengthen the contact with the relevant departments of the local government, often understand the basic situation of the clearance area around the highway runway, strengthen publicity, inspection and supervision, and actively cooperate with and help manage the clearance area of the highway airstrip through the local government.

(2) Establish a command organization and clarify command relationships

Establish a command organization. Aviation logistics organizations usually set up emergency mobile support command posts, which are fully responsible for the preparation, advance (transportation), stationing, and deployment of emergency mobile support, and ensuring the organization and command of aviation units stationed and carrying out combat missions. In order to smoothly accomplish all support tasks, commanders should rationally divide labor, clearly define their responsibilities, and do a good job in a coordinated manner. The command post usually has one military and political commander, two deputy commanders, and several staff officers and officers, who are specifically responsible for the overall command of mobile support operations. Equipped with the necessary communications, vehicles and other command equipment. After stationing at a support point, a joint tactical logistics command post may be set up in accordance with the instructions of a higher level or in coordination with a logistics command organization at the support point stationed there; when there is no logistics command organization at the support point stationed, a command post should be set up immediately, and contact the relevant units at the higher level should be contacted to accept the specific command of the higher command post.

Clarify the command relationship. In the implementation of mobile support, there are the following kinds of relationships in the logistics of the air force: First, there is a subordinate relationship, second, a subordinate relationship, and third, a coordination relationship. The subordinate relationship is the command relationship between the logistics at the pig level and the support units within the system. The subordinate relationship refers to the command relationship between the logistics at the same level and the units (subunits) strengthened and subordinate to the higher level, as well as the militia and civilian workers in front of the branch. The synergistic relationship refers to the relationship between the logistics at the same level and the logistics of friendly and neighboring troops, as well as the front-line support institutions at the same level. Regardless of the command relationship, the following points should be paid attention to in the implementation of emergency mobile support command:

The Air Force Aviation Emergency Mobile Support Brigade is usually directly dispatched by the Air Force Logistics Department, under unified command, and used in a centralized manner, and is under the command of the command post of the aviation unit stationed at the support site. When part of the support force implements accompanying support, it is commanded by the composite command post of the aviation unit stationed on the spot. When the support force of the emergency mobile combat unit is mainly used to carry out accompanying support, it shall be commanded by the command post of the subordinate aviation unit; when the emergency mobile support force of the field station is partially supporting the support of other airports, it shall be under the command of the receiving station. When the emergency mobile support force of the field station independently opens a field airfield, a highway airstrip, or requisitions a civilian airport, it is under the command of the command post of the aviation unit stationed there.

(3) Time is pressing, and grasp the favorable opportunity for the troops to advance

A timely, accurate, and comprehensive grasp of the development and changes in the operational logistics support situation and careful analysis and judgment are the prerequisites for the correct use of emergency mobile support forces. Use too soon. Waste of manpower, material resources, financial resources, and transportation capacity. Therefore, commanders should use all means to follow the development and changes of the battlefield situation, draw correct conclusions in a timely manner, and direct the troops to act.

In wartime, it is necessary to inspect the equipment (installation), restore the support facilities, revise various support plans, familiarize themselves with the flight sites, support facilities, and support methods, organize pre-war training, understand the enemy's situation and social conditions, establish a joint defense of the military and the people, and inspect and implement security measures. A large amount of preparatory work for battle, such as mobilizing and educating troops, will take a certain amount of time to complete. Judging from the situation of several operations and combat readiness operations in recent years, the time taken to station at a new airfield generally takes 7 to 10 days, so when determining the stationing of emergency mobile support forces, it is necessary to leave as much time as possible for preparation to prevent combat operations from being affected due to insufficient preparations for entering the airport. In emergency mobile support, the time for the air force's logistical emergency mobile support force to maneuver is specified by the higher authorities. However, as far as the emergency mobile support force itself is concerned, on the premise of resolutely carrying out the orders of the higher authorities, it should adopt a positive attitude and actively put forward its own views and suggestions to the higher-level command organs with a high sense of responsibility, so as to strive for the best stationing support. It is necessary to actively provide advice to the relevant departments at the higher level and play the role of a think tank to assist decision-making. It is necessary to understand and grasp the relevant situation in the garrison area from all sides, so as to enhance the pertinence and accuracy of mobile support operations,

reduce unnecessary mistakes and make the use of emergency mobile support forces timely and efficient.

(4) Overall defense and improve the self-survivability of support forces

Due to the limitation of its establishment, although there is a certain amount of defense force within the air force's logistical emergency mobile support force, there is still a considerable gap between it and the requirements of logistics defense in modern warfare; therefore, under the conditions of future high-tech warfare, it is necessary to treat defense and support as equally and consider them as one. First, it is necessary to do a good job in concealment, camouflage, and defense of the emergency mobile support force itself. It is necessary to make full use of the terrain conditions, such as trees, depressions, buildings, and especially underground facilities, to evacuate and deploy organs, units (subunits), and warehouses, make full use of all kinds of equipment, and enhance the ability to resist reconnaissance and strikes through various means of concealment and deception, so as to effectively preserve ourselves. Construct field fortifications, make full use of the terrain and existing engineering facilities to build simple fortifications, so that materials, equipment, and personnel can be effectively protected. Second, it is necessary to enhance the self-defense capability of emergency mobile support forces. It is necessary to readjust and properly use the existing forces, closely integrate support and defense, and minimize the enemy's hard killing. The third is to take the initiative to coordinate and rely on overall defense. Efforts should be made to incorporate the aviation unit's logistical emergency mobile support force into the overall operational defense, so that its own defense force can be combined with the cover of the combat units, so as to enhance its own survivability. Fourth, it is necessary to organize joint defense between the military and the people, and give full play to the important role of the militia in the ground defense of airports.

(5) Tap the potential of multiple parties and organize the transportation guarantee of emergency mobility

In accordance with the requirements of timeliness, accuracy, and high efficiency, a centralized and unified transportation mechanism should be established under the unified command and control of the higher-level command post. Rationalize the means of transport and the quantity and timing of inputs. Different conveyance methods are established according to different objects. For example, the delivery of emergency supplies by air is usually mainly carried by air. The long-distance delivery of general combat materials and equipment is mainly by railway, and the weapons and materials and equipment within the campaign area are comprehensively used by various means of transportation such as rail, road, water, air, and pipe. For this reason, when organizing logistical emergency mobile support for the air force, especially when transporting all kinds of materials, equipment, and equipment, it is necessary to keep a close grasp of the dynamics of transportation, maintain close ties with all departments concerned, and grasp the information and situation of various transportation support in a timely manner

according to different transportation methods, a variety of support schemes are formulated to fully tap into the potential of multiple transportation methods. Second, it is necessary to strengthen the coordination and control of loading, transportation, unloading and intermediate links, and do a good job in the close connection of the conversion of different modes of transportation. Third, we should take the initiative to coordinate with the joint command organization to strengthen the management of the transportation of important materials on the way to ensure the timely and smooth transportation work. Fourth, when they are attacked or damaged by enemy attacks on the way to transportation, or when they encounter other circumstances, they should promptly get in touch with the relevant departments at a higher level and apply for the support of the theater's joint logistics forces or request the assistance of the local front-line forces.

Chapter 12: Logistics Support for the Modification of New Aircraft of the Air Force

With the deepening of China's reform and opening up and the application of high and new technologies in the aviation field, aviation weapons and equipment have been continuously updated through research and development. In recent years, a small number of new-generation combat aircraft have been refitted and will be equipped with aviation units for some time to come. The aviation depots and stations that are responsible for the modification of new aircraft will be faced with the arduous task of logistical support for the modification of new aircraft.

Section 1: Preparation for New Aircraft Modification

The modification of new aircraft is not only a major military operation, but also an important political task, and the air force depot must take this task as the central task and get a good grasp of it and make full preparations for support.

1. Set up a modification support team

Under the guidance of higher-level leaders and organs, air force depots and stations should usually set up a leading group for the support of the modification of new aircraft, which shall be specifically responsible for organizing, directing, inspecting, and supervising the work of providing support for the modification of new aircraft. According to the actual support, the leading group for station modification and support can be divided into groups such as organization and command, engineering construction, equipment and materials, and safety and security. It can absorb the leaders and business backbones of relevant departments and detachments to participate, and be specifically responsible for organizing various professional support work for the modification of new aircraft. In accordance with the overall arrangements for the modification of new aircraft, the leading group should formulate a detailed support plan and work plan, regularly analyze the situation, and do a good job of coordination.

2. Establish addendum units

Due to the new generation of combat aircraft, the tactical-technical performance has been greatly improved,

advanced airframe structure, airborne weapons, electronic equipment, fire control systems, etc., have put forward higher requirements for logistics support. It is necessary to provide new support equipment and build new support facilities. These new installations and facilities require the addition of new units and personnel to manage and support them. Before receiving and installing the station, it should carefully consider the formation of an addendum unit in accordance with the relevant regulations of the higher authorities and the requirements of the new aircraft support. First of all, it should be scientifically demonstrated. It is necessary to repeatedly demonstrate which specialties should be expanded, which units should be newly built, which support posts can be optimized, and the quantity and quality of support personnel to be allocated should be repeatedly demonstrated, and efforts should be made to be scientific and reasonable. Second, it is necessary to draw up a plan for additional units and personnel. In the process of formulating the plan, it is necessary to take the initiative to seek the guidance and support of the superior business department to ensure that it is completed in a timely manner.

3. Organize support training on new aircraft modifications

The training of new machine modification guarantee is related to whether it can be installed on time, and it is also an important factor to ensure the quality of new machine modification. Therefore, the station should educate the personnel of the whole station to enhance their ideological understanding and enhance their sense of mission and responsibility in supporting the modification of new aircraft from the high plane of "winning the war" of the air force. We should pay close attention to learning new knowledge and new technologies, train hard, and strive to have the ability to support new machines in the shortest possible time.

To organize training on the modification and support of new aircraft, first, it is necessary to scientifically formulate a logistics training plan and think of various training measures. Second, it is necessary to clarify the content of training. In the logistics command specialty, it is necessary to focus on studying the procedures and methods of the organization and command of the new aircraft support and the characteristics and requirements of the support of various specialties. In all service specialties, it is necessary to focus on learning the characteristics, requirements, and methods of professional service support for new aircraft, and the performance and operation skills of equipment (equipment) in this specialty. Third, it is necessary to flexibly choose training methods. It can be taken to go to the superior for training, at the same level of training, to study in school, to go out to meet, competitions, assessment and acceptance, etc. Fourth, it is necessary to pay attention to training methods. Before the new aircraft and support equipment are in place, the station can organize relevant personnel to go to the station where the new aircraft is stationed to follow and study; after the new aircraft and support equipment are in place, actively organize the support personnel to conduct intensive training to further familiarize themselves with the operation methods and support methods of the support equipment (equipment); on the basis of doing a good job in individual training, organize the whole station to conduct comprehensive drills, and continuously improve the organization, command, and support capabilities of the new aircraft support. In addition, when organizing training on the modification and support of new aircraft, the station should take the initiative to report to the relevant departments at the higher level, strive for the guidance of the relevant business departments at the higher level, provide support in the training venues, teaching materials, etc., and improve the training conditions.

You can also get in touch with relevant institutions and scientific research institutions to get support and help in teaching strength.

4. Renovation and construction of new support facilities

Airports that undertake the task of retrofitting new aircraft usually need to rebuild or expand airport supporting engineering facilities. For example, if the domestic aircraft is modified, it is necessary to widen, thicken and lengthen the pavement of the field, expand the airport apron, refueling apron, and refueling well, add a new aircraft tethering ring, and build an anti-blowing wall. Aircraft blocking facilities have been added, field lights have been adjusted, and professional rooms for seats, high-altitude equipment, shooting radars, and missile maintenance have been built. According to the requirements for the introduction of aircraft maintenance, regular inspection, test and storage, in addition to the construction of the above-mentioned support facilities, an airport apron should also be built near the aviation comprehensive, fire control, reactance, flight ginseng and other professional rooms and plug-in equipment warehouses. Before the reconstruction, the leaders of the station should organize the aircraft battalion department and relevant personnel to conscientiously study the standards for supporting engineering facilities of the new aircraft support airport issued by the superiors, and go to the airport that has provided the corresponding new aircraft for on-site inspection. Then according to the actual situation of the airport, it is carefully planned and designed. When making designs, it is necessary to solicit the opinions of the relevant operational departments and troops at higher levels, and strive to make the design scientific and reasonable. During the construction, the station should strengthen the control and management of the whole process of the project, monitor the progress and quality of the project, find problems, deal with them in a timely manner, and report major problems to the superior in a timely manner. After completion, especially when the project enters the stage of sweeping, the station should strengthen the contact with the relevant departments at the higher level, and do a good job in the acceptance of the project according to quality and quantity. At the same time, the station should do a good job of receiving the project according to the regulations, strengthen maintenance, find problems, report to the higher authorities in a timely manner, coordinate with relevant units, and properly solve them.

Section 2: New Aircraft Connection and Installation Support

Support equipment (equipment) and materials and equipment are important tools and means for carrying out flight support. Before the modified aircraft is stationed, the support equipment (equipment) and materials and equipment that are matched with the new aircraft must be equipped with a station. The new aircraft support equipment (equipment) and materials and equipment are usually delivered by the relevant departments or units at a higher level before the modified aircraft is stationed, or the station is notified to pick them up.

Therefore, the station should be prepared to receive new equipment (equipment) and materials and equipment in advance.

1. Preparation for assembly

Before the modified aircraft is stationed, the station should timely understand the plan of the relevant departments and units at the higher level for the issuance of the new aircraft support equipment (equipment) and materials and equipment, and urge the relevant business departments of the station to find out the model, variety and quantity of the support equipment (equipment) and materials and equipment in a timely manner, and the time and place of issuance or request. Prepare a parking space for equipment (equipment) and a warehouse for storing materials and equipment. Special support equipment (equipment) is often large in size or has high requirements for storage conditions, has special requirements for the parking environment, and requires special parking places. The reserve conditions of special materials and equipment are demanding, and there are special requirements for temperature and humidity, which need to be rebuilt or added to a special warehouse. In addition, it is necessary to arrange the personnel who receive equipment (equipment) and materials and equipment, clarify the tasks, and divide the labor and responsibility.

2. Loading and unloading

Before the new aircraft is stationed, the time to ensure the receipt of equipment (equipment) and materials and equipment is often relatively concentrated, and the workload of loading, unloading and transportation is large. Therefore, the station should unify the planning of transportation capacity, loading and unloading sites and personnel. If conditions permit, multiple work sites can be opened. At the same time, it is necessary to survey the transportation routes, formulate detour or avoidance measures for dangerous road sections such as sharp bends, and take measures such as reinforcement or erection of "bridges on bridges" for bridges with small bearing tonnage. If the airport is far away from the railway, or there is no special railway line, it is necessary to organize a convoy to pick up the airport in time. If the capacity of the terminal is tight, you can request friendly or local capacity support. The loading and unloading of large-scale equipment (equipment) and materials and equipment requires special large tonnage extended vehicle transportation and lifting equipment.

3. Inspection and acceptance of the equipment

After the new machine support equipment (equipment) and materials and equipment arrive at the scene, the station should organize the support personnel to carefully check and accept, carefully check the equipment (equipment) model and ancillary accessories, and prevent omission and loss. Check the variety, quantity and quality of materials and equipment. According to the plan, carefully check, orderly storage, approval of warehousing, registration. If damage or loss is found, it should be reported in time and no hidden dangers should be left.

