Research on Military Cold Chain Logistics Management

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Abstract. With the implementation of the diversified military operations and the implementation of practical training, the environment of the armed forces is becoming more and more complicated, and the quality of food and beverage is obviously improved and the variety is more abundant. Dairy products, aquatic products and other fresh food both high nutrition and taste, in the army officers and soldiers diet occupies an important position. But at the same time such foods are highly perishable, how to provide safe and efficient diet, directly determine the combat effectiveness of the troops. Cold chain logistics with extended food shelf life, to prevent food contamination, to ensure food safety performance, cold chain logistics system for the Armed Police Force fresh food diet provides an effective solution.

Introduction

The current international and domestic situation is complex, anti-China, violent forces have been opportunistic terrorist attacks, resulting in adverse social impact, threatening people's lives and property. The army as the backbone of maintaining social stability and maintaining the order of social order, needs periodic field training or a long period of time to maintain the social order of the incident area. Therefore, it is necessary to support the troops' effectively at the sudden combat effectiveness.

When the troops in the mountains, suburbs and other places away from the city area training, or the task of local social order is extremely chaotic, can’t purchase to the safety of fresh ingredients, the need for food from the storage site to the task of transport, cold storage and food refrigerated trucks will play important reserve and transport role. Therefore, the construction of cold storage and the construction of refrigerated transportation are the most important two links in the cold chain logistics system construction, directly related to the cold chain logistics benefits and the quality of officers and soldiers’ diet.

The Basic Meaning of Cold Chain Logistics

According to the "People’s Republic of China national standard logistics terminology" provides that the cold chain is "according to the characteristics of goods, in order to maintain its quality from the production to consumption in the process of always in a low temperature state of the logistics network[1].

Cold chain logistics requires professional refrigeration. Refrigeration facilities and equipment provide technical support to ensure the effective operation of cold chain logistics. Food cold chain logistics technology is focused on cold storage construction and refrigerated transportation construction, infrastructure investment cost, high technical complexity and high difficulty. All aspects of the cold chain require higher organization coordination and efficient cost operation control. At the same time, cold chain logistics market operating scale is small and the network is scattered, military combination less.

Cold chain logistics for fruits and vegetables, meat and poultry, aquatic products and other primary agricultural products, including cooked food, dairy products such as processing and frozen food, but
also chemical dangerous goods, drugs, blood and other special goods. While the military cold chain logistics generally involves only diet and medicine.

The Military Cold Chain Logistics Development Status

With the rapid development of China's economy, people's living standards continue to improve, the pace of life is accelerating and people's demand for frozen food is growing. The importance of frozen food safety is also increasing. In recent years, CCTV and other major media has exposed the cold chain logistics industry insider aroused widespread concern. In order to ensure the quality of frozen food, cold chain logistics development is imperative, the construction of cold chain logistics is even more urgent[2].

The Development of Cold Chain Logistics in China the Status and Causes of Cold Chain Logistics

Since the 1982 "Health Law" promulgated to promote China's food cold chain since the start, the Chinese government in the "national transport policy points", "long-term development of the logistics industry planning" and a series of standard norms and development reports regulate the relevant cold chain logistics. The industry standard, depth analysis of the current status quo, put forward the strategic planning.

At present, China's fruits and vegetables, meat, aquatic products cold chain circulation rates were 5%, 15% and 23%, and Europe and the United States far. Data show that Europe and the United States and other developed countries, the circulation rate of meat and poultry cold chain has reached 100%, fruit and vegetable cold chain circulation rate of 95% or more, while China is the majority of fresh agricultural products at room temperature circulation, even slaughter or storage part of the link The low temperature treatment, but in the transport, sales and other aspects of a "broken chain" phenomenon, the whole cold chain ratio is too low [3].

