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DIRETORIA DE ENSINO DA AERONÁUTICA
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EXAME DE SELEÇÃO E ADMISSÃO PARA ALUNO REGULAR DO PROGRAMA DE PÓS-GRADUAÇÃO EM DESEMPENHO HUMANO OPERACIONAL PPGDHO - TURMA 2020

PROVA DE PROFICIÊNCIA EM LÍNGUA INGLESA

CADERNO DE QUESTÕES

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1) É permitido somente uso de dicionário convencional (não eletrônico), de uso individual e exclusivo, inglês / inglês.
2) O tempo **máximo** de realização da prova é de 3 horas.
3) Utilize caneta esferográfica azul ou preta.
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5) Só será permitido ao candidato se retirar do local de prova após decorridos 60 minutos.
6) Só será permitido ao candidato levar o caderno de questões após decorridos 120 minutos.
7) Não escreva no caderno de questões. Utilize a folha de respostas.

NOVEMBRO / 2019

READ THE TEXT:

Fit for Duty?

Evaluating the Physical Fitness Requirements of Battlefield Airmen

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Summary

The U.S. military requires service members who are physically capable of performing the many demanding tasks associated with their duties, which vary considerably by occupational specialty. One way the military accomplishes its goal of having physically capable personnel is by having them take periodic tests that assess physical fitness. Generally, these assessments provide a useful gauge of overall physical well-being, but they are not based on job requirements. Thus, the tests do not allow the military to determine whether personnel have the physical capabilities to carry out the specific tasks required by their occupational specialties.

Physical fitness standards may serve a wide range of goals, including improving general well-being, boosting unit morale, increasing productivity, reducing injuries and lost workdays, and eliminating stress. Depending on the goal, the standards could be the same for everyone or applied differentially, e.g., by age or sex. Standards developed for specific occupational tasks would be applied to all who perform those tasks.

Fitness standards also differ according to their type. Organizations often use two types of standards: norm-referenced and criterion-referenced. Norm-referenced standards reflect an individual's relative standing on a test relative to some referent group. For example, an individual who did 60 sit-ups in two minutes might be ranked in the 50th percentile of a referent group such as all soldiers between the ages of 18 and 21 years. Norm-referenced standards are essentially arbitrary and have no inherent meaning; they do not indicate whether an individual is healthy, can perform assigned duties, or deploy to combat. In contrast, criterion-referenced standards statistically link test scores with important outcomes or criteria. In the example above, criterion-referenced standards might link the ability to do 60 sit-ups in two minutes with the likelihood of developing heart disease.

Purpose and Approach of the Research

The U.S. Air Force has proposed a two-tiered approach to distinguish between fitness standards. Tier I standards are designed to reduce health risks and foster an overall fitness culture within the Air Force. Tier II standards are specific to Air Force Specialty Codes

(AFSCs) and are intended to ensure that an individual is able to perform the physical tasks and duties required by his or her job. The Air Force asked researchers from RAND Project AIR FORCE (PAF) to demonstrate how the Air Force could establish Tier II fitness standards for physically demanding occupational specialties. We selected four AFSCs to study: Combat Controller (CCT), Pararescue (PJ), Special Operations Weather Team (SOWT), and Tactical Air Control Party (TACP).[1] Airmen in these specialties are collectively referred to as Battlefield Airmen, and these specialties were selected in coordination with the Air Force because successful performance of the tasks associated with these specialties is believed to require high levels of physical fitness and ability. To help the Air Force develop Tier II fitness standards for Airmen, we set out to answer the following three research questions:

- What methods could be used to identify physically demanding tasks performed by Airmen?
- What methods are available for identifying the physical demands of occupational specialties?
- How can the Air Force use information about the physical tasks and demands to establish Tier II fitness standards?

To answer these questions, we employed a variety of methods. Specifically, we reviewed the methods used to establish physical requirements by different military organizations, the research literature on the different methods available for identifying physical fitness requirements, and documents and reports that contained specific tasks performed by Airmen in the four target specialties. Documents and reports included Occupational Analysis Reports (OARs), Career Field Education and Training Plans, Air Force Instructions, Air Force Technical Training Publications, and Army field manuals. After we developed an initial list of physically demanding tasks for each specialty, we vetted the tasks in focus groups and interviews, and we made efforts to observe Airmen performing the tasks during training. Interviews identified examples of critical physically demanding events that could significantly contribute to successful or unsuccessful performance. The outcome of these efforts was a list, by occupational skill, of the most important physically demanding tasks, or what we call "critical physical tasks" (CPTs).

Having identified CPTs, the next step was to link the tasks to the physical abilities needed to carry them out. This step included an analysis of movement patterns, such as balancing, carrying, lifting, climbing, and the physical abilities associated with the movement patterns, such as, muscular strength and endurance, cardiovascular endurance, and coordination, and agility.

The last step was to identify tests that could measure the required physical abilities. This identification involved both a literature review and an analysis of tests that have been validated with job performance.

[1] Although we did not specifically include officers in our study, the results may be relevant to the following associated officer career fields: Combat Rescue Officer, Special Tactics Officer, and Air Liaisons Officer.

