

# Ammunition Security Studies Based on Third-party logistics

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**Abstract**—To analyze the definition of third-party logistics and the significance of it using in army ammunition supply security. Research on the status of the U.S. third-party logistics application stage. According to the current situation of the army ammunition supply security, and to learn the successful experience of the use of third-party logistics military in America. Than put forward that how our army use the third-party logistics in store, transportation, packaging which is the three links of army ammunition supply security. All of these are providing a reference for the actual basis for the protection of ammunition.

**Keywords**—third-party logistics; ammunition security; significance; application

## I. INTRODUCTION

The arrival of the information age, so that the basic of transition from mechanized warfare to information warfare. Information technology operations faster, showing multidimensional space combat, combat unprecedented increase consumption, operational support system complexity, which is bound to protect our military ammunition raised new and higher requirements. In recent years, with the rapid development of the global logistics industry, third-party logistics increasing people's attention. As an increasingly popular mode of logistics, it has become the future development trend of logistics. Third-party logistics with low operating costs, high quality of service features and the military played a key role in security. Therefore, the development of our military should learn and apply the results of the third army logistics support capabilities to enhance and promote the development of China's military and defense industry.

## II. DEFINITION OF THIRD PARTY LOGISTICS

Third-party logistics which abbreviated 3PL or TPL, in a foreign country, also known as contract logistics contract, first developed in the mid-1980s in Europe and America. China's national standards will be defined as "Providing

logistics services business model by supply-side and demand-side outside of logistics enterprises". In addition, due to the TPL is often in the form of logistics outsourcing contract to operate, it is sometimes also known as contract logistics or logistics outsourcing. Third-party logistics is a third-party logistics service provider to the user in a specific price at a specific time period personalized logistics services. The logistics services which are usually built on the basis of electronic information technology. Meanwhile, third-party logistics is independent of the first party (the supply-side, also called the shipper) and the second outside party (the demand side, also called the consignee). It is working with the first party and the second party to provide its specialized logistics services.

3PL have low operating costs, high quality of service characteristics, which as a new logistics concept of operations and methods accepted by people. All over the world it has been developing rapidly. But it has not only become a success in business management methods, but also have gradually been discovered in the military. And in developed countries such as the U.S., UK and so on introduce 3PL military security reform and construction practice, and achieved many successful experiences. Army ammunition guarantee continuous protection of existing capacity, lack of rapid response capability, which restricts the ability and level of protection ammunition army had an urgent that need to protect the ammunition into the old concepts and tools. Third-party logistics operations as a new concept and method can solve the existing army ammunition security problems. But how to apply to third-party logistics protect our military munitions become urgently needed at this stage of our consideration..

The concept is applied to third-party logistics army ammunition protection have the following meanings: First, third-party logistics is based on the user's requirements for troops to force a user-centric, best meet the needs of troops in peacetime and wartime ammunition for the troops to provide high-quality logistics services, accurate security, real-time protection. Second, third and ammunition to protect the entire logistics process is an important part of third-party logistics should be included ammunition to protect this great system, the ammunition to protect the organic integration and optimization of resources, thus

contributing to the whole rational and efficient military logistics operation. Finally, third-party logistics business flow, logistics and information flow of the three combination. This has obvious characteristics of militarization, on the other hand contains the functional elements of logistics, and information flow plays a major role in controlling and guiding

### III. SIGNIFICANCE OF AMMUNITION TO PROTECT THIRD-PARTY LOGISTICS

#### A. *Selecting a Template (Heading 2)To improve the military effectiveness*

In the development process of China's military logistics, there are still many problems. Such as modern logistics technology behind the small scope of application of the Internet of Things, shallower, less high-level military logistics professionals, ammunition management and logistics centers as the main content, covering the military logistics system has not been established, and so on. But the local development of the logistics industry earlier, relatively rich theoretical and practical experience, has a large number of professionals. The introduction of third-party logistics, logistics companies can take advantage of the local technological advantages and scale advantages, military logistics personnel to promote high professional standards and levels of day, to accelerate the construction and improvement of our military ammunition security system, logistics system, to better improve the military effectiveness . It also can increase the security of ammunition can mobilize to meet the army ammunition guarantee "timely and appropriate manner, the amount of 'supply needs.

#### B. *Learn advanced concepts of third-party logistics*

US-led Western countries, the new emphasis on the emerging revolution in military affairs should be built into a logistical delivery type to distribution -based , capable of combat troops precise safeguards lean, efficient and flexible digital logistics one of the troops , the core meaning of this reform goal is to rebuild the service concept. It should be said , after the reform has moved from a purely logistical material reserves and allotment of services into a broader , more advanced service delivery , a more proactive attitude of the new logistics. Concept of modern logistics in the field of promotion and use of the military , especially in third-party logistics strategy to achieve the inevitable logistical support innovative ideas can be realized with the distribution -based active protection. The purpose of logistics is the " Speed ( speed ), Safety ( security ), Surely ( reliable ), Low ( low cost ) of 3SIL principle that the least cost to provide the best quality service ." Logistics requirements of the service to pursue a more comprehensive, more in-depth , it is even more adept at breaking the traditional multi-level functions of management, focusing on business process management , focusing on quality of service. Therefore , the use of third-party logistics service concept on the one hand the inevitable introduction of logistical areas of logistics , it also requires the military service concept must be further changes in order to facilitate the development and use of third-party logistics .

