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REMARKS

FYI: Schemmer noted with some glee that the other leaks on the Stealth pgogram did not mention tactical (fighters). However he changed his tune a few days later when he was on the hot box. He then said he should not have been given the info in the first ~~in~~ place.

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pg 30

US Has Been Flying Virtually Invisible Aircraft for Over Two Years

Several Tactical Versions Are In Production: Senior DoD Official Calls Program a "Breakthrough," Bigger Than Cruise Missile or Hi-Energy Laser

by Benjamin F. Schemmer

SINCE EARLY 1978, the US has been test flying several versions of virtually invisible new airplanes, both manned and unmanned versions, in a highly classified "stealth" program. Although hundreds of millions of dollars a year are now being spent on the program, only a few dozen government officials have been privy to details of it. Several different types of the aircraft have been built. Scores of flight test hours have been accumulated on several prototypes, although only a handful of pilots have flown the planes.

One senior Pentagon official expects that within ten years, roughly 10% of all US military aircraft could be "stealth" systems.

Defense Secretary Harold Brown was expected to make some details of the program public soon after this issue of *AFJ* comes off the press. Although he had hoped to keep any news of it under wraps for at least another year, or until well after the new planes become operational, several leaks about the program have forced earlier disclosures.

All of the airplanes involved in the stealth program are new designs, not modifications of existing aircraft. Four or five major defense contractors are involved in the program at the "system" level, that is, building or designing the aircraft.

The planes are virtually invisible to air defense radars, to infra-red or other electronic or acoustic detection systems.

Defense officials decline to discuss the techniques used to make the planes virtually undetectable—they modestly call the new aircraft "reduced observables" and say only that they are of "low" detectability—but the complex technologies involved meld a variety of unusual aircraft design and electronic technologies. These include what one senior defense official described to *AFJ* as "a powerful systems approach." He would not elaborate further, making clear that he was unwilling to discuss any of the technology involved.

But the general techniques apparently involve special shaping or contouring of the aircrafts' structure; non-metallic materials that absorb electromagnetic energy or cause such a weak return of it for the signal to be ambiguous or almost undetectable; infra-red shielding of an aircraft's engine exhaust and other "hot spots," with exhaust nozzles, for instance, bent into directions that make infra-red or heat-sensing detection difficult; special paints to absorb, deflect and shroud signals which might otherwise detect metallic components, while also making visual detection difficult; and electronic techniques and countermeasures to generate false returns which show a plane's position far away from the plane's actual flight path or which mute the energy and accuracy of electromagnetic air defense acquisition and tracking systems.

No one single technical "trick" is responsible for the breakthrough, one senior Defense official emphasized to *AFJ*. He scoffed at one rumor circulating in some Washington circles that the Pentagon has invented a "transparent" paint to make airplanes invisible.

Major Breakthrough

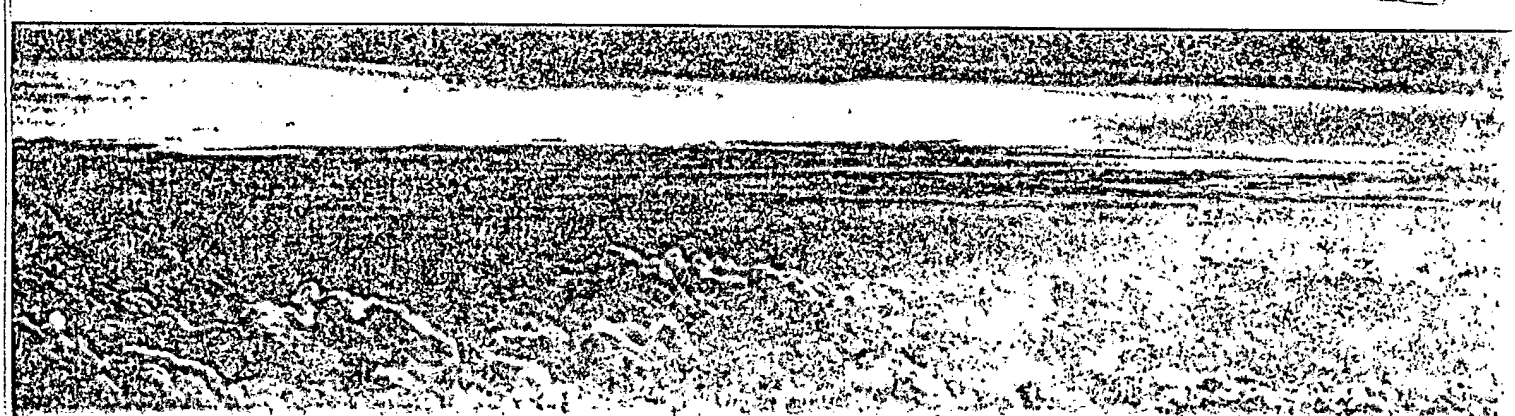
Defense officials will not specify just how successful the new aircraft have been, except to acknowledge that they "pretty much invalidate the whole set of air defense systems existing today." Both theoretical calculations and test data indicate that the "stealth" aircraft represents a "breakthrough" which rates among the "top three" in recent years and which could "possibly [be] the *first* one in terms of potential military leverage," according to one Pentagon senior official. He told *AFJ* that the program could even be more important than the cruise missile, which the Administration characterizes as a revolutionary technological innovation, and more important than an operational hi-energy laser weapon.