Section 3: Preparations for the Launch of New Aircraft

Adequate logistical preparations are the material basis for ensuring the smooth take-off of the new aircraft, and are an important link related to whether the new aircraft can take off smoothly. Therefore, the station should do a good job in preparing ideologically, organizationally, equipment (equipment), materials and equipment, and support facilities.

1. Ideological preparation

Before the new aircraft takes off, the station should educate all support personnel to firmly establish the idea of taking flight logistics support as the center, and adhere to the "three aspects and three services." With a high sense of responsibility, they should conscientiously study new knowledge and new technologies, master new equipment, and be familiar with the requirements of new aircraft; study and master the relevant systems and regulations for flight logistics support of new aircraft; and be familiar with various professional support procedures and relevant special requirements and operating procedures. Fulfill their duties, strictly abide by the regulations, concentrate their efforts, and prepare for the flight.

2. Organizational preparation

The leaders of the station should have a clear division of labor, and organize the organs to formulate a detailed support plan for the launch of the new aircraft. All support departments and detachments should select cadres and professional and technical backbones with strong organizational and command capabilities to form the main support force on the front line, and other personnel can learn while providing support. It is necessary to organize security personnel to actively carry out anticipatory activities and formulate practical and feasible countermeasures in response to special situations that may arise. Organize drills according to the plan, find problems, and study and improve in a timely manner. Station leaders, organs, and various support departments and detachments should take the initiative to solicit the opinions of aviation units and equipment departments and coordinate with relevant support matters.

3. Equipment preparation

Before the flight, most of the support equipment (equipment) supporting the new aircraft was the latest product developed by China or imported from abroad, with advanced technology and complex structure. After the support equipment (installation) arrives at the scene, all support departments and detachments should seize the time to unseal, test the operation, and test the machine, familiarize themselves with its performance and operating procedures, carry out on-the-job training, and master its operation and use methods. When preparing for the new aircraft to take flight, it is necessary to repeatedly check the operation of the support equipment (equipment) and check the technical difficulties and abnormalities that occur

If the station can handle it by itself, if the station is not able to handle it, it should be reported to the relevant departments at the higher level in time, or request support from relevant units and experts. For the quality or performance defects of imported safeguard equipment (equipment), after verification and confirmation by experts, it may be recommended to file a claim.

4. Preparation of materials and equipment

After the materials and equipment matched with the new machine are put into storage, the station should urge the relevant support personnel to be familiar with the variety, quantity, quality, use and storage location of the materials and equipment. Due to the advanced performance of the modified new machine, the large loading capacity of materials, and the fast consumption, some parts and equipment of the new machine rely on imports. Therefore, before the new aircraft takes off, it is necessary to actively carry out anticipatory activities and explore the law of consumption of materials and equipment, so that we can make an application plan as early as possible and raise funds in a timely manner, so as to prevent a shortage of individual items from affecting the new aircraft's flight. It is necessary to further check the integrity of materials and equipment, and whether the reserve temperature and humidity meet the requirements to ensure timely supply.

5. Preparation of support facilities

Before the flight, in accordance with the flight support requirements of the new aircraft, it is necessary to repeatedly check the good condition of various support facilities. Clean the road, keep the cleanliness of the road, check whether the aircraft blocking facilities meet the requirements, and carry out the inspection of the net and the net, check the lighting facilities of the road, and prepare for emergency power supply to ensure good operation. Carry out pressurized operation of oil pipelines, refueling wells (frames), oil fillers, oil tanks and other support facilities to ensure that they are in good condition. In addition to making preparations for logistical support facilities, the station should also inspect equipment support facilities such as shooting ranges, ordnance, aviation materials, and ammunition supply points, as well as combat support facilities such as communications, navigation, and towers.

Section 4: Support for the Launch of New Aircraft

In addition to the characteristics of general flight logistical support, the support for the launch of the new aircraft has a distinct particularity due to the changes in the types (types) of support aircraft and the improvement of support tools and means.

1. Characteristic analysis

- (1) Being present for a long time and making personnel fatigued

The presence time is long, first of all, the arrival of the site to ensure the increase of maintenance preparation time. In the past, it generally took 1 to 1.5 hours, but it usually takes 1.5 to 3 hours for new aircraft maintenance preparation. The reasons for the increase in time are: First, it sometimes takes more than 3 hours from the time the flight commander makes up his mind to the time of departure. Second, there are many contents to be inspected before take-off, and the time is increasing. More than 10 items such as inertial navigation should be checked before the aircraft starts, 7 systems such as power supply and transmission should be checked after driving, more than 10 items such as cockpit canopy should be checked before sliding out, a series of inspections should be carried out after the runway, and the first take-off and landing of the aircraft should be warmed up. Secondly, the support time from the start of the flight to the end of the flight has increased. The average time of new domestic aircraft is longer than that of old aircraft (types), and the introduction of aircraft is longer than that of new domestic aircraft. The reasons are: First, the new aircraft has strong endurance, greatly increasing the flight time, a flight can complete the domestic aircraft (type) several sorties of exercises, the flight intensity is also correspondingly increased, a flight is more than 1 hour at the shortest, and some subjects have 4 to 5 hours of space. Correspondingly, the station also needs to implement long-term, continuous support, which generally takes 8 to 9 hours on a flight day, and longer on the spot if the flight is carried out continuously at dawn, dusk or night. The second is to go out again to prepare for the increase in time. This is because the new aircraft support content is more than the old aircraft (type), especially the introduction of aircraft, often adopt the "first-line" way of support, the organization and command are complex, and after the flight landing, the maintenance personnel have to carry out flight reference transcription processing to confirm whether the aircraft is in good condition, which generally takes about 30 minutes. If there is an abnormality or malfunction of the aircraft, the maintenance inspection and troubleshooting time will be longer. Due to the long time on site, the continuous operation of the support personnel reduces their physical strength and is easy to cause fatigue.

(2) The material consumption is large, and the support task is heavy

Material consumption is large. Due to the large thrust and strong maneuverability of the new engine, the single machine consumes a large amount of materials. The fuel consumption of a single domestic new aircraft is about 2 tons per hour, and the fuel consumption of a certain type of imported aircraft is 9.4 tons, the normal fuel consumption per hour is 2.5 to 3 tons, and the maximum fuel consumption is 4 tons, and there are nearly 19 kinds of various auxiliary fuels. According to statistics, the annual jet fuel consumption of a station that is permanently stationed in the introduction of aircraft flight regiments exceeds 20,000 tons. For example, aviation materials, due to the complex structure of the new aircraft, the overload of air action is large, there are many support items, and the consumption of aviation materials has also increased significantly. The same goes for the four-station guarantee:

For example, a new type of aircraft has a large nitrogen demand and high quality requirements, and each aircraft flies for 100 hours, consuming a total of about 3,000 kg of nitrogen with a purity of 99.5%. For example, when a certain type of aircraft performs an anti-air combat mission, it can carry 10 missiles (6 P-27 missiles and 4 P-73 missiles), and can carry 80 rockets or 4,000 kg of bombs when undertaking ground attack missions. The high consumption of flight support has increased the difficulty of material procurement, and the task of material support has become more and more onerous.

The task of support is heavy. The new types (types) of the modified aircraft have advanced tactical and technical performance, and undertake arduous combat training tasks; they are the "fist" force of our army's air operations, and they will certainly bear the brunt of the battle in future wars, and they will be used throughout the whole process, and they will be often used in peacetime to deal with emergencies and deal with unknown air conditions, and they must have excellent comprehensive support capabilities in station support. In particular, when the new aircraft is on emergency combat mission, the station is required to maximize the response speed, shorten the support time, improve the support efficiency, and have the ability to provide rapid support. The task of supporting the station for the modification of new aircraft has been increased.

(3) There are many support equipment (equipment) and high technical content

Due to the advanced performance of the new aircraft, it is required to provide more support equipment (equipment), and dozens of vehicles such as traction, refueling, inflation, and power supply are required to ensure the flight of the new domestic aircraft. To ensure the introduction of aircraft flights, it is necessary to provide special support vehicles such as radar, air conditioning, and nitrogen. For example, the PC Б H-4H radio beacon machine (Takang platform), the HC II wireless electric instrument landing system, the ejection seat K-36 Д M Oxygen vehicles, nitrogen vehicles, air-conditioned vehicles, and oil pump vehicles are imported with aircraft. The technical performance is more advanced than that of domestic equipment (equipment). The domestic equipment (equipment) used, such as Zhonghuan tractor, Steyr refueling truck, oil testing equipment, field service support equipment (installation), 716 rain measurement radar, 424A power supply vehicle, etc., are also relatively advanced in domestic equipment. Due to the large number of models, large quantity, high technical content, and complex maintenance, it brings great difficulties to the guarantee.

In addition, because the new machine is generally set up with 8 to 9 specialties, and the cross-linking between the specialties is very strong, each professional inspection and preparation needs the relevant professional supporting equipment guarantee of the station, especially the four-station professional power supply car, air-conditioned car, nitrogen filling car, etc. must often follow the maintenance personnel for aircraft inspection and preparation, and the maintenance support is more dependent on the station.

(4) High quality requirements and high safety pressure

Due to the complex structure of the modified new aircraft, it leads to high requirements for the quality of flight support. The landing gear of the new domestic aircraft is shorter, the engine inlet is closer to the ground, the inlet is not dust-proof, and some aircraft also set up auxiliary air intakes in the lower part of the fuselage, if the field is not clean, the aircraft may take off and land in the process of taxiing, it may suck in foreign objects, damage the engine, and even cause accidents. The introduction of aircraft heavy weight, high requirements for the strength of the field, and because of its use of suspended air intake, the aircraft air inlet is low, the air intake is large, easy to absorb the impurities on the surface of the road and the fine sand particles in the cracks, or suck in the sand particles blown by the previous aircraft when the formation takes off, and damage the aircraft engine. Therefore, there are high requirements for the cleanliness of the road. In addition, due to the fast take-off speed of the new modified aircraft, it is easy to suck in frightened birds, thereby breaking the engine, and the requirements for bird driving work are strict.

There is a lot of pressure on flight support safety. The new aircraft is expensive to modify, and if the aircraft is scratched during the support process, or if the spare parts are damaged in the supply of aviation materials, it will cause heavy losses and affect the combat training flight; the structure of the new aircraft is complex, the electronic components are numerous, the assembly space is small, it is not easy to disperse, and the fire hazard is relatively large; the support equipment (equipment) is advanced and the specialties are complex, especially some imported support equipment (equipment). It is relatively difficult to operate and use the airplanes, and there are many links that are prone to problems; the introduction of aircraft flights, the implementation of "first-line" support, the concentration of various support equipment (equipment), and the easy occurrence of aircraft or other accidents; the objectives of airports are important, there are many points, they are extensive, the police force is scattered, some airports are not easy to close, the social situation is complicated, and the security work is difficult. There is a lot of pressure on flight support safety.

2. Organization and command measures

Due to the different types (types) of the modified aircraft, the support forces that need to be invested are different, and the support methods adopted are also different, which makes the organization and command work more complicated, and it is necessary to take corresponding measures in view of the above characteristics to ensure the smooth flight of the modified new aircraft.

(1) Careful planning and training according to the program

Support for the launch of new aircraft is usually organized and implemented in accordance with the three stages of flight preparation, implementation, and evaluation stipulated in the "Air Force Flight Logistics Support Regulations."

In accordance with the flight plan of the air force unit, the station should carefully draw up a flight support plan and take the initiative to solicit the opinions of the air force unit and the equipment department. On the basis of the preparations for the launch of the new aircraft, we should conscientiously inspect the implementation of the preparations for the flight of various departments and detachments. Support personnel, equipment, materials, and other support forces should accurately arrive at the specified time and place in accordance with the requirements of the plan to organize and implement support.

(2) Select the method of protection for the object of protection

The flight of modified domestic new aircraft generally adopts the "three-line" support method. That is, the aircraft is towed from the landing line by the tractor to the refueling line for refueling and inflation, and then towed to the take-off line for power-up and bomb hanging after completing the refueling and inflation (oxygen). The use of this guarantee method can effectively save aircraft engine hours, prolong the service life of the engine, and have good economic benefits. The flight of modified and introduced aircraft generally adopts the "first-line" support method. That is, the "three lines" become the "first line", the aircraft taxied to the preparation site after landing, and uniformly implemented refueling, inflation (oxygen) and power-on, so that not only can shorten the preparation time again, but also reduce the frequent round-trip of traction, power supply and other support equipment, and the support efficiency is high, which is convenient for the coordination and command of the support site and meets the needs of rapid support. In addition, it is necessary to adopt different refueling methods for different protection objects.

(3) Increase material reserves and improve continuous support capabilities

Due to the large consumption of materials for the modification of new machines, under the guidance of the relevant departments at the higher level, the material reserves should be increased in a planned manner to improve the continuous support capacity of materials and equipment. If the consumption of aviation fuel is large, the airport fuel depot should be expanded. According to the requirements, the capacity of the airport oil depot of a permanent Jian-7 regiment should generally not be less than 6,000 cubic meters; the capacity of the airport oil depot of a permanent Jian-8 regiment should not be less than 10,000 cubic meters; and the capacity of the airport oil depot of a certain type of aircraft flight regiment should not be less than 17,000 cubic meters. All of them must have the ability to receive and unload railway tank trains. For some special materials and equipment that need to be imported, the market is not easy to raise, and the supply adjustment period is long, so it is necessary to make plans and apply in advance, leaving sufficient room to prevent supply interruption.

(4) Go deep into the support site and strengthen inspection guidance

Station commanders should go deep into the scene and strengthen inspection and guidance. First, it is necessary to rationally allocate support forces. Strengthen the unified dispatch and use of equipment, pay attention to the connection and cooperation of cold charging, oxygen charging, power supply, and refueling, and maintain good working order in the field.

The second is to strengthen the inspection of field equipment. Before the flight, in order to prevent the equipment vehicles from bringing mud and sand into the road and apron, there is a vehicle tire washing pool in the outfield, and the vehicle must pass through the washing pool when entering the field. The leaders of the station should supervise and urge the field service detachment to do a good job of cleaning, maintaining and maintaining the pavement in accordance with the regulations, and remind and assist the flight commander to inspect the runway. According to the requirements of the flight commander, timely organize the pavement repair and sprinkling of water on the pavement in the flight gap. Do a good job in night flight lighting support, and use different night flight lights for different support objects. In accordance with the regulations, complete the fire extinguishers and fire extinguishing bottles on the take-off line, apron, refueling apron and test apron, and strengthen management. Before the flight, send out the fire truck on time, strictly guard the post, and be ready to go out at any time. The blocking machine sand flat should be loosened. During the flight, according to the instructions of the flight commander or the flight support command room, the blocking net shall be erected and released in a timely manner. Do a good job of repelling birds at airports to prevent birds from crashing into and damaging planes. The third is to do a good job in health protection and ensure the safety of flight personnel. The station should assist the relevant departments to guide and supervise the pilots to correctly select, deploy, keep and use high-altitude equipment such as airtight helmets and high-altitude compensatory suits, so that they can meet the requirements of aviation medicine for high-altitude flight. Strictly enforce the regulations to prevent pilots from flying empty and on a full stomach. Under normal circumstances, you are not allowed to fly on an empty stomach (without food for more than 4 hours) or within 30 minutes of eating. When flying at high altitude and long distances, the pilot's 24-hour and flight day recipes should be checked to meet the requirements of the high-altitude flight diet. The station health team (hospital) should start from the complex situation, formulate a variety of rescue plans, and prepare sufficient medical equipment and medicines. Fourth, it is necessary to do a good job in providing military supplies and ensuring the health of flight personnel. The station should find out the rules of dietary security for flight personnel at high altitudes, provide meals, meals, and night meals at any time, and prohibit foods and beverages that produce a lot of gas, contain high cellulose and are not easy to digest, so as to prevent high-altitude flatulence. Ensure the health of flight personnel.

