

Assessing Republic of Singapore Air Force's Defensive Air Operations Capabilities

Confronting Challenges in Unconventional Scenarios

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During the post–Cold War era, we have witnessed numerous reforms in international security architecture, which, with time, diminished any possibility of a full-scale military confrontation between two or more states. That being said, transborder territorial aggression continues to persist as possible conflict zones across the globe; unconventional threats to domestic and international security such as transnational organized crime, radical militant fundamentalism, violent nonstate actors, natural and man-made calamities, along with international health epidemics have further complicated the challenges faced by military establishments around the globe. To strengthen combat effectiveness, aviation assets are quickly being deployed in operations other than traditional war, such as (but not limited to) humanitarian assistance and disaster relief (HADR) efforts and counterinsurgency, counterterrorism, and peacekeeping initiatives.

As a consequence of the evolution in military strategies and tactics, there was a phenomenal increase in the cost of fighter aircraft that aggressively expanded the use of airpower. In an effort to fulfill necessities during peacekeeping operations, numerous air forces, including the United States and Royal Air Force, were forced to postpone their mobilization of fleet and concomitant squadrons of fighter aircraft over the years to acquire and deploy armed unmanned aerial vehicles (UAV) during combat operations in Iraq, Libya, Yemen, and Afghanistan.¹

Since its first peacekeeping mission to Cambodia in 1993, the Republic of Singapore Air Force (RSAF) has, with time, learned and subsequently strengthened the use of aerial assets to match their partners and allies while contributing significant forces to counterterrorism operations, assisting in HADR efforts, and participating in joint counterpiracy operations. Consequently, the success of such operations and Singapore's continued efforts to expand the use of air assets have phenomenally increased the dependence on the RSAF to maintain peace and security.

This article highlights the evolution of airpower due to rampant changes in the international security environment and advances in technology to make a case for further investment in the RSAF and its airpower policy to defend Singapore. The

article further highlights the progressive expansion of airpower that strengthened Singapore for countless years, while portraying the challenges faced by Singapore—particularly its territorial vulnerabilities and threats to its strategic objectives. The primary operational objective and focus for the RSAF should be to defend Singapore from enemies foreign and domestic rather than extending its resources and overutilization of vital assets in complex environments outside war. Policy makers must focus their attention on formulating an effective policy to secure strategic objectives of an island nation such as Singapore during the duality of war and peace, while restructuring the RSAF's standard operating procedure to fulfill the needs during war and peace without hindering its ability to secure a quick and a firm victory in the former.

Systematic Evolution in Air Capabilities

In the words of one of the oldest air forces in the world, the British Royal Air Force, airpower is the fusion of tactics and strategy demonstrated through airpower in an effort to alter the course of scenarios involving multiple actors and forcing them to alter their plan of action. Separating the numerous intangible characteristics of airpower, we limit the segments of its capability to speed, altitude, and elevation. Swiftly outmaneuvering opposing ground forces and overpowering topographic challenges that could significantly compromise movement of the ground forces, military leadership, by deploying air assets, could further maintain fire superiority without losing tempo and agility, while focusing their firepower on the opposing force's *center of mass* in an effort to deliver a significant blow to the enemy's assets and neutralize them at the onset of battle.² When it comes to potentiates of airpower, it is capable of catering to all needs and strategic interests of a state and can be segregated into major segments such as air dominance/superiority; demonstration of force; intelligence, surveillance, and reconnaissance (ISR) capabilities; and first aggressor abilities.³ As a military asset, strategic and tactical commanders can employ airpower for both aggressive and defensive campaigns.

The pinnacle of offensive modern air warfare was inarguably attained during the Cold War, when massive squadrons of long- and short-range strategic/tactical bombers, medium and multirole fighter aircraft, and long-range cruise and ballistic missile systems catered to the demands of the erstwhile hegemon: the Soviet Union and the United States. With the disintegration of the USSR in 1991, the United States, a sole global power supported by its NATO allies, actively engaged in a few conventional air skirmishes in the Middle East (particularly Iraq) and in Kosovo. Interestingly, NATO and US air forces actively engaged in more unconventional warfare rather than traditional war. The United States and its al-

lies' engagements in Somalia, Bosnia, and in Libya, followed by their HADR operations (particularly in response to the Asian tsunami, earthquake in Nepal, and nuclear disaster in Japan), are prime examples. Considering the shortcomings of air assets to firmly seize and hold territory, they were significantly employed to support ground forces in terms of ISR, and precision strikes. One such example can be seen in the use of air assets that played a major role in US-backed efforts to defeat Islamic State forces.

