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CONGRESS AND THE MANNED PENETRATING BOMBER DEBATE

INTRODUCTION

When President Carter announced on June 30, 1977, that he had decided to discontinue production plans for the B-1 bomber, he effectively killed a strategic bomber program some eleven years in the making.¹ The previous year, candidate Carter had publicly criticized the B-1 program as "wasteful." In place of the cancelled bomber, the new President proposed that air-launched cruise missiles (ALCMs) should be deployed aboard U.S. aircraft, including the existing B-52 bomber fleet. He believed that such a course would provide a force just as effective for national defense, but at a good deal less cost.

Although in public the Secretary of Defense and the Air Force dutifully went along with the President's decision, privately there were many military officers and civilian defense experts who found President Carter's reasoning on the matter deficient and his decision strategically unsound. These latter feelings were publicly expressed by John W. R. Taylor in September 1977 in his Foreword to the 1977-78 edition of the authoritative Jane's All the World's Aircraft. Taylor commented:

If our planet is subjected one day to the unimaginable horrors of a third World War, 1977 might be recorded as the year in which the seed of defeat for the Western Powers was sown....

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1. The Air Force's AMSA (Advanced Manned Strategic Aircraft) requirement for a low-altitude penetrating bomber designed to replace SAC's fleet of B-52 bombers by 1980 began conceptual development in 1966. In June 1970, the Department of Defense awarded contracts for the B-1's airframe and engine. And in January 1971, the aircraft's essential design was frozen.

This respected editor argued that the worth of the manned penetrating bomber had been repeatedly proven in the past. And he questioned whether modern first-generation cruise missiles would prove any more effective against Soviet defenses than the German V-1 "Buzz Bombs" had been in World War II against British defenses. Finally, he remarked: "[The Soviet Union's] leaders must be surprised beyond belief that the U.S. President has disposed of the B-1 without asking any Soviet concession in return."²

When President Carter cancelled the B-1 bomber program, he attempted to lessen the finality of his decision by declaring that if U.S.-Soviet relations deteriorated drastically, he might find it necessary to change his mind.³ Now, three years later, in the aftermath of the Soviet invasion of Afghanistan and with the United States finding itself deep within the Strategic Bathtub (an expression coined by SAC's Commanding General Richard Ellis to describe a graph showing an inability by the U.S. strategic forces to adequately respond to a Soviet attack in the 1977-1986 time frame) various members of Congress have begun to propose alternatives to the Carter Administration's present strategic bomber program.⁴ And some have called upon the President to redeem his pledge to reactivate the B-1 program in the light of changed circumstances. It is evident from the Administration's response up to this point, however, that the President has no intention of doing so.

PENETRATING BOMBERS: DEFINING THE NEED

A penetrating bomber is an aircraft designed to enter heavily defended enemy airspace and, by avoiding or deceiving the enemy's

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2. John W. R. Taylor, ed., Jane's All The World's Aircraft 1977-78 (New York: Franklin Watts, Inc., 1977), p. 61.
 3. In answer to a question at his press conference announcing the B-1 decision, President Carter said: "If I had looked upon the B-1 as simply a bargaining chip for the Soviets, then my decision would have been to go ahead with the weapon. But I made my decision on my analysis that, within a given budgetary limit for defense of our country, which I am sure will always be adequate, that we should have the optimum capability to defend ourselves. But this is a matter of great importance, and, if at the end of a few years, the relations with the Soviets should deteriorate drastically -- which I don't anticipate -- then it might be necessary for me to change my mind. But I don't expect that to occur." Quoted in "Carter Blocks Production of B-1," Aviation Week & Space Technology, Vol. 107, July 4, 1977, p. 16.
 4. General Ellis told the House Armed Services Committee in January: "I can only state that, by today's measurements, an adverse strategic imbalance has developed, and will continue for several years to come. This imbalance exists not only when our forces are in a day-to-day alert posture (the worst case), but also when fully generated (the best case)." Quoted in "U.S.: 1980s SAC Plans, B-1," Defense & Foreign Affairs Daily, Vol. 9, January 30, 1980, p. 1.