Chapter 13: Airport Defense

Airport defense is the defensive measures and combat operations taken to resist attacks from the air and the ground in the airport area and ensure the safety of the airport. It includes three aspects: airport air defense, airport ground defense and airport protection. It is usually the strength of the organization station, which is carried out with the support and cooperation of nearby military and civilian forces in conjunction with other troops stationed at the site. Airfield defense is essentially airfield defense. However, the airfield is located in the rear area, and many of the key points of defense belong to the logistics purpose, and the organization and implementation are mainly based on the strength of the station, which has the nature of logistics defense. Airport defense is usually organized and implemented by the depot in conjunction with the relevant departments under the leadership of the head of the aviation unit. Airport defense operations should be premised on ensuring that the air force units take to the skies for combat. Because the airfield is large, there are many key targets, and its own resistance force is limited, it is an important way to achieve defensive victory by enhancing the defense capability of the troops stationed on the field, obtaining the support of nearby friendly and neighboring troops and local armed forces, and fully relying on the strength of the masses of the people to jointly confront the enemy.

The basic elements of airport defense include three aspects: defense personnel, defense organization, and defense means.

Modern high-tech warfare is a three-dimensional warfare, and airfields in front and rear may be attacked by the enemy. In addition, the airfield is the base for our air force to carry out combat missions and is a key target for the enemy. Therefore, closely organizing and implementing airfield defense is an extremely important task for ensuring airport security and enhancing the ground survivability and combat capability of the air force. For this reason, in organizing airport defense, it is necessary to establish and improve the airport defense organization, closely organize logistical vigilance and defensive operations, improve defense weapons and logistical equipment, strengthen education and training in logistical defense, and strengthen the construction of logistical protection facilities.

Section I: Airfield Air Defense

Airfield air defense is the action of preventing and countering the enemy's air raids and aerial reconnaissance of airfields. In modern warfare, the threat to airfields comes mainly from the air. With the continuous development of military science, the radius of activity of aviation weapons is getting larger and larger, the methods of penetrating defenses and the types of ammunition used on airfields are increasing, the projection distance of weapons is getting farther and farther, and the accuracy of hitting is getting higher and higher. Therefore, the task of air defense of airfields is also becoming more and more onerous.

1. Characteristics of airfield air defense

In World War II, aviation weapons were used in large quantities for combat, and air raids on airfields became an important means of seizing air supremacy, especially when launching surprise attacks. In a number of local wars after the Second World War, the invading country paid more attention to the air over the airfield. In the Anglo-Argentine battle for the island in May 1982, Britain used "Vulcan" strategic bombers and "Peng" vertical take-off and landing planes to attack the Argentine airfield on the island several times, reportedly destroying 30 Argentine planes and damaging part of the runway. During the Gulf War in the spring of 1991, the multinational forces first and repeatedly used new anti-runway submunitions and "Durandal" bombs to effectively attack more than 60 Iraqi airfields.

It can be seen from the history of air raids on airfields and the views of foreign armies on airfields in modern times that the enemy's attempt to attack airfields is mainly to seize air supremacy in order to ensure that its air and ground (sea) forces are protected from air strikes. The targets of its attack on the airfield will be very wide, which may be aircraft, flight sites, warehouses such as fuel, ammunition, aviation materials, etc., and may be the command system and personnel. Because the airfield is a combined target, any part of the attack will be damaged, which will affect the aircraft's lift-off operation. In general, the main targets of attack are aircraft and runways. This is mainly due to the fact that the airport runway is fixed and easy to detect and attack. Modern combat aircraft are increasingly dependent on airport runways, and destroying airport runways means that enemy planes will not be able to take off into the air for combat, which is tantamount to losing their combat effectiveness. Advanced precision-guided weapons also provide the necessary guarantee for the success of air strikes. It is easier to destroy enemy combat aircraft on the ground than in air combat. Therefore.

we must strengthen the air defense of airfields throughout the course of future wars, especially to deal with the enemy's surprise attacks in the early stages of the war.

It can be seen from the situation of air raids on airfields in several recent local wars that the air defense of airfields in future wars will have the following characteristics: The enemy's air raids have increased suddenly, and our preparations for the imminent battle of counter-air raids have been hastily prepared; the enemy's air raids have a large scale, a wide range, and a long period of time, and the expansion of the area of our air raids will be carried out continuously day and night in all directions of the campaign, and the tasks will be very arduous; the destructive power of the enemy's air raids will be great, and our battlefield survival will be extremely arduous and difficult; and powerful electronic countermeasures will be the forerunner of the enemy's air raids and will run through the entire process of operations. The electronic countermeasure capability of China's anti-air raid combat system is weak, and it is quite difficult to seize electromagnetic supremacy; China's anti-air raid combat forces are large and complex, and it is quite difficult to command and coordinate with each other.

2. Airfield air defense aviation logistics tasks

The tasks of airfield air defense are to vigorously carry out counterattacks and strive to annihilate enemy planes that have penetrated into the airspace above the airfield, or to force them to be unable to accurately surprise targets and smoothly carry out reconnaissance; to closely organize protection so that personnel, equipment, materials, and various facilities will not be damaged or to be spared; and to quickly eliminate the consequences of the attack so that the air force can resume combat operations in a timely manner. When participating in airfield air defense operations, the logistics of the aviation units mainly undertakes the latter two tasks under the unified command of the commanders of the troops stationed on the field, so as to ensure that the aviation units carry out their combat tasks in a timely manner, effectively carry out evacuation and concealment, and minimize the losses caused by air raids.

3. Main measures for the implementation of airfield air defense in the logistics of the aviation forces

(1) Formulate an anti-aircraft defense plan

The airfield's anti-aircraft defense plan was prepared by the unified organization of the aviation units. It mainly includes intelligence reporting and air observation, combat and coordination plans for fighter aviation units and ground forces stationed on the ground, and emergency lift-off and ground evacuation and concealment plans for air units. The station should be specifically responsible for the preparation of the ground evacuation concealment plan, the main content of which is the division of evacuation areas for personnel, aircraft, equipment and materials, vehicle allocation and evacuation procedures and requirements. When they are equipped with missiles, antiaircraft artillery, and other antiaircraft forces, or when they are preparing to organize troops stationed on the ground to use individual firearms to resist enemy planes, the stations should draw up plans for air attack and do a good job of coordinating with the air defense units.

(2) Organize reporting and observation services

The report of airfield air defense means to obtain information on the enemy's air attack on the airfield in a timely manner, issue an alarm to all units (subunits) stationed at the airport, and inform friendly neighbors. The observation of airfield air defense refers to the visual observation within the airfield.

Information on enemy air strikes on airfields is usually obtained from higher-level air information knowledge networks and guidance radars at their own airfields. In accordance with the requirements of the higher authorities, the station should designate special personnel and equipment to participate in the air signal knowledge network, and make full use of radio, wired electricity, sirens, and other means to form the alarm system of the airport, and issue the pre-warning, warning, and dismissal of the enemy's air raid to the subordinate units (subunits) in a timely manner. In wartime, these signals are usually uniformly prescribed by the superiors.

The purpose of the visual observation posts is to detect low-altitude enemy aircraft in a timely manner and to monitor their activities against the airfield in order to take appropriate protective action. It is advisable to have 2-4 observation posts, and the strength of the troops can be drawn from the subordinate detachment, or by other posts, with 1 to several people per post, equipped with telescopes and communication equipment, and when there is a threat of the enemy, they can be set up in a location that is convenient for observation. Its task is to detect enemy aircraft in a timely manner, observe the situation of the attack on the airfield, report to the command post in a timely manner, and issue a signal of notification in accordance with the order. When assigning tasks to observation posts, it is necessary to specify the time and place of its opening, the main observation direction and area, the method of reporting information, and other relevant requirements.

(3) Use fortifications for protection

The use of fortifications is an important measure for the air defense of the airport. Modern aircraft have a high penetration rate and powerful aviation ammunition, and only by relying on strong fortifications and combining other protective measures can the safety of equipment, materials and personnel be guaranteed. In the Fourth Middle East War, Egypt built aircraft shelters to cover aircraft, which greatly increased the ground survivability of the air force. According to the Egyptian side, "not a single plane was destroyed on the ground" in this war. The protective fortifications built by our airport mainly include aircraft protective fortifications, various underground warehouses and personnel protective fortifications. For example, the aircraft shelter built in recent years will not be penetrated even if a 57-millimeter rocket hits directly or a 250-kilogram blasting bomb explodes at a distance of nearly 5 meters, which can ensure the safety of the aircraft in the warehouse.

The timing of the use of fortifications for the protection of personnel, equipment, and materials should be determined according to specific conditions. As a rule, early evacuation should be carried out when there are signs of war and the situation is gradually tense.

Evacuation should be carried out when the transition to a state of imminent combat should be carried out. In the event of an obvious surprise attack or a surprise attack by the enemy, an emergency evacuation should be carried out promptly. When there is a threat from the enemy, planes should be parked in the depot as much as possible; fuel, aviation materials, ammunition, and other materials that are not easy to carry and are suitable for long-term storage in underground fortifications should be kept in the fortifications frequently; relatively heavy equipment and equipment that are not suitable to be placed underground in peacetime can be moved into the underground fortifications in time of war; vehicles that are carrying out support tasks can enter the fortifications when they receive an air raid forecast; and personnel usually enter the fortifications when they receive an alarm.

(4) Organize evacuation and concealment

Making full use of the terrain and features to evacuate and conceal is a simple and effective air defense measure. Due to the high accuracy and strong penetration of modern aviation ammunition, even if there are certain protective fortifications, the important role of using evacuation areas for evacuation and even dredging protection on the spot cannot be ignored. According to foreign estimates, when 10 fighter-bombers attack 24 aircraft parked on the ground, if the aircraft are parked on the tarmac, the survival rate is 0, and the evacuation parking is 70% (95% in the evacuated aircraft shelter).

When there is a threat of hostile situation, non-duty aircraft without protective fortifications should be evacuated and hidden. The evacuation of aircraft is divided into two categories: lift-off evacuation and ground evacuation. Ground evacuation is the towing of the aircraft to a designated evacuation area and concealed parking. If there is no suitable evacuation area, it should be parked near the tarmac so that the distance between the aircraft is greater than the radius of destruction of conventional blasting shells.

Materials and equipment that are not conditionally stored in the warehouse can be evacuated and concealed when preparing for battle or receiving an alarm signal. If the auxiliary fuel tank must be placed in the outfield, it can be stacked separately in advance. Support vehicles can quickly enter a predetermined (or temporarily selected) location after receiving an alarm or completing a mission to evacuate and conceal.

Personnel without fortifications should quickly evacuate and hide when receiving an air raid alarm. The evacuation and concealment sites should be planned in a unified manner in advance, generally near the deployment (mission) area, select a good terrain, and divide them into detachments.

(5) Organize camouflage protection

Camouflage is to conceal the truth and reveal the false, and it is an important means to deal with the enemy's reconnaissance and air raids. In the history of warfare, camouflage has played a good role in airport security.

In modern warfare, although modern technologies such as electronics and infrared have been widely used in air-to-ground reconnaissance and air raids along with visual means, camouflage technology has also continued to develop and still plays an important role in anti-aerial reconnaissance and anti-air raids at airports. It is said that the United States and Britain are jointly using integrated camouflage technology to develop "stealth airfields", which, when completed, can reduce the success rate of enemy aircraft attacks from 80 percent to 30 percent.

The main methods of airport camouflage include setting false targets, camouflage, artificial shielding and plant camouflage. To set a false target is to use a false target to attract the enemy and make the real target hidden. For example, setting up fake runways, fake planes, fake vehicles, fake hangars, and fake electronic information, etc., so that the enemy mistakenly turns fake into true. Camouflage is the use of paint, dyes or other convenient materials to change the shape and color of the target, reduce the color difference between the target and the background, and make it difficult for optical reconnaissance to distinguish the outline of the target. If you use a special paint, you can also imitate the background luminosity and deal with infrared reconnaissance. Artificial shielding is the use of standard equipment or convenient materials and facilities to cover the target, or to cast smoke screens to cover the target. Camouflage equipment and smoke screens with different performance have the role of anti-optical, infrared or radar reconnaissance. Plant camouflage is the use of growing plants or collected plants to cover the target, mainly used to block optical reconnaissance. The implementation of camouflage must meet the requirements of tactics and technology, must not affect the performance of combat missions, must be natural and realistic, conceal the truth thoroughly, and show the false appropriately. It is necessary to flexibly change the methods according to the local characteristics of the time, try to diversify or use a variety of measures at the same time, and also make them regular, and strictly enforce the discipline of camouflage.

(6) Resisting enemy air raids

Counterattack is an active measure of air defense at airfields. The main weapons of ground and air resistance are anti-aircraft artillery and missiles, and infantry light weapons can also be used to fire and lay air obstacles to stop enemy aircraft. Small arms fire and obstacle interdiction are effective means of adversarial countermeasures. During the War to Resist US Aggression and Aid Korea, the logistics system of the Chinese People's Volunteers shot down 36 enemy planes with infantry and machine guns; in the 80s, Afghan guerrillas also shot down MiG planes and helicopters with infantry and light weapons. During the Fourth Middle East War, Egypt used steel cables at both ends of the runway to tie balloons, which caused two Israeli planes to crash and destroy.

When the airport is equipped with missiles, anti-aircraft artillery and other weapons,

they should be deployed in the main direction, cover key targets, and organize coordination with antiaircraft artillery, missile forces, and aviation. When using ground light weapons to resist enemy planes, it is necessary to designate troops, be prepared in advance, stand by in concealment, and concentrate fire.

(7) Eliminate the consequences of the attack

In modern warfare, the aviation forces have a great dependence on airfields, which are a large-area combined target and are vulnerable to destruction. Once attacked by the enemy's air raids, there will be casualties, damage to weapons and materials, damage to facilities, fires, and other emergencies. Moreover, problems in each part may affect the aircraft's lift-off operations, which has a bearing on the combat effectiveness of the aviation units. Therefore, promptly and quickly eliminating the consequences of an attack is not only an urgent task but also an indispensable measure for airfield air defense.

After an attack on an airport, it is necessary to quickly ascertain the damage, quickly make a determination to eliminate the consequences in accordance with the plan and the actual situation and organize military and civilian forces to carry it out. The focus is on rescuing personnel and aircraft, extinguishing fires, and rushing to repair runways and other facilities according to the situation.

Section 2: Airport Ground Defense

Airport ground defense is a defensive action and protective measure taken to defend an enemy from attacking an airfield from the ground. Sending airborne troops or ground troops to attack and seize airfields is a common combat operation of invaders. Most of the targets are front-line airfields, especially key airfields in the main campaign direction and airfields that are convenient for launching attacks on other targets after occupation. Therefore, strengthening the ground defense of airports, especially first-line airports, is of great significance to ensuring airport security and maintaining the stability of theater defense.

1. Characteristics of airport ground defense

Attacking airfields from the ground is mostly carried out by airborne, because airborne troops can go beyond the front line of the opponent's defense and suddenly attack in depth. In World War II, this method was used by Germany, Japan, the Soviet Union, the United States, Britain and other countries. According to incomplete statistics, of the 47 airborne landings during World War II, there were as many as 17 airborne landings using airfields as airfields.

