



Exploration and Application of Armaments Test Standard Information Management Mode

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Abstract. For the performance qualification test of modern equipment, the test and verification related standards are becoming more and more complex, especially in the real combat environment, the test outline and process preparation requirements are becoming higher and higher. The development and optimization of test standards in the equipment test validation process has become a common problem faced by troops, construction units and design units, which requires an in-depth sorting of test standards, and with the development of digital and intelligent technology, the establishment of digital archives and automatic optimization of test protocols or processes is imminent. The paper carries out the application of test standard file management mode and other related research, explores the innovative strategy of file development and utilization in the digital era, and analyzes the role of standard test file information management mode. On this basis, it elaborates the realization principle and application strategy of the test standard management mode, which can significantly improve the efficiency of the formulation of test standards for performance identification of modern armaments equipment.

Keywords: Armament Test Standard, Information Management, Realization Principle, Application Strategy.

1 INTRODUCTION

With the continuous development of science and technology and the constant updating of equipment technology, the importance of equipment test standards is becoming increasingly prominent. Equipment test standards are an important basis for assessing the performance and quality of equipment, directly affecting the design, manufacture, procurement and use of equipment. However, with the continuous development and updating of equipment technology, the existing test standards have been difficult to adapt to the needs of new technologies and new equipment, and the development and updating of test standards have become more and more complex and difficult. Therefore, there is an urgent need to explore a new management mode to better adapt to the development and application of modern equipment test standards.

With the continuous emergence of new armament equipment, the content and requirements of the test standards are constantly updated and improved, test engineers need to constantly learn and adapt to the new test standards^[1-2]. The constant changes

and updates of test standards bring certain difficulties to the test work, and test engineers often need to spend a lot of time and energy to study and understand the new standard requirements. Therefore, how to improve the efficiency of the development of test standards, simplify the test process, improve the efficiency and accuracy of the test has become an urgent problem in the field of equipment testing.

To this end, this paper will focus on the equipment test standard information management mode to carry out research, trying to explore a suitable information management mode for China's national conditions, in order to improve the efficiency of the development of equipment test standards and management level, to achieve the scientific, standardized and information management of the test work.

2 ANALYSIS OF THE REASONS FOR THE COMPLEXITY OF THE TEST CRITERIA

The complexity of the test criteria stems from several factors:

Technological diversity: modern equipment involves a variety of different technological fields, such as mechanics, electronics, information, optics, etc., each of which has its own specialized test standards and specifications. This makes the formulation and management of test standards quite complex.

Huge standard system: With the continuous development of technology and the increase in the types of equipment, the number and types of test standards are also increasing, forming a huge standard system. Different equipment and different test items may need to refer to different standards, which increases the complexity of the standard.

Rapid updating of standards: with the continuous progress of science and technology, the test standards are also constantly updated and improved. This requires test personnel to understand the latest standard requirements in a timely manner, timely adjustment and optimization of the test process to ensure the accuracy and reliability of the test results.

Overlapping and contradiction between standards: In the actual test process, there may be overlap and contradiction between different standards, which brings great trouble to the test personnel.^[3] Test personnel need to spend a lot of time and effort to solve these problems, which will affect the progress and efficiency of the test.

Difficulty in understanding and applying the standards: test standards usually involve more specialized technical knowledge and terminology, and test personnel need to have a certain degree of professional knowledge and experience in order to correctly understand and apply the standards. This requires a higher quality of test personnel, but also increases the difficulty and complexity of the test.

3 ISSUES OF THE EQUIPMENT TEST VALIDATION PROCESS

3.1 Analysis of Test Standard Development Needing

Test standard-setting needs are an important part of equipment testing, directly related to the accuracy and effectiveness of testing. In modern society, equipment test standard-setting needs mainly include the following aspects:

First of all, the demand for test standards requires technological sophistication. With the continuous development of science and technology and equipment technology is constantly updated, test standards also need to be constantly updated and improved to adapt to the development trend of new technologies. This means that the development of test standards demand must have technological sophistication, to reflect the latest technology and equipment performance requirements.

Test standard requirements require comprehensiveness and systematicity. Equipment testing is a comprehensive process, involving requirements and indicators in many areas. Therefore, the requirements for the formulation of test standards must take into account all aspects and elements of the test process to ensure that the test is comprehensive and systematic.