defenses, precisely deliver strategic weapons on major targets. The ability of bombers to penetrate air defenses is a function of many variables, such as aircraft characteristics, tactics and the quality of the penetration aids carried on the aircraft. U.S. Air Force penetration doctrine calls, in order of precedence, for the avoidance, degradation, dilution and destruction of enemy air defenses. Avoidance of enemy defenses requires the use of preferential routing of the bombers around known air defense complexes. Degradation of these defenses refers to the use of active electronic countermeasures (ECM) to jam or deceive enemy radars. Dilution of the enemy's defense network is accomplished through the use of multiple decoys -- small flying vehicles which carry equipment to mimic the radar signatures of the much larger bombers -- launched by the incoming aircraft. And destruction of the defenses calls for the use of air-to-surface missiles such as SRAM (short range attack missile) for attacking enemy radar and surface-to-air missile (SAM) complexes.

It is self-evident that an aircraft that is hard to detect has a much greater chance of successfully penetrating enemy air defenses and reaching its target than one that is not. An aircraft's susceptibility to radar detection is a function of a number of factors, including its penetration altitude and its radar cross section.

In order to evade detection by ground-based radars, bombers must fly at least part of their mission at low altitude, below the effective level for ground radar intercept. At such altitudes, the aircraft's radar profile is masked by ground clutter, as radio waves are bounced back from the surrounding terrain. With the advent in recent years of the large, real-time-processing airborne radar such as the U.S. AWACS (airborne warning and control system) -- which is able to "look down" and distinguish low-flying aircraft from the ground clutter produced by the terrain below -- the bomber's ability to penetrate enemy airspace primarily by virtue of low-level entry is becoming increasingly curtailed. The Soviet Union is now at work developing its own airborne warning and control aircraft for use against both low-flying bombers and cruise missiles. However, the initial version of this SUAWACS, based around the TU-126 MOSS aircraft, apparently still lacks the required low-level target acquisition capability.

The size of the aircraft's radar cross section is dependent upon the reflectivity of its surface. Radar reflectivity, in turn, depends upon the size, shape, aspect and dielectric properties of the aircraft. Aircraft designs which incorporate radar signal reducing measures such as the installation of engines so that engine inlets do not protrude below the wing surfaces and which make use of radar-absorbing materials (aspects of passive

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5. The radar cross section is the ratio of power returned in a radar echo to power received by the target reflecting the signal.

electronic countermeasures) produce aircraft with noticeably smaller radar cross sections.

The larger the aircraft's radar cross section (and thus the greater its chance of detection), the more important is its need for active electronic countermeasures to jam or deceive the enemy's radars. The range of ECM equipment available aboard a strategic bomber enables its aircrew to utilize a variety of jamming techniques.

The aircraft's barrage and spot noise jammers employ high power transmitters to emit sound radiation to obscure target position and velocity. Chaff can be released by the aircraft to jam radar signals by producing radar echoes which look like those given off by small rain showers or tight formations of aircraft. Other forms of jamming rely on varying the received radar signals to deceive the ground controllers as to the aircraft's range and horizontal direction (bearing). In transponder mode, a bomber's ECM equipment amplifies and retransmits a received radar signal with a gradually changing time delay in order to mislead the radar's range-gate tracker.⁶ And in repeater mode, the ECM equipment amplifies and modulates the received radar signals to confuse the radar's azimuth (bearing) position tracking circuits.⁷

In order to successfully penetrate enemy airspace in the 1980s and 1990s, U.S. strategic bombers will have to rely on the entire panoply of tactics and penetration aids available to them. As Soviet air defenses against low-flying aircraft continue to improve over the next several years, our aging strategic bomber fleet will find itself stressed as never before in an attempt to maintain adequate penetrating capabilities.