In some local wars after World War II, airborne assault airfields were more widely used. Under certain conditions, there are also attacks on airfields with ground forces. For example, in World War II, on the Soviet-German battlefield, the German army took advantage of the favorable conditions of the staggered battle lines to send ground troops to attack Soviet airfields many times. During the U.S. war of aggression against Vietnam, the Vietnamese army used guerrilla tactics and repeatedly attacked U.S. airfields. In the doctrine of war in developed countries, all attention is paid to the seizure of airfields from the ground. They believed that seizing the airfield would not only weaken the opponent's air power, but also use the airborne troops at the airfield to launch an offensive from depth and speed up the course of the campaign. Almost all of the military exercises they have carried out over the years have been airborne to seize airfields. In future wars, the enemy's surprise attacks on our airfields from the ground, especially the airborne assaults and seizure of our airfields, will be extremely frequent, and they will have the characteristics of large airborne landing, strong surprise firepower, wide landing area, and fast speed of action. Airfield ground defense has the following characteristics:

First, the ground defense area of the airport is vast, there are many important defense targets, and our defense force is limited, so we must rely on the joint defense of all forces in the theater. Second, the ground defense of airfields, in which the enemy fights in various forms and moves quickly, must have the means and methods to deal with all kinds of complicated situations. Third, airfield ground defense operations will be carried out simultaneously with air raid operations at hostile airfields, and while organizing ground defense operations, it is necessary to make all preparations for countering enemy air raids. Fourth, in airfield ground defense operations, the composition of our defense forces is complex, and it is difficult to organize and coordinate, so it is necessary to implement a comprehensive and unified operational command. Fifth, airfield ground defense, the enemy's airborne operations will be the main form of airfield ground defense, and it is necessary to have a defensive combat action plan that is commensurate with this. The airfield anti-airborne operation has the following characteristics: First, the degree of freedom in airborne operations has increased, and the uncertainties in anti-airborne operations at our airfields have increased. Second, changes in the situation of airborne operations have accelerated, and it has become more difficult for our airfields to grasp the fighters in anti-airborne operations. Third, the elements of airborne combat forces have increased, and the overall anti-airborne combat requirements of airfields have become higher. Fourth, the enemy's ability to fight independently in the airborne has been enhanced, and it is even more difficult to achieve a quick and complete annihilation in the anti-airborne operation. It is not difficult to see from recent local wars that the enemy's anti-airborne operations under high-tech conditions have undergone profound changes in weaponry, combat means, and tactical application, and the airborne troops' independent combat capability has been greatly enhanced.

In terms of weaponry, it has developed from being limited to carrying light weapons in the past to being able to airborne all kinds of heavy equipment, and is developing in the direction of intelligence and high energy. In terms of combat means, it has developed from a transport carrier that was only used to carry out troop maneuvers in the past to an air combat platform that combines mobility and penetration force. In terms of tactical application, it has developed from being used only at a certain important time in combat to being used in the entire process of combat. In addition, the sustained capabilities of airborne operations have increased significantly. As a result, it has significantly increased the difficulty of the rapid and complete annihilation of the anti-airborne operations at our airfields. For this reason, in future airfield ground defense operations, it is necessary to incorporate China's anti-airborne operations into the overall defense system of the theater and rely on the theater defense forces to enhance the overall defense capability. Only by closely relying on the forces of both the military and the civilian sector to organize an effective joint defense of the military and the people can we ensure the victory of our anti-airborne operation.

2. The task of aviation logistics in the ground defense of airports

The enemy attacks the airfield from the ground, either directly by parachuting troops on the airfield area (parachute first and then airborne) to launch an assault, or by airborne outside the airfield and then attacking the airfield; it is also possible to use ground forces to break through our ground defenses and attack, and it may also send small bandits to sabotage. Its purpose is to destroy the airfield or to seize and use it. Therefore, the main task of the ground defense of our airfields is to resist the enemy attacking from the ground, stop its sabotage and use of the airfield, and ensure the smooth implementation of the combat mission by the air force.

3. The main measures for the implementation of airfield ground defense in aviation logistics

Ground operations are carried out in various forms by hostile airfields, and for this reason, it is necessary to have a support plan to deal with various situations. The following measures should be taken in particular.

(1) Formulate an operational plan for the ground defense of the airport

The airfield ground defense operation plan (also known as the airfield ground defense operation plan) is a combat plan formulated by aviation units and stations to defend the airfield against the enemy's airborne and ground attacks. All airfields that may be attacked by the enemy's airborne or ground attacks should draw up an operational plan for the ground defense of the airfield. The basis for the preparation is the intentions of the superiors, the possible attack of the enemy, the forces available to us for ground defense, and the terrain of the airfield area. The main contents of the plan include the judgment of the enemy's situation, tasks and determination, the composition of troops (including troops and militia), their disposition and tasks, the combat plan, the command organization, communications, and other regulations.

(2) Clarify the distinction between organizational command and mission

Clarify the command relationship. The organization of airport ground defense should be under the unified command of the airport defense leading group, and the command and coordination relationship between the airport defense forces and the relevant defense forces should be clarified. In particular, it is necessary to coordinate with the local militia and the troops stationed near the airport, clarify the specific content and methods of coordination, and clarify the defense and combat tasks that each party undertakes.

Clarify the composition of the force. In wartime, the main forces that carry out the ground defense of airports are our airport defense forces, local militias, police forces, army units, and local armed forces.

The troops stationed on the ground are the basic force of ground defense, and they should normally be organized into garrison detachments, mobile detachments, and obstacle setting units. When antiaircraft weapons are available, they are organized into antiaircraft firearms units (sub-units).

The garrison detachment is composed of various formed units, and its task is to resist the incoming enemy on the spot or in the vicinity of the garrison (deployment) site, relying on fortifications and favorable terrain.

The mobile detachment is composed of troops drawn from the guard company and the depot and the maintenance detachment, and is equipped with better weapons and necessary means of transportation. In peacetime, they carry out tasks with the original formed units, assemble under orders in wartime or when there is a direct threat from the enemy, and undertake tasks such as patrolling the airport area, resisting the enemy attacking from the main direction, and strengthening the defense of key points. The size of the strength of the mobile detachment depends on the state of the airfield's strength and the combat mission. Several units can be set up in a unified manner, mobile detachments can also be set up separately in each defense area, or both can be used at the same time.

The obstacle setting team may be composed of some personnel and vehicles of the automobile, field service and other detachments. Prepare obstacle equipment, stand by in the original formation in peacetime, concentrate on concealment when there is an obstacle task, and set up obstacles on runways, taxiways and other places to prevent enemy planes from landing. The militia is an important force in the defense of the airport. Usually organized into battalions, companies, platoons, squads, and other combat units according to the natural distribution of villages, towns, and populations, they participate in defense work according to orders in wartime. The task is to carry out observation, patrol, and vigilance on the periphery of the airport, pin down the enemy with various combat actions, and cooperate with the troops to annihilate the enemy's airborne troops and the enemy attacking from the ground. They can also assist the troops in strengthening the vigilance and defense of the field according to the situation.

When army units and local armed forces are involved in the defense of airfields, they are the main force against the enemy. According to the instructions of the higher authorities, the airfield should take the initiative to contact them, jointly formulate operational plans, and do a good job of coordination.

Divide the operational defense zone. In order to exercise timely and effective command, when organizing the ground defense of airports, it is necessary to divide a number of operational defense areas into operational defense areas in accordance with the natural conditions of the airfields, the characteristics of the support, and the specific conditions of the defense forces, and designate commanders in each defense area to be specifically responsible for the defense tasks of their own areas. Usually, the outfield and the camps, reservoir areas, evacuation areas, etc., are divided into multiple areas according to the terrain or the formed units. Assign a zone commander in each area to be responsible for the organization and command of the region's defense. Units and units that have not been divided into operational defense zones should clearly define the main points of defense in light of the situation and organize a certain number of forces to carry out effective defense.

(3) Organize reconnaissance and reporting services

Organizing reconnaissance and reporting services is a regular task of ground defense at airports. In order to strictly prevent the enemy from attacking and sabotaging from the ground, and to ensure that the enemy who may attack is discovered and informed as soon as possible, so that effective countermeasures can be taken in a timely manner, it is necessary to establish reliable reconnaissance and reporting services. The airfield's reconnaissance and reporting of the enemy's airborne attack is completed by the air defense observation and notification group. In addition to obtaining information mainly from higher-level and friendly and neighboring units, the airport should also organize militia reconnaissance and patrol detachments and patrol detachments of troops stationed at the airport to conduct regular or irregular patrols around the airfield and in the airfield area, so that abnormal signs can be discovered in a timely manner and reported to the police in a timely manner. The airfield patrol detachment may be composed of part of the strength of the mobile detachment, or it may be organized by each defense area on its own, or it may be a combination of the two.

In order to ensure that the report is accurate and timely, the methods and methods of reporting and the patrol route should be clearly defined for the personnel involved in the reconnaissance and reporting. After receiving a report on the enemy's situation, the command post should quickly make a judgment and report it to its superiors, to the troops, and to its friendly neighbors.

(4) Organize joint defense of the military and the people

Organizing joint defense between the army and the people means that the army, the people's armed police force, and the militia will be organized in a unified manner to jointly carry out the task of defending the airport with the cooperation of the local people. Organizing joint defense between the military and the people in the ground defense of airports is an important body for implementing the idea of people's war; it can resolve the contradiction of insufficient troop strength and make it easier to make use of the natural distribution conditions of the militia to form a ring defense on the periphery of airports; in particular, it can quickly engage the enemy and annihilate the enemy when it has not yet gained a firm foothold during the anti-airborne landing; and it is also possible to carry forward the advantages of being familiar with people, places, and situations with small groups of bandits to discover, encircle, and suppress them in a timely manner, so as to ensure the safety of airports.

In organizing joint defense between the army and the people, we should adhere to the principle of giving priority to the strength of the army and giving full play to the role of the militia. It is necessary to uniformly organize, allocate and assign tasks to military and civilian resistance forces.

(5) Clarify the deployment of troops and organize circular defense

Ring defense is a defense that can resist the enemy's attack from any direction around the defense area or target, and is the basic form of defense to defend important rear targets. When weaving the ring defense of the airfield, because the defense area is large and the defense force is small, it is necessary to control the depth and some key points around it to resist the enemy. The basis for the formation of ring defense is the superior enterprise, the task of the defense of the airport, the enemy's situation, our situation, the terrain, etc. The specific method is usually to first judge the enemy's situation, clarify the main points, and then deploy troops.

Judging the enemy's situation is mainly to judge the timing, method, strength, direction, and intention of the enemy to attack. If the enemy is likely to be airborne in the area of the airfield, then its landing field should be judged. The conditions for choosing an airborne landing site are usually as follows: it is easy to identify from the air, there is sufficient airborne territory, it is convenient to launch an attack on the target, there is no large force of the opposing side nearby, especially the tank department, and the air defense is weak. The airborne landing site is usually selected in a suitable area 1-2 kilometers away from the airport runway, so that the parachute advance detachment can control the airport and then carry out the main landing.

The main point of airport defense is the point where we must fight between the enemy and the enemy. It usually includes: command posts, aircraft and aircraft evacuation areas, oil depots, ammunition depots, and other important deployment sites, commanding heights where the airfield can be controlled by firepower, and commanding heights where the enemy must pass through the road to attack the airfield. When countering airborne, it is also necessary to choose a commanding height that can control the enemy's airborne landing field with firepower. If there is no high ground to use, the terrain should be modified, fortifications should be constructed, and key points should be formed.

The basic principle for deploying troops is to concentrate forces on key points. That is, to meet the needs of the main directions and key points as much as possible, and to deploy a relatively large number of relatively strong forces near the enemy's airlanding site or at key points, so as to concentrate forces to annihilate the enemy; For example, mobile detachments, support detachments, and militia detachments should not be deployed too far away from their stations so that they can be easily assembled; they should be convenient for commanding and concealing and carrying out tasks. That is, the locations where each detachment is deployed should have the necessary conditions for communication and concealment, and be convenient for maneuvering to the places where they are carrying out their tasks. Specific deployment, usually the main force of the mobile detachment is deployed in the fortifications or hidden terrain of its station close to the main direction,

the other part can be assembled in a moderate location for easy command and concealment, as a reserve. Obstacle crews can be deployed in concealed locations close to the flight site. Other detachments stationed at the airfield were deployed on the spot to fight the enemy nearby. The militia basically follows its natural distribution, controls key points in the vicinity, forms a circular deployment around the airport, and is prepared to use a larger number of troops to coordinate forces in the main direction to annihilate the enemy. It is also possible to designate part of the troops to assist the troops in garrisoning important facilities such as warehouses. When army units and local armed forces take part in the defense of airfields, they should carry out their main tasks at important times and in major directions. For example, encircling and destroying the enemy's airborne troops, holding on to key points, and encircling and annihilating the enemy who broke through into the airfield. They are usually deployed in part of their forces near the main direction of the airfield area, and the main force enters the battle after the enemy situation is determined.

(6) Actively resist the enemy

1. Fight against the enemy parachuted in the airport area

To resist the enemy parachuted at the airfield, it is mainly necessary to seize the two seasons of destroying the enemy's carrier aircraft and annihilating the enemy's vanguard detachment.

The first attack carrier. The destruction of the enemy's carrier aircraft is a favorable opportunity to completely annihilate the enemy's airborne forces and thwart their attempts. When the enemy's aircraft are in the air, the anti-aircraft firearms unit (sub-unit) should be directed to fire fiercely. On the premise of not revealing the deployment of our anti-airborne forces, we can also organize light weapons to shoot down in one fell swoop or force them to fail to accurately land in the air.

Hit the airborne again. Enemy paratroopers suspended in the air should rely on favorable terrain to carry out accurate and fierce shooting, and in particular, it is necessary to destroy enemy commanders who use different color umbrellas and command equipment. When destroying the enemy's guidance detachment, it is especially necessary to concentrate firepower to destroy its guidance device. Setting up obstacles at the landing site of enemy aircraft is also an effective way to destroy enemy aircraft or prevent them from landing. When it is determined that the enemy plane is attempting to land, it is necessary to immediately dispatch an obstacle formation team to quickly set up all kinds of obstacles at the enemy plane's landing site that are sufficient to hinder the enemy plane's landing. When setting up obstacles on the runway, the obstacles used should be easy to quickly lay and remove.

Three measurements landed. Destroying the enemy's paratroopers from the time they leave the plane to assemble is also a favorable opportunity to destroy the enemy. In order to seize this advantageous and short-lived fighter plane, it is necessary to immediately occupy the preset position of destroying the enemy after the enemy's airborne landing attempt is discovered, strengthen observation, and prepare for battle. When the enemy parachutes, he should direct his troops to exert the full power of their firearms and make every effort to annihilate the enemy before assembling and deploying.

For the enemy who lands, you should take advantage of its unstable foothold and inflict a large number of casualties with heavy firepower. If the enemy's forces are not large, it is necessary to take swift and resolute combat action to encircle and annihilate them on all sides, interspersed with divisions, and to encircle and annihilate them by taking advantage of the confusion; the enemy's airborne combat vehicles and artillery should be destroyed by concentrating forces and firepower. In particular, it is necessary to prevent enemy paratroopers from approaching and using large weapons that have been dropped and landed by air. In addition, it is also necessary to give full play to the characteristics of the militia, take advantage of the conditions for pre-preparation, and immediately open fire in the form of an ambush without waiting for orders, or detonate all kinds of anti-airborne mines that have been set in advance to annihilate the enemy.

2. Fight off enemies attacking the airport from the ground

Adjust the deployment and protect it tightly. When the enemy who landed in the airborne is strong and has launched an attack on us, we should command the troops to hold their positions and shrink their forces to hold the main points according to the situation. Such as aircraft evacuation areas and caverns, command post tunnels, important warehouses and other support points with preset fortifications. It is necessary to combine the full development of firepower with the setting up of obstacles, constantly kill and injure the enemy, try to stop the preparation of flight sites and the landing of planes with firepower, and prepare to cooperate with reinforcements to annihilate the enemy.

Stick to the key points and block the enemy and wait for help. The enemy attacking from the ground (including the enemy who attacks the airfield after landing on the perimeter of the airfield) usually has relatively strong firepower, and the main measures to counter these enemies are to organize forces to destroy the enemy on the periphery and to hold on to key points to destroy the enemy. If the attack is on a small group of the enemy, then the military and civilian forces should be organized to encircle and annihilate it.

When the enemy's ground forces attack the airfield, they should try their best to annihilate the enemy on the periphery of the airfield, or gradually weaken or delay the enemy, so as to gain time for the airfield to organize defense. To this end, it is necessary to give full play to the might of the joint defense of the army and the people, command the nearest troops and militia, and strike, pinch, and consume the enemy everywhere. In particular, in the direction of the enemy's advance, it organized forces to hold commanding heights, battle villages, control arteries, bridges, and ferries, and used a variety of tactical means to annihilate the enemy.

At this time, the troops stationed in the field should quickly prepare for defense. If it is determined that the enemy's forces are small, it is possible to concentrate the main forces in the main direction, occupy key points, and try to form a depth disposition in preparation to annihilate the enemy by relying on the terrain. Other detachments are deployed for self-defense and cooperate with each other in the vicinity. If it is determined that the enemy's forces are relatively large, it is necessary to appropriately shrink the forces, prepare to hold a few key points, and only use a small force to block the enemy in the main direction. At the same time, it is necessary to organize tight protection. Personnel and vehicles that are not on duty to resist and combat duty should be quickly evacuated and concealed,

aircraft can be lifted into the air, put into storage, or evacuated and concealed on the ground as planned to avoid or reduce losses.

Maneuver according to the situation and destroy the enemy on the periphery. When the enemy is attacking the airfield, it is necessary to concentrate firepower in front of the formation to form a dense network of fire, which can be combined with various obstacles to kill and injure its living forces and stop its attack. If the enemy is repulsed, we will generally only organize a fire pursuit, and at the same time strengthen observation, continue to ascertain the enemy's situation, adjust our deployment, and prepare to meet the enemy again; if the enemy suffers serious casualties and the situation is favorable to us, we can carry out a short-distance pursuit with the cooperation of the militia and completely annihilate the retreating enemy. If the enemy's forces are strong and part of the airfield is occupied, it is necessary to adjust the deployment in a timely manner, stick to some key points, make full use of underground fortifications to pin down the enemy, stop him from sabotaging or using the airfield with active combat actions, and be prepared to cooperate with reinforcements to annihilate the enemy.

Section 3: Airport Protection

Airport protection is the protection of nuclear, chemical, biological and other weapons at airports. Nuclear and chemical weapons are weapons of mass destruction and destruction. Since 1899, the use of chemical weapons has been banned by many international conferences, but almost all of the large and small wars that have occurred in the past century have been recorded killing and injuring soldiers and civilians. Since the advent of nuclear weapons in the late Second World War, nuclear combat readiness has been strongly condemned by world public opinion. At present, the call for world peace is getting louder and louder, and a nuclear war cannot be fought for a while, but a conventional war under the threat of nuclear weapons has to be guarded against, and at the same time, with the miniaturization of nuclear weapons, the possibility of using nuclear weapons in local wars has increased. Therefore, strengthening airport defense is still an important part of doing a good job in airport defense.

1. The lethal and destructive effects of nuclear weapons on airport personnel

Nuclear weapons are weapons that use the various effects of atomic nuclear reactions to have a lethal and destructive effect. Its lethal and damaging factors include light radiation, shock waves, early nuclear radiation, nuclear electromagnetic pulse and radioactive contamination. These factors have a great lethal and destructive effect on airport personnel, materials, equipment and equipment. Once an airfield is subjected to a nuclear attack, it will cause great difficulties for the combat operations of the air force, and it will not even be able to carry out its combat mission. Its main lethal and destructive uses are as follows:

(1) Killing and injuring living forces

A nuclear weapon assault on an airfield can cause heavy casualties. For example, the air explosion of a 100,000-ton nuclear bomb (120 meters high) can have a moderate kill radius of 3,210 meters for people exposed in open ground, and 600-800 meters for personnel in the reinforced shelter. According to this calculation, if such a nuclear explosion occurs over the runway, all exposed personnel in the field and some personnel who have entered the fortifications will be incapacitated. It is worth noting that because nuclear weapons have a variety of lethal factors, the types of injuries and injuries of the injured are also complex. At this time, it is necessary to organize a large number of personnel to rescue the wounded, so that the combat effectiveness will be even more affected. In addition, due to the tremendous power of the nuclear explosion and the series of scenes after the explosion, people will be strongly stimulated psychologically, and even panic and lose their self-control. All these have a great impact on the combat effectiveness of the troops stationed at the airport.

(2) Destroying aircraft, vehicles, and other equipment and materials

The shock wave and light radiation of a nuclear explosion can cause damage to aircraft, vehicles and other equipment and materials. If these equipment and materials are contaminated with excessive radioactivity, they cannot be used, even if they are not damaged. The following table shows the distance of damage to aircraft and vehicles caused by a nuclear explosion.

Table 13-1: Radius of destruction of a nuclear weapon ground explosion (with a specific height of 0)

Destruction target	Equivalent (10,000 tons)				
	2	10	20	50	100
J-6 aircraft (light)	1180	2050	2560	3450	4420
H-6 aircraft (light)	2200	3780	4610	6450	8130
Car (medium)	780	1370	1780	2500	3200
Vertical tank depot (medium)	850	1420	1800	2450	3100
Horizontal tank depot (medium)	650	1129	1400	1900	2380

As can be seen from Table 13-1. When a 100,000-ton nuclear bomb hits an airfield, airplanes and vehicles parked in the open will be unusable, unprotected consumable oil depots will be moderately damaged, and airborne materials will be scattered and destroyed. In addition, light radiation can cause flammable materials to burn, causing fires.

A nuclear explosion can also destroy an aircraft flying in the air, and the focus of its weak shock wave can affect the operation of a wider space. The near-zone focus is 30-80 km away from the blast center, and the far-zone focus is generally 130 km away.

(3) Destroying airfield roads and other buildings

If a nuclear bomb explodes at a low altitude at an airport, it will cause ablation of the surface layer of the cement concrete pavement, damage to the pavement and foundation structure, and the pavement will be covered with molten slag and gravel. A ground explosion (higher than 10) can also create a huge crater. Except for the surface ablation of the pavement surface, which can be used after cleaning, the above conditions affect the flight to varying degrees. For example, a nuclear bomb ground explosion with a yield of 12,000 tons, there are more cracks on the cement concrete pavement 170 meters away from the explosion center, and the crack width is 0.5-3 mm. A nuclear bomb with a yield of 100,000 tons exploded on the ground of the soil. The crater has an average diameter of 186 meters and a depth of 42 meters, and the radioactive contamination is very severe. Such craters are practically irreparable in wartime

In addition, a nuclear explosion can cause buildings to collapse and cause indirect damage to personnel, equipment and materials.

(4) Seriously affecting all kinds of service support

Because the nuclear explosion has reduced the number of personnel in various logistical support areas, destroyed logistical equipment, and damaged materials and equipment, and the logistical tasks at this time are often more arduous, the various logistical support work is extremely difficult. For example:

Both cable and radio communications are susceptible to damage and interference from various damaging factors caused by nuclear explosions, and in severe cases, communications are disrupted. In particular, electronic components, which are widely used in command and communication equipment, are prone to burn out under the action of nuclear electromagnetic pulse. All this will make it impossible for the communications detachment to carry out its support tasks and will directly affect the unit's communications liaison and operational command.

A nuclear explosion can damage roads and affect vehicle transportation. When the transportation line is attacked by a ground explosion, there are destruction areas, blockage areas, fire areas and contamination areas from the explosion center to the outside.

The first three areas have a serious impact on transportation and even make it impossible for vehicles to pass. Contaminated areas may also injure transport personnel and contaminate equipment and materials with radioactive dust. At this time, there will be a serious contradiction between the large increase in the demand for transportation and the sharp reduction in transportation efficiency due to the lack of means of transportation, the shortage of transportation personnel, and the obstruction of roads.

Health support is also facing a huge test. The airport was subjected to a routine air strike, with a total attrition rate of about 5-7%, of which 80 per cent were wounded. In the event of a 20,000-ton nuclear bomb ground blast attack, combat attrition alone may exceed 20%, of which 90% are wounded. If there are 3500 people at the airport, the wounded can be up to 630 people. Moreover, it has a wide range of distribution, many types of injuries, and complex injuries. Under the conditions of the weakening of the security forces and the harsh environment for treatment, the support work will be very difficult.

2. The lethal and destructive effects of chemical weapons on airport personnel

Chemical weapons are a general term for all kinds of weapons and equipment that kill and injure living forces with chemical agents. It kills and injures living forces through human and animal inhalation, skin penetration and accidental ingestion. Foreign militaries believe that chemical weapons are "atomic bombs of poor countries" and have the advantages of low cost, high lethality, and no damage to equipment and facilities. A chemical attack on an airfield would seriously threaten the safety of personnel and affect various combat operations.

(1) Killing and injuring living forces

The agent can easily render unprotected personnel hors combat, and at a concentration of 0.1 mg/L of sarin in the air, half of unprotected personnel will be killed for one minute of exposure. Modern fighter-bombers, the maximum bomb load of a brigade can reach tens of tons, and if 250 kilograms of sarin poison bombs are used, several square kilometers of an area can be poisoned. Its lethality is much higher than that of conventional weapons. Persistent agents can poison organisms for a long time and poison people through skin penetration or ingestion. In the event of an attack by the above-mentioned aircraft loaded with mustard gas, the combat attrition rate in the attacked area will also reach 20 per cent. In particular, it is worth noting that the poisonous air has the characteristics of drifting with the wind and penetrating everywhere, which will cause harm to personnel in unsealed fortifications and personnel wearing inaccurate personal protective equipment.

(2) Influencing combat operations

Chemical weapons can not only injure people instantaneously, but also have a delayed killing effect.

In places where air circulation is not easy to circulate in buildings or low concave terrain, it is not easy for toxic air to spread. Personnel are allowed to enter only after disinfection or wearing gas masks, and access to floors, equipment, or other objects contaminated with persistent agents must be disinfected or wearing protective equipment. In this way, not only was the combat time greatly delayed, but also the eyesight, hearing and endurance of the personnel were greatly affected. For example, after wearing a gas mask, the field of vision is reduced by 30 percent, sometimes blurred, the vision is distorted, the communication distance is shortened by two-thirds, the voice is distorted, and the error rate increases; and when wearing a mask and a gas suit, the physical strength of the personnel will be reduced, and the working time will be shortened. All these have reduced the combat effectiveness of the personnel to varying degrees and affected combat operations.

(3) Increase the difficulty of logistical support

In addition to the reduced capacity of logistics personnel due to the use of protective equipment to carry out support, there are also many factors that make logistics support more difficult. For example, when a road is poisoned by a persistent agent, it must be detoured or disinfected before it can be passed. If the passage is forced, protective measures must be taken, which will affect the timeliness and reliability of transportation; after the persistent agent infects the ground, equipment and other objects, it is necessary to organize manpower and material resources to disinfect them, and the task is very heavy; In addition to taking ordinary rescue measures, it is also necessary to determine the use of first-aid drugs and methods according to the symptoms of poisoning, and the task of rescue and treatment is extremely arduous; if the grain and water sources are infected with poison, it will also bring great difficulties to the livelihood support.

3. The tasks of aviation logistics in the protection of airfields

The main tasks of protection against nuclear, chemical, and biological weapons are to organize protection training to enhance the combat capability of the troops under the conditions of using these weapons; to organize protection closely to reduce or avoid losses caused by attacks; to actively eliminate the consequences of attacks and quickly restore support capabilities; and to actively resist the enemy when conditions permit.

4. The main measures for the implementation of airfield protection in the logistics of the aviation forces

(1) Formulate a plan for "defense against nuclear, biological and chemical weapons."

The "defense against nuclear, biological, and chemical weapons" plan was formulated for the purpose of accomplishing the task of protecting nuclear, chemical, and biological weapons in advance. It is an integral part of the aviation logistics emergency action program.

The main elements of the program are the organization and tasks of the protection organization. The protection organization includes a command group, a professional protection and support team, and a part-time protection team. The command group is the command organ for airport protection, and is composed of the headquarters of the aviation unit stationed at the airport and the relevant personnel of the station; the specialized protection detachment is responsible for the observation, reconnaissance, decontamination, and rescue of nuclear, chemical, and biological weapons, and is organized by the station in a unified manner; the part-time protection group refers to the protection force organized by the various detachments stationed at the airport to solve their own protection problems, and it is composed according to the protection task and the specific conditions of each detachment.

(2) Construct fortifications for protection

This is an important measure against nuclear and chemical weapons. Closed fortifications can effectively prevent poison attacks. All kinds of fortifications have a certain anti-nuclear weapon effectiveness. For example, in the event of a nuclear explosion, the radius of light lethality is one-fifth to one-quarter of the exposure of a person entering a light shelter and one-sixth to one-fifth of a person entering a reinforced shelter. When the 200,000-ton nuclear bomb is exploded in the air, the slight damage radius to the Jian-6 aircraft can reach 3.47 kilometers, and when it enters the aircraft shelter, the damage radius will be greatly reduced. Because the probability of damage to the aircraft shelter (2 kg/cm² square centimeter) from the center of the explosion is only 48%, and the probability of damage to 1 km drops to 15%.

Airports should improve all kinds of protective fortifications in a planned and step-by-step manner. It is necessary to enhance their ability to resist the shock wave of a nuclear explosion; civil air defense fortifications must improve the "three defenses" facilities and solve the problems of water supply, drainage, moisture prevention, and dehumidification; and all kinds of fortifications must meet the requirements of being convenient for protection and for carrying out combat missions. When there is a threat of hostile situation, the fortifications should be used quickly and rationally.

(3) Organize evacuation, concealment, and camouflage

Evacuation, concealment, and camouflage can not only make it difficult for the enemy to discover and select targets for attack, but also have a certain protective effect, and are commonly used protective measures in modern warfare.

Evacuation must conform to the principle of being both well prevented and easy to fight. When organizing ground evacuation, the evacuation area should be set up on the anticline of the high ground and the upwind direction that may be attacked by chemical attack as much as possible and make full use of the terrain and features to conceal it, and take a variety of measures to camouflage. When determining the aircraft evacuation zone under general conditions;

forward airports and deep airports should be able to prevent a 50,000-ton or 400,000-ton nuclear bomb from destroying two evacuation areas, or an evacuation area and an important target (such as a runway) at the same time. Organizing the air evacuation of aviation units can achieve good results. When conditions permit, the aircraft can be directed to take off as planned, transfer or be on standby in the air.

(4) Tightly organized observation and reporting services

Tightly organized observation and reporting can promptly discover the signs and attacks of the enemy's use of nuclear, chemical, and biological weapons, so that warnings can be issued in a timely manner and protection can be organized. The airport's notification of nuclear, chemical, and biological weapons is contained in the airport's air defense information network. When there is a threat of hostile situation, special nuclear, chemical, and biological observation posts should be set up at the airport. In order to save troops, these observation posts can be used in conjunction with air defense observation posts when the technical conditions are available. The mission of the observation post is to observe (detect) nuclear, chemical, and biological weapons attacks, report the results of observations, and relay warning signals according to orders.

