

Section 1. INDUSTRIAL TECHNOLOGIES AND EQUIPMENT

UDC 687.017

**PRELIMINARY STUDIES IN THE CREATION OF
SPECIAL PURPOSE CLOTHES FOR SOLDIERS***T. Andrasiuk, assistant of Clothes Technology and Design Department**S. Alakhova, assistant professor of Clothes Technology and Design Department**E. Artanovich, student**Vitebsk State Technological University, Belarus*

Key words: sewing Industry, field uniforms soldiers, rational design, anthropometric compliance.

Abstract. Improving clothes for military service is the main goal. Analysis and creation of models for military uniforms, including field-purpose clothing is one of the main tasks. Overall analysis includes consideration of all the advantages and disadvantages of clothes similar to those of clothes. Methods of analysis and ergonomic pre-studies requires improving to the synthesis of structural and technological solutions to ensure the required level of quality indicators at all stages of the design work on the basis of research and analysis of the operating conditions.

When designing new models of special clothing military basic requirement is that it corresponds to the nature and conditions of service and combat missions. Non-compliance of the existing clothes anthropometric characteristics and the power cause a significant limitation of the amplitudes of movements, general discomfort and leads to a rapid development of the state of fatigue.

The task of developing research-based ergonomic parameters clothes soldiers and, above all, to ensure compliance with the dynamic structures motor component of service combat activity is relevant.

In order to ensure the dynamic comfort of the product in the design of various types of clothing is important to take into account information about modifying anthropometric features, depending on the different body movements made by a person. It is known that during physical activity a person performs various movements that can be combined on the basis of the classification of movements in three groups:

- movement of the upper limbs (flexion and extension at the elbow joint, abduction of the shoulder joint , etc.);
- lower limb movements (support , with springs and locomotor function);
- body motion (flexion and extension in the form leaned forward, backward and sideways).

All anthropometric studies are conducted according to certain programs. When developing dynamic measurement of dimensional attributes of the program types of human movements have been chosen, the most characteristic of the work needed to ensure that this freedom of movement have been identified correctly [1,2].

Analyzing the conditions of operation for the field of clothing uniforms soldiers formed the structure of the internal and external factors affecting the conditions for the functioning of the system "soldier - clothing - environment" and identify ways to reduce the degree of influence, notably through the implementation of compliance with the requirements of consumer products.

Analysis of normative - technical documentation, survey direct consumers it possible to establish the basic requirements for field uniforms:

- ergonomic construction;
- maintaining the heat balance in the different temperature regimes;
- protection from adverse weather conditions (rain, wind);
- low weight;
- compactness;
- functionality that provides effective removal of moisture at different levels of physical activity;
- camouflage properties;
- durability.

The established requirements and the study of ergonomics allow soldiers to choose the right materials, impregnation and structural elements, such as the type of fastener, hem design products, the determination of the necessary stress concentration sites in the clothing, the location of the protective lining of reinforcing areas of maximum friction and amortization, pockets, ventilation elements.

Using the developed taking into account the requirements set apparel to outfit military will reduce the risk of adverse effects of harmful factors on the employee, namely:

- decrease in the incidence of risk of injury, ensure safe conditions of service;
- increase in clothing ergonomics, providing reduction in the movement of the human resistance at the time of performance of service operations;
- improved coordination of employee movement, concentration, reduced fatigue;
- increase efficiency by reducing general and local discomfort.

References

1. Planning and control. The cost focused concepts of controlling / Khan D., Kharald Kh. – M.: Finance and statistics, 2005. – 928 p.
2. Controlling / Karminskiy A., Falko S., Zhevagaa A., Ivanova N. – M.: Finance and statistics, Infra-M, 2009. – 336 p.
3. Controlling concept: Management accounting. Reporting system. Budgeting. / Horvath & Partners; – M.: Alpina Publishers, 2009. – 270 p.
4. Follmut Kh. Controlling tools. – M.: Omega L, 2011. – 128 p.