

revisions were made at the AAS meeting in Pasadena, which was marked by sharply rising interest in public policy questions among the society's membership.

—WILLIAM SWEET

Military uses and rising costs jeopardize space station

Two years ago, when the members of the European Space Agency, Canada and Japan agreed to join in planning for the space station project despite reservations about subordinating themselves to US technology and objectives, it seemed a triumph of President Reagan's personal diplomacy and a striking vote of confidence in NASA's technical prowess (PHYSICS TODAY, May 1985, page 77). That was before the Challenger disaster and before the Iran-contra affair, and it was before the Pentagon began to drastically escalate its claims on the space station.

In mid-December, when negotiations about design and construction of space station components were beginning to pick up momentum, the Pentagon asked NASA to delay talks until it could be determined whether any proposed agreement would preclude military use of the platform. About the same time, Defense Secretary Caspar Weinberger gave President Reagan a briefing in which he urged the President to approve a plan for early deployment of a missile defense system based on rocket interceptors.

In all previous negotiations military use of the space station had been carefully finessed. Top NASA officials said off the record that they took it for granted that the Strategic Defense Initiative Organization would want to get aboard once the platform was built, and in negotiations they took pains to inform foreign partners that the Pentagon was a potential user of the station. At the same time, the actual agreements with foreign partners said that the station would be used only for peaceful purposes, and ESA's charter restricts the organization to peaceful activities.

When negotiations resumed in February this year following a US interagency review of a draft intragovernmental agreement, the State Department endorsed a statement that there had been no change in the US position toward the space station since Reagan issued his invitation to foreign countries in 1984. The statement, signed by representatives of the United States, Canada, Japan and the 12 ESA member states participating in the project, said: "All partners confirm their intention that the space station should

provide the opportunity to establish a long-term mutually beneficial relationship for the exploration and use of outer space. They further confirm that the space station will be developed and used for peaceful purposes."

All parties are thought to be eager to see a final agreement reached by September, when the two-year conceptual design phase is scheduled to end and Phase C-D—design and construction—is scheduled to begin. Pryke stresses that real negotiations are taking place now—that talks have gone well beyond the preamble phase.

If the question of whether the Pentagon is to use the space station has been resolved, the answer is not publicly known and still must be considered, in detail, by the foreign partners. One report indicates that the Pentagon withdrew its request to use the station for Star Wars research and tests; another indicates that the President has signed a classified decision finding on how DOD will use the station.

Cost escalation. Independently of that issue, NASA Administrator James C. Fletcher conceded in testimony this winter that the space station might cost the United States \$12-13 or \$14-15 billion rather than \$8 billion as originally estimated. The latest internal NASA estimates are rumored to be well above \$20 billion.

The changed estimates may be of little direct concern to foreign partners, whose contributions are fixed. But they do concern Congress, which warned, when it originally authorized the space station, that cost overruns would not be tolerated. One measure of the space station's sudden vulnerability is the ad campaign launched by aerospace contractors to save it. During the winter full-page ads favoring the project were placed in leading newspapers and magazines by companies such as Boeing and Lockheed. "Space research is this generation's call to greatness," the ad from Boeing said.

At this writing, leading Administration officials have just gone to the President with a recommendation to proceed with a smaller version of the space station that would cost about \$4 billion less. The plan reportedly has been endorsed by James C. Miller, director of the Office of Management and Budget, National Security Adviser Frank C. Carlucci, Presidential science adviser William R. Graham and Fletcher. Fletcher's office would not comment on the report.

Apparently the plan calls for a smaller power supply that would support less modules and equipment. It remains to be seen whether the new version still could accommodate all the

equipment that Europe, Canada and Japan want to deploy.

Other issues. Plans for Columbus, the name given the European program for the space station, have become increasingly complicated as various national interests have been accommodated on the European side. The current agreed-upon plan for Columbus includes a permanently attached laboratory module and a polar satellite that is to complement an identical NASA satellite. The Europeans have proposed, in addition, a separate but co-orbiting platform for experiments with sensitive instruments and an astronaut-tended free flyer that could become the basis for an independent European station.

Whether the Columbus flotilla turns out to have two, four or some other number of vessels, it probably will not have three and it clearly will not make it to the new New World by 1992, in time for the 500th anniversary of Christopher Columbus's voyage, as originally hoped. The latest target date seems to be 1995.

—WILLIAM SWEET

AIP will start a new magazine, Computers in Physics, in 1988

Robert R. Borchers, associate director for computation at Lawrence Livermore National Laboratory, will be the editor of *Computers in Physics*, a new magazine-journal that AIP plans to start publishing next year. Borchers was recommended for the position by a search committee headed by Howard J. Voss of Arizona State University.

Borchers will edit *Computers in Physics* at Livermore, relying on a board of associate editors who will select scholarly articles on the basis of assessments from referees. The editor's job is part-

BORCHERS