MANNED PENETRATING BOMBER ALTERNATIVES IN 1980: THE CARTER ADMINISTRATION PROGRAM

Since the President's June 1977 B-1 cancellation decision, the Carter Administration's position on the manned penetrating bomber has been entirely linked to its air-launched cruise missile program. The overall thrust of this position is the reliance of the United States on a force of stand-off aircraft armed with long-range ALCMs as the predominant component of the air-breathing leg of the strategic TRIAD. Present Administration plans call for ALCMs to be deployed on the Air Force's B-52G bombers. These aircraft, which now serve as penetrating bombers, will gradually be turned into stand-off cruise missile carriers.

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6. Range-gating involves the use of circuits in radar to suppress target signals falling outside selected range limits.
 7. Of course, bombers also require other types of jamming equipment (IR jammers) designed to protect the aircraft from ground- and air-launched heat-seeking missiles.

Until 1985, however, they will retain their internally-mounted SRAMs, which will maintain at least a partial penetrating ("shoot and penetrate") capability for the B-52G fleet to that time.

There are 173 G models currently in inventory -- 169 operational aircraft and four test aircraft. Each of these bombers will have to undergo significant modernization of its avionics systems to properly handle the new stand-off weapons. The first phase of this modification program, which the B-52 H models will also undergo -- the offensive avionics systems (OAS) update -- will involve some \$597.2 million in funding in FY 81. OAS update funding will provide for the complete overhaul of the navigation and weapons delivery systems of the B-52 bombers; in the G models this will take place in parallel with the integration of the ALCM into the aircraft.

The first B-52G is scheduled to undergo modification in early 1981. When equipped with its initial complement of twelve externally-mounted ALCMs in September 1981, this first cruise-missile-armed B-52G will be placed on operational status (first alert capability or FAC). The initial operational capability (IOC) for the ALCM-equipped force is scheduled for December 1982, when a full squadron of sixteen aircraft becomes operational.

Once the entire B-52G force has been equipped with external, pylon-mounted ALCMs (1984-1985), the Air Force will begin modifying the aircraft for internally-mounted missiles, a procedure that will be completed in 1990. At that time, the full operational capability (FOC) for a force numbering 151 B-52Gs will have been

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8. The internally-mounted rotary launcher for the ALCMs is being designed to accommodate SRAM, so that it will be possible to mount short-range attack missiles in place of cruise missiles in the event it becomes necessary.
 9. The term avionics refers essentially to aircraft electronic systems that perform navigational, weapons delivery, communications and electronic countermeasure functions.
 10. Of this total, \$142.4 million is for RDT&E and \$454.8 million for procurement. See The FY 1981 Department of Defense Program for Research, Development, and Acquisition -- Statement by the Honorable William J. Perry, Under Secretary of Defense Research and Engineering to the 96th Congress, Second Session, February 1, 1980, pp. VI-9, 10; and Procurement Program, Department of Defense Budget for Fiscal Year 1981, January 28, 1980, p. 29.
 11. Robert R. Ropelewski, "U.S. B-52 Bomber Fleet Being Upgraded," Aviation Week & Space Technology, Vol. 112, June 16, 1980, p. 192.
 12. This first squadron will be based at Griffiss Air Force Base in New York. Other ALCM-armed bomber squadrons will be deployed eventually at Wurtsmith AFB in Michigan, Grand Forks AFB in North Dakota and Ellsworth AFB in South Dakota. "US: Ten Year ALCM Lead Over USSR," Defense & Foreign Affairs Daily, Vol. 9, March 28, 1980, p. 2.

reached.¹³ By that time, each aircraft in the force will be armed with twelve external (pylon-mounted) and eight internal (rotary-launcher-mounted) cruise missiles. The cruise missile itself will be Boeing's AGM-86B, which has a range of approximately 1,350 statute miles. The Air Force is planning on procuring 3,418 of these ACLMs through 1989, at a total cost of some \$5.2 billion (including RDT&E).

The updating of the offensive avionics systems in the B-52Gs and Hs constitutes only part of the modification program which the Air Force estimates will be needed to allow the aircraft to perform their missions in the coming decade. As General Richard Ellis informed the Senate Armed Services Committee in February: "Secretary Brown's estimate [of bomber penetrability] