

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Human Spaceflight Global Technical Session (9-GTS.2)

Author: Mr. Zhang Jian

Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
amanofiron@126.com

Ms. Fang Fang

Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
1067890319@qq.com

Mr. Su Ling

Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China,
amanofiron@126.com

CARGO LOADING DESIGN AND FUTURE APPLICATION OF CHINA TIANZHOU CARGO
SPACECRAFT

Abstract

Cargo spacecraft is one of the key foundation and guarantee for the space station construction and operation. In the space station engineering project, It was assigned to a cargo spacecraft the responsibilities of transportation of propellants and other nonrenewable resources, astronauts consumables, space station maintenance replacement equipment and tools, experimental payload, the destruction of waste and space station orbit control support mission. Upstream cargos were generally made up of consumables and payload. Techniques for cargo installation and layout, thermal control for devices, power supply and communication system, cargo information management, transportation and store for cargo and waste in cabin, ergonomics were all involved. In this paper, cargo loading design and system functions for Tianzhou cargo spacecraft were described, also with the performance for the first flight in 2017. At last, the future application of the spacecraft was discussed, which would be more open to the international business.