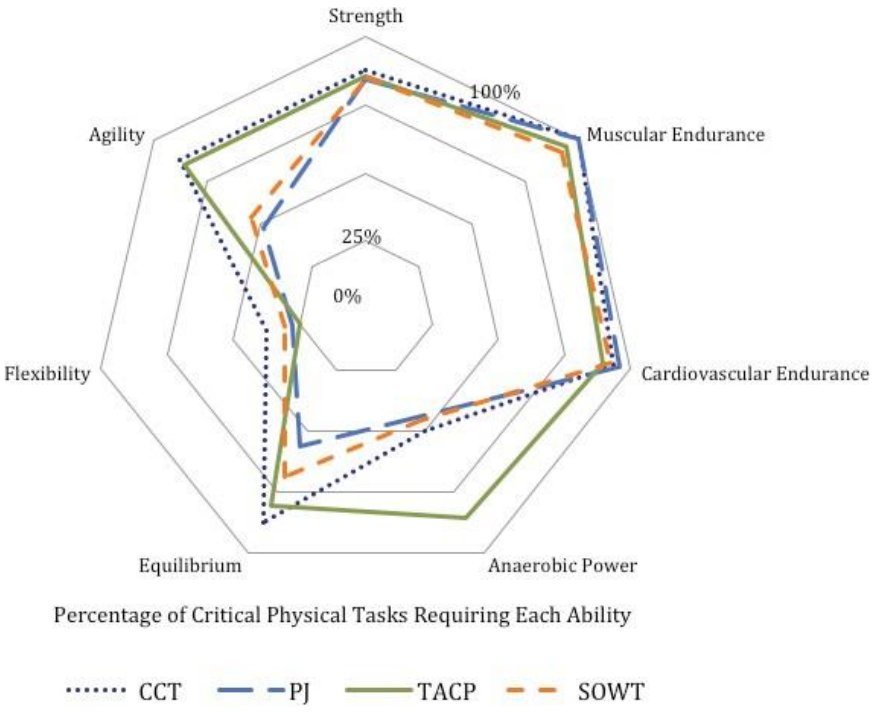
Results

The physical abilities identified as critical for each of the occupational skills include the following:

- muscular strength
- muscular endurance
- cardiovascular endurance
- anaerobic power (ability to do high-intensity, short duration activity)
- equilibrium
- flexibility
- coordination and agility.

The radar chart in Figure S.1 shows the relative importance of the physical abilities for the four specialties as determined by focus groups and interviews. Lines closer to the center of the diagram indicate that fewer CPTs in that specialty require a particular physical ability, and those closer to the outer edge indicate that a greater number of physically demanding tasks are required for the specialty. The figure shows a high demand (more than 80 percent of the CPTs) across the four specialties for strength and muscular and cardiovascular endurance, followed by agility, anaerobic power, and equilibrium. We found flexibility to be less critically important, only being required for slightly more than 25 percent of CPTs. Although there is considerable overlap in the physical abilities required for these specialties, further research is needed to identify which physical ability tests will predict operator performance in each occupational specialty.

Figure S.1. The Relative Importance of Battlefield Airman Physical Abilities



Recommendations for Developing Operationally Relevant Fitness Tests

The results of the analysis lead to one overarching recommendation and three specific recommendations.

Overarching Recommendation: Conduct a Validation Study to Establish Tier II Standards

The research reported here is a starting point. A critical next step for the Air Force is to engage in a systematic program of research and development to produce valid and reliable Tier II tests and standards to (a) ensure that tests measure important physical abilities required for successful mission or job performance, (b) ensure that performance on tests is a good indicator of mission or job performance, and (c) identify minimum test standards that are associated with acceptable mission or job performance. In selecting tests, particular attention should be paid to test reliability, cost and ease of administration and implementation, and, most important, coverage of the important physical abilities and tasks performed by operators.

Once tests are selected, the second step is to establish or develop appropriate job and training performance measures. This step will require additional work and collaboration with career field managers, squadron commanders, and subject-matter experts (SMEs). Determining what constitutes success is difficult, and we recommend developing behaviorally based performance evaluation scales for each Battlefield Airman specialty. For example, a behavioral observation scale (BOS) allows raters who are familiar with operators' performance to identify the frequency with which physically demanding tasks are performed effectively. For example, a rater may evaluate how often an operator keeps up with his team on overland movements or carries others team members' gear when they are fatigued. BOSs are reliable and effective methods for measuring performance. Once BOSs are developed, the next step is for SMEs to define the minimally acceptable level on the BOS. Final steps include analyzing the relationship between test scores and performance and establishing minimum scores.

Specific Recommendations

Use Multiple Tests to Measure Each Physical Ability

We recommend using at least two tests to measure each ability. Tests may include a combination of basic fitness tests and simulations, and can be integrated with the current Air Force Special Operations Command (AFSOC)/PJ operator tests and with tests conducted by strength and conditioning coaches assigned to the different squadrons. However, any test considered for validation should follow a strict protocol to ensure consistent administration, scoring, and reporting. Although flexibility was identified as an important ability for each Battlefield Airman specialty, we do not expect flexibility to relate strongly to performance. In fact, the quantitative review suggests that flexibility is among the weaker indicators of performance. However, poor flexibility has been cited as a potential indicator of injury risk; therefore, the Air Force may consider evaluating the potential benefits of a flexibility test by using injuries as the criteria.

