

The F-111: Flight through the context gap

**Builder of controversial
swing-wing fighters rises
to their defense**



General Dynamics

F-111s take shape in Fort Worth as arguments swirl around them.

Frank Davis calls it the context gap. Davis is president of the Ft. Worth, Tex. division of General Dynamics Corp., which builds the F-111 swing-wing jet fighter—either the greatest thing since Kittyhawk or the world's most expensive flying lemon.

The two main versions of the plane—the Air Force F-111A and the Navy F-111B—have been strongly criticized in Congress and in the press for being too heavy, for being behind schedule, for high cost and low performance.

General Dynamics has begun delivery of the Air Force's planes. Pilots who have flown them appear satisfied, but the controversy continues.

Ever since 1962, when Defense Secretary Robert S. McNamara picked General Dynamics to build them, the F-111s have been the center of their own war. But the embattled aircraft are victims not of their own shortcomings, says Davis, but of that context gap that yawns between reports of the troubles and their actual significance.

There is little doubt in Davis's mind as to who keeps the gap open. The crowbars are in the hands of Senators John L. McClellan (D-Ark.) and Henry M. Jackson (D-Wash.). McClellan's committee has been probing and pummeling the F-111 for years. Jackson, whose home state houses the Boeing Co., loser in the F-111 bidding, is on record, Davis says, as claiming credit for launching the attack on the plane.

"There are enough figures around," maintains Davis, "that you can prove anything you want." Misleading figures appear, he says, because of inaccurate comparisons between military objectives

(such as hitting a given target with a given weapon at a given distance while moving at a given speed), requirements (the plane's abilities—speed, maximum altitude, etc.), specifications (the plane's physical characteristics—weight, size, controls, etc.) and desires (which are what the armed forces would like if they could get everything they asked.)

Such comments aren't surprising from the man in charge of building the planes, except that since the first F-111 was rolled out in 1964 there has been virtually no comment from General Dynamics at all. "We're not in the debating team business," Davis told a gathering of newsmen in Ft. Worth, though he admitted that now he was "trying to achieve a 180-degree turn in the way you view the program."

Last month, Navy Assistant Secretary Robert A. Frosch provided an example of the "semantic wonderland", as Davis calls it in which the F-111 has been ensnared. The Navy F-111B will probably not meet all of its "initial specifications," he said, but as to military needs, he was confident it would fulfill its primary mission.

But more recently, in fact just as Davis was at last saying his piece, the context gap threatened to become a chasm. The prod was the report that a group of top Navy brass, under the Chief of Naval Operations Adm. Thomas H. Moorer, was recommending that the F-111B be canceled and its major systems be combined into a more agile, less expensive replacement.

Hackles rose high at General Dynamics and in the Pentagon. Phrases such as "damn liar" and "whole cloth"

were heard here and there, and Adm. Moorer himself issued a statement declaring that all rumors of the F-111B's impending cancellation or radical alteration were "absolutely false." They might, he said, have resulted from misinterpretation of a competing manufacturer's proposal to the Pentagon. He said nothing, however, about whether a group of officers was nevertheless making such a recommendation.

The alleged report included some cogent points, but it had its weak ones too. One key argument against the plane was said to be the need for an aircraft that could handle dog-fights as well as strike air and ground targets from afar. Even Davis admits that the F-111B was not designed for aerial acrobatics, and that they would hardly be among its strong points.

On the other hand, the replacement fighter apparently proposed in the report was priced at as little as \$4 million, compared to a minimum of \$8 million for the F-111B. If an aircraft were built using the B's TF-30 engines (\$1.5 million per plane), missile system (\$2 million for the electronics alone and more for the six-in-one Phoenix missile itself) and other equipment, \$4 million would leave small pickings indeed for the airframe manufacturer.

Even a cheap but willing airframe producer, however, might not clear up the F-111's problems. The Phoenix missile system, the main pacing item for the F-111B, has delayed things for more than a year, and even a dummy Phoenix was not ready for test from an F-111B until almost half a year after the plane's first flight. The plane's en-

gines have also been a headache, as both General Dynamics and Boeing predicted during the F-111 competition that they would be, because of the Pentagon's insistence on contracting for them separately, instead of allowing them to be designed specifically for the airframe.

The Government-provided Pratt and Whitney engines use a new technique in which the thrust from the afterburner—which provides extra kick by mixing fuel with the exhaust gases and reigniting them—can be varied over a wide range. Frank Davis strongly indicates that General Dynamics' problems with the highly complex engines are still not entirely solved.

Still, says Davis, it is the context gap, combined with a "love gap" between Congress and the Defense Department, that is the F-111's biggest woe. The plane has been misinterpreted to the press, to the public and to the world, he maintains, in a controversy that may even have given the Russians a boost in advancement fighter aircraft.