While "several" of the new planes are in pilot production, no one of them is yet operational, *AFJ* has learned. However, the Pentagon is looking at early IOCs," *AFJ* has been told, meaning that the new aircraft would have an "initial operational capability" earlier than would be expected under the Pentagon's normal seven-to-ten year research and development cycle for getting a new system into the field.

Work on stealth *technology* has been underway for several decades, with significant efforts put into reducing the radar cross section of aircraft and hiding their infra-red detectible exhaust plumes and hot spots. The present stealth *program* apparently had its real genesis early in 1977 when Defense Secretary Harold Brown and his newly appointed top technical advisors surveyed the Pentagon's so-called "technology base" research and development program to assess which new technologies might be exploited to greatest operational advantage during their tenure.

Brown, *AFJ* is told, "understood the significance" the first time he was briefed on the possibilities of flying entirely new aircraft designs incorporating recent stealth advances. At that time, only about ten million dollars a year was being spent on stealth technology out of the two billion dollars a year invested in the "technology base."

Brown and his Under Secretary for Research and Engineering, Dr. William



Perry, subsequently ordered all of the stealth work to be tightly "compartmented"—thus, so closely held that until today, only a few dozen government officials have been privy to it. The program was given "the highest priority" Brown and Perry could assign.

Prototypes Flew in 1978

In August of 1977, Brown and Perry ordered the stealth effort increased by what one official described to *AFJ* as an "order of magnitude," implying at least a ten-fold funding increase to a spending level of a hundred millions dollars or more a year.

At least one prototype was flying by early 1978, within seven or eight months of that decision.

Of the four or five different types of planes involved, several are in flight test status, others are soon to fly as prototypes, and some others are "still on the drawing boards," *AFJ* is told.

Bomber Decision in March?

One of the designs still on the drawing boards is for a stealth version of a new strategic bomber. Press speculation about a stealth bomber triggered an August flurry of press inquiries to the Pentagon over its stealth program, and there have been rumors that a "stealth penetrator" is even under construction.

A senior defense official told *AFJ* that it will be next March before the Pentagon finishes its evaluation of new bomber alternatives and is able to recommend whether or not to put a "stealth bomber" into engineering development. At present, he said, such an airplane is still in the "design stage," although he acknowledged that one might be developed fast enough to meet a recent Congressional mandate that a new "multi-role" bomber should be operational "not later than 1987." The *Journal* was told that work on the stealth alternative is not far enough along to permit an informed judgement on whether or not it would be more effective than a stretched version of SAC's FB-111 or a derivative of the B-1. Even the stealth program's most ardent advocates, *AFJ* was told, are "not yet ready to make a case" for a bomber version. Thus, the stealth bomber issue is not likely to be exploited or compromised by 1980 election year rhetoric, as some press "leaks" have suggested.

Press "Leaks"

Aviation Week, for instance, noted on August 11th in its "Washington Roundup" column a brief memo that recent Congressional votes requiring the Pentagon to develop a new manned bomber to become operational by 1987 had led the White House to "continue studies" of options ranging from a stretched version of the General Dynamics FB-111 to a fixed wing version of the Rockwell International B-1 to "the advanced technology stealth

Do the Russians Have One?

WHEN SHE READ the first draft of this article, *AFJ*'s circulation manager, Nancy Biglin, asked one editor:

"Let me ask you this: Do the Russians have one of these airplanes?

Our editor told her, "I doubt it."

She asked us, "But how would we *know*—if they can't be *seen?*"

A long silence followed . . .

