1980 to $5.5 billion in FY 1982, an increase that may be just about enough to provide a little real growth, barring a rapid surge in inflation.

—Colin Norman

Shuttle Astronauts Give Report

During a week of debriefings, astronauts John Young and Robert Crippen have told the engineers who designed the space shuttle Columbia that its maiden flight was nearly flawless and that the vehicle has better maneuvering and lift capability than anticipated. It used less fuel during liftoff than expected, lofted past its targeted initial altitude, and traveled smoothly at hypersonic speed for the first time. Young also predicted that it would traverse farther and more easily away from its natural path of flight in space, possibly providing the capability to launch and service satellites in more varied orbits.

On the much discussed topic of the shuttle's tiles, Crippen says he noticed that some were missing on the shuttle's aft when he first opened the payload bay doors. If it caused either him or Young any alarm, neither has admitted it. The most vital heat-sensitive areas are the forward edges of the wings, and the astronauts could see that the pyrolized carbon coating there was undisturbed. Young reported that he and Crippen had been told by engineers that at least one of the tiles on bottom of the shuttle would fall off on reentry—which is, of course, the reverse of what the National Aeronautics and Space Administration (NASA) had assured the public. They had also been told that heat in a tile gap "may burn a hole through something, but it doesn't hurt anything." In any event, no tiles fell off, to Young's obvious delight as he walked around inspecting the craft after landing.

The astronauts said that nothing surprising occurred during reentry except that NASA was unable to obtain critical temperature readings from the shuttle's skin during the period of greatest heating from atmospheric frictions. The data were missed both by a chase plane with an infrared camera and by a faulty tape recorder on board the shuttle. Until the next flight, NASA can only guess how much heat the tiles reflected during this period.

During later flights, temperatures on reentry will become even higher because of a new angle of descent. Aerodynamic pressures will increase by almost 20 percent. Also, additional power must be generated to support longer stays in space. The toilet must be made to work properly (it worked for only part of the first flight). The engines must be certified at greater levels of thrust, and the external fuel tank and solid rocket boosters must be modified so as to lose about 5000 pounds. Eventually, the ejection seats for the astronauts will be removed to lighten the load.

Most of the Columbia's tiles must be reexamined at Kennedy Space Center before the next launch. NASA expects to replace as many as 600 of the shuttle's 32,000 tiles routinely between flights. All of the tiles on orbiters now under construction will be strengthened and tested, unlike many of those on the Columbia. Meanwhile, the agency has budgeted $20 million over the next few years to develop an alternative heat protection system.

NASA also plans to examine the main engines of the Columbia with a boroscope, a tube containing a magnifying lens at one end. Ignoring the advice of an expert panel of the National Academy of Engineering, NASA has decided not to disassemble one of the engines before the next flight.

—R. Jeffrey Smith

New AAAS Panel in National Security Field

AAAS has established a panel on security and scientific communication. The move is prompted by the increase in recent years of cases in which national security considerations have conflicted with freedom of research or international scientific interchange.

Examples are restrictions on cryptography research and efforts to control information on advanced technology, for example, through enforcement of the International Traffic in Arms Regulations (ITAR).

Other scholarly and scientific organizations—such as the National Academy of Sciences, American Association of Universities, and American Council on Education—have addressed the problem on an ad hoc basis. The AAAS panel, however, will be a regular subcommittee of the standing Committee on Scientific Freedom and Responsibility. Chairman of the subcommittee is Stephen Unger, of the department of computer sciences at Columbia.

Formation of the subcommittee marks a new departure for AAAS, whose committees have heretofore not dealt on a regular basis with national security issues.***—John Walsh***

Jury Exonerates Bendectin in Mekdeci Case

On 9 April, a federal jury in Orlando, Florida, ruled unanimously that the antinausea drug Bendectin did not cause the birth defects of 6-year-old David Mekdeci. This was the first and most critical test of claims made against Richardson-Merrell Inc., manufacturer of Bendectin. Sixty other suits have been filed.

A number of lawyers have been placing newspaper ads for cases involving women who took Bendectin during pregnancy and subsequently bore deformed children. The drug has been called "a new thalidomide." Bendectin, on the market for more than 24 years, has been taken by more than 30 million women to suppress nausea during pregnancy.

Last September, a panel of the Food and Drug Administration determined that there is no demonstrated association between Bendectin and birth defects (*Science*, 31 October, 1980, p. 518). Nonetheless, lawsuits against Richardson-Merrell are going ahead as planned.

The Mekdeci case was originally tried in January 1980, but federal Judge Walter E. Hoffman ordered a retrial, saying that the jury's verdict was inconsistent. The jury on the first trial recognized no damages due to the use of Bendectin but gave the child's parents $20,000 anyway for medical expenses. The retrial lasted 9 weeks; the jury of five women and two men reached a unanimous verdict after 2 hours of deliberation. The Mekdecis will continue to press their case.

—Gina Bari Kolata