(5) Organizing radiation and chemical reconnaissance

Radiation reconnaissance is a reconnaissance organized to discover and ascertain the distribution of irradiation rates in areas contaminated with nuclear explosions. Its task is to find out whether the main areas are contaminated, the distribution of irradiation rates, and to mark the contaminated areas. Chemical reconnaissance is a reconnaissance organized to find out the situation of an enemy's chemical attack. Its task is to find out whether the ground, air, and objects in the areas where the troops are regularly active are infected with drugs, the type, extent, and scope of the infection, and to mark the areas of poisoning.

The radiation and chemical reconnaissance teams at the airfield are dispatched by specialized anti-chemical warfare detachments or by trained part-time personnel. The commander of the airfield protection shall keep abreast of the results of his reconnaissance and determine the measures to be taken by the troops when operating in the affected area.

(6) Organize protective equipment guarantees

Protective equipment is equipment that protects humans and animals from poisons, radioactive substances or biological warfare agents. Such as gas masks, gas gowns, etc. The guarantee of airport protective equipment is organized by the station. In wartime, it is generally necessary to follow the principle of first urgency and then delay, and the combat detachments should be distributed first and then the general personnel, so as to ensure comprehensive supply, key support, and timely replenishment. It is necessary to guide the troops in the correct use of protective equipment, and promptly organize the repair and maintenance of protective equipment so that it can always be kept in good technical condition.

(7) Organize dose supervision

The examination and control of a person's exposure to nuclear radiation is called dose supervision. This is an important measure to protect the troops from nuclear radiation. The main tasks are:

Establish an irradiation registration system. Usually, the detachment is the unit to establish personnel irradiation files, so as to grasp the radiation situation of the troops in a timely manner.

Monitor the amount of radiation to the troops. Under normal circumstances, the standard for nuclear radiation control is that a person should not be exposed to more than 50 at a time (within 4 days), and if the radiation reaches or approaches 50 at one time, he or she should avoid further exposure within one month after exposure. The cumulative annual exposure of personnel shall not exceed 150. The cumulative lifetime radiation dose does not exceed 250. In order to reduce the amount of irradiation of personnel, when on duty in the contaminated area, they should rotate their work in batches, strictly use protective equipment, and try to take a car or detour when passing through the contaminated area.

(8) Organize rescue and decontamination

After being attacked by the enemy's nuclear, chemical, or biological weapons, the wounded should be rescued promptly. In addition to rescuing the wounded in a nuclear attack in a regular manner, it is necessary to prevent further contamination and external exposure; for those who have been attacked by chemical or biological weapons, they should promptly use appropriate drugs and methods to give first aid and then evacuate them for treatment as appropriate.

Decontamination is a general term for disinfection and elimination of radioactive contamination. It is an important element in eliminating the consequences of a nuclear, chemical and biological weapons attack. It mainly includes the decontamination of personnel, equipment, important grounds, drinking water, grain, etc.

(9) Tissue drug prevention and sterilization

Drug prophylaxis is when a person is pre-given drugs to protect against certain poisons, biological warfare agents, or radiation damage. This is a precautionary measure to mitigate or avoid harm to personnel from nuclear radiation, poisons and biological warfare agents. Sterilization is a measure against biological weapons.

When organizing drug prevention and sterilization, it is necessary to ascertain the nature and scope of infection, inject or make people who have been infected or will enter the contaminated area take corresponding preventive drugs, and carry out mass sanitation and epidemic prevention work to eliminate germs and the conditions for their breeding.

(10) Resisting the enemy's nuclear, chemical, and biological weapons assault forces

The most effective protective measure is to eliminate the enemy's nuclear, chemical, and biological weapons assault forces before the assault.

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This task is usually organized and carried out by the commander of the theater of operations. In accordance with the requirements of his superiors, the commander of the airfield commanded his subordinate aviation units and anti-aircraft firing weapons to actively annihilate the invading enemy's aircraft.

Chapter 14: Rush Repairs to Destroyed Airports

With the development of science and technology and its wide application in air attack weapons, in future wars, the hostile airfield will carry out surprise attacks with higher accuracy and greater destructiveness, making it more difficult to repair our airfield. Therefore, whether or not the destroyed airfields can be quickly restored in wartime and that the air force units can be lifted into the air at any time is of great significance to enhancing the survivability of the air forces and ensuring the victory of the operations.

Section 1: Styles and Means of Assaulting Airfields

Under the conditions of high-tech warfare, when an airfield is attacked by the enemy, it will inevitably cause serious damage to the road, making the task of repairing the road extremely arduous and complicated.

1. Basic styles of destroying airport pavement

(1) Destroying the flatness of the pavement

When modern combat aircraft take off, they have special requirements for the airfield runway they rely on, which requires that the runway must have sufficient strength, rigidity, and good flatness. When the aircraft takes off and lands, the wheels of the aircraft produce vertical pressure and horizontal force on the pavement, and under the action of these external forces, tensile stress, compressive stress and shear stress will occur inside the pavement structure. If the strength of the whole or a part of the pavement is insufficient to resist the action of these external forces, the pavement will be damaged such as fracture or subsidence, which will affect the normal take-off and landing of the aircraft. Similarly, without good flatness, it will also affect the normal take-off and landing of the aircraft. Therefore, if the flatness, strength and stiffness of the runway surface of the airport are destroyed, the aircraft will not be able to take off and land normally. The use of aerial bombs and some artillery shells to attack the airfield pavement will cause the above-mentioned performance indicators of the pavement to be destroyed, the most obvious feature is the appearance of craters.

If the crater area is small, it will be repaired quickly. Therefore, when attacking the airfield road, it is necessary to cause a large crater or a large area of pavement structure damage as much as possible.

(2) Destruction of runways in sections

The destruction of runways is an important means of seizing air supremacy. In modern warfare, if the belligerents attempt to destroy the entire runway of the other side's airfield at one time, it will be difficult for the two belligerents to destroy the runway in sections, and there will be many craters along the axis of the pavement that are separated by a certain distance, and the entire runway will lose its use value and achieve the purpose of preventing the aircraft from taking off. This is mainly due to the fact that modern combat aircraft (except for those with vertical take-off and landing) need to glide for a certain distance to take off or land. Taking our military aircraft as an example, the take-off and running distance of the J-8B aircraft is 637 meters (afterburner take-off) and the landing and running distance is 940 meters; the take-off and running distance of the Su-27 aircraft is 500 meters and the landing and running distance is 600 meters; the take-off run distance of the H-6 aircraft is 1,160 meters when the take-off weight is 60 tons, 2,070 meters when the take-off weight is 75.8 tons, and the landing run distance is 1,050 meters. At present, the runway of our military airport is generally 2000-2800 meters long, and as long as the runway is blown into 5-7 sections, the runway loses its use value.

2. The main means of assault on airfields

The means used to destroy the airport pavement by surprise attack mainly include aviation explosive bombs, anti-runway weapons, guided bombs, and long-range precision strike weapons. Due to the different types of bombs, the damage effect on the airport pavement after explosion is also different.

(1) Aviation blasting bombs

An aerial blasting bomb is an aerial bomb that destroys a target with the help of a shock wave (or blasting wave) generated when the bomb body explodes. The size of the blasting shock wave is related to the amount of charge, the more charges, the larger the shock wave, and the greater the destructive power. These bombs explode on the pavement and can not only destroy the structure of the concrete pavement and foundation, but also throw concrete fragments and form craters.

Table 14-1: Size of the crater of the US MK-80 series aerial bomb in ordinary hard soil

Code Name	Name		Crater	
	Pounds	Kilograms	Diameter (meters)	Depth (meters)
MK-81	250	118	2-3	0.5-1.0
MK-82	500	240	4-5	2-3
M-117	750	365	7-8	3-4
MK-83	1000	447	8-10	4-5
MK-84	2000	884	12-14	6-8
M-118	3000	1370	>25	10-15

Note: This table is based on on-site observation data

(2) Anti-runway weapons

Anti-runway weapons are weapons designed to destroy airfield tracks. Since the advent of anti-runway weapons in the 60s of the 20th century, they have attracted great attention from the militaries of various countries because of their remarkable achievements in combat applications, so that they have developed rapidly, and have now developed to more than 10 models in two categories.

1. Anti-runway bombs

The anti-runway bomb is a rocket booster added to the ordinary aviation blasting bomb. Due to its high penetrating ability, it is much larger than the penetration depth and crater diameter formed by a blasting projectile under the same conditions. For example, the "Durandal" anti-runway bomb produced in France, with a body length of 2.7 meters, a diameter of 0.22 meters, and a total weight of 195 kilograms, can penetrate a 70-centimeter-thick concrete pavement, and can form a crater with a diameter of 5 meters and a depth of 2 meters, and can also set off a pavement with a diameter of 15 meters around the crater, and its destruction area is greater than 250 square meters.

Other such bombs include: the BAP 100 anti-runway bomb in France, the BRFA anti-runway bomb in Spain, and the anti-runway bomb produced by Rockwell in the United States.

2. Anti-runway sub-bomb box

Compared with ordinary bombs, the main characteristics of its damage to the runway are as follows: First, it has formed many craters and a large area of destruction. For example, the MW1 aircraft submunitions of the Federal Republic of Germany contain 224 small penetrating munitions in each submunition box. If low-altitude bombs are used, the area of destruction of airfields can reach 90,000 square meters, and if high-altitude bombs are dropped, the maximum area of destruction can reach 1.25 million square meters. Second, there are many unexploded ordnances left behind, and it is difficult to repair them. After the anti-runway bomb box attacked the airport road, in addition to leaving a large number of craters, it also left many unexploded bombs or mines in the destruction zone. For example, a kind of "direct attack airfield combination bomb" developed by the US military, that is, the DAACM anti-runway submunition, which consists of 8 kinetic energy-boosted armor-piercing bombs (also called penetrating bombs) produced by Marsh Corporation of the United States and 24 HB-876 surface anti-personnel mines produced in the United Kingdom. After the fuse ignites the booster, the kinetic power-assisted armor-piercing bomb penetrates the runway by increasing the impact velocity, blowing up 8 craters, and 24 delayed blasting mines are staggered around each crater, which is specially used to interfere with and destroy the repair work of the airport. Another example: JP233 aviation submunition produced by the British company Hunting Engineering, and mainly used to destroy airport runways. JP233 aviation submunition has a bathtub-sized casing with two magazines in the shell, one is the SG-357 bomb box, located at the rear of JP233, containing 30 small bomblets that destroy the road, and the other is HB-876 mine box, located at the front of JP233, contains 215 small surface anti-personnel mines. After the explosion of the SG-357 small bomb, many small craters were created on the runway, which hindered the take-off of the aircraft, while HB-876 small mines were scattered around the runway, detonating at different times at regular intervals, and could explode intermittently for several days, mainly preventing the crater repair work.

(3) Guided bombs

Guided bombs are a new type of bombs that are improved and developed to adapt to the precision bombing carried out by modern tactical attack aircraft, and are improved and developed by adding head guidance and control components and power units on the basis of ordinary aviation explosive bombs. For example, the U.S. military's Paveway series of guided bombs modified on the basis of MK82 and MK84 can reach a maximum accuracy of no more than 1 meter, and can explode inside a human target, so the crater formed is large and deep. Undoubtedly, it poses a great threat to airport runways, aircraft shelters, air defense command centers, etc.

(4) Long-range precision strike weapons

Long-range precision strike weapons, with high guidance accuracy and strong penetration capabilities, can effectively destroy high-value targets, and are generally used for assault aircraft bunkers, air defense command centers and other solid and important targets, and sometimes also used to assault airport runways, and are effective means of carrying out early attacks and key strikes in war. For example, the US military has the AGM-130 (launch range 74 km), "Slam" (launch range 93 km), JSOW (launch range 90-110 km), the medium- and long-range "Slam enhanced" (launch range 186 km), and the joint defense zone launched air-to-surface missile JASSM outside the joint defense area (launch range 280-330 km) and so on. The above-mentioned long-range precision strike weapon was used by the US military in the Kosovo War, causing serious damage to the Yugoslav airfield.

3. Destruction of airfield paths by nuclear weapons

After an airport runway is attacked by nuclear weapons, the surface layer of the concrete pavement may be burned, the pavement and foundation structure may be damaged, and the pavement will be covered with slag and gravel and craters may be formed. These will have a direct impact on the use of the runway.

Pavement ablation. Under the action of optical radiation from a nuclear explosion, the surface layer of the concrete pavement is melted, which in turn blisters and peels. Generally speaking, surface ablation can only occur when a high-yield nuclear bomb explodes in the air. Ablation does not cause structural damage, and the runway can be restored to service by simply removing the ablation layer.

Pavement structure failure. The shock wave generated by a nuclear explosion can cause the destruction of concrete pavement structures within a certain range. Under the action of shock wave and the acceleration of formation displacement caused by propagation in the formation, cracks, local settlement and protrusions will occur on the concrete pavement. For example, a nuclear bomb ground explosion with a yield of 12,000 tons (specific height of 0), 170 meters away from the explosion center, under the action of 18 kg/cm² overpressure, the quadrilateral concrete road slab has many cracks, and the crack width is 0.5-3 mm, and the hexagonal concrete road slab is dislocated by 5 mm at the joint, and the individual plate protrusions are 6 mm high. The range of destruction of the pavement structure is related to the yield of the nuclear bomb and the mode of detonation. Generally speaking, a large yield has a larger range of damage than a small yield, and a ground explosion has a larger range of damage than an aerial explosion.

Table 14-2: Destruction of concrete pavement by nuclear explosion

Destruction Level	Destruction radius							
	Low-altitude explosions				Ground explosions			
	10,000 tons	20,000 tons	100,000 tons	1,000,000 tons	10,000 tons	20,000 tons	100,000 tons	1,000,000 tons
Mild	240	310	520	1130	250	320	540	1200
Medium	150	185	315	680	160	200	350	750
Severe	90	115	195	420	130	170	285	620

Note: The specific height of the low-altitude explosion in the table is $70 \text{ m} \sqrt[3]{\text{thousand tons}}$, and the specific height of the ground explosion is $20 \text{ m} \sqrt[3]{\text{thousand tons}}$

The pavement is covered with slag and sand. After a nuclear attack on the airport, the pavement was often covered with slag and gravel, and the covering had to be removed before it could be restored. The amount of covering depends on the mode of explosion, the yield, and the location of the blast center. Generally speaking, ground explosion is more than air explosion, large yield is more than small yield, and it is closer to the explosion center than far from the explosion center. For example, if a small-yield nuclear bomb touches the ground, the thickness of the covering 80 meters from the center of the explosion in the upwind direction is 10-50 cm, the thickness of the covering at 170-400 meters is 0.5-5 cm, and the distance of the covering with a thickness of 0.5-5 cm in the downwind direction can reach 1,000 meters.

Crater. When a nuclear bomb explodes on the ground (specific height $\leq 10 \text{ m} \sqrt[3]{1,000 \text{ tons}}$). Due to the action of high temperature, high pressure and high-speed moving airflow and the formation displacement and seismic acceleration caused by its propagation to the formation, the soil or rock near the explosion center is destroyed and thrown away, forming a huge crater, and the formation structure around the crater will also be damaged to varying degrees. According to the damage characteristics of the crater and its surrounding strata, it can be roughly divided into three areas: crater, crack and compact. Tests have shown that when a nuclear weapon explodes on a rock, the crater is smaller than when it explodes in soil, and the crack zone is significantly reduced, and there is no compacted zone.

