

National Space Society
Position Paper on
Commercial Use of International Space Station

(March 1998)

The International Space Station (ISS) begins construction in low-Earth orbit in 1998. ISS will be jointly owned, with all contributing countries having a share of the total resources available, roughly in proportion to their contributions to the program. The United States will have the largest share.

Work performed on the ISS will be a mix of scientific, technological, and applications-oriented research, with a balance sought among fundamental science, technology development, commercial investigations, and educational uses. The National Aeronautics and Space Administration (NASA) intends to manage the allocation of Station resources with a variety of protocols that will adapt as Station operations mature. Currently, NASA has two methods for choosing users: the peer-reviewed system where experiments are chosen based on ground tests, scientific soundness, feasibility, and readiness for flight; and for commercial users, selection via proposal to one of NASA's designated Commercial Space Centers. Proposals are judged based on "the relative contribution of the industrial partner and its plans for applying and marketing the knowledge gained from flight experimentation." [Ref. ISS Research Plan, NIP 1998-02-232-HQ]

A similar approach to Shuttle utilization has resulted in relatively little commercial interest. High cost, uncertain schedules, red tape, and government's desire to pry into business secrets and pass judgment on quality of proposed research, are some of the reasons. Yet NASA states, "Only when commercial entities predominate in low-Earth orbit will we be able to truly say that the space frontier is open for business." [Ibid]

Policy experts in the National Space Society (NSS) have reviewed the situation and conclude that changes in the way ISS experiments are selected and operated may encourage more U.S. industry participation, which will result in opening the space frontier to business, and eventually to space-based workers and tourists. Specifically, the NSS urges Congress to direct NASA to:

(1) Set aside a portion of the U.S. share of Space Station resources for commercial users. Commercial users would pay for the use of Station resources according to a NASA price sheet based on market-like mechanisms such as those used to allocate Cassini resources to experiments during that mission. Commercial users would also be invited to utilize resources on a marginal cost and space-available basis. Marginal cost means only the difference in cost for accommodating industrial research over and above what NASA would spend anyway to resupply and operate the Station. Space-available means industry would be able to use shuttle delivery and return capability, and Space Station resources, which would otherwise go unused.

(2) Accept industry experiments on a first-come, first-served basis without peer review

and without scrutiny of experimental content beyond that required for Space Station safety. Peer review is inappropriate for proprietary commercial research which is paying to use the resources it requires. It is appropriate for scientists who are asking for public funding. However, periodic peer reviews after the flight opportunities, for example, every five years, could be done to help "benchmark" commercial programs as a whole to reassure Congress that industry use of Station resources is of benefit to the American people.

(3) Streamline the process for getting manifested on the Space Station such that the manifesting process is not the "long pole" in an industrial schedule to develop and build a flight experiment.

(4) Develop an adequate means of protecting industry proprietary data, including experimental equipment, content and samples, and telemetered and hard-copy data.

(5) Provide a "user's guide" to industrial experiment developers to (a) assist them in the design and development process in terms of "what works in space"; (b) define what astronauts can be expected to perform and how to design for ease of astronaut involvement, and (c) define and describe the various interfaces and processes for which experiments must be designed.