CHINA AEROSPACE STUDIES INSTITUTE

Thoughts from the Chairman

Building the Foundations of a Strong Nation: On Advanced Materials, Modern Industry, and National Defense

Many nations focus on weapons. They count ships, aircraft, missiles, and tanks. These things are important, but they are not the foundation of military power.

Military power rests upon something deeper.

A nation cannot sustain advanced weapons without advanced materials. It cannot replace losses without manufacturing capacity. It cannot prevail in a prolonged struggle if its supply chains are dependent upon others. The true measure of national strength is not what a country possesses on the first day of a conflict, but whether it can sustain strategic competition over years and decades while preserving its capacity for national development, and what it can continue producing on the hundredth day.

The real economy is the foundation of national development. Manufacturing is the principal battlefield of the real economy, and advanced materials constitute the strategic foundation upon which a modern industrial system is built. Only by strengthening this foundation can China ensure the security of its industrial system, promote high quality development, and steadily advance Chinese modernization.

This is why advanced materials, new industrialization, and the development of a modern industrial system have become national priorities for China.

Some foreign observers view materials science as a technical field and manufacturing as an economic activity. The Party understands that they are matters of national security and national development. Every aircraft, satellite, high speed train, semiconductor, robot, electric vehicle, communications network, and advanced weapon system depends upon materials that determine performance, reliability, efficiency, and survivability. Without mastery of these foundations, technological leadership remains an illusion.

History has repeatedly demonstrated the dangers of dependence.

For too long, key technologies and critical materials remained vulnerable to foreign control. Certain nations believed they could maintain permanent advantages by monopolizing advanced manufacturing capabilities and restricting access to critical technologies. They

assumed China would remain dependent upon external suppliers for essential components and materials.

They were mistaken.

China must possess the capability to design, produce, and sustain the technologies upon which its future depends. This requires mastery not only of finished products, but of the materials and production systems that make those products possible. Our objective is not isolation. It is high level scientific and technological self reliance and self strengthening. Only by mastering key core technologies in our own hands can we ensure that China's development remains secure regardless of external circumstances.

The Party therefore places great importance on high performance materials, advanced structural materials, and advanced functional materials. Carbon fiber composites, advanced alloys, ceramics, semiconductor materials, and other critical technologies are not isolated industries. Together they form the industrial foundation of national power. These sectors are also indispensable to cultivating new quality productive forces, creating new drivers of growth, and building a manufacturing powerhouse capable of leading the next generation of industrial development.

A nation that lacks these capabilities remains vulnerable to coercion.

A nation that possesses them gains strategic freedom.

Development and security are inseparable. Security provides the conditions for development, while development strengthens the foundations of security. Advanced materials and manufacturing therefore serve both objectives simultaneously, providing prosperity in times of peace and resilience in times of strategic competition.

We must strengthen the security, resilience, and controllability of industrial chains and supply chains. Every link, from basic research and raw materials to design, production, logistics, maintenance, and recycling, must become more secure, more efficient, and more innovative.

This effort extends beyond traditional notions of self sufficiency. It is about building resilient industrial systems capable of withstanding uncertainty while remaining open to mutually beneficial international cooperation. It is about resilience.

Future competition among major powers may not be decided solely by battlefield engagements. It may also be determined by which nation can continue producing, repairing, and sustaining its capabilities under conditions of disruption. Supply chains may be contested. Transportation networks may be attacked. Access to foreign technology may be denied.

China must be prepared for such circumstances.

Advanced manufacturing technologies, including additive manufacturing, robotics, and intelligent production systems, provide important advantages. They enable production to become more flexible, more distributed, and more responsive to changing requirements. They shorten repair cycles. They accelerate replacement of damaged equipment. They strengthen the nation's ability to endure prolonged competition. The development of new quality productive forces requires accelerating intelligent manufacturing, digital manufacturing, green manufacturing, and

high end manufacturing. These technologies improve productivity, optimize resource utilization, enhance quality, and provide sustained momentum for high quality development.

This is particularly important for national defense.

We must strengthen integrated national strategic systems and capabilities so that scientific innovation, industrial development, infrastructure, logistics, and national defense mutually reinforce one another. The modernization of industry and the modernization of national defense are complementary tasks that advance together.

The People's Liberation Army requires not only advanced weapons, but also the industrial capacity necessary to sustain military operations. Modern warfare places enormous demands on production, maintenance, logistics, and force regeneration. The side that can replace losses faster than its opponent gains a decisive advantage.

Future conflicts may not reward the nation with the most sophisticated platform. They may instead reward the nation that can sustain production, preserve industrial resilience, and win the strategic initiative throughout a prolonged struggle.

This reality explains our continued focus on critical technological bottlenecks.

Certain areas, including advanced aeroengine materials and semiconductor production, remain especially important. These technologies represent strategic high ground that cannot be surrendered to others. Success requires persistence, long term investment, and national coordination. We must fully leverage the advantages of the new national system, bringing together government, industry, universities, research institutes, financial institutions, and the armed forces to achieve breakthroughs in key core technologies. The Party must continue mobilizing resources to ensure that these capabilities are developed domestically and sustained over time.

Some countries pursue short term efficiency. China must pursue long term security through high quality development, technological innovation, and a secure, resilient industrial foundation.

By 2035, China's industrial base must be capable of supporting national development and national defense under all conditions. It must be resilient, adaptable, and capable of rapid expansion when circumstances require. It must provide the foundation for technological leadership across every major strategic sector. By the end of the Fifteenth Five Year Plan period, China should have made significant progress toward building a modern industrial system driven by innovation, supported by new quality productive forces, strengthened by secure industrial and supply chains, and capable of supporting the strategic objectives of national rejuvenation through Chinese modernization.

This objective is not driven by a desire for conflict. It is driven by the recognition that strength preserves security. A resilient industrial system strengthens not only our ability to prevail in conflict, but also our ability to deter conflict. Nations are less likely to challenge a country whose industrial capacity cannot be exhausted and whose strategic resolve is supported by enduring productive strength.

The great rejuvenation of the Chinese nation requires more than innovation. It requires endurance. It requires resilience. It requires the confidence that no external pressure can interrupt China's path forward.

History demonstrates that no great nation has achieved lasting prosperity without a strong industrial foundation. Building a modern industrial system is an essential requirement of Chinese modernization. Advanced materials and advanced manufacturing provide the foundation upon which innovation, national security, economic prosperity, ecological sustainability, and the people's well being all depend. Only by continuously strengthening manufacturing capability, improving the quality of development, cultivating new quality productive forces, and mastering key core technologies can we realize the great rejuvenation of the Chinese nation and ensure that China always maintains the strategic initiative in an era of profound global change.

China intends to be that nation.

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