The Status and Causes of Cold Chain Logistics

Foreign military cold chain logistics development started earlier, at present, the US military, Japanese, Russian troop’s cold chain logistics equipment in the forefront of the world military logistics field. The US military has used three-temperature and double-temperature shelters for food on several recent battlefields. The Japanese also invented the software portable folding refrigerator, weighing 60 kg, small size, easy to carry troops carrying.

Our army has not yet established a system of efficient, involving all aspects of the whole element of the cold chain logistics operation mechanism and regulatory system, the Navy in the voyage cold chain mode has been used and research, the research institutes of cold storage containers, Incubators and other special-purpose cold chain equipment research and development. As the entire cold chain ratio of low social and environmental conditions, the Armed Police Force grassroots fresh food supply chain is even more so, many food suppliers are not strictly used cold chain transport equipment, do not attach importance to food hygiene conditions, which officers and men diet healthy to a great threat [4, 5]. The main reasons are the following:

The Degree of Ideological Awareness Is Not Enough, the Regulatory System Is Not Perfect.

The concept of cold chain logistics is also the beginning of the rise in recent years in China, due to media reports, ordinary people have just come to understand the importance of cold chain logistics for food hygiene and safety, military cold chain logistics started late, there is no relevant cold Chain logistics system concept, the Quartermaster business department logistics assistant, the chief secretary and the cooking manager has not systematically recognized the cold chain logistics for the officers and men of the importance of food hygiene and safety, supervision is not high and the actual operation process, do not pay attention to the cold chain equipment operation Normative, to the troops food hygiene and safety has brought hidden dangers. Coupled with no relevant food cold chain logistics standards, the armed police forces in this area is a blank.
Cold Chain Logistics Equipment Behind, Technical Standards Are Not Unified. "Twelve Five" before the military cold chain logistics equipment using military civilian model, such as the direct purchase of civil insulation barrels, a simple color processing to military, a single species, backward technology, poor adaptability, can not meet the troops mobile off-road Performance requirements, coupled with a low degree of information, can not meet our military wartime cold chain equipment needs, cold chain logistics equipment overall development is slow.

With the further construction of modern logistics to further promote the achievements of the cold chain construction has been the initial results, food freezers, refrigerators and other refrigeration equipment has been listed in the grassroots level, for the protection of troops and routine diversification of military tasks to play an important role in diet protection. With the serialization of processing equipment, modernization, thirteen five plan is expected to invest 2.5 billion development of cold chain equipment. At present, our army has successfully developed a quick-frozen function, can quickly maneuvering off-road, can bring their own or outside the power supply of frozen frozen shelters, real-time monitoring of high information-based food refrigeration insulation car, field software storage incubator, refrigerated containers And helicopter crew to go out to perform the task of the helicopter hot and cold dining box, the Armed Police Force units also have independent research and development of food refrigerated trucks, food incubators, style standards are not uniform, can not meet the needs of the military mission tasks, many Unit cold chain equipment in idle state.

Distribution in Various Forms, Convergence Link Is Not Perfect. At present, there are three types of cold food logistics and distribution of fresh food, one is the distribution of goods producers, the second is the professional cold chain logistics company distribution, the third is not the cold chain conditions of the logistics company is also distribution of cold chain food. Most of the food suppliers in the distribution and did not use a professional refrigerated trucks, distribution conditions do not meet the state requirements of various types of perishable food low temperature storage and transportation technical indicators, such as: milk, eggs, fruits and vegetables suitable for 0 °C to 7 °C in the environment of storage; meat, aquatic products suitable for -2 °C to 2 °C in the environment of storage.

Cold chain logistics in the processing, storage, transportation, distribution and other links closely to ensure the quality of food. However, the military station is different, cold chain logistics hardware conditions by the regional economic development constraints, coupled with the troops do not have strict cold chain logistics regulatory mechanism, many areas without large cold storage, suppliers in order to save costs, will be near the shelf life of food supply troops, As well as the use of soil on the need for refrigerated agricultural and sideline products transport phenomenon, greatly affected the food storage cycle and food safety.

