Deutsches Zentrum
DLR für Luft- und Raumfahrt

Handout

Baromedizinisches Labor

Messgrößen
- Druck
- CO2 Gehalt
- O2 Gehalt

Anlagenbeschreibung
Test-bed for isolation and different environmental conditions, e.g. as a ground based Space Station or airplane cabin.
The chamber can be operated from 5 mbar (absolute) to 80 bar, from 5°C to 40°C, from dry air (gas) to 90% rel.hum.,

Facility's Capabilities:
Equipment and know-how are available for the simulation of a space station environment and can accommodate physical, psychological, physiological and biological test systems for studies and for the testing of materials.

The chamber is well equipped to be used as a recompression chamber for safety reasons during wet training of astronauts.

Another field is research on cabin parameters for aircraft manufactures and airlines.

The chamber complex:
In the first floor the living and sleeping chamber A: 2,2 m diameter and 6,6 m length for 4 test subjects. In the rear part there the sanitary section is located. The man lock in front is for experiments too. Through the sanitary section the subjects get to the bell. Through the bottom hatch they may enter chamber C. An outside door (1m diameter) enables the entry of larger and heavier components (e.g. special experimental equipment). All chambers are suited either for individual or joint operation.

The following main parameters can be measured at the test subject:
- breathing
- heart rate
- physical work capacity
- lung function
- motorial and psychological capabilities
- distribution of inertgas in the body tissues.

Anwendung
Keywords
Human Factors, Human Physiology, Isolation, Confinement, Decompression sickness, Hyperbaric Oxygen Treatment, Saturation Helium-Oxygen Treatment, EVA, unmanned Material Testing (inside / outside high pressure, tightness)

Literatur / Referenzen
- Reference literature: - EXEMSI 92
- ESA Contract 9722/91/F/FL(SC)
- Document CEI07/DLR/93/EX/F
- - Joint CO2 Study
- ESA Contract 10933/94/NL-JS
- - The influence of CO2 in a Space-Like Environment
- J.Wenzel, N.Luks et al.
- Aviation, Space and Environmental Medicine
- Vol. 69, No.3, March 98

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Dieses Handout sowie Querverweise zu verwandten Messtechniken und Anlagen finden Sie unter: http://messtec.dlr.de/link-494-de.

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