#### C. *To increase economic efficiency*

Military systems into third-party logistics services, and its essence is to raise or lower the premise. It does not affect the security forces to optimize the allocation of resources between the army and society. And to achieve the best allocation of resources efficiency. Material supply management system has caused the existing umbrella organizations overlap, increased redundancies, imperfect system formed a lot of manpower, material and financial waste. In addition, because the layout of the relative dispersion forces can not effectively protect the organization and implementation of socialization. Through the introduction of third-party logistics services, will integrate the needs of the army needs form economies of scale. The full enjoyment of scale advantages, it can reduce the unit cost of protection, while improving economic efficiency and service level guarantees. Meanwhile, as supplies by specialized companies to complete in order to streamline the military security agencies, prompting its functions optimized to improve the army's own support capabilities.

#### D. *To improve security of supply capacity ammunition*

Due to transport military forces to protect the resources, rapid ongoing difficult task forces for protection. The third-party logistics companies with its specialization and scale advantages, to respond quickly to the needs of the troops, the use of third-party logistics companies to assist the military to complete the logistics business and efficient service. Thereby enhancing the security forces combat capability. Especially in wartime, military logistics services to increase the amount of demand, forces difficult or not well done individually support tasks, the army will introduce third-party logistics, improve efficiency and protect the ability to meet the logistical needs of the user supplies the troops.

### IV. THE USE OF THIRD-PARTY LOGISTICS STATUS OF U.S. MILITARY

Modern U.S. Military developing gradually cited a number of local business development experience, technology, business model, and so on. U.S. Air Force, the company signed a contract with the local contract aircrew training, operation at Sheppard Air Force Base, and aircraft repair and maintenance. Meanwhile, the Navy is introducing local construction companies studied surface ship combatants technology and is equipment maintenance bays major projects. In logistics services, mainly to the introduction of third-party logistics troops. It is a local business operating method introduces a successful example of the army. At the same time, it is widely used in all aspects of military logistics reform and practice. This paper analyzes the U.S. Defense reports to the status and experience of the U.S. third-party logistics of introducing simple to understand and analyze. Specific summarized as follows:

#### A. *The Full Advanced technology of third party logistics*

Due to the heavy task forces to study the complexity of the high specialized logistics technology, unlike local companies engaged. But also because of the cooperation and competition among enterprises make local logistics technology is far advanced in the army. Because of this,

the U.S. third-party logistics vigorously introduced into its armed forces, to include procurement of raw materials, the use of advanced packaging materials, container ships use dangerous materials scrapped, business management consulting services, supply chain management and many other content . Also introduces the concept of third-party logistics strengths in customer satisfaction. These contributed to the development of military technology and military logistics logistics development and innovation, with a strong practical and theoretical significance. Besides the introduction of advanced technologies through third-party logistics to the army, to meet the needs of military logistics, but also reduced the number of military technology and the development and construction of facilities, reducing military spending.

#### *B. Strengthening Cooperation with Third-party Logistics Company*

U.S. troops in the introduction of third party logistics companies, logistics needs for different choice of different companies, and even multiple companies working together to meet the needs of logistics. The logistics company with professional, high quality of service and business development of the company better, stronger and so on. Meanwhile, under the specific needs of the U.S. military and even select international third-party logistics companies to cooperate. In the course of cooperation with third-party logistics companies, the U.S. military will be concluded or decision on its further development partnership based on the actual situation, to reach a mutually satisfactory, mutually beneficial cooperation and win-win situation. It is worth noting that the implementation of strict agreed price (firm-fixed-price), while third-party logistics services, and do not make any changes to the price paid when working with third-party logistics. This not only ensures the smooth progress of cooperation, but also help maintain long-term good relations of cooperation.

#### *C. To Expand the Scope and Field of Application of Third-party Logistics*

Third-party logistics has been extended to the U.S. Navy, Air Force, Army military services and the large range. Meanwhile, third-party logistics involved in all aspects of the procurement, packaging, transportation and other U.S. military logistics, but also in all aspects of management, information technology and platforms, the use of broad areas. In addition, the logistical support of the health care industry also uses third-party logistics business model. Seen not only in the U.S. third-party logistics support which it has gradually involved in various sectors and areas in which the U.S. military, but also use of field is very broad. And it has become the development trend irreversible.

