Paper ID: 15735
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23rd SYMPOSIUM ON SPACE ACTIVITY AND SOCIETY (E5)
Human Habitation Beyond Low Earth Orbit (3)

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STOWAGE : WHERE TO FIND AND PUT THINGS IN SPACE – A DESIGN EVALUATION FROM SKYLAB TO THE ISS

Abstract

Skylab was the first US space station. It was inhabited between 1973 and 1974 – in total 171 days by three crews. Due to its size, the Skylab was the first space station wherein astronauts could experience real 'living and working in microgravity conditions'. Skylab served as a testbed for future living and between 1974 and 1975; an extensive evaluation of its architecture living conditions was carried out by NASA Lyndon B. Johnson Space Center. This study led to the Skylab Experience Bulletins, a comprehensive set of recommendations for future living and working environments in space that was published promptly at the conclusion of the Skylab progam.

Following a recent evaluation of all inhabited space-craft with the focus on human activities – Architecture for Astronauts - by one of the authors, it was learned that, among the major issues for astronauts is the challenge of stowing and managing objects, especially over time. Not only is stowage volume in tight supply on ISS, but the ability to record and keep track of the locations where a crewmember may stow an item can be problematic for a later crew. Excess stowage sometimes blocks the side windows of modules and can become a potential safety issue in terms of access to emergency equipment.

With this paper, the authors will show the importance of the topic of Stowage throughout the history of spaceflight, as well as its influence upon habitability. Even today's astronauts refer to this situation as the number one issue for living and working in space. What has been learned, what has been improved and what should have been - following the experiences of the space station Skylab?

The authors will review / discuss the designs and following recommendations made in the 70s and compare them to today 's standard of living and working on-board the International Space Station.