AFJ's board of directors is now thinking of having Nancy replace the editor: He never asked the most interesting question in this whole story.

tail, other than to note that "several in the Senate contended that Dr. Perry oversold the 'stealth' aircraft in order to stop a Senate amendment for a new but more conventional bomber."

Three days later, the *Washington Post* noted on its front page that "President Carter will commit himself to developing a new strategic bomber" to "steal a march" on his Republican opponents, and mentioned that "Some Air Force enthusiasts have nicknamed this new bomber 'Stealth' because of its ghost-like qualities. Technocrats explain Stealth presents a virtually undetectable 'cross-section' to radar beams searching for it. They call it the High Technology Aircraft." The story went on to quote one Carter campaign official as saying, "You're going to hear about these bomber breakthroughs sooner or later in this campaign" and then quoted public Congressional testimony from USAF "research chief" Lt. Gen. Kelly H. Burke that "high on our list of hardware explorations" in a new bomber effort "is radar-absorbing material to reduce radar cross-sections." The article later said that a Defense Science Board study of new bomber options had "reportedly discouraged the idea that a virtually 'invisible' aircraft like Stealth could be built anytime soon."

Neither the *Post* nor *Aviation Week* articles made any mention of *tactical* stealth aircraft, such as those which have been flying for over two years.

300-400 Planes by 1990 as "Force Multipliers"

A senior defense official told *AFJ* that by the end of this decade, he expects to see roughly one-tenth of the US military air arm comprised of the new stealth airplanes. That would mean that about 300 to 400 of the planes might be operational. He said that "We already have this investment in conventional aircraft, and we don't need to scrap it. The trick is to use the new planes as 'force multipliers'—to perform their own functions and increase the effectiveness of the planes aircraft could be used to suppress enemy air defenses without even being detected, thus increasing the effectiveness of the recently operational F-15 and F-16 air-to-ground and air-to-air fighters immensely.

A senior defense official was emphatic in saying that the stealth breakthrough renders present air defense systems almost useless. The Soviets, he said, will now be faced with a choice of trying to function without air defense, or of spending tens of billions of dollars to invent and field new ones.

Although he declined to describe the new aircraft in detail, the new planes, he said, need not be "hot burners" because "We don't believe they can be effectively engaged." Thus, he said, the Pentagon's secret three year, recent R&D program has been aimed at "optimizing" them for other characteristics, "like payload and range."

The new aircraft, he said, offer "enormous leverage for a relatively low dollar investment."

He compared their significance to the possibility of an operational hi-energy laser system this way:

"Even if we could achieve those goals, it's not clear that we would build and deploy one. The payoff just isn't that clear. I consider this development more significant than the hi-energy laser."

Without specifying which stealth planes have been approved for production, the defense official acknowledged that there would be significant differences between air-to-air or interceptor versions of the new stealth systems and their air-to-ground and reconnaissance counterparts. An air-to-ground defense suppression vehicle, for instance, would clearly need to have internal ordnance stations, something only the F-111 has today, since stealth technology has not advanced to the point of "hiding" bombs, which for their relatively small size generate unusually high radar returns.

No US allies have been briefed on or have been privy to the stealth aircraft program, *AFJ* has been told, and no decision has been weighed on when or whether to release the technology behind the new planes for their consideration or use.

Some sources refer to the revolutionary new planes as the "phantom fighters" and to one of the unmanned reconnaissance versions as the "Shadow." ■☆■

THE JOURNAL HAS KNOWN about essential elements of the program for several years, but has not revealed them following a request by a senior Pentagon official in mid-1978 that *AFJ* not print, on national security grounds, a story *AFJ* had written at that time about the the first "stealth"

ARTICLE APPEARED
ON PAGE 2.

WASHINGTON POST
28 August 1980

Recipient of Leak On 'Stealth' Calls It a Political Move

The editor of a military affairs magazine told a House panel yesterday that a story about the Pentagon's recently disclosed "Stealth" breakthrough was leaked to him by a high-level Defense Department official.

Benjamin Schemmer, editor of the Armed Forces Journal, told the House Armed Services subcommittee on investigations that he felt the action was "a directed leak for political purposes because I can think of no reason why this story should be made known at this time." He also termed the action "totally irresponsible."

Defense Secretary Harold Brown announced last Friday that the United States had achieved a major technological breakthrough, dubbed "Stealth," that would prevent Soviet radar or other sensors from spotting American aircraft until it was too late to knock them down.

