

THE STUDY ON CHINESE DEFENSE SCIENCE AND TECHNOLOGY INDUSTRY MANAGEMENT INNOVATION IN THE POLICY OF CIVIL- MILITARY INTEGRATION

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Abstract: *This paper analyzes the difficulties of Chinese defense science and technology industry management, and then put forward to some methods to achieve management innovation in the policy civil-military integration. The methods can be summarized as follows: to build innovative management system, to coordinate the management operation mechanism and to improve relevant laws and regulations.*

Keywords: *Civil-military integration; Defense science and technology; Management; Innovation*

1. INTRODUCTION

Since the implementation of the civil-military integration strategy in Chinese defense science and technology industry, brilliant achievements have been made—defense science and technology resources are effectively utilized and the viability of enterprises are greatly enhanced;

The integration provided enterprises better material basis and effectively promoted them to improve the R&D level of military products; the integration also led to the deepening of enterprise reform, and accumulated useful experience for the development of defense science and technology industry under market economy conditions.

However, at the same time there are still many problems about Chinese defense science and technology industry management.

Therefore, how to innovate the management of defense science and technology industry still has a positive meaning.

2. THE TEXT OF THE PAPER

2.1 To improve relevant laws and regulations. Sound regulatory system is the premise of defense industry integrating into the development of social economy.

For integrating defense science and technology industry management into the social economy development all-around, the major developed countries put attention to legislation to make defense economy and social economy development in harmony.

For example, in the United States, there are the Defense Production Act, the national defense patent law, researching and ordering systems involving weapons and equipment, defense technology and weapons and equipment management system and so on; to promote the integration of national defense construction and social economy development, the United States also introduced a variety of rules, regulations or plans to between the two.

Since 1990, in order to promote the integration of defense scientific research and production, the United States have in succession introduced technology transfer program,

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Advanced Concept Technology Demonstration program, dual-use science and technology program, Department of Defense manufacturing technology program, independent research and development program, North American technology and industrial base organization plan, technology transfer initiatives, Small Business Innovation Research program and so on.

Market economy is legal economy, and there is no aspect of civil-military integration not needing the adjustment of law category.

Therefore, the state should improve relevant laws and regulations of national defense science and technology industry comprehensive civil-military integration as soon as possible, providing law foundation for defense science and technology industry management.

Specifically, the state should do the following work:

Establish market competition regulations of weaponry research and production.

In U.S., the legislation in this regard has been very mature, as in 1984, "Competition Law of signing the contract" states: "Defense department (acquisition of assets and services) should adopt open competition procedures."

In 2003 its "Defense industrial basic transformation road map" stressed the need to change the situation of main contractor controlling defense market, and to guide and encourage SMEs who master innovative technologies into defense sector, thus forming the new defense market structure of different size and many suppliers.

"2009 Weapon Systems Acquisition Reform Act" stipulates that there must be two or more competitors provide competitive prototype in weapon system technology development phase.

"Defense Production Act" requirement: "The president should give preferential to small businesses (including subcontractors and suppliers) small businesses acting as contractors or subcontractors in all projects at all levels should obtain opportunities as many as possible, in order to maintenance and strengthen national industrial base and technological base.

" In view of this, our country should reform the existing military procurement regulations, work out "national Defense procurement Law" or the " PRC military procurement law ", as soon as possible under the guidance of the spirit of the Constitution. Open the military market gradually.

Formulate standardized systematic laws and regulations of civil-military integration, accelerate military standardization reform and progressively implement standard for dual-use.

In order to promote the integrity of military standards and civilian standards, in 1994 "Federal Acquisition streamlining bill " made a major adjustment on military technical standards, implemented the strategy of using more civilian specifications and standards.

America advocates the use of civil standards and business practices in the equipment acquisition process. In 1994 the United States Secretary of Defense released the theme of "norms and standards - new method of doing things" memo, allowing contractors to determine their own quality systems.

China should accelerate the military standardization reform, and gradually achieve the integral standard of military and civilian.

We should accelerate the establishment of the complementary regulations and standards system of national, military and industry.

Any civil standards which can meet the military requirements should be used directly, rather than to develop a separate military standards. Under the premise of ensuring the performance of weaponry, we should positive use civilian standards in line with the requirements of military. Draft "Military Standardization Management Regulations". The relevant departments can listen to the suggestion of defense industry authorities departments and military equipment departments, in order to ensure civilian standards to meet military needs as far as possible.

Accelerate the establishment of national defense intellectual property protection laws and regulations. "Bayh-Dole Act" confirmed the principle of "Who developed, who owns", which greatly facilitates the integrity of military and civilian.

It involved defense intellectual property rights laws and regulations including "Federal Acquisition Regulation", "Federal Technology Transfer Act," "Arms Export Control Act," "Export Administration Act," etc.

In addition, Defense Department and defense-related sectors (such as the Department of Energy, NASA) had also developed a number of intellectual property management regulations, such as: "Federal Acquisition Regulation Defense Supplemental Rules", "Federal acquisition Regulation DOE Supplemental Rules", "Federal acquisition Regulation NASA Supplemental Rules", "Army of intellectual property management regulations" and so on.

