

ASSESSMENT OF THE DISCOMFORT THRESHOLD OF COMMAND BOARD OPERATORS IN AUTOMATED PRODUCTIONS WITH RESPECT TO ITS APPLICATION IN PROFESSIONAL SELECTION

L. Tzaneva

National Center of Hygiene, Sofia, Bulgaria

SUMMARY

The discomfort threshold problem is not yet clear from the audiological point of view. Its significance for work physiology and hygiene is not enough clarified.

This paper discusses the results of a study of the discomfort threshold, performed including 385 operators from the State Company "Kremikovtzi", divided into 4 groups (3 groups according to length of service and one control group). The most prominent changes were found in operators with increased tonal auditory threshold up to 45 and over 50 dB with high confidential probability. The observed changes are distributed in 3 groups: 1. increased tonal auditory threshold (up to 30 dB) without decrease of the discomfort threshold; 2. decreased discomfort threshold (with about 15–20 dB) at increased tonal auditory threshold (up to 45 dB); 3. decreased discomfort threshold at increased (over 50 dB) tonal auditory threshold. The auditory scope of the operators, belonging to groups III and IV (with the longest length of service) is narrowed, being distorted for the latter. This pathophysiological phenomenon can be explained by an enhanced effect of sound irritation and the presence of a recruitment phenomenon with possible engagement of the central part of the auditory analyzer.

It is concluded that the discomfort threshold is a sensitive indicator for the state of the individual norms for speech-sound-noise discomfort. The comparison of the discomfort threshold with the hygienic standards and the noise levels at each particular working place can be used as a criterion for the professional selection for work in conditions of masking noise effect and its tolerance with respect to achieving the individual discomfort level depending on the intensity of the speech-sound-noise signals at a particular working place.

Key words: noise, occupational exposure, discomfort threshold

Address for correspondence: L. Tzaneva, 15 Dimitar Nestorov str., 1431 Sofia, Bulgaria