Table 14-3: Crater diameter and depth (specific height of 0) at the time of nuclear explosion

Destruction of target	10,000 tons		20,000 tons		100,000 tons		1,000,000 tons	
	Diameter (m)	Depth (m)	Diameter (m)	Depth (m)	Diameter (m)	Depth (m)	Diameter (m)	Depth (m)
Soil	86	19.4	108	24.5	186	42	400	90
Rock	69	15.5	86.4	19.6	149	33.6	320	72

It is extremely difficult to fill the craters created by a nuclear explosion. As shown in Table 14-3, a nuclear bomb with a yield of 100,000 tons exploded on contact with soil, with an average crater diameter of 186 meters and an average depth of 42 meters. To fill up and repair such a crater, 2,000 people (manual work) worked around the clock for 133 days. Moreover, because the radiation level on the ground is too high (119,000 roentgen/hour), it cannot enter the explosion area immediately after the explosion. It is necessary to wait for the ground radiation level to decay to 11.9 l/h after 54 days before entering the explosion area for long-term operation. In this way, the time to fill in and repair the crater has to be extended to half a year (187 days). This makes no sense, either militarily or economically.

Pavement contamination. This is caused by the precipitation of a large amount of radioactive material produced during a nuclear explosion onto the pavement. Radioactive contamination has a great impact on the use and repair of the site. The degree of pavement contamination is related to the yield, the mode of explosion and the direction of the wind at high altitude. Generally speaking, the large equivalent is heavier than the small equivalent, the ground burst is heavier than the air explosion, and the downwind direction is heavier than the upwind direction.

Section 2: Preparation for Airport Emergency Repairs

The repair of the damaged airfield requires a large amount of manpower and various materials, equipment and tools, and the time limit for repair in wartime is very short, so the station must be fully prepared in peacetime.

It mainly includes the preparation of the airport emergency repair organization, the preparation of the emergency repair force, the preparation of the emergency repair plan, the preparation of the equipment and materials required for the emergency repair, and the preparation of the emergency repair technology, so as to ensure the smooth progress of the emergency repair work at the airport in wartime.

1. Preparation of airport emergency repair organization

(1) Establish a command organization for emergency repairs

Rushing to repair airports is a task with a heavy workload and an urgent time limit, and it is far from enough to rely on the army's own strength, and it is necessary to combine military and civilian forces in order to complete the task in a timely and smooth manner. Therefore, under the leadership of the party committee of the aviation division (unit) and in conjunction with the local government, the station should, in accordance with the instructions of the higher authorities, form an emergency repair committee to study major problems in the emergency repair of the airport. For example, formulating an emergency repair plan for the airport, organizing emergency repair forces, studying the procurement of materials, organizing various training and exercises, and even implementing emergency repairs. The Airport Emergency Repair Committee shall have one chairman and two to three vice chairmen, who shall be leaders of divisions (troops), depots, and relevant local departments; and its members shall be composed of leaders of relevant units participating in emergency repairs at airports. The airport emergency repair committee generally consists of emergency repair headquarters, political work group and logistics group, which are specifically responsible for various matters in the emergency repair. In wartime, the command of the emergency repair of the airfield is carried out by the emergency repair headquarters. The headquarters usually has 1 commander and 2-3 deputy commanders, who are respectively served by the leaders of the station and the local government, and the relevant departments send people to form an office responsible for handling the specific matters of the headquarters.

(2) Organize emergency repair forces

When organizing emergency repair forces, the station usually divides and organizes various emergency repair forces according to the division of labor required for the emergency repair of the airport, and organizes the various emergency repair forces according to the tasks they undertake, mainly including: technical guidance group, reconnaissance and ammunition disposal group, communications group, guard group, medical rescue team, chemical defense team, hydropower emergency repair team, vehicle machinery team, bomb crater pavement repair team, and other professional detachments.

Technical Guidance Group: It is mainly composed of relevant technical personnel of the aircraft battalion unit and the field service company. Its main task is to formulate the implementation plan for emergency repair of the airport, conduct professional training for emergency repair personnel, survey the crater, calculate the amount of work, guide the construction work of all emergency repair personnel, and check the construction quality.

Reconnaissance and ammunition platoon group: It is mainly composed of relevant professional and technical personnel of the ordnance unit and field service company, as well as professionally trained soldiers and militiamen. Its main task is to send observation posts to observe and record the location and number of bombs dropped by enemy aircraft, and to conduct reconnaissance, search for and eliminate unexploded ordnance.

Communication group: It is mainly composed of relevant personnel of the station communication battalion. Its main task is to be responsible for the emergency repair of damaged communication lines at the airport and the implementation of communication support in the emergency repair of the airport.

Guard Group: Composed mainly of security personnel and local militia. Its main task is to be responsible for the security of the repair site.

Medical ambulance team: It is mainly composed of medical personnel from the station hospital (health team). Its main task is to provide medical care in the event of emergency repairs.

Anti-chemical warfare team: It is mainly composed of anti-chemical warfare staff officers of the station headquarters, medical personnel of the station hospital (health team), and personnel of the anti-chemical warfare squad of the guard company. Its main task is to educate all personnel on the "three defenses" before the war, and to be responsible for radiation contamination reconnaissance, decontamination, and dose inspection after being attacked by the enemy's nuclear, chemical, and biological weapons.

Hydropower repair team: It is mainly composed of electrician class, plumbing class, and field service company lighting team personnel of the machine camp unit. Its main task is to be responsible for the power supply and lighting of the airport emergency repair; emergency repair of night aviation lighting equipment, emergency repair of power supply and transmission equipment and water source and water supply equipment. Water supply guarantee in emergency repair operations.

Vehicle Machinery Fleet: Mainly composed of personnel of the automobile company, the field service company and local support forces. Its main task is to be responsible for the transportation of construction materials and the guarantee of construction machinery in the rush repair.

Bomb crater pavement repair team: It is mainly composed of military repair teams and civilian workers. Among them, the military emergency repair team is mainly composed of station personnel and personnel of the troops stationed at the site, and the civilian labor repair team is generally composed of local migrant workers. Its main task is to be responsible for the filling of craters and the repair of pavements. In wartime, airfields in the main operational directions can be repaired with the support of specialized emergency repair detachments of the theater air force. The specialized emergency repair team is generally composed of personnel from the field engineering brigade of the air defense engineering office of the air defense engineering office of the military region or the airport engineering service team of the air force of the military region.

2. Preparation of emergency repair equipment and materials at the airport

(1) Preparation of emergency repair equipment

Emergency repair equipment refers to the mechanical tools required for bomb disposal and emergency repair of airport pavement.

1. Preparation of ammunition disposal machinery and tools

The bomb disposal machinery used by our air force depots is mainly airport bomb disposal engineering vehicles. As a supplement to the bomb-disposal engineering vehicles, each station should also prepare some mechanical tools, such as bougie and bomb detectors for detecting the location of bombs buried in the ground, cranes for lifting bombs, and wire ropes, explosives, electric detonators, blasting tools, fuses, detonating cords, etc., used for the destruction of unexploded ordnance.

2. Preparation of mechanical tools required for the repair of pavement

Mainly include: excavators, cars, cutters, air compressors, air picks, and crowbars used for cleaning concrete pavement panels at the edge of the crater; bulldozers, forklifts, shovels, and shovels used for backfilling the debris around the crater; automobiles, dump trucks, and trolleys used for transporting emergency repair materials such as sand and gravel; pumping machines used for draining water accumulation in the crater; forklifts, loaders, shovels used for loading sand and gravel materials; plate vibrators, rammers, and road rollers used for compacting backfills; concrete mixers or asphalt mixers used for making pavement surface courses; Concrete vibrators, scrapers, slab vibrators or small rollers, generator sets and lighting equipment for night construction work.

Since a considerable part of the emergency repair equipment is the same as the machinery equipped in the station's peacetime support, in the pre-war preparations, only the mechanical tools that are not used in the station's peacetime need to be prepared.

(2) Preparation of emergency repair materials

1. Preparation of materials for bomb crater repair

The materials required for bomb crater repair mainly include crater filling materials and pavement surface repair materials, mainly sand, stone, cement, asphalt, aluminum road panels, etc. Sand and stone are mainly used to fill the crater and make the pavement surface layer, and cement, asphalt and aluminum pavement panels are mainly used to make the pavement surface layer.

The methods of making pavement surface layer mainly include cement concrete, asphalt concrete and assembled aluminum pavement panels.

There are many types of cement and asphalt used for pavement surface layer, mainly including fast-hardening and early-strength cement concrete mixed with inorganic cement, asphalt concrete mixed with organic cementing material and polymer concrete.

Inorganic cementing material fast-hardening and early-strength cement concrete is a cement concrete mixture made of various fast-hardening and early-strength cement or ordinary high-grade cement and special cement mixed with an appropriate amount of ultra-early strength additives as cementing material, and sand and stone.

Asphalt concrete is made of asphalt or modified asphalt as a cementing material mixed with sand, stone, stone powder, etc., which can be divided into two categories: hot-mix hot-paved asphalt concrete and room temperature (cold) asphalt concrete. Hot-mix hot-paved asphalt concrete should be cooled after construction, when its surface temperature drops below 50 seven, it can be provided, if the time is urgent, you can use sprinkler water to cool down. Room temperature (cold-paved) asphalt concrete now has bagged materials, which can be paved after opening the packaging bag, and compacted and formed. After construction, the thinner gradually evaporates and the strength increases. The shelf life of bagged cold-laid asphalt concrete currently used is about 1 year.

Polymer concrete is formulated with organic cementitious material. At present, the most used are: epoxy resin concrete, epoxy resin mortar. In addition, there are phenolic resins, polyurethane resins, silicones, silane couplings, and polyolene polymers as cementing agents for polymer concrete or polymer mortar. Polymer concrete has high mechanical properties. Polymer concrete is rarely used because of its high cost of binding. At present, we are studying the combination of resin and water as a cementing material for polymer cement concrete, which has significantly improved mechanical strength and cementing properties compared with ordinary cement concrete. A certain amount of resin can be stored for airport repair.

The assembled road panel is mainly an aluminum road panel. In the early days, there were concrete prefabricated blocks and steel through panels. After the concrete prefabricated blocks are paved, due to poor foundation treatment, the slabs will loosen and undulate when the aircraft passes, endangering flight safety. The steel track panel is stamped with steel plates, not flat, but has many holes, which is no longer suitable for modern aircraft. Aluminum pavement slabs are aluminum alloy forming plates, each of which is made of two extruded partition type hollow slabs with joints welded at the ends. Each set of aluminum track panels consists of 300 whole panels, 40 flat panels and 32 inclined panels.

Each set can be paved with a width of 24 meters and a length of 26 meters.

2. Preparation of lighting equipment

During the war, the airfield was bombed by the enemy, and the lighting system of the field was extremely damaged, so it was necessary to reserve a certain amount of lighting equipment. According to the Air Force's regulations, major combat airfields should reserve a certain number of power cables, night navigation lamps, horse lanterns, and so on.

3. Strengthen the management of emergency repair materials at the airport

Peacetime reserves are for the convenience of wartime use, and sufficient reserves are very important for the successful completion of emergency repair tasks in wartime. However, if the reserves are sufficient and the management is not good in peacetime, it will not only cause the waste of emergency repair materials and the damage of emergency repair equipment, but also affect the smooth implementation of emergency repair work in wartime. For the daily management of airport repair materials and repair machinery and equipment, the following points should generally be noted:

(1) Dedicated storage, special person is responsible, and separate accounts are established

All machinery and materials that are not suitable for open storage should be put into the warehouse, managed by a special person, and a storage account book should be established for registration, such as cement, shovels, trolleys, etc.

(2) Regularly inspect and maintain, and update and replace in a planned manner

For the repair of machinery and equipment, regular inspection, maintenance and repair. Keep it in good condition. Such as: mixers, bulldozers, rollers and other mechanical equipment. Some airport repair materials are not easy to store for a long time, so they should be updated and replaced in a planned manner. Such as cement, various concrete additives, etc.

(3) When stacking in the open air, a stacking diagram should be drawn

For emergency repair materials (such as sand, stone, etc.) stored in the open air, on the premise of not affecting flight safety, try to take care of the convenience of access, classify and match, and evacuate and stack. There should be obvious signs such as the specification and quantity of materials, and draw a material stacking diagram to facilitate management, access, and prevent confusion.

(4) Unauthorized use is strictly prohibited

It is generally forbidden to use the reserve of machinery and materials without authorization.

Under special circumstances, it must be used, and it must be approved by the head of the station before it can be used; Those who use it without authorization must not only make up for it in accordance with the regulations, but also deal with it seriously when necessary.

3. Preparation of airport emergency repair technology

Airfield bomb disposal and emergency repair is a highly technical work, and the shorter the operation time in wartime, the better, so there are very high requirements for the professional quality of all kinds of personnel participating in emergency repair. Only by strengthening operational training and improving the technical level of personnel in peacetime can we improve work efficiency in wartime and gain valuable time for the aviation units to enter combat as soon as possible. The emergency repair technical training mainly includes three aspects: technical training for removing unexploded ordnance, emergency repair technical training for airport pavement and technical training for emergency repair of field lighting equipment.

(1) Technical training in the removal of unexploded ordnance

In order to delay the operation of rushing to repair the airport, the enemy is generally bombing our airfield in wartime and will drop time-delay bombs or mines, so the first task in the emergency repair work of the airport is to remove unexploded ordnance and mines. Bomb disposal and demining is a very dangerous task that should not be taken lightly. The technical knowledge that the personnel participating in the bomb discharge should master includes: the firing principle of the fuse, the use of explosives, detonators, fuses, detonating cords, and blasting tools, the use of aerial bomb detectors and minesweepers, and the judgment of the trajectory of ground-penetrating bombs. During the training, the relevant professional and technical personnel should be invited to provide special guidance.

(2) Airport pavement repair technical training

The main contents of the technical training for emergency pavement repair at the airport are as follows: The mechanical operator should be proficient in the operation method of the emergency repair machinery and be able to eliminate general faults; the field service company maintenance platoon should be proficient in the construction technology of cement concrete pavement or asphalt concrete pavement, and understand the proportion and dosage of various materials; the field assistants and technicians of the machine camp unit, the company commander of the field service company, and the platoon leader of the maintenance field should know how to calculate the amount of various materials used for the emergency repair of the pavement. The training method is mainly combined with the usual airport maintenance work, but a comprehensive drill should also be carried out at the appropriate time.

(3) Technical training for emergency repair of lighting equipment

The main contents of the technical training for the repair of the lighting equipment are: the detection of cable faults,

cable connection, installation and replacement of lamps and lanterns, drill of lighting on airport road lighting vehicles, etc.

4. Preparation of the airport emergency repair plan

In wartime, the airport is repaired in a hurry, and there are many personnel, materials, and equipment used, and the situation is complicated, so as to ensure that after the airport is damaged by enemy air raids, all kinds of repair work can be carried out quickly and in a planned manner, and the emergency repair task can be completed in a timely manner. The airport emergency repair plan is an integral part of the air force's emergency action plan, and is drawn up by the station headquarters on the basis of the establishment of the troops stationed at the site, the emergency repair equipment, and the local support forces. The case can be expressed in the form of a table, or in text and charts, or in figures and text annotations. The main contents of the pre-plan should include: the organization and command of the airport emergency repair force, the organization and task division of the emergency repair force, the plan for the use of the emergency repair force under different sabotage conditions, the reserve of emergency repair machine tools and emergency repair materials, the division of the emergency repair force into a geographical area and the method of communication and liaison, the setting up of the air observation post, and other professional service support measures.

The airport emergency repair plan is the basic basis for the implementation of airport emergency repair in wartime, and because the wartime situation is complex and changeable, the airport emergency repair headquarters still needs to adjust and supplement it in a timely manner according to the actual situation at that time.