The regulations can encourage private participation in defense research and greatly reducing the costs.

So, we should actively study weaponry intellectual property right definition and management problems, establish and improve protection and management regulations, strengthen the protection consciousness of intellectual property rights, pay attention to the use of legal means to promote and protect defense technology to enter the market, allow military intellectual property ownership and right of use to appropriately separate.

National defense science and technology departments should give full play to role of patent laws and regulations system, pay attention to the use of legal means to promote and protect national defense science and technology transferring into practical productive forces.

Establish "national defense scientific research and production law" and specific criteria, specifications matching "weapons and equipment research and production license implementation methods", such as weapon equipment development contract, manufacturing contract, quality supervision and management procedures; according to national defense science and technology industry reality, establish and improve regulation system of national defense science and technology industry achievements and technical transferring.

For example, study and formulate "national defense science and technology industry achievements and technical transferring regulation" and relevant laws and regulations on "use high technology to promote national defense science and technology industry basic capacity".

The main contents include national defense science and technology industry achievements and technical transferring methods, sharing of authority and benefit, legal responsibility of encrypting and decrypting and so on, orderly adjust and specify relationships of different subjects in process of national defense science and technology industry achievements and technical transferring, to ensure that national defense science and technology industry achievements and technology can be fully used, and obtain the maximum benefit. Establish Defense contracts laws and regulations as soon as possible. The U.S. government insisted that contracts for defense economic activity are their only choice.

Contracts have an important position in the civil-military integration, which formed the characteristics of U.S. defense industry system.

The U.S. Congress passed "1984 signing contract competition law" to promote civil-military integration and defense acquisition reform. U.S. governments manage the units participating defense research by contracts. "Federal Acquisition Regulation " and Defense Ministry's " Supplemental Rules " made detailed provisions for U.S. contract management of military and civilian integration. Compared to administrative, military force and free trade method, Contract management has a great advantage. As the microscopic forms of development of military and civilian integration, defense contract is not only in full compliance with the inherent requirements of the development of military and civilian integration, but also can effectively realize military-civil integration. Therefore, China should draw "PRC Defense Contract Law" and develop "defense research and production method "to regulate weapons and equipment research contracts, production contracts, quality supervision and management procedures.

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Legislation of the management of defense science and technology industry is an organic and unified entirety of legislating, changing, and abolishing. We should not only pay attention to the creation from scratch, but also cleaning up the existing system, amending and abolishing current laws and regulations not adapt to civil-military integration. Such as U.S. legislative bodies and administrative departments pay attention to repeal, amend outdated laws and regulations and develop new acquisition timely in order to promote the reform, when facing new situations. In 1991 U.S. Defense Department has set up a special group to comprehensive clean-up and review of the relevant laws. The provisions relating to weapons and equipment and ordering system in "National Defense Law of the People's Republic of China" should be refined; Those laws and regulations unable to adapt to the new situation and new tasks of civil-military integration, be overall feasible and individual terms are not applicable must be necessary to revise and perfect. For example, the contents of Military supplies are not established in "Contract Law" on the 15 contracts. There are no principled provisions of how contract is drafted on national defense scientific research military and military orders and other aspects, thus we lack of sufficient legal basis to formulate relevant laws and regulations. So we suggest including relevant military supplies into military contracts normative contract directory and establishing principled provisions on the related problems in "Contract law". Regulations which cannot be applied to current needs in general, even conflict with other laws, and cannot solve problems rely on modifying and improving individual provisions must be abolished.

2.2 To build the innovative defense industry management system. Integrating national defense and army modernization construction into the social economy development is involved into the national strategy, which covers various sectors of the military and civil, and all of the developed countries have the highest coordination body. The National Security Council Entity is the highest coordinating body in America.

The Commission is a permanent body, with full-time staffs. Besides policy-making functions, it has the ability to implement the decision-making. In addition to top-level coordinating body, there are also special coordinating body to promote integration of the field of defense technology and production, such as the Defense Technology Transition Committee established in 1993. Its chairman is served by the secretary of the Defense Advanced Research Projects Agency (DARPA) and the members are from the Army, Navy, Air Force, the Commerce Department, the Department of Energy, Department of Transportation, National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF) and so on. According to our national situation, civil-military integration is a kind of reflection of and national behavior and will, so it should be promoted through national policy and military departments coordinately. We should begin with high-level decision-making, comprehensive coordination and policy implementation, according to government and military departments' functions, to establish scientific and reasonable operation mode. On the division of responsibilities, it should be that military department claim demands, high-level decision-making body coordinate relationships among departments, government management sector monitor implementation of policies. Civil-military integration involved adjusting interests function between departments, which needs different departments to work together under the leadership of Party Central Committee and State Council. That how to unify the different thoughts of various departments, establish effective macro control and strategic synergy mechanism is an urgent the problem which need to address now. The key is a central leader who can manage military and civil both establish authoritative high-level coordination mechanism. Play and strengthen his decision making, coordination and supervision function of strategic issues, such as national significant science and technology project, national defense science and technology major planning and significant civil-military integration industry base, and improve decision procedures and coordination mechanism according to the present government and military system situation.

