Research on the Construction of Functional Physical Training Method System for Civil Aviation Safety Officers Based on Computer Empirical Analysis

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Abstract. The current functional physical training method system for civil aviation safety officers still has many disadvantages, which is difficult to effectively guarantee the healthy development of civil aviation. Based on this, this paper first analyses the current situation of functional physical training of civil aviation safety officers with the help of computer, then studies the problems existing in the functional physical training method system of civil aviation safety officers, and finally gives the construction strategy of the functional physical training method system of civil aviation safety officers.

Keywords: Functional Physical Training, Civil Aviation, Safety Officers, Computer

1. Introduction
With the iterative growth of social economy and the improvement of residents' living standards, more and more people choose airplanes as their way of travel. In this context, aviation safety has become one of the important factors to ensure the healthy development of the civil aviation industry. As an important part of the civil aviation crew, the importance and status of the safety officer is gradually highlighted [1]. The working environment of aviation safety officer is always on the closed plane, and its working atmosphere has many typical characteristics, such as time is not fixed, irregular and space is closed. This special working atmosphere puts forward higher requirements for the physical fitness of the safety officers, and the nature of their work also requires the safety officers to maintain high vigilance at work, so it also brings great challenges to the psychological endurance of the safety officers.

The efficient working ability and the ability to deal with emergencies of civil aviation safety officers are based on the higher physical quality. In order to make the physical fitness of civil aviation safety officers effectively guarantee and match the requirements of their working atmosphere and responsibilities, it is necessary to carry out targeted training on their physical fitness. Only through the physical examination of civil aviation administration can they become a qualified aviation safety officer [2]. The qualification evaluation standard of civil aviation safety officer mainly includes several aspects as shown in Figure 1 below. It can be seen that only by establishing a scientific and reasonable functional physical training method and system can the quality and ability of civil aviation safety officer meet the standard requirements effectively.
In addition, the current civil aviation safety officer functional physical training method system still has many disadvantages, it is difficult to effectively guarantee the healthy development of civil aviation [3]. Therefore, the use of computer analysis technology, combined with relevant empirical studies, to carry out the judgment of the rationality of the functional physical training method system of civil aviation safety officers, is conducive to the protection and promotion of the health of safety officers, and to promote their training methods and processes more appropriate. Therefore, only by establishing a scientific system of training time and training amount can it maximize the training effectiveness of the system.

In short, the modern civil aviation industry puts forward higher requirements for the physical quality of aviation safety officers [4]. The training system constructed by the training courses and methods of modern physical training is very important for the guarantee of the responsibility and ability of safety officers. Functional physical training of safety officers can not only effectively prevent sports injuries, but also stimulate the training enthusiasm of safety officers. The method system of physical training plays an increasingly important role in improving the ability of safety officers. The better application of functional physical training in the practice of safety officer training can effectively promote the development of civil aviation. Therefore, it is of great practical value to study the construction of functional physical training mode system for civil aviation safety officers based on computer empirical analysis.

2. Empirical analysis of functional physical training of civil aviation safety officers based on computer

2.1. Current situation of physical training for civil aviation safety officers

Based on the Civil Aviation Administration's physical training program for civil aviation safety officers, the physical examination standard for civil aviation safety officers is assessed by stages and grades. 200 civil aviation safety officers are selected for regular training and testing. The status of the selected safety officers is shown in Table 1 below.

Table 1. The age status of the selected safety officers

|   | 30 | 30-35 | 35-40 | ≥45 |
|---|----|-------|-------|-----|
| 86 | 47  | 38    | 29    |

Secondly, the physical test items are determined according to the physical examination training program of safety officers. The selected physical examination items are shown in Table 2.

Table 2. The selected physical examination items

| Item I       | Item II  | Item III | Item IV |
|--------------|----------|----------|---------|
| Dipping      | Pull-up  | Abdominal curl | Sprint |
In addition, based on the computer data analysis technology, the test results of the selected test items in the training safety officers are statistically analyzed and processed, and the results are shown in Figure 2.