Schemmer said after the hearing that he was briefed by a "senior defense official," whom he declined to name, at least two days before the full House and Senate Armed Services committees were informed of the project. Committee members "were sworn to ultra-secrecy while the magazine was at press," he said later.

There had been leaks in other publications about some details of the project. Schemmer said he was given the impression that the Defense Department "wanted the story out because of previous leaks about Stealth."

on the episode in which eight U.S. service- who led an unsuccessful mission to rescue U.S. prisoners from a North Vietnamese camp at Son Tay in 1970. (See CRITIQUE, Pg. 2-F)

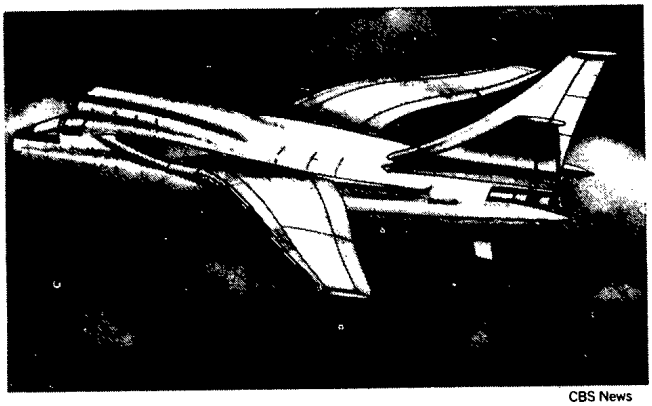
NEWSWEEK 1 SEPTEMBER 1980 (26 AUGUST) Pg. 23

Unveiling a Ghost Plane

The latest weapon in the U.S. defense arsenal isn't there at all—at least as far as Soviet radar is concerned. Word leaked out last week that the Pentagon has been developing new technology that would make aircraft virtually invisible to enemy detection devices. "Stealth" planes, as they are known, involve a variety of innovations including unconventional shape, radar-absorbing materials—and electronic jamming devices to reduce the "radar echo" aircraft normally give off. Defense analysts said the stealth technology would foil Soviet air defenses that are becoming so sophisticated that by the late 1980s they will probably be able to stop most conventional aircraft. Several experimental stealth planes have been built and flown, Pentagon spokesmen said last week, indicating that at least one had crashed during testing.

Disarray: Defense Secretary Harold Brown called the stealth plane a "major technological advance" that "alters the military balance significantly." In fact, the breakthrough has been developed over at least twenty years. Experts say it involves contouring aircraft to eliminate radar-reflecting flat planes and sharp corners (one plan envisions a plane shaped like a manta ray) and repositioning radar-sensitive parts such as jet air intakes so that they scatter enemy radar waves into confusing disarray. Defense technicians also have perfected lightweight coating materials that absorb radar waves, and they are working on designs that may prevent detection of a plane's heat-producing jet engines by infra-red scanners. Eventually, stealth technology can be applied to a whole range of manned and unmanned aircraft, Defense officials said, and they may propose plans for an advanced stealth bomber to Congress next March as an alternative to the scuttled B-1.

Disclosures about the "invisible plane" coincided with an Administration campaign to show that it is aware of U.S. defense vulnerabilities—and is moving to correct them. Earlier in the week, in a speech before the Naval War College, Brown officially unveiled the new U.S. strategy for limited nuclear exchanges with the Soviet Union (NEWSWEEK, Aug. 18). The limited war plan—actually in the works for years—calls for targeting more U.S. missiles against Russian military installations in the event of a limited Soviet first strike. Brown said that the Soviet potential for destroying land-based U.S. strategic missiles already "has been realized—or close to it." That reading was slightly more pessimistic than usual, but insiders said it was based more on political factors—such as building support for the proposed MX mobile missile—than on any new intelligence about Soviet strategic breakthroughs.



CBS News

Invisible weapon: Artist's conception of a 'stealth' aircraft

Victory: Republican Sen. Jake Garn of Utah, a virulent opponent of SALT II, called the timing of Brown's speech "the most patently political use of one of the most sensitive Presidential policy responsibilities I have ever witnessed." But other critics of Carter defense policy seemed impressed. Paul Nitze, a former Deputy Defense Secretary and SALT expert, declared that the Administration "has recognized facts that have always been there and has now done something about the problem . . . The proposals are realistic." Coming from such a prominent hawk, that was precisely the kind of strategic victory the White House needs in this political year.

MELINDA BECK with WILLIAM J. COOK and JOHN J. LINDSAY in Washington