As he says this, he brandishes a photograph of a new Soviet Mikoyan jet fighter, displayed for the first time near Moscow last summer and bearing a strong resemblance to the F-111, in-

cluding its variable geometry. The craft is believed capable of reaching Mach 2.8 to Mach 3, compared to the F-111's Mach 2.5, and its wings can be completely swept back in flight in only four seconds, versus 10-20 seconds for the F-111. Another Russian swing-wing is the Sukhoi Su-7, which was adapted from a delta-wing plane capable of Mach 2.8.

Few of the numbers pertinent to the F-111, however, can be so easily isolated. Almost anything can be found about the plane in one record or another. For example, Davis says, the original F-111 research and development contract was for \$478.9 million, yet it will probably turn out to be worth as much as \$1.2 billion. The difference, he says, is largely because the contract was renegotiated to include five additional versions of the aircraft, as well as spare parts, ground support equipment and other items.

The F-111 will do what it was guaranteed to do, Davis says, and it won't cost a penny more than General Dynamics agreed to sell it for. But, after all is said and done, "will it beat the enemy?" asks one of Davis' charts. "Russia's best," he says staunchly, "looks like our December 1961 proposal." ♦

schools are being provided with special services, extra teachers and remedial reading programs.

Open enrollment was never aimed at achievement in any case, says Dr. Fox. Its rationale was that segregation is psychologically crippling to children, and so far as personal and social effects are concerned, the program has met its aims. "I don't have the slightest doubts about that," says Dr. Fox.

He says that in classroom participation and verbal fluency, the bussed children rate above their ghetto counterparts and were equal to resident classmates. In all other aspects of classroom functioning tested—behavior, interrelationships, spontaneous questioning—the bussed and resident children were comparable.

Only in reading, the single academic achievement test given, were the ghetto children behind.

The new report, based on the 1966-67 school year, ties in with conclusions reached last year in a far larger and more complete study. That evaluation tested half of the 11,000 children engaged in open enrollment and also concluded that the dramatic effects of bussing are in attitudes, not school achievement.

Teams interviewed the children, says Dr. Fox, even tried to argue them away from their positive perception with such questions as: "Do you really like spending an hour on the bus every morning and night just to come here?" The answer was yes.

The New York City Board of Education, however, recently decided not to expand the open enrollment program, which means, says Dr. Fox, that it will shrink. The only new children being permitted in now are brothers and sisters of those already bussed. "Once the current generation goes through school, that's the end of it," Dr. Fox believes.

In his opinion, if the children don't lose anything in achievement, but gain in social and psychological areas, the money is well-spent.

There is, however, danger to ghetto schools from open enrollment if the better students are being drained off to surrounding districts. That would compound the already serious problems in providing quality education in ghetto schools.

For the present, the New York study found no serious differences in quality of teaching between elementary schools in ghettos and those in other areas. There was a major difference, however, between the junior high schools.

Junior highs in the ghettos are pretty dreadful, says Dr. Fox. One major advantage of bussing children is that they eventually enter the better secondary schools. ♦

BUSSING

Help and no help for ghetto children

New York City has been bussing thousands of ghetto children to predominantly white schools for about six years. The program is the largest in the nation and in its social-psychological impact has been an unquestionable success. The children clearly have better attitudes toward themselves, toward school and toward their white classmates. They function better in class, and feel accepted by whites—and the feeling is justified.

But just as clearly, bussing alone is not closing any reading achievement gaps between ghetto children and the more advantaged in suburban schools.

In a report released last week by the New York Board of Education, the program's evaluators could find no good evidence of a long-term improvement in reading level due to years of attendance at the white schools.

The reading results were based on a sample of 460 fifth and sixth graders, mostly Negro and Puerto Rican, who have been bussing for two to six years.

After five or six seasons in the program, 46 percent of the sixth graders were still reading almost a year below their grade level. Among fifth graders, 51 percent were reading a year behind.

By contrast, the schools they attended were well above normal reading levels in all grades.

"Thus," says the report, "open enrollment (New York's name for the voluntary bussing project) does not seem to be an immediate or even long-range solution to the overall problems of reading retardation."

Nevertheless, bussed children did read better than their counterparts who stayed in ghetto schools. Compared to the average fifth and sixth grader in ghetto schools, the bussed children were reading three-tenths of a year better in the fifth grade and 1.1 years better in the sixth.

"The kids being bussed do better than the average ghetto kids," says Dr. David J. Fox, author of the evaluation report and a professor at New York City College. But he says there is evidence that open enrollment pulls out a select group—the academically more able—from ghettos.

"Achievement is a hard nut to crack," comments Dr. Fox. But, he says, if bussing doesn't improve reading skills, neither do such alternatives as New York's More Effective Schools program. Under that project, many ghetto