

The mystery of the Soviet shuttle

by Marsha Freeman

For the past 10 years, experts in the West have been arguing over whether or not there is a Soviet space shuttle, and when it would fly. After years of denial and contradictory statements, in May 1987, the Soviets finally admitted that their reusable spacecraft did exist. On Oct. 26, the Soviet news agency Tass announced that the maiden flight of the craft would be on Saturday, Oct. 29.

It should not really be surprising that the shuttle "Snowstorm" did not launch on the day the Soviets said it would. For one, as Hugh Harris, the voice of Shuttle launch control at the Kennedy Space Center said, "Space shuttles and delays go hand in hand." It is a complex system, with any number of technical problems that can develop in even the last few minutes before lift-off.

The news reports are that the launch platform, which gives engineers and technicians access to the orbiter while it is on the pad, would not move away properly before launch, which canceled the lift-off. Yet Tass stated that the flight was postponed "indefinitely," which would lead one to suspect a more serious technical problem. The Soviets have not been ready to do a second test flight of their Energiya booster, on which the shuttle depends, for a year and a half, undoubtedly because of serious technical problems. In September, they lost the first of two Phobos spacecraft that are supposed to go to Mars.

The most astonishing aspect of the announced shuttle test flight was that the Soviet orbiter is not a stand-alone system, but is attached to the Energiya super-booster, which takes it into space, and the Energiya has been flight tested *only once*, in May of 1987. At that time, the dummy payload atop the rocket did not deploy properly.

Nicholas Johnson, an expert on Soviet space programs, wrote two years ago that the Soviets "traditionally exhaustively test" any new launch vehicle. Why risk a half-billion dollar shuttle orbiter on a rocket that has been tested only once? For years, space analyst James Oberg insisted it was highly unlikely that the Soviets would test a reusable shuttle system in the 1980s. One reason is that the Soviets have never demonstrated the sophisticated computer technology needed to fly a machine that takes off vertically on a rocket, but lands horizontally, like an airplane.

No matter how well trained your pilots might be, this vehicle cannot be flown without computers. Of course, what these able analysts did not bank on was *glasnost*. One observation made by many aerospace engineers privately, is that this new "openness" has probably given the Soviets the computer technology they needed. Of course, the most common comment made, when the Soviets released the first-ever photograph of their shuttle on the same day the Discovery returned America to space, was, "It looks familiar." That the Soviets saved themselves many years, many rubles, and the embarrassment of failure, by simply "borrowing" the design from the U.S. orbiter, is virtually undeniable.

According to Oberg, however, there are a very limited number of designs that would make aerodynamic sense, considering the fact that the spacecraft has to be brought in from orbit to land on a runway. But the U.S. did the wind tunnel tests, the aerodynamic drop tests, and took the risks that the Soviets were able to by-pass.

In preparation for the testing of a full-scale orbiter that can carry about 65,000 pounds of payload like its U.S. predecessor, the Soviets did landing tests with a mini-spaceplane between 1982-84. Apparently the full-scale model has jet engines, unlike the U.S. Shuttle, which would allow it to land under power, and make a second attempt at landing if it were out of alignment with the runway. Two runways have been built for the Soviet shuttle.

But a mystery still remains—why are the Soviets developing a space shuttle? They do not need it to deliver cosmonauts routinely to their Mir space station. For more than a decade they have used highly reliable expendable rockets to do this, which they mass produce.

They do not need a shuttle to deliver large payloads to Earth orbit—they have developed the Energiya booster for that very purpose, and do not have to risk the lives of people in a shuttle vehicle. Moreover, at least for their current Mir, which they certainly plan to use through the turn of the century, the modules and laboratories that have been designed to be added on, fit on their other operational boosters. In the next few years, it is most likely that the Soviets will be readying the deployment of an Earth-orbit-based strategic defense system, which may require the assembly of large structures. The shuttle gives the Soviets the ability to have a maneuverable, manned space platform, from which assembly and construction can be performed.

It is also possible that the orbiter will not always or even primarily be flown manned. Years ago, the Soviets tested an orbital system designed to deliver nuclear bombs to the West from space-based trajectories which allow the weapons to sneak by radar detectors and defenses.

It is disappointing that the Snowstorm did not take off as scheduled. It will be at a time when the Soviets are trying to prove *glasnost*, and when they are taking propaganda advantage of such an accomplishment, that Western observers may find out more about this mysterious shuttle.

SPETSNAZ



SPETSNAZ

In the Pentagon's "authoritative" report on the Soviet military threat, *Soviet Military Power 1988*, the word *spetsnaz* never even appears. But *spetsnaz* are Russian "green berets." Infiltrated into Western Europe, *spetsnaz* have new weapons that can wipe out NATO'S mobility, firepower, and depth of defense, before Marshal Nikolai Ogarkov launches his general assault.

ELECTROMAGNETIC PULSE WEAPONS

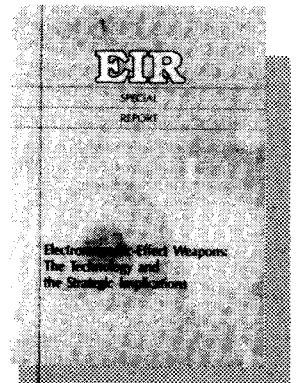
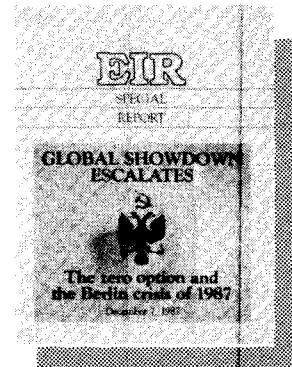
At least the Pentagon report mentions them—but only their "defensive" applications. In fact, they can be transported by *spetsnaz*, finely tuned to kill, paralyze, or disorient masses of people, or to destroy electronics and communications. With EMP, as strategic weaponry or in the hands of *spetsnaz*, the Russians won't need to fire a single nuclear missile to take Europe.

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