Use Simulations to Offset Body Weight Bias of Basic Fitness Tests

Many basic fitness tests (e.g., pull-ups, three-mile run) are potentially biased in favor of smaller, leaner operators. We recommend integrating a job simulation that samples CPTs. Although specific simulations can be developed for each career field, we recommend developing a simulation that includes CPTs that are shared among all Battlefield Airman specialties. For example, CPTs shared across specialties include a march carrying a rucksack and carrying or dragging a casualty.

Test Alternative Methods for Setting Standards

After operators have been scored on the various tests and simulations, steps can be taken to identify the optimal combination of tests needed to determine physical readiness. We recommend using a compensatory model, which allows stronger performance on one or more tests to make up for slightly weaker performance on other tests. Although allowing weaker performance on some tests may seem counterproductive to reaching physical readiness goals, a compensatory model ensures that operators have the right combination of physical abilities to perform CPTs.

Final Thoughts

This report outlines the steps and provides an example, using the four enlisted Battlefield Airman specialties, of how to identify job-specific physical demands and the physical abilities needed to perform those tasks. Although this study focused on occupations closed to female Airmen at the time, the approach we took for developing occupationally relevant fitness standards and our recommendations for a validation study are relevant to the issue of women entering previously closed occupations. Recent changes in U.S. Department of Defense policy excluding women from certain assignments and specialties add urgency to the need for the services, including the Air Force, to establish appropriate gender-neutral standards for military occupations. Setting fitness standards that are tied to physical job performance is a key element to setting gender- neutral standards. Our study and recommendations can therefore inform efforts that the Air Force can take to address changes to the combat exclusion policy.

BASED ON THE TEXT ABOVE, CHOOSE THE CORRECT ALTERNATIVE A, B, C or D.

QUESTION 1

The authors highlight that physical fitness standards may achieve lots of objectives. Which of the objectives below are NOT mentioned in the text?

1- Decreasing injuries	5- Improving general well-being
2- Avoiding heart disease	6- Increasing productivity
3- Reducing absence from work	7- Establishing the physical capabilities by sex
4- Undermine unit morale	8- Removing stress

A) 1, 5 and 8.

B) 2, 6 and 8.

C) 2, 4 and 7.

D) 3, 4, and 6.

QUESTION 2

In order to help the Air Force establish fitness standards for Airmen, the researchers tried to answer three research questions. Number the steps below from 1 to 9 according to the sequence followed by the researchers.

( ) Examination of the tasks dividing them into specific groups and interviews.

( ) Identification of the tasks to measure the required physical abilities.

( ) Literature review on different methods.

( ) Development of an initial list of physically demanding tasks for each AFSC.

( ) Review of methods used by different military organizations.

( ) Compilation of critical physical tasks.

( ) Research on documents and reports focused on specific tasks performed by the four AFSCs.

( ) Observation of Airmen performance during training.

( ) Connection between CPTs and the required physical abilities.

A) 9, 5, 2, 8, 1, 7, 6, 4, 3

B) 5, 9, 2, 4, 1, 7, 3, 6, 8

C) 5, 9, 1, 2, 8, 6, 3, 4, 7

D) 2, 5, 3, 8, 1, 4, 6, 9, 7

QUESTION 3

According to the text, decide whether the statements are TRUE (T) or FALSE (F). Choose the correct sequence.

( ) Flexibility is the weakest indicator of performance, although its deficiency has been considered a strong indicator of injury risk.

( ) The norm-referenced standards could show whether an individual is able to perform assigned duties.

( ) The study includes U.S. Air Force Airmen and officers.

( ) A BOS is not an effective method to identify the frequency with which physically demanding tasks are performed.

A) F / F / F / T

B) F / T / T / F

C) T / T / F / F

D) T / F / F / F

QUESTION 4

Choose the best sentence to complete the statement:

The authors recommend integrating a job simulation that samples CPTs. Each career field may have specific simulations; nonetheless, the researchers suggest developing a simulation with CPTs _____.

A) which include pull-ups and running only.

B) which consider flexibility only.

C) which cover all specialties.

D) which include coordination and agility.

BASED ON THE TEXT, ANSWER THE QUESTIONS IN PORTUGUESE:

QUESTION 5

According to the text, what are the basic differences between the two fitness standards proposed by the U.S. Air Force?

QUESTION 6

The researchers have selected in coordination with the U.S. Air Force four specialties to study. Explain why they selected those specialties.

QUESTION 7

According to Figure S.1, what are the physical abilities most required by the four target specialties?

QUESTION 8

Cite one of the reasons why the Air Force should promote the production of valid and reliable Tier II tests and standards.

QUESTION 9

After the selection of suitable Tier II tests, what kind of professionals will be required in order to help develop appropriate job and training performance measures?

QUESTION 10

Why do the authors recommend using a compensatory model to determine physical readiness?