The evolution in aerial engagement and tactical deployment during the early 1990s and throughout Washington's global war on terrorism, supplemented by the rapid advances in technology and production cost inefficiency, has significantly reduced global and regional powers' reliance on traditional aerial assets due to the rising costs in maintaining a large fleet. This has resulted in many lesser powers relying further on developing and employing UAVs for many missions, including ISR. This was evident from Washington's decision to reduce the procurement of over 700 F-22 multi-domain fighter aircrafts to almost 187, while significantly increasing production of armed UAVs for combat purposes.⁴ Insignificant in quantity and cost inefficient in operation, Washington did not deploy its prestigious squadrons of stealth bombers and F-22 advanced multirole aircrafts during operations in Iraq and Afghanistan nor in the low-risk airspace of Libya.⁵ Instead, Washington deployed armed MQ-9 Reaper UAVs to support International Security Assistance Force allies on the battlefields of Yemen and Afghanistan today and deployed RQ-7 Shadows and RQ-4 Global Hawk for humanitarian ISR missions. In an effort to strengthen ground forces' engagement capabilities in effectively countering the Islamic State at the onset of Operation Inherent Resolve, Washington deployed squadrons of armed and unarmed UAVs to gather critical real-time surveillance on enemy forces during which the UAVs' performance was outstanding, convincing the United States to separately dedicate finances from its budget toward further development and deployment of such assets.⁶

Defending Singaporean Skies

Since its establishment as the Unified Singapore Air Defence Command in early 1968, armed with a squadron of eight Cessna 172K, most of the air force's acquisitions were based on immediate demand to maintain squadron strength instead of procuring air assets based on future operational scenarios. Learning lessons from Japanese aerial superiority in the Pacific during World War II, Singaporean leaders realized the importance of a strong and reliable air force that could not only effectively counter opposing enemy airpower but also defend territorial boundaries when and if challenged. Operationally expanding under the new name of the Republic of Singapore Air Force (RSAF), the island's air arm

initiated acquisition of air assets for basic air defenses in the early 1970s, strengthening such capabilities in the late 1980s and devising state-of-the-art training and recruitment of air force personnel only by the 1990s.⁷ Subsequently, the RSAF continues to make major progress in transforming this once nascent air force into a fourth-generation fighting force.

However, the RSAF mission to defend Singaporean airspace and the nation's territorial integrity has not deviated since its establishment, despite the rampant evolution in combat environments that occurred in the international security domain and frequent technological developments that have opened the doors for economies to cooperate in unconventional situations outside war. Without altering its mission, such advancements have enabled the RSAF to maintain a professional organizational architecture and logical operational mechanism in all domains.

The RSAF gained its first international experience through a UN mission, deploying four Eurocopter AS332 Super Puma utility helicopters along with a contingent of 65 troops to assist the United Nations Transitional Authority in Cambodia, with a mandate to assist in election monitoring. Subsequently, the RSAF boosted its international cooperation initiatives by participating in a series of peacekeeping missions and contributing over a dozen air assets to UN missions active in Afghanistan, Côte d'Ivoire, Timor-Leste, and in the Persian Gulf. Additionally, the RSAF participated in numerous HADR operations, particularly in post-disaster operations in Thailand and Indonesia, search-and-rescue operations of Indonesia AirAsia Flight 8501, and counterpiracy operations in the Indian Ocean.⁸ Singapore received global appreciation for its efforts, further strengthening its image as a global contributor to the UN and a responsible ally at the global podium and securing its national territorial boundaries and strategic assets as a responsible state.

In light of the expanded role of air assets during unconventional operations and the Singapore's aforementioned faithful cooperation, are policy makers and military leaders ready to formulate a dedicated unconventional policy and invest RSAF assets in an effort to maintain global peace and security? Or should they focus their attention on strengthening/formulating conventional airpower in an effort to defend the nation's strategic assets and territorial integrity? Irrespective of the air capabilities, the decision to delegate air assets and resources to HADR efforts would seem to be obvious, particularly taking Singapore's past into account. It is more important, however, for military leaders and policy makers to formulate a strategy that allows Singapore to deploy air assets in peacekeeping operations without compromising its ability to fight a conventional war, keeping in mind Indo-Pacific regional instability and Singapore's strategic assets.



