

Research on Weaponry Information Management System

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Abstract

The purpose of the information management of weapons and equipment is to provide a comprehensive information management mode for military weapons and equipment, so as to improve the management efficiency and reliability of equipment and ensure the full realization of the wartime operational efficiency of weapons and equipment. This paper analyzes the large weapons and equipment to carry out the importance of equipment management information system, combed the collection part of the research status of weapons and equipment management information system at home and abroad, and several kinds of information technology for weapon and equipment information management is studied, for large weapon equipment information management system design work to lay a certain foundation.

Keywords

Weapons and Equipment, Information Management, Life Cycle.

1. Introduction

The army is an important cornerstone of safeguarding national security. In order to fulfill the responsibility and mission of safeguarding national unity, the army must always maintain a high level of combat effectiveness, and equipment management is an important link in the formation of combat effectiveness. With the acceleration of the new military revolution in the world, the modernization of weapons and equipment of the world's major military powers has been accelerating, and some large weapons and equipment for major battles have entered the stage of mass production and equipment instead of trial production in small batches. Equipment quantity and technical data are increasing, quality and core parameters are improving, management mode is becoming more and more complex, and management is becoming more and more difficult. Traditional weapons and equipment management mode can not adapt to the needs of military equipment management, urgent need to change and innovation, which put forward higher requirements for the current military equipment management work. At present, the management of some weapons and equipment still follows the tradition of manual and paper document publishing, statistics and storage, which has many disadvantages such as complicated approval process, low management efficiency and unguaranteed security.

Under the new situation, information technology has gradually penetrated into all aspects of people's work and life. It not only changes the way of life, but also promotes the revolution of military management technology. The military revolution with information technology as the core is advancing comprehensively, which is mainly marked by the informatization of military management. Informationization is an important condition to promote the development of the army. Implementing the management of weapons and equipment with the help of information technology can improve the combat effectiveness of the army to a certain extent. Weapon equipment information management

system is through integrated information management, the use of related software design, high-tech computer and network technology, equipment information transmission, collection, processing, maintenance and storage functions, in order to improve the efficiency of equipment management and high income. It can fully improve the efficiency of equipment management, reflect the actual status of equipment in real time, ensure that equipment is always in good condition, and maximize the effectiveness of the army.

2. The Significance of Weapon Equipment Information Management System Design

According to the need of networked and integrated war in the future, it is necessary to promote the information construction of weapons and equipment, implement the dynamic scientific management of weapons and equipment with the help of information technology, make the army integrated and efficient in the management of equipment, and effectively improve the combat effectiveness of troops. As a continuation of weapon equipment development and production work, technical support and after-sales service is to properly handle the possible quality and reliability issues, we will further improve the equipment function and the performance of the important way, is equipped with a stage in the whole life cycle management, also is a kind of professional technology of weapon system and even a series of accessory products. Reality, make grinders unit for main battle weapon equipment development work over a long period of time "sides" status, emergency production, although the weapons and equipment, conducted a series of test and examination, but for the long-term performance of weapons and equipment maintaining and reliability data accumulation has been a lack of more reliable data basis and facts to support, for the long-term reliability of the equipment and "healthy" management difficult. After a large number of new main battle weapons and equipment are delivered to the army for service, the maintenance and other management work of equipment in the later period brings great pressure to the army, and it is often difficult for the contractor to obtain long-term test data of equipment, so it cannot provide better technical support. Once the equipment has quality problems, the army cannot deal with them on site, the contractor cannot rush to the site as soon as possible, and the fault phenomenon and data cannot be transmitted in time through effective security means, which will have a certain impact on the timely investigation and treatment of problems. In view of these situations, there is an urgent need for an information management system of weapons and equipment. Through integrated information management and network technology, it can transmit, collect, process, maintain and store equipment information, so as to improve the efficiency and high income of equipment management, and support accurate control and decision-making system. Through the weapons and equipment information management system of construction, not only to improve military equipment management mode, improve the efficiency of management, reduce the pressure of management, also can keep weapons and equipment performance, good tactical and technical equipment development and production continuous improvement to provide reference data, can effectively support the bearing grind make grinders unit after-sales service management system, Give full play to the troops and weapons manufacturers both overall technical advantage and resource sharing, effectively ease the maintenance support and the contradiction between the urgency of the after-sales service and all kinds of resource utilization, reduce the cost of equipment support, improve the work efficiency, improve equipment reliability, maintainability and supportability, provide service for the army in a timely and effective manner, It is very important to realize the integrated management of equipment life cycle.

Therefore, strengthening the research on the design of weapon equipment information management system can accelerate the improvement of military equipment support ability, and realize the improvement of management efficiency and quality. With the advent of the information age, the emergence of this management mode has practical significance in solving management problems and improving the effectiveness of equipment life-cycle management.

