

COMBINED INFLUENCE OF NOISE AND HEAT

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Although the knowledge regarding the influences of noise and heat on human performances and physiological functions have been accumulated gradually, only few studies have been published about the combined influences of these two environmental factors on them. This report is concerned with the combined influences of noise and heat on simple manipulation task, subjective sensation and several basic physiological functions.

The experimental data were collected from seven young adult males, ranging in age from 20 to 22 years, who were in good physical condition and had lived in Kyushu district in Japan. They were exposed to the conditions combined white noise at three different levels of 60 db(A), 70 db(A), 80 db(A) and air temperature at four different levels of 18°C, 23°C, 28°C and 33°C. The relative humidity was kept at about 50% throughout all the conditions. The classification of subjective sensation into five categories was adopted. That is quiet, moderately noisy, noisy, very noisy and intolerably noisy.

It was found that the exposure to the condition of white noise at 70db(A) and air temperature at 28°C produced the largest individual differences in the levels of simple task performance, subjective sensation and physiological functions. As for as the simple task is concerned, there was no interaction between noise and temperature factors. A significant influence was confirmed for the temperature factor. As for the subjective sensation, the influence of ambient temperature was slight and almost negligible. No interaction between these two factors was confirmed for the physiological functions. The temperature factor influenced considerably on the systolic and diastolic blood pressures.