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Launch failures leave gaps in military space program

Planned missions pushed back years

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WASHINGTON — It didn't take long after the world learned of the nuclear disaster at Chernobyl in the Soviet Union for U.S. officials to offer

anonymous descriptions of the destruction wrought by the accident. No one had to ask how they knew.

It is the most unsecret of top secrets that a U.S. satellite was directed over the site to send photographs back to Earth.

In the quarter century since the Soviets shot down a U.S. spy plane over their territory, the superpowers have put their "overhead assets" into orbit to spy and to give early warning of attack from intercontinental ballistic missiles.

Now, for perhaps the first time since the earliest days of the U.S. space effort, questions have been raised about the U.S. ability to prevent blind spots — at least in the short term — in its strategic presence in space.

Disasters with both the manned space shuttle program and the Air Force Titan rocket have stripped the United States of the ability to put large satellites into orbit.

U.S. officials, backed by knowledgeable outside experts, say strategic information-gathering capability has been pinched by the problems but by no means shut off. But if U.S. launch vehicles capable of lifting heavy payloads, including the shuttle, aren't flying soon after mid-1987, the damage could be much more serious.

And in fact, the damage so far to other military space programs is significant. The use of space for communication, navigation and weather forecasting has become a military necessity. Planned improvements here have now been pushed back years.

"It's because of space-based systems that we can effectively provide warning to the president, that we provide information about the world, that we can provide accurate weather data, and can communicate globally, instantaneously and reli-

ably," said a highly placed Pentagon official, who declined to be identified. "When you [look] across all those missions that we can do only from space, it provides an absolutely unique and vital capability. The importance is inestimable."

Not having "assured access to space because of the launch failures is extremely serious if it continues for a very long period of time. So the urgency and the hurt are time-dependent," this official said.

"Right now, there's no crisis," he continued. "But sooner or later, things on orbit wear out. We're in a world of hurt if this goes on very much longer."

The shuttle Challenger was destroyed Jan. 28 with the loss of seven lives when one of its two solid rocket boosters failed. Dr. James C. Fletcher, the new chief of the National Aeronautics and Space Administration, has said NASA believes it can fly safely again by mid-1987, but if that time arrives and the agency isn't confident, "we just won't fly."

On April 18, an Air Force Titan 34D blew up seconds after its liftoff from Vandenberg Air Force Base in California. Last August, an erratic Titan 34D was destroyed for safety reasons after liftoff. Air Force officials have said that the two accidents were from apparently different causes and that no design flaw has been detected in the booster, which has had many successful flights.

While government sources won't confirm the payload of either disastrous flight, outside experts say chances are great that both rocket launches were attempts to put into orbit a KH11 photographic spy satellite to augment the lone KH11 in orbit over the Soviet Union now.

It was the KH11, which can be shifted to cover different swaths of the globe on its orbits, that was directed over the Chernobyl site, these experts say.

The KH11 now in orbit is likely to last until late 1987 or early 1988, says John E. Pike, aerospace expert with the Federation of American Scientists.

Until then, Mr. Pike said, coverage over the Soviet Union will be reduced. "Perhaps they'll get one picture a month of a Soviet warship under construction instead of one a week," he speculated.

Mr. Pike said other, Third World targets can be covered by increased use of the SR71, the high-flying, piloted spy plane that can fly three times the speed of sound.

A defense official with extensive knowledge of U.S. spy satellites would say only that it was "not true" that the United States was down to one reconnaissance "asset" but declined to elaborate.

A successor to the KH11, the more capable KH12, is reportedly too large for current, unmanned rockets to lift into orbit and must await the return of shuttle flights to be put into service.

One satellite system officials will talk about is called NAVSTAR, and its operation has been delayed at least two years by the shuttle disaster. It is a global positioning system, or GPS, that will give ships, planes and ground units equipped to use it their precise location in three dimensions within "tens of feet," night or day, anywhere on the globe, says one official.

The system consists of 18 satellites with four backups. They will be resistant to jamming, and a user is likely to be within range of three or four at any one time. It was to be in place by the final three months of 1988.

"The global positioning satellites were designed only to fly on the shuttle, which in retrospect was not a very smart strategy," a Defense official said.

If the Air Force has its way, NAVSTAR will be removed from the shuttle payload list and pave the way for a new generation of medium-lift rockets that also can be used commercially to compete with commercial satellite launches by other nations, chiefly the European Ariane rocket.

The service intends to hold a competition for the medium-lift rocket for its needs, thus establishing the manufacturing base for a commercial version.

The Air Force also hopes to approximately double, to about 20, the number of new heavy-launch vehicles it plans to begin using by 1988. In sum, military payloads will be split about 50-50 between the shuttle, when it flies again, and expendable rockets.

When the shuttle does fly, it is likely to be mostly if not wholly with military payloads, at least for the near term. A year's delay would leave 10 Pentagon payloads on the loading dock. Two years would more than double the number waiting for a "launch opportunity."

The Air Force has said that "many backlogged [defense] missions must take priority when the flights are reinstated." Thus, through accident and necessity, the military may temporarily dominate

the shuttle program, as some critics charged it did in the late 1970s when the Air Force was brought on board to help finance the shuttle.

Defense officials have grumbled that the United States would be in even worse shape if not for their previous insistence on procuring new, unmanned rockets called complementary expendable launch vehicles over additional criticism that they were seeking a duplicate military space program.

A question mark remains, however, about use of the shuttle for purely military flights from the new launch pad constructed at Vandenberg for some \$3 billion. The question concerns the safety of solid rocket boosters made for the military from light synthetic fiber.

These boosters are designed to save weight so additional fuel can be loaded into the rockets to meet the requirement of launch from Vandenberg. Unlike shuttle launches from Florida, which use steel-case boosters, the polar orbit launches from the California site do not get the boost available from the Earth's rotation. The synthetic boosters have failed in tests.

Beyond concrete foreseeable needs, enormous military space freight requirements loom. Researchers for the Strategic Defense Initiative, President Reagan's missile defense plan, have suggested that some new kind of reusable vehicle will be needed to meet the volume of space lift that the so-called "star wars" defense would entail. And that would be in addition to the extra launch capability provided by the "Orient Express" space plane — a primarily military project to produce a craft capable of conventional take-off and landing but achieving speeds 25 times the speed of sound at low orbit altitudes — on which research has begun.

The immediate problems of the U.S. space program also have begun to revive the debate over the general American preference for expensive, highly capable satellites in reduced numbers (KH11 is said to cost \$500 million) versus cheaper and therefore more numerous if somewhat less capable systems.

**Tomorrow morning in The Sun:
Will NASA change its mission?**