3. Research Status of Weapon Equipment Information Management System at Home and Abroad

China's equipment support work started late, the accumulation of equipment support engineering experience is insufficient, and there are many problems in the implementation process, so there is still a big gap between the work effect of equipment support and the support needs of engineering projects. But after long-term continuous learning, exploration and practice, also made certain achievements. In management, with preliminary management experience; In technology, the preliminary establishment of the technical application system; In terms of personnel, a team of equipment support technicians has been initially trained and established. At the same time, the theory and method of systems engineering are used to arrange the support work of model projects in different development stages, such as equipment support work planning and research, combat system equipment support design and analysis technology research, etc., to provide necessary support for the implementation of equipment support information construction.

Chen Yihui has proposed based on. NET weapon equipment management information system design and implementation analysis, the management information system is divided into information management, weapon management, equipment management, ammunition management four modules, to ensure the effectiveness of work and data accuracy, highlighting the important role of weapon equipment management system in promoting military management information construction. The research uses RFID to realize a set of weapons and equipment management system suitable for military use. Based on the life cycle of weapons and equipment management, the core business process of weapons and equipment management is deeply studied. The requirements and design scheme of weapons and equipment management are proposed, and the actual coding implementation of weapons and equipment management system is carried out. The actual test shows that the system can run safely, stably and efficiently, and play a practical role in improving the efficiency of equipment management and combat effectiveness.

Wang Yugang once proposed a construction scheme of weapon equipment management information system based on Internet of Things technology to improve the current level of weapon equipment management. Radio frequency identification, such as temperature and humidity sensor unit and unit internal LAN together to form a comprehensive equipment management information network, and makes a preliminary explanation on the overall design of the system, basically achieved a certain type of weapon equipment intelligent management, to improve the efficiency of weapon equipment management and has the vital significance.

Wang Ren designed a domestic embedded database management system, which can not only replace the file system, but also replace the foreign data management system, as a tool for data storage and data management. The system simplifies the management mode and improves the security and reliability of the system.

Han Bo puts forward a design scheme of weapon equipment fault information support system based on Android. The system mainly includes portable weapon equipment fault diagnosis platform, fault information database management and maintenance, and designs the overall framework structure and information coordination architecture, which has good expansibility and operability. It has great reference value for future fault diagnosis and auxiliary decision making of various weapons and equipment.

Can be seen from the above research, with the continuous development of information construction in our country, at present our country on the management mode has had the profound change, basically all units of different departments at various levels have comparative perfect automation management system, management personnel at all levels have been mastered the knowledge of computers, have rich experience in the use and management, Even with a certain level of research and development. At present, the military management information system is gradually improving both technically and architecturally, indicating that Our country is entering the information

construction period. But the existing management system for weapon equipment and can't meet the requirements of actual work, the management of weapons and equipment still use manual administration more supplemented, computer management way, without a compatible and perfect management system to the full life cycle of weapon from issued to scrap the omni-directional, the whole process, the vertical type of management.

4. Research on the Application of Weapon Equipment Information Management Technology

With the development of information technology and increasingly mature, a lot of new technology is applied to the weapon equipment management information in the study, the new technology application research in some ways has a strong practical value, and some technologies have been widely used at present, have achieved good application effect, for the development of weapons and equipment management informatization has played a good role in promoting.

Radio Frequency Identification (RFID) technology is a non-contact automatic Identification technology based on Radio Frequency communication, which is widely used in equipment management, vehicle management and other aspects. Niu Zibiao applied RFID technology to the research of torpedo weapon equipment maintenance and support information system, realized the digital three-dimensional warehouse of torpedo equipment maintenance and support, the visualization of the whole life cycle maintenance and support, the visualization of equipment situation, the visualization of logistics and so on, and designed and realized a munitions containerized support management system.

The Interactive Electronic Technical Manual (IETM) is an important equipment support information technology developed in the late 1980s under the impetus of the development of modern information technology and the military demand of information war. This technology has played a huge economic and military role in the US military logistics support, and China issued the relevant technical standard (GJB6600) in 2008. In the related application research, Shao Hongwei once established the IETM system of a certain armored vehicle based on the IETM technical standard GJB6600 of China.

Since 2009, the concept of Big Data and Big Data analysis technology have gradually received attention and attention. In 2015, The State Council of China issued the Notice of Action Program for Promoting the Development of Big Data, officially raising Big Data to the height of national core strategy. Army informatization construction in our country, especially in the process of equipment support informationization and big data will also be a revolutionary impact, at present, in view of the large data in the application of equipment support system is still in its infancy, and researchers for big data in the application of equipment support system is studied, for big data technology application in the field of equipment support to provide the reference. Some domestic experts have explored the impact of big data technology on equipment support construction and development from both technical and theoretical levels, conducted feasibility analysis on the application of big data technology in the field of equipment support and formulated development strategies. Based on the military big data control platform, this paper expounds the idea of data deep application in equipment support construction from the perspectives of data control and sharing, pattern recognition and decision assistance.

5. Conclusion

Analyzed in this paper in the military to carry out large weapon equipment information management system, the importance of collecting combed the domestic and foreign research status quo of weapons and equipment information management system, and several kinds of information technology to the guarantee of weapons and equipment is studied, in solving large weapon equipment management problems and improve equipment efficiency aspect of the whole life cycle management has practical significance.

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