

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
Astronauts: Those Who Make It Happen (5)

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HUMAN FACTORS ISSUES IN CHINESE SHENZHOU 9 MANNED SPACE MISSION

Abstract

Abstract: Chinese Shenzhou-9 manned space mission is one of the important moves in China's manned space program, aiming at the breakthrough of the key technology of manual rendezvous and docking (RVD). A lot of studies were carried out ahead of mission on human factors issues, including personnel selection and training, ergonomic design of human-machine interface and manual control systems, psychological and medical support for crew on orbit, and human-centered design of flight procedures. Fruitful achievements have been made to meet the mission's requirements. A three-people flight crew including the first Chinese woman astronaut was selected and trained for this manual RVD mission. The interface and control system of manual RVD were designed to accommodate the cognitive and control ability of Chinese astronauts. Psychological and medical support methods and measures integrated with Chinese medicine were developed to keep the health of the crew during the spaceflight. The flight procedures in both normal state and emergency were determined as the combination of automation and human control to make the best match of man-machine function allocation. The above results laid a solid foundation and provided a theoretical guide for the successful accomplishment of Shenzhou-9 mission.

Keywords: Shenzhou-9 mission; human factors issue; rendezvous and docking; interface design; crew selection and training.