We should establish high-level decision-making mechanism coordinate civil-military integration, improve national economy macro-management system, for example, we can set up an office responsible for the daily coordination work under State Council. We should also clear defense integrated department and its corresponding responsibilities, strengthen national defense integrated work, improve national defense construction management system, for example, clearing National Development and Reform Commission's defense functions of regulating national economic mobilization and economic and social development, taking considering the overall balance of national defense construction as one of the basic duties and daily work. Strengthen central committee functions of State and Central Military Commission, which has the power to enact major principles and policies of national defense construction, harmonious development and rational resources allocation of national industry and science and technology, decide, coordinate and supervise implementation of major dual-purpose project and mutual transferring of technology. Relevant government departments, national defense science and technology industry comprehensive management departments, science and technology education departments, military equipment management departments, all arms constitute it. We can set up an office assuming coordinating the daily work and Expert Advisory Committee responsible for the major dual-purpose project assessment and providing advice for major decision-making (It consists of well-known experts of military and civil). According to the long-term development and reality demand, relevant military departments (equipment department), can take the relationship between short-term and long-term and need and possibility into consideration, propose scientific and reasonable demands of military construction and equipment development. Finally the demands are collected to a department of Central Military Commission (such as the assembly), and then be evaluated. Set up communication and interaction mechanism among government departments and between military and civilian.

Establish fixed communication channel and working procedure through means of the joint meeting, offices and regular communication.

2.3 To coordinate management operation mechanism. The first thing to do is to improve competition mechanism. Above all, expand the military market scope. With the rapid development of civilian technology, many countries realized that the full use of the achievements and resources of civilian areas to serve national defense construction is an important way to improve the efficiency of resource, and therefore they take various measures to actively support and encourage the civilian enterprises to participate in military weapons equipment research and production. Support civil SMEs to develop products for the military, has become the guidelines of the U.S. military. Weapons and Equipment General Administration of French Defense Department make it clear that they should encourage SMEs to participate in the competition of weapons and equipment procurement, especially in the sub-systems and equipment levels. To ensure that SMEs access to military research projects, Weapons and Equipment General Administration set aside 10% of the acquisition plan as the competitive project of SMEs. Therefore, government departments should unify the management of military products market access and authentication. Those units who engaged in weapons and equipment research and production grant corresponding license in accordance with the provisions, and those private enterprise who comply with the conditions can be absorbed in; military equipment order department should coordinate with government departments effectively, select the best equipment production units in designated market circle to promote the market competition order. The second is to accelerate investment system reform of national defense science and technology industry. According to "State Council's approval on deepen national defense science and technology industry investment system reform", formulate supporting policies and measures. Formulate and implement specific methods and measures of civilian units into weapons and equipment research and production areas.

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Draw up "social investment guidance catalogue" to introduce social capital, advance diversity of investment subject. Actively introduce social capital, advance diversity of investment main body.

To improve the incentive mechanism is another important thing. Give full play of the government's guiding role in investment. Encourage and support civil-military integration through direct financial investment, preferential tax and other financial investment ways. In the process of absorbing and introducing civilian technology into military product development and production, set up special funds to promote national defense basic ability. Encourage to absorb and introduce high civilian technology ability. Implement relevant taxation policies, encourage and support enterprises to develop dual-use new product, new technology and new technology. Increase incentive policies, such as the pre-tax deduction of enterprise investment in research and development, implement preferential tax policies to promote the development of hi-tech enterprises. Offer necessary tax supporting policies to the purchase of advanced scientific research instruments and equipment. Increase foreign exchange and finance supporting to overseas research and development institutions of enterprises, provide convenient and quality services for foreign investment. Implement relevant financial policies. Establish and improve the investment mechanism, set up multi level capital market system. Create a more relaxed financial and foreign exchange environment for the high-tech venture investment enterprises operate capital among countries. Take positive steps to explore investment ways of government funds for guidance, policy finance and commercial finance capital for main body, promote more capital into the venture capital market.

To improve the evaluation mechanism is also necessary. Establish communication channels and bodies for information services and evaluation, assessment, certification of civilian technology potential military value and dual-use technology; establish evaluation system reflecting coordinated development of national defense and the economy.

Establish information communication channels of military research and production and construction. Promote network and dynamic change directional development of military market supervision mode, shorten the information chain. Establish military and civilian enterprises information communication platform, form information open communication channels.

3. CONCLUSIONS

Civil-military integration is the trend. In the context, how to improve the management of Chinese defense science and technology industry must be a very worthwhile topic of concern. We should learn from the experiences and practices of developed countries, to build innovative management system, to coordinate the management operation mechanism and to improve relevant laws and regulations. Of course, in addition to the above practices, there are other ways that should be studied. They will be the object of further research for the authors.

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