The Armed Police Force Cold Chain Logistics System Construction Measures

Perfect armed police force cold chain logistics system construction, alone rely on the strength of the Armed Police Force itself is difficult to complete. It needs the government, the military, industry organizations and local enterprises through the cooperation can be achieved. Armed police forces should be combined with China's national conditions, military intelligence, learn from the experience of developed countries, out of a line with the actual diet of the cold chain construction of the road.

To Strengthen Publicity and Education, Improve the System

Through propaganda and education, to improve the officers and soldiers for the food cold chain safety issues of attention and awareness, logistics staff long cooking class staff training into the professional cold chain logistics knowledge education, improve the quality of grass-roots food security personnel, Chain logistics supervision and regulatory mechanisms, the establishment of cold chain food supplier library, regular examination of the final out to ensure that the cold chain benefits and food hygiene quality.
**Increase Capital Investment, Standardize Technical Standards**

The troops should meet the needs of diversified military tasks under different conditions, strengthen the cold chain logistics infrastructure construction investment, increase cold chain equipment equipment research and development, to ensure that officers and soldiers can eat safe food; to speed up the cold chain information system construction and investment, To monitor the cold chain transport and storage environment, both to ensure that the cold chain forward transport, but also make full use of existing facilities and equipment, to minimize costs; combined with national industry standards, the development of cold chain operating procedures and technical standards to ensure that troops from the students Fresh ingredients ordered to the transport storage to the cold chain equipment installation and maintenance and so on, according to the clothing, there is regulation feasible.

**Combined with the Actual Station, Innovation and Security Model**

**Strengthen Self-protection.** R & D and production units can use their own to meet the different conditions of food refrigerated trucks, as well as the establishment of research group with the comprehensive protection base and five regional security center, the construction of large-scale cold storage, to build a large-scale cold storage. Strengthen the cold chain logistics support capacity. This model is characterized by the forces of self-control cold chain logistics equipment and facilities, can be dominated at any time, at any time call, safe and efficient to meet the needs of the task, but more expensive, more investment, longer construction period, armed police forces can be combined with the task Northwest northwest direction or a task to strengthen.

**Full Care Support.** The implementation of relying on local third-party cold chain logistics enterprises, signed the relevant agreement by the third party in the task when the troops need to send the necessary ingredients. It is characterized by relying on social security to improve efficiency, save the manpower and financial resources of the troops, reduce the loss of military resources, but at the same time local enterprises can not guarantee in any social environment is more complex circumstances to meet the needs of the task force, in addition, third parties to provide food transport, food safety Sexual conditions will be threatened, if the criminals by the criminal attacks, the consequences could be disastrous, therefore, in the implementation of all-care support can be considered in the high level of economic development areas, such as the Yangtze River Delta, Pearl River Delta, Beijing, Tianjin and other regions.

**Explore the Integration of Military and Civilian Security.** By the national planning, in the construction of cold storage to consider the needs of the troops, so that when the need to use the cold storage resources; with local enterprises to sign an agreement to protect the troops in the task needs to mobilize the relevant food refrigerated trucks to provide self-catering protection. This model is characterized by saving the troops of the financial manpower, but also to protect the troops in the task needs of self-dominated cold chain logistics equipment to ensure food safety and task completion. Military and civilian integration as a means of exploration, with the self-protection, all-inclusive security together constitute the Armed Police Force cold chain logistics system.

**Concluding Remarks**

With the diversification of the task, especially the Tibetan areas, Xinjiang and other regional tasks continue to increase, the development of supporting perfect, full coverage, all-weather cold chain logistics system, will be the importance of the construction of the military logistics system content. The government should take into account military needs in the context of macro-planning national cold chain logistics systems and include force requirements in decision-making. In different times, in the face of different complex environments, according to the type of task received, cold chain logistics to take the operating mode can be different.
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