(Photo courtesy of Singapore Ministry of Defence)

Figure 1. Exercise Forging Sabre. Singapore's Senior Minister of State for Defence Heng Chee How receives a brief on the capabilities of the command post at Exercise Forging Sabre 2019, hosted at Mountain Home AFB, Idaho. Conducted 30 September to 10 October 2019, the exercise involved around 600 personnel from the Singapore Armed Forces (SAF), including the Singapore Army's Commandos, and assets from the Republic of Singapore Air Force (RSAF) such as the F-15SG and F-16C/D multirole fighter aircraft, AH-64D Apache helicopters, Heron 1 unmanned aerial vehicles, and the inaugural participation of the A330 MRTT multirole tanker transport in an overseas exercise.

Regional Instability and Singapore's Strategic Objectives

Although Southeast Asia has prospered since the end of World War II, enjoying relative secured and peaceful environment, there are numerous international issues that have the potential to possibly alter this chartered course of peace and tranquility. Unlike European states that are committed to the need for peace and security, the fragile security and fractured peace in Southeast Asia with underlying differences could result in regional instability.

Over the years, Asian defense expenditures have increased exponentially—a grave concern, particularly expressed by peacekeeping institutions such as the UN and liberal think tanks in the Indo-Pacific.⁹ Most recently, South Korea has been keenly expanding its multirole fighter acquisition policy, and Japan reiterated its commitment to expand its Lockheed Martin F-35 Lightning II training program in the light of developing situations in the region. Within the Association of Southeast Asian Nations, member nations such as Indonesia and Malaysia are keen to expand KAI KF-X combat aircraft development program, a joint South

Korean and Indonesian venture, in an effort to formulate squadrons of this multirole fighter aircraft to further enhance their air superiority. Although some of the air assets negotiations/acquisitions orchestrated by regional economic groupings are genuinely focused on defending territorial integrity, should the relationships among these nations fall out, such modernizations could quickly turn into hoarding of air assets in an effort to secure military superiority.

Limiting the discussion to the South Pacific, rampant economic growth and the dire need to replenish natural resources to quench rising energy demands have created various disagreements among regional powers regarding resources and external boundaries with their economically and militarily inferior neighbors. One such example is the contestations of regional economies in the South China Sea. The Philippines and Australia recently announced acquisition of KAI T-50 Golden Eagle and Lockheed Martin F-35 Lightning II multirole fighter aircraft in an effort to further strengthen their air capabilities to counter any aggression in the Indian Ocean or the South China Sea. Other powers, like Indonesia, which have no claims in the South China Sea, are strengthening their defensive capabilities by acquiring AH-64 Apache twin turbo-shaft attack helicopters in an effort to defend their economic zones.

Singapore, due to its geostrategic location, size, and geography, will remain threatened from external forces due to its extensive dependence on global trade and dearth of natural resources. Learning lessons from past diplomatic and trade relationships, seemingly healthy bilateral and multilateral relations can quickly and dramatically turn sour.

RSAF: Learning the Right Lessons

With Singapore deploying its air assets to peacekeeping operations all across the globe, the focus for military and political leadership should be on strengthening RSAF maneuvering capabilities irrespective of its operational domain, which is possible through equipping the RSAF with adequate capabilities without compromising its current strength. This would enable the RSAF to maintain its operational mechanism during HADR operations, it would further assist air commanders in cost-effective maintenance of such air assets even when they are not in rigorous use. Military leadership should also focus on acquisition of air assets that have multiple uses, such as multi-domain air transport fixed-wing aircrafts, transport helicopters, and ISR UAVs, which are not only vital in combat scenarios but are also critical in HADR operations. Acquisition policies on aforementioned lines would further retain RSAF organizational and operational focus on national security, enabling the service to respond to HADR challenges and national security threats simultaneously.

Conclusion

In light of the fluid global insecurity of the post–Cold War era, the evolution in military tactics have potentially altered the course of airpower and opened new doors for air forces to operate in new unconventional and conventional combat environments. Particularly for an island nation such as Singapore, air assets play a critical role in the nation's overall development. As the roles played by traditional air forces in HADR and unconventional military operations continue to expand, the RSAF too needs to adapt its operational mechanism without compromising its ability to fulfill Singapore's strategic objectives. With Singapore relying on its airpower for defense, the RSAF must amend flexible operational mechanisms, enabling it to participate in global peacekeeping missions without compromising its national security and maintaining a firm equilibrium in its acquisition policies to effectively counter both conventional and unconventional threats without compromising operational continuity. ★

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Notes

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