5. Organize airport repair drills

The ability to repair airfields in wartime is largely determined by peacetime training. Therefore, it is necessary to regularly organize various detachments to conduct drills according to the plan. The purpose of the plan is to familiarize the commanders and relevant detachments with the plan so that all personnel can understand the procedures and methods for emergency repairs at airfields in wartime, the position of each detachment, and the specific tasks; and second, to sum up experience through the exercise. Expose the problems existing in the plan, sum up experience, and revise it in a timely manner, so that it can be gradually improved, meet the needs of actual combat as much as possible, and lay the foundation for the smooth completion of emergency repair tasks in wartime. Through training, the commanders' ability to organize and command is tempered, and the overall coordination ability of each unit is trained. At the same time, it is necessary to organize joint military and civilian drills on a regular basis to enhance the organizational and command capabilities of the emergency repair command organs and the coordination and cooperation ability of the emergency repair personnel.

Section 3: Implementation of Airport Emergency Repairs

In wartime, the emergency repair of airfields is not only a very heavy task and a tight time requirement, but also may be carried out under the condition of repeated bombing and damage by the enemy. In order to give full play to the maximum effectiveness of the numerous emergency repair forces and tools, complete the emergency repair task in the shortest possible time, and ensure that the aviation units stationed on the ground can enter combat as soon as possible, it is necessary to organize and implement the emergency repair in accordance with appropriate procedures in the course of carrying out the emergency repair, in view of different damage situations and different operational situations, and to exercise flexible command.

1. Examine the condition of airport damages, determine the emergency repair plan

Identifying the situation is a prerequisite for determining a specific remediation plan. When the air raid siren is lifted, a reconnaissance and bomb platoon team should be dispatched immediately to quickly ascertain the damage to the airfield.

(1) Find out the damage to the airport

It is necessary to make a preliminary judgment on the scope and extent of the damage to the airfield based on the types of weapons used by the enemy and the methods of destruction obtained by the anti-aircraft observation posts, as well as the time of bombing and the location of the impact points, and then send personnel to further ascertain the specific damage.

1. Find out the contents of the destruction of the airport

The main contents are: the location, number, and size of the craters, whether there are unexploded bombs, the location, number, and depth of penetration of the unexploded bombs, and whether or not they are infected with poison.

2. Methods for identifying the damage to the airport

Finding out the damage to an airport requires a timely and accurate manner, and the following methods can be adopted in specific implementation:

(1) Dispatch anti-air observation posts

The task is to record the impact point and the damage, etc. Under normal circumstances, 2-4 anti-air observation posts should be set up in the flight field area, and the selection of the location of the observation posts should consider the ability to observe the whole field from different angles, and the observation field should be broad, and at the same time, it is necessary to make use of natural conditions as much as possible to conceal them. In important areas such as aircraft evacuation areas and emergency take-off runways, air observation posts should also be set up when necessary. Important reservoir areas and camp areas are to be observed by all residential units.

(2) Send a ground reconnaissance group

The task of the ground reconnaissance group is to conduct on-the-spot reconnaissance of the sabotage site and obtain first-hand information. After the air raid siren is lifted, the commander should immediately draw a schematic diagram and record sheet of the situation of the bomb hit at the airfield according to the reports of the various anti-air observation posts, and issue an assignment to the reconnaissance and bomb platoon group. You can search the main zone and the landing area first, and then search the other areas. If craters or unexploded ordnance are found during the search, the situation should be ascertained and clearly marked.

(3) Use of field monitoring system

The field monitoring system is a relatively advanced means of surveillance. Use the field monitoring system to find out the damage of the field, and issue an alarm, and the monitoring system can also be networked with the computer in the command post, and the image is provided by the monitoring system, and the computer can provide a reliable basis for the determination of the airport emergency repair plan.

(4) Aerial reconnaissance

The damage to the airport was fully detected through the aircraft's aerial photography and video recording devices, and the recorded situation was transmitted to the airport emergency repair headquarters.

(2) Determine the specific emergency repair plan

After ascertaining the situation, the best emergency repair plan should be determined in accordance with the intentions of the higher authorities, the requirements of the aviation units stationed at the scene for using the airport, and the manpower and material resources that may participate in the emergency repair of the airport, as well as the mechanical equipment and means of emergency repair. There are generally three types of emergency airport repair plans in wartime:

1. Emergency repair plan

The so-called emergency repair plan refers to the plan taken to select a section of the smallest length and the narrowest width that can be used for aircraft take-off and landing in the damaged flight site, and concentrate on repairing it in the shortest time. The key issue in adopting this repair plan is how to determine the scope of emergency repair and choose the best repair location. Generally speaking, the minimum amount of engineering work for emergency repair, the shortest time for emergency repair, and the minimum amount of emergency repair should be followed as the standard for the minimum flight needs of the troops. Make the most of existing runways, taxiways and aprons. When determining the location of emergency repairs, the following principles should be followed:

(1) When one end is seriously damaged, repair the other end.

(2) When one side is seriously damaged, the side with less damage should be repaired.

(3) When the middle part is seriously damaged, repair the less damaged end, and use the end safety road.

(4) When the entire runway is seriously damaged, repair the taxiway or forced landing track.

2. Permanent remediation options

It is repaired according to the original specifications and quality standards of the runway, and this construction method has a large amount of work and a long repair period, and is generally used in deep airports.

3. Construct a separate plan

When the entire flight site is seriously damaged, such as a nuclear bomb attack, or a number of huge craters caused by bombing, which are difficult to repair or cannot be repaired at all, the nearby road runway, the old airport, or the pre-surveyed site can be renovated first.

2. Elimination of unexploded ordnance

In addition to destroying the runway with instantaneous bombs, the enemy may also use unexploded bombs and mines of varying performance to block the repair of the damaged airfield. Therefore, the removal of unexploded ordnance is the first step in the emergency repair operation at the airport. It is necessary to quickly discover, accurately locate, and safely eliminate. The principle of eliminating bombs is to first eliminate bombs that hinder emergency repair and flight, and for other unexploded bombs, first make danger signs and mark the safety range, and then organize forces to eliminate them.

The removal of unexploded ordnance should be carried out by reconnaissance and ammunition platoon detachments that have received special training and are equipped with special equipment. Usually, the distribution and penetration status of the bomb are ascertained first, and the type of bomb is determined, and then it is properly handled in accordance with the relevant professional and technical regulations.

3. Fill craters and repair the pavement

The most critical part of the emergency repair of the airfields that were damaged during the war is the repair of damaged runways. The project to repair the runway is divided into two parts: filling the crater and repairing the pavement.

(1) Filling the craters

The word "rush" in emergency repair work is the most important, and it is most important to gain time. It is necessary to arrange the construction procedures and make all links organically combined. The general procedure for filling a crater is:

1. Clean the crater

In order to ensure the tamping quality of the crater filling process, the concrete fragments with a diameter of more than 30 cm in the crater should be cleaned up. And the loose soil on the crater wall will be peeled off and rammed to create conditions for the later process. In the rainy area in the south, or after the rain, the soil contains more water, and the floating soil and scattered soil in the pit cannot be used, so we should first concentrate on removing the floating soil and the adjacent scattered soil, and create the working surface inside and outside the pit, so as to facilitate mechanized construction, and at the same time to remove (reduce) the water in the pit as soon as possible.

2. Backfill the scattered soil around the crater and clean up the damaged pavement around the crater

When backfilling, it should be compacted in layers, and the thickness of each layer is about 30 cm. At the same time, it is necessary to organize forces to clean up and dismantle the broken and drummed artificial pavement around the crater, concentrate it in piles, and place it near the crater so that it can be backfilled. Large concrete blocks can be crushed with a roller or broken with a hammer.

3. Backfill slag

After the scattered soil around the crater is backfilled and compacted, the blasted concrete slag can be backfilled with the crater, and the slag is tamped while filling, in order to prevent the slag from loosening, it is best to spray fast-setting cement slurry while backfilling the slag, or use the machine to tamp it in layers, and you can also spray wet sand to fill the gap of the slag. Backfilling the ballast can not only save the material for filling the crater, but also do not have to clean up a large amount of ballast and transport it, which can speed up the progress of emergency repair.

4. Transporting materials and filling pits

Backfilling slag does not fill the entire crater, and it is necessary to fill the crater with other crater filling materials. When the scattered soil is cleared and the slag backfill is carried out, the material transporter is ready to transport other pit filling materials and transport the crater filling materials to the construction site as soon as possible. After the crater backfilling, the pavement base layer is treated.

(2) Repair the pavement

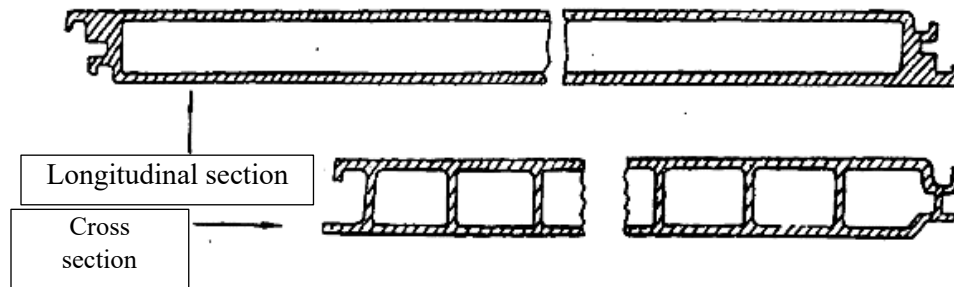
Pavement repair is the last process of airport repair work, and there are mainly the following methods:

1. Aluminum track panel method

The aluminum track panel is an aluminum alloy forming plate, each of which is welded by two extruded partition type hollow core plates, and the end is welded with a joint (14-1).

At present, our army has developed aluminum track panels, and each set can be used to repair 4-6 bomb craters.

Figure 14-1: Aluminum track panel



When laying with this method, the aluminum track panel (14-2) can be assembled nearby while filling the pit, and after the crater is filled, it is dragged to the pit mouth to cover, and the inclined plate is installed at both ends, and it is fixed, and it can be used (14-3). The strength of the aluminum pavement slab is high, and its bearing capacity is equivalent to the bearing capacity of a 30 cm thick ordinary concrete pavement. It has the advantage of being reusable many times, and its disadvantage is that the seams are uneven. After the aluminum pavement slab is paved, the surface of the slab is 3.8 cm higher than the concrete pavement. In addition, the cost of aluminum track panels is also relatively high, and it is only suitable for large craters, not for craters with a diameter of less than 6 meters. The main reason is that when the laying area of the aluminum track panel is too small, the aircraft will have strong bumps when taxiing, and even cause accidents.

2. Gravel restoration

It's an easy and quick way to repair pavement. It combines crater filling and pavement repair into one process, which greatly speeds up the construction schedule and saves time. The method of gravel repair is: when the slag and gravel are filled to 60 cm away from the pit mouth, the limestone is refilled until it is 15 cm higher than the pit, and the vibrating roller is rolled several times, and then the grader is shoveled to 3 cm higher than the pavement, and then the vibrating roller is rolled dozens of times to make it tight and flush with the runway pavement, which can be used for aircraft take-off and landing. In order to prevent gravel from damaging aircraft tires and being sucked into the engine, a 1 cm thick film made of polyurethane glue and glass fiber is covered, and the perimeter is fixed to the pavement with screws (Figs. 14-4).

Figure 14-2: Arrangement of the aluminum track panel

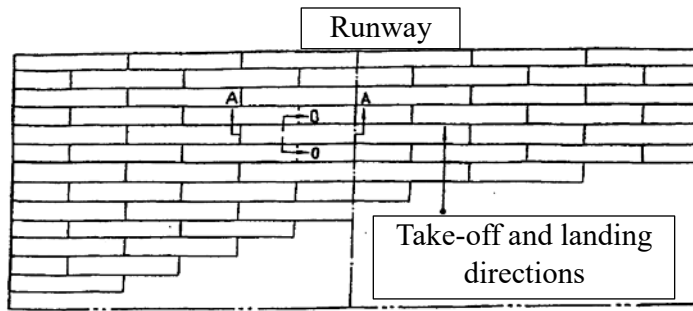


Figure 14-3: Schematic diagram of aluminum track panel method

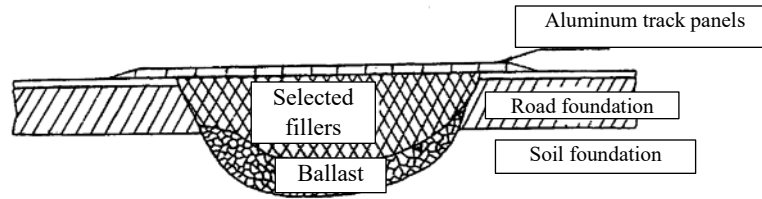
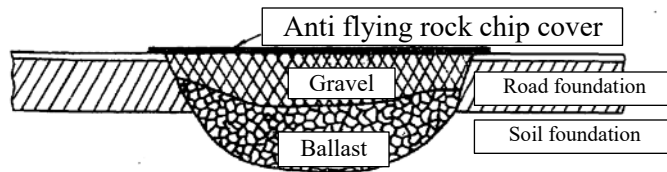


Figure 14-4: Schematic diagram of the gravel repair method



3. Cast-in-place method

The on-site pouring method is to directly pour the concrete pavement on the filled crater, which is similar to the pouring method when building the runway, and is a method commonly used by our army. If it is poured with ordinary cement, it takes more than 3 hours to start condensing, and it can be used for 20 days before curing, which is not suitable for emergency repair. After adding the early strength agent during construction, it still takes 3-5 days to reach the best strength.

In order to shorten the repair time of the pavement, fast-setting and quick-hardening cement are generally used. This "double-fast" cement can be set in 10 minutes after mixing, so a retarder (tartaric acid or sodium tartrate) must be added to apply. The pavement poured with retarder can be used in 4-8 hours. There is also a kind of ultra-fast hard rock cement, hardening early, strength development fast, 2-3 hours to start hardening, 8 hours to reach the best hardness, and can be firmly combined with the original concrete, so the old pavement utilization rate is higher.

At present, the improved high-temperature asphalt concrete method is also used. After the improved high-temperature asphalt concrete is paved, it can be used in 4-8 hours, but the temperature of the asphalt concrete is required to be not lower than 80 degrees during construction.

4. Wet sand method

When backfilling the slag, fill the joint with wet sand, fill it to about 1 meter away from the pit mouth and start to fill it with wet sand until it is flush with the pavement, it can be used, and the water content of the sand should be close to saturation to make it compact by itself. This method is convenient for construction, low cost, and the US military believes that it is more promising. However, when using it, you need to constantly observe and constantly spray the sand, otherwise it will lose its ability to support. In addition, the wheels are easily injured when the aircraft is taxiing, and the wheel guards should be installed when using.

5. Small crater repair method

For small craters on the runway and locally fragmented pavement, it is usually filled with fast-setting material directly after cleaning. At present, for the repair of small craters with a diameter of less than 1 meter, cold-paved asphalt mixture is mainly used. In order to speed up the filling process, the US military uses compressed air to blow away the debris in the pit, and then uses a special device to inject fast-setting material and smooth it. In addition to the above pavement repair methods, the relevant departments are testing several new pavement repair methods. Such as: RCC method, FRP track panel method and improved prefabricated slab assembly method.

At present, it has entered the stage of practical experiments, and it is expected that it will soon be used for the emergency repair of our army's wartime airfield.

4. Clean-up, marking runways and repairing other support facilities

While backfilling the crater and repairing the pavement, the area outside the emergency repair work area can be cleaned, and after the pavement is repaired, all the areas can be cleaned up, and the marking line is marked. When repairing the runway, the necessary facilities for emergency flight, such as water supply, power supply and road lighting equipment, should also be repaired.