### **V. ARMY AMMUNITION INTRODUCED TO PROTECT THIRD-PARTY LOGISTICS**

On the status of third-party logistics and the implementation of the U.S. military to protect our military ammunition for analysis, we can see the introduction of

third-party logistics and ammunition security is realistic. However, due to the more dangerous munitions itself, but the packaging needs of professional, high-quality, high specificity requirements. The addition ammunition also has a high security requirements which is "timely, adequate and accurate". So we will be introduced to the third-party logistics and ammunition to protect them need to take full account of the special requirements of ammunition and ammunition to protect themselves, and give full consideration to all aspects of the logistics of how to introduce third-party logistics support capabilities to improve ammunition.

#### *A. Ammunition Stockpiles*

Ammunition in the production, use, decommissioning, scrap the entire process of destruction, which stores accounted for most of the time. Ammunition storage requires a lot of manpower and ammunition depots, spent a considerable amount of military spending. The introduction of third-party logistics, warehouse and can borrow local managers to reduce expenditure on infrastructure and staff wages, increase the flexibility of the military, the military will be more high-tech and research into new weapons and equipment. In the long-term storage, due to the role of various factors, ammunition quality conditions will gradually deteriorate. In the application of the local warehouse store ammunition, pay attention to the temperature, the construction of humidity, moisture, mildew, rust and other conditions, to ensure the quality of ammunition. Meanwhile, you can place on the basis of the existing warehouse on the transformation to rebuild the warehouse, making it more suitable for the storage of ammunition.

#### *B. Ammunition Packaging*

There are two types: component heads and text heads. As an integral part of the packaging of ammunition , ammunition before the security system run has been completed, and its integration into the overall protection of the natural form of logistics , ammunition and security forces to become connected to the bridge and link. Meanwhile, the packaging of ammunition or ammunition in storage, the need to protect transportation security. Ammunition to consider its usual storage temperature, humidity , pay attention to moisture , rust during the war. Due to the rapid deterioration of the living environment of the battlefield , changing the natural environment , a wide area of the electromagnetic environment , sophisticated electronic warfare environment makes storage of ammunition facing an unprecedented threat to the security and survival . Local logistics packaging technology , packaging materials, and containerization , integrated logistics approach has matured , both to help achieve security and ammunition security , maintenance, ammunition quality , while improving efficiency and ammunition packaging . When ammunition packaging activities in the application of third-party logistics resources and technology , to fully consider the packaging specifications, packaging materials and packaging structures. First, local logistics and packaging specifications would like to move closer to a shared third-party logistics handling, handling stacking,

packaging equipment. Secondly, the material selected, fully consider keeping ammunition quality and safety. Finally, on the packaging structure, both the logistics and local standards, but also to prevent the packaging structure deformation.

### C. Ammunition Transport

Ammunition transport, logistics can use local transport, you can also staffing, transportation and other selected third-party logistics companies to reduce costs and improve efficiency. In the beginning of military cooperation, as well as the completion time for the carriage of traffic in order to protect the ammunition "timely, adequate" protection requirements. In addition, local logistics palletized, containerized transport is more mature than the military, you can speed up the introduction of third-party logistics transportation equipment set our military ammunition and integration, has enormous significance for the protection of ammunition. It is worth noting that, in the course of the introduction of third-party logistics, pallet size and the size of the container, the size should have strict standards, the military should be integrated where pallets, general specifications of the container, as well as the transport of ammunition pallets, container requirements, its written rules and standardized to facilitate the application of ammunition transport third-party logistics.

## VI. CONCLUSION

Ideal form of protection on behalf of ammunition refers to the "number, quality, time and space" to meet the dimensional characteristics of the material needs of ammunition actions to protect and provide timely and appropriate manner, the applicable ammunition guarantee support, in order to achieve "effective support" of General requirements. Development of professional, modern ammunition to protect not only the need to improve the protection of our military ammunition existing technology and equipment, but also to break the traditional thinking and security concepts, change the "large and small" Fundamentally, nothing - yourself concepts, according to military and socio-economic benefits, benefits of scale principle, third-party logistics matures organically into ammunition to protect large-scale systems, and establishing development needs of our military ammunition security system to protect and improve the ability to protect our military ammunition.

The introduction of third-party logistics ammunition protection in line with the needs of our military to protect current and ammunition, has a certain positive role and significance. In addition, the introduction of foreign troops experienced third-party logistics and the introduction of

third-party logistics for the army to provide some inspiration and ammunition to protect specific methods can operate. Therefore, we also need to fully understand the positive role of third-party logistics, the establishment of accurate and comprehensive service standards and evaluation system, construct the corresponding ammunition protection model, designed specifically to enhance the ability of the operating mechanism of ammunition guaranteed complete protection of the army's ammunition tasks.

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