

SPACE OPERATIONS SYMPOSIUM (B6)
Training Relevant for Operations, in particular Human Spaceflight (3)

Author: Ms. Kanako Daigo
Japan Manned Space Systems Corporation, Japan, daigo.kanako@jamss.co.jp

THE ISS CREW TRAINING FOR KIBO MODULE AND FUTURE STEPS

Abstract

The operations and the utilizations of International Space Station (ISS) "Kibo" module have begun since in March 2008. For this first Japanese manned space operation, JAXA (Japan Aerospace Exploration Agency) has developed a crew training course and trained Kibo training instructors. Up to now, we have provided total 46 astronauts and cosmonauts with Kibo operations and space experiment training by total 22 certified instructors. Through the training development and deliveries, we have built up our training philosophy for long flight, and improved our training course, training materials, training facilities, instructional method, and evaluation method for more effective and efficient crew training. Some of the crew comments lead us to consider how to maintain their knowledge and skills during their long flight. At least, they have to maintain their skills for 6 months, which are the standard duration of ISS staying. To resolve this issue, we developed an "onboard training" for Kibo emergency operation. We conducted 3 times of the onboard training successfully with onboard crew and hardware, and with interaction between crew and ground. At this point, crew actions at Kibo emergency and robotics operation are the two skills that crewmembers always have to maintain. It is obvious that this onboard training becomes more important for future long space exploration, such as staying on the moon or even during the travel to the mars. That also makes sense because one of the long-term visions for the future space exploration aimed by JAXA is the establishment of new technologies for future lunar utilization, and manned space operation as well. Under this circumstance, our future business naturally heads to "How to teach crew staying on the moon or on the way to the mars. "Tele-training" or "remote training" will be the new area of business by applying the latest communication technologies such as enhanced video conference system, virtual reality system and even mixed reality system. As a trial, we started some lessons via videoconference system to identify future works on the remote evaluation of their skills. To achieve these new objectives of our business, it is very important for crew training community to consider that now is the time for any challenges for establishment of new technologies under this international space station program. Not only the scientific outcomes from space experiments but also these outcomes on crew training technology are also required from ISS which we built for the further step for space expeditions.