Test standard requirements require operability and practicality. Test standard development needs can not only stay in the theoretical level, but also need to take into account the actual operation and practicality of the test site, to ensure that the test standard can play a guiding role in the practical application, improve test efficiency and accuracy.

The requirements of test standards also require standardization and standardization. The formulation requirements of test standards must meet the requirements of relevant national standards and specifications, so as to ensure the comparability and credibility of the test process and results. At the same time, the test standard should be sustainable and can be applied to different equipment test fields for a long time.

In summary, the demand for test standard development is an important and complex part of equipment testing, which requires comprehensive consideration of such factors as technological sophistication, comprehensiveness, systematicity, operability, practicality, standardization and normalization to ensure that the test standards can effectively guide the development of test work and achieve the desired test objectives and requirements.

3.2 Standard Optimization Challenges

Test standards face many challenges and problems in the process of practical application, one of the main challenges is the optimization of standards^[4-5]. With the continuous development of technology and equipment testing is constantly deepening, the original test standards may not be able to meet the needs of the development of new science and technology, the need for corresponding optimization and updating.

First of all, the updating speed of test standards is relatively slow, unable to keep up with the development of technology and changes in equipment testing. Traditional

test standards are often summarized based on past experience and practice, and are difficult to adapt to the current rapidly changing technology and test requirements. Therefore, how to update and optimize test standards in a timely manner has become an urgent problem.

Secondly, the process of formulating test standards involves the participation of many parties, such as competent departments, industry associations, enterprises, etc., and inconsistent opinions and coordination difficulties occur from time to time. In the optimization process of test standards, it is necessary to unify the opinions of all parties, form a consensus, and increase communication and collaboration to ensure the scientific nature and applicability of the standards.

The optimization of test standards also needs to take into account the limitations of test equipment and technical levels. Some test standards are formulated taking into account the limitations of certain equipment or technology, which may lead to certain defects in the practical application of the standard. Therefore, when optimizing test standards, it is necessary to take into account the interests and limitations of all parties to find the optimal balance.

Overall, the challenge of optimization of test standards is a comprehensive problem that needs to be sought as a solution under the joint efforts of all parties in the industry. Through continuous research and exploration, the scientificity, accuracy and practicability of test standards can be effectively improved to promote the continuous improvement of equipment test quality.

4 EXPLORATION OF THE TEST STANDARD FILE

4.1 Digital Archive Development Strategy

The digital archive development strategy is an important part of the modern equipment test standard information management mode. In the digital archive development strategy, firstly, it is necessary to clarify the objectives and needs, and determine the scope and content of the digital archive, including test standard documents, test data, test results and so on. Secondly, it is necessary to choose appropriate digitization technology and tools to ensure the security, reliability and accessibility of the digitized files^[6-8]. At the same time, it is also necessary to establish a perfect digital archive management process, with a clear division of responsibilities, authority management and approval process, to ensure the accuracy and completeness of the digitized archives.

In addition, it is also necessary to carry out classification, indexing and retrieval of digitized files in order to quickly and accurately find the required information. Finally, it is necessary to pay attention to the updating and maintenance of the digital archives, and carry out regular data backup and revision to ensure the timeliness and effectiveness of the digital archives. Through a good digital archive development strategy, it can improve the efficiency and effectiveness of the information management of equipment test standards, promote the updating and optimization of test standards, and promote the standardization and standardization of the equipment test verification process.

4.2 Research on Informationization Management Mode

Informatization management mode refers to a management mode that uses information technology and systems to achieve management goals and improve management efficiency and management level.

First of all, it is necessary to conduct research on the development strategy of the digital archives of test standards. This includes the establishment of a unified digital archive management platform to realize the storage, retrieval and sharing of test standard digital archives. Secondly, it is necessary to conduct an in-depth study of the information management mode, including the development of information management processes and specifications, the establishment of an information management system, and the realization of a comprehensive coverage of the information management of test standards.

