

HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Advanced Systems, Technologies, and Innovations for Human Spaceflight (7)

Author: Prof.Dr. Yuguang Yang
China Aerospace Science & Industry Corporation (CASIC), China

Ms. Yu Cao
Beijing Institute of Electronic System Engineering, China, China

MAJOR CONTRIBUTION OF CASIC IN CHINA MANNED SPACE PROGRAM

Abstract

Manned space engineering program is the most complicated task of China aerospace. China Aerospace Science and Industry Corporation (i.e., CASIC) has been playing an important role in these space missions, providing many important subsystems, components and devices for Shenzhou spaceships and Tiangong space laboratory. During the flight missions of these manned spacecrafts, the technologies provided by CASIC has guaranteed a high success rate and ensured the safety of astronauts in the past years. Although the complexity and risk of manned space flight is very high, CASIC will continue to support implementation of China manned space missions. This paper has mainly stated CASIC's technologies and contributions in China manned space engineering program from technical level, explained it by the characteristics and advantages of the systems and components, including rendezvous and docking radar, quartz-flexure accelerometer, gamma Ray altimeter, software engineering, batteries for spaceships and carry rockets, separations between modules, target tracking in black-out area, crystal components, in-orbit refueling, regenerative environmental control and life Support System, etc. These products and technologies have been successfully used during launch, orbiting, rendezvous, docking, EVA, separation and reentry of China's manned spacecrafts. Many of these technologies are quite different comparing with those used by other countries. As a developing country, China has made great achievements in its manned space program. The future manned space station program will do more contribution to the development of science and technology, as to the progress of human society. As an important participator of China manned space engineering, CASIC will continue to endeavour in human space flight, and try our best to do more contributions.