

NASA: Helping with DOD's bills?

Concerns about military influence on the U.S. civilian space program are not new. Since the 1960s, for example, there have been occasional reports of Defense Department efforts to restrict access to data from National Aeronautics and Space Administration spacecraft, for fear that they might reveal too much about U.S. capabilities. The coming of the space shuttle, however, has raised another sort of issue, even apart from the shuttle's acknowledged dual role in both civilian and military programs. It is that the NASA budget, suffering in several key areas because of its domination by the shuttle's development, production and operations, includes a number of expenses directly related to the shuttle's military role—a role that, some critics are now charging, ought to be borne by DOD.

In February, a General Accounting Office analysis concluded that the space agency's method of charging non-NASA users of the shuttle's launch services (particularly DOD) amounts to a subsidy "at the expense of the [NASA] space science, applications and aeronautics programs." In 1976, said the report, the average cost of flying a standard shuttle mission was projected to be \$16.1 million. By September 1980 the projection had grown to \$27.9 million. Acting under a policy established in 1977, however, NASA had been planning to charge DOD only \$12.2 million per launch during the shuttle's first six years of operation. Commercial, foreign, and other U.S. civil agencies would get a smaller discount, to \$18 million, and with a lid on the price for only three years.

NASA says that it is now considering revisions to its plan. "However," reported GAO, "an underlying principle of the Space Transportation System's pricing policy is to encourage users to change over to the shuttle [from other launch vehicles] by offering a launch price that is less than the cost to NASA to launch the shuttle. Consequently, GAO believes it is reasonable to assume that even after NASA revises its current pricing policy, the agency will be subsidizing users in the early program years." GAO recommended that NASA update its price to reflect its growing costs, "and charge it to all users, including DOD and other government users." Furthermore, the report added, "GAO believes the user agencies should be responsible for justifying any additional program costs to the Congress. If a user cannot justify a program's cost, then it raises a question as to the program's overall worth."

A more recent GAO analysis, however, suggests that DOD may be benefitting from NASA's economics in more ways than just cut-rate launch fees. In response to a request from Sen. William Proxmire, ranking minority member of the Senate Ap-

ropriations Committee, GAO set out to determine just how much of NASA's requested FY 1983 research and development budget (about \$5.3 billion) was actually serving DOD's purposes. First, GAO asked NASA to break down the total into three sections, indicating how much money was going for (1) NASA's use alone, (2) combined goals relevant to both NASA and DOD, and (3) strictly DOD needs. Then GAO conducted its own analysis, using the same rules. The differences are striking.

In the areas of space science and applications, aeronautics and space technology, and tracking and data acquisition, GAO's analysis agreed with NASA's. In the case of the shuttle and its operations, however, which account for 65 percent of the total, NASA cites no DOD-only expenses at all. Nearly \$3.2 billion is for dual-purpose, civil/DOD items, while less than \$0.3 billion is NASA-only.

The GAO version paints a different picture. In GAO's view, there is nothing in the dual-purpose category. Civilian needs account for almost \$2.4 billion, and the DOD-only portion — "work . . . that would not be funded by NASA in fiscal year 1983 without a DOD requirement" — amounts to more than \$1 billion, a fifth of the total.

Administration officials, including NASA head James M. Beggs, have repeatedly noted a need for NASA to cooperate closely with DOD, particularly because the shuttle is the primary launch vehicle for both agencies. The new GAO report, however, proposes a division of the source of expense. "Based on NASA's latest traffic model," says GAO, "DOD is estimated to require 114 of the estimated 234 shuttle flights through 1994, or about 49 percent of the flights." The report translates this into a similar percentage of the shuttle's production and modification costs, or \$0.9 billion, and a portion of operations costs.

GAO's conclusions are already making themselves felt. Last week, the Senate Commerce Committee unanimously passed its version of the administration's NASA budget bill. The total is the same — \$6.612 billion — but \$409 million of it has been reassigned from shuttle operations to various other NASA programs. DOD "should not be 'subsidized,'" says the bill's sponsor, Senator Harrison Schmitt (R-N.Mex.), "at the expense of our nation's civil aeronautics and space programs. . . ." The \$409 million includes \$40 million for planetary data analysis and spacecraft operations (keeping the Pioneer probes going) and \$20 million for physics and astronomy, as well as \$64 million for aeronautics, \$150 million for a fifth shuttle orbiter and \$90 million for a modification of the Centaur upper-stage rocket (though not the one that might have saved nearly half of the Galileo mission's 4½-year flight time). A day later, the House Budget Committee recommended a similar kind of shift, including the assumption that DOD would pick up a greater portion of shuttle operations costs.

—J. Eberhart

Do new blood tests mark chemical war?

Since last fall, the U.S. State Department has been trying vigorously to develop a case that proves Soviet-supplied fungal poisons are being used as chemical warfare agents in Southeast Asia. First, the department released "compelling . . . but nonetheless preliminary evidence" (SN: 10/17/81, p. 250). This was followed by "smoking gun" evidence and data to back an "inescapable conclusion" (SN: 2/20/82, p. 122; 4/3/82, p. 230). Now the department has released more evidence to bolster its conclusion.

Analyses of blood samples taken from victims of an alleged chemical attack reveal levels of the fungal poison T2 and its breakdown product HT2, State Department officials recently reported. T2 is one of several mycotoxins believed to constitute a warfare agent dubbed "yellow rain." One set of blood samples included two drawn from Khmer Rouge guerrillas presumed to have been chemically attacked by Vietnamese forces at Tuol Chrey in Kampuchea on Feb. 13. These samples — drawn by an undisclosed source less than 24 hours after the attack — revealed 18 parts per billion (ppb) T2 toxin and 22 ppb HT2 metabolite in one victim and 11 ppb T2 and 10 ppb HT2 in the other.

A second set of blood samples was drawn from five other victims by Amos Townsend, an American physician in Bangkok. While these samples were not taken until 18 days after the Tuol Chrey attack, detectable levels of T2 toxin still were found in two of the victims.

That T2 was detectable in any of the victims 18 days after the attack is surprising, says Harvard University geneticist Matthew Meselson, who counseled the arms control agency and U.S. Department of Defense on matters of chemical and biological warfare for 10 years, beginning under President John F. Kennedy's administration. Meselson cites animal studies that have shown T2 to break down quickly — that is, 12 to 24 hours after administration. But Chester Mirocha of the University of Minnesota in Minneapolis, who not only conducted all of the recent blood-sample analyses but also conducted the previous animal studies of the half-life of T2, says the results are not suspicious. "In the laboratory animal experiments, we haven't really gone into very precise and sensitive analysis," Mirocha explains. As a result, minute amounts of T2 could have lingered in the samples beyond its presumed lifetime. The recent human-blood analyses, on the other hand, employed sensitive analytical tools to detect such minute amounts, Mirocha says.

Results of these recent analyses will be turned over to a U.N. team investigating the previous U.S. allegations of chemical warfare.

—L. Garmon