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DEEP SPACE FINE - A PILOT STUDY ON ARCTIC CREW EXPERIENCES WITH EXTREME ENVIRONMENT HABITAT DESIGN

Abstract

The aim of this pilot study was to investigate crew experiences and interactions with their extreme environment habitat. The study sample consisted of a two-person crew who lived inside the habitat for two months in Arctic Greenland, and the crew carried out a lunar analogue mission, experiencing an isolated and confined environment (ICE). One and a half hour interviews were conducted post-mission with each of the crew where questions on habitat layout, work, relaxation, leisure, and exercise were asked. Preliminary findings suggest volume, storage, and the control and variation over habitat sensory features such as lighting and noise were key design features. Recommendations for future research include further study into human-environment interaction in high-fidelity ICE habitats and the application of environmental psychology theory in such studies, with value for crew performance and well-being in future ICE habitats such as space stations, be they agency (e.g. those via NASA's Artemis program) or commercial (e.g. Haven-1, Orbital Reef, and Axiom Station).