

The Bomb That's A Missile Too

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Just as the electronically-guided "smart bombs" and HoBo bombs have hit the front pages, the military has finished testing an entirely new missile-bomb which promises to once again revolutionize modern air warfare.

In the wake of recent fare over the TV-guided Maverick, North American Rockwell's Columbus, Ohio, Division has come up with the Condor, which it refers to as an "educated missile."

To fire the Condor, a pilot need not be near nor see his target. It is a no-risk weapon for high-risk missions which promises to antiquate even those TV-and laser-guided iron (conventional) bombs now in use.

"The HoBos (homing bomb systems) have their limitations," says D. A. Smith, manager of analysis planning at North American Rockwell, "particularly against high value targets

such as factories, strategic bridges, power plants, ships, airfields, and petroleum dumps.

"Many of these are guarded by antiaircraft defenses that include sophisticated surface-to-air missiles (SAM's) that can seal a 'leak' envelope, fending off anything that comes within eyeball range or even further out." The problem is simple: even though "smart bombs" and HoBos are accurate, pilots have to release them over the targets.

ALTITUDE

As Smith says, now pilots must fly "right down the gun barrel of the enemy" before they can pick up their targets and lock the TV guidance system of the "smart bombs" on them. Pilots continue to be shot down at an "unacceptable level" while trying to do so.

What North American Rockwell has done with its new Condor, is in effect to make a seeing-eye bomb with its own propulsion system. Where the "smart

bomb" only has fins to direct its fall, the Condor has an engine.

"It's terrific," says Smith. "It can fly longer distances and stay further out of trouble. The rocket motor allows the plane to stay out of visual range and get better 'stand-off.'" The pilot can launch his payload well outside of the target area. He may be 20 miles away, which is none too far if there is heavy flak or SAMs. He can also be en route to another target, or heading home.

PICTURES

There is a TV camera in the nose of the Condor which sends back TV pictures of what it sees to a cockpit screen. "When the Condor gets near the target area," says Smith, "a green light comes on in the pilot's cockpit saying, 'start looking at the TV screen.'" The pilot then picks out the target on the screen and guides the weapon home.

"You need never see the target in order to get a hit," notes Smith. "And we get a hit almost every time — a 90 per cent ratio."

This technique is referred to by the military as the "ready-fire-aim" system, and is described as a "radical departure" from the conventional "ready-aim-fire" tactics used with bombs, rockets, guns, and even HoBos. Not only does the system insure maximum safety for the attacking pilot, but allows an attack to be carried out almost without detection. It gives the enemy little time to react.

WEATHER

But perhaps the most important feature of all is that the Condor will allow the U.S. military to pin-point bomb right through bad weather and heavy cloud cover. "It can go right through weather," says Smith. "Once under the

clouds, the pilot can pick up the target on the nose camera and it's home free."

The Condor carries an explosive charge roughly equivalent to a 1000-pound conventional bomb, although it does lose some "punch" because of the added weight of the rocket engine and the electro-optical equipment.

Military planners see the Condor as a "fairly inexpensive" means of destruction in spite of the high per-piece cost (\$11,000 for the guidance system alone, excluding the bomb and rocket engine, while a 1000-pound iron bomb costs roughly \$2000). Says Smith, "Sure, you pay for your direct-hit weapons, but you get over 90 per cent reliability. You only have to drop one weapon for the job of 100."

TESTS

The research and development costs of the Condor have run to more than \$130 million. It has been tested for land use at China Lake, Calif., Naval Weapons Testing Station, and off San Clemente Island, where it scored a direct hit on a target ship. In Smith's words, this "ushered in a new era in the Navy's ability to hit surface ships out of range of defensive fire."

The Navy is requesting another \$20 million this fiscal year to put it into final mass production. The Air Force is also interested in immediate implementation of the Condor. The trend in new weapons is clearly toward automation; toward keeping pilots out of "high threat situations."

North American Rockwell, with an eye on its competitors in the arms industry, seems to be right on top of the trend with the Condor. Says Smith with confidence and satisfaction, "Well, yes, the Condor looks good. No one else has anything else developed which is even remotely like it."