5 REALIZATION PRINCIPLES AND APPLICATION STRATEGIES

5.1 Principles for the Implementation of the Management Model

The principle of implementing the management model refers to some basic principles and guidelines that need to be followed in the process of promoting the exploration and application of the information management model of equipment testing standards in order to guarantee the smooth implementation and effective operation of the management model. The specific principles are as follows:

First of all, it is necessary to adhere to the user demand-oriented. In the process of implementing the management model, the needs of the users of the test standard and the actual application scenarios should be fully considered to ensure that the design and optimization of the management model can truly meet the needs of the users and improve user satisfaction and work efficiency.

Secondly, we should advocate full participation and collaboration. The implementation of equipment test standard information management mode requires full participation, all relevant departments and personnel to strengthen communication and collaboration, to form a synergy, and jointly promote the implementation and improvement of the management mode.

Thirdly, we should focus on continuous improvement and innovation. The implementation of the management model is not a one-time exercise, but a process of continuous improvement and optimization. It is necessary to constantly review and assess the operational effectiveness of the management model, identify problems and shortcomings, and make timely improvements and innovations to continuously enhance the applicability and effectiveness of the management model.

Fourth, information security and confidentiality should be emphasized. In the process of implementing the information management mode, it is necessary to strengthen the awareness of information security and technical safeguards, establish a sound information security management mechanism, ensure the information security and

confidentiality of the test standard files, prevent information leakage and damage, and safeguard national security and interests.

Finally, to follow the norms and standardization requirements. In the design and implementation of the management mode, we should follow the relevant standards and norms requirements to ensure that the management mode of legal compliance, improve the reliability and stability of the management mode, and lay the foundation for the sustainable development of the equipment test standard information management mode.

5.2 Analysis of Application Benefits

The benefit of strategy application refers to the benefits and gains brought about by adopting certain principles and strategies for implementation in the exploration and application of the informationization management model of equipment testing standards^[9-10]. In the implementation process, the following benefits can be obtained:

Improve the efficiency of test standard management: the application of information technology management mode can make the test standard management more efficient and convenient. Through the storage and management of digitized files, it can greatly save the cost of manpower and time and improve work efficiency. At the same time, under the guidance of the implementation principles, the management process is more standardized, reducing the confusion and errors in management.

Promote the optimization of test standards: through the introduction of information management mode, the implementation of test standards can be better supervised and tested, and problems can be found and optimized in time. At the same time, under the guidance of the implementation principles, the test standards can be formulated and updated more scientifically to make them more in line with the actual needs and improve the precision and effectiveness of the test.

Enhance the accuracy of test results: the application of information management mode can realize the comprehensive collection and unified management of test data, avoiding the situation of data omission and confusion. In the test process, the quality and accuracy of the data can be monitored in time to ensure the authenticity and credibility of the test results.

Promoting the continuous improvement of equipment test standards: through the application of the informationization management mode and the guidance of the implementation principles, a perfect feedback mechanism can be established to collect users' opinions and suggestions in a timely manner, so as to provide the basis and support for the continuous improvement of test standards. Through continuous optimization and updating of test standards, the quality and efficiency of tests can be gradually improved.

In general, the benefit of strategy application is an important advantage of the informatization management mode of equipment test standards, which can improve management efficiency, promote the optimization of test standards, enhance the accuracy of test results and promote the continuous improvement of test standards. Through the application of reasonable principles and strategies, the role of infor-

mation management mode can be better utilized to realize the modernization and scientification of equipment test standard management.

6 CONCLUSION

With the continuous updating and improvement of modern equipment test standards, the complexity and specialization of the test work are also increasing, and the introduction of the information management mode can effectively improve the efficiency of the formulation and implementation of the test standards, and enhance the quality and efficiency of the test work.

The research on the information management mode of equipment test standards can promote the modernization and transformation of the test industry, promote the standardization, normalization and informatization of test standards, and provide technical support and management experience for the rapid development of China's test industry. Again, the application of informationization management mode can effectively reduce the test cost, shorten the test cycle, improve the test efficiency, save manpower, material and financial costs for enterprises, and enhance market competitiveness.

The exploration and application of the information management mode of equipment test standards can also promote the innovative development of the test industry, promote the continuous improvement and optimization of test standards, and lay a solid foundation for the sustainable development of China's test industry. In short, the research of equipment test standard informatization management mode has important theoretical significance and practical value, and is of great significance for enhancing the overall level and international competitiveness of China's test industry.

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