

HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Astronaut Training, Accommodation, and Operations in Space (5)

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ASTRONAUT TRAINING FOR PHYSIOLOGY EXPERIMENTS - THE IMPORTANCE OF A
DEDICATED APPROACH

Abstract

Since February 2008, the European laboratory module Columbus is permanently attached to the International Space Station. With this fundamental contribution, ESA gained its full utilization rights of ISS using extensively the Columbus platform to perform most of its scientific experiments.

Before the ISS program, there was no real standardized concept for astronaut training in Europe thus some of the scientific experiment training was conducted by the scientists themselves. Since the beginning of ISS utilization, ESA is handling the training of astronauts and cosmonauts only by means of certified instructors and usually at the European Astronaut Centre. Indeed, the increased duration of the missions, the continuous manning of the station, the required cooperation with international partners, the accrual of obligation of results as justification for an expensive space program and the needs of the current research industry necessitate a dedicated training approach. Training can be defined as an organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill. Space experiments in general are unusual topics to teach. The environment, the subjects, the objectives, the students are extraordinary. Space physiology experiments in particular are specifically challenging training topics: some are complex in terms of knowledge, skills and hardware; some have physical, potentially painful, impact; some present privacy or comfort concerns for the astronauts, to name but a few. To develop and conduct training in the most appropriate and efficient way, EAC certifies instructors and training material for each and every individual lesson according to defined standards. Experience and/or involvement in real-time operations, versatile backgrounds, involvement in the entire experiment development process are essential driving factors in an effective training development and key features of EAC instructors. This unique configuration and dedicated training approach will be illustrated and detailed in this paper.