![Figure 2. Results of physical training for civil aviation safety officers](image)

2.2. Current situation of strength and quality of civil aviation safety officers

As one of the important characterization factors of civil aviation safety officer's physical fitness, its strength quality occupies a high proportion in civil aviation safety officer's physical fitness assessment requirements [5]. With the help of computer technology, the strength and quality test results of selected safety officers are statistically analyzed, and the results are shown in Figure 3 below. It can be seen from Figure 3 that the strength and quality of most civil aviation safety officers are relatively general. From the score distribution of the test results, it can be seen that the number of safety officers with higher scores is small, and even a small number of aviation safety officers cannot meet the minimum level requirements.

![Figure 3. Civil aviation safety officer strength quality test results](image)

2.3. Current situation of endurance quality of civil aviation safety officers

The endurance quality of civil aviation safety officers participating in the empirical research is assessed, and the results are shown in Figure 4 below. It can be seen from Figure 4 that most of the endurance quality of civil aviation safety officers can reach the standard. However, there are still a small number of civil aviation safety officers whose endurance quality is not good, and there is still high room and potential for improvement. This shows that the endurance training of civil aviation safety officers is also the focus of their functional physical training methods.
3. Problems of functional physical training method system for civil aviation safety officers

3.1. The strength and quality of safety officers need to be further improved

Through the empirical analysis of the current situation of functional physical training of civil aviation safety officers by means of computer, it could be seen that the strength quality of civil aviation safety officers is still insufficient [6]. Whether in terms of relative strength or endurance, the strength quality of civil aviation safety officers has great room for improvement and necessity. The important duty of civil aviation safety officer is to deal with the unexpected safety events on the plane. The professional ability represented by strength quality has an important impact on the competency of his duty. In this context, airlines need to further strengthen the strength and quality training of civil aviation safety officers.

3.2. Strengthen speed training and endurance training

First of all, as one of the important indicators of the functional physical fitness of civil aviation safety officers, their speed quality is an important representation of their physical training level and technical and tactical ability [7]. Rapid response speed is helpful to achieve the effective play of various tactical skills. However, due to the high requirements of speed training corresponding to practice and site, and the nature of civil aviation safety officers' work, it is difficult to effectively guarantee the training time and intensity, which leads to the difficulty of carrying out the intensity training effectively according to the rhythm. Secondly, the work intensity of civil aviation safety officers is often high, especially for the safety officers on international routes [8]. The irregular work intensity for more than ten hours brings higher requirements and challenges to their physical endurance. Endurance training not only involves physical fitness, but also involves the test of psychological quality of safety officers, which requires safety officers to have high willpower and endurance. However, due to time constraints, it is difficult for safety officers to improve their own quality.

4. Construction of functional physical training method system for civil aviation safety officers

4.1. The principle of constructing functional physical training method system

The functional physical training of civil aviation safety officers should be carried out according to the principle of resistance contact alternately [9]. First of all, strength training should be carried out from the basic strength level and adjusted according to the various functions of training. Secondly, the basic physical training should be used to ensure the physical system of civil aviation safety officers. In addition, in the static training, static training is carried out according to the change of arm of force to enhance the endurance quality of safety officers. Finally, in the process of functional physical training, it should follow the principle of increasing compliance to train safety officers' comprehensive physical training literacy. In the process of training, based on the personalized characteristics of safety officers and the actual needs to strengthen training. Strengthen professional training to ensure that the training can adapt to any civil aviation working environment.
4.2. Construction of functional physical training method system

The construction of functional physical training method system for civil aviation safety officers needs to be carried out from the aspects of strength quality, speed quality, endurance quality, flexibility quality, sensitivity and balance quality [10]. In the aspect of strength quality, it should carry out targeted exercises according to the characteristics of strength quality required by different training activities. Secondly, in the aspect of endurance quality, it should strengthen the training represented by middle and long distance running in the physical examination items of aviation safety officers. In addition, in the level of flexibility quality, the stretching method is used to improve the flexibility quality of safety officers. Finally, at the level of sensitivity and balance, we use the transformation training method to carry out rhythmic and phased connection.

5. Conclusion

In summary, using computer analysis technology, combined with relevant empirical studies, to carry out the judgment of the rationality of the functional physical training method system of civil aviation safety officers is helpful to guarantee and promote the health of safety officers. Functional physical training of safety officers can not only effectively prevent sports injuries, but also stimulate the training enthusiasm of safety officers. This paper analyzes the current situation of functional physical training of civil aviation safety officers by computer demonstration, and points out the problems existing in the functional physical training method system of civil aviation safety officers. Finally, the principle and process of functional physical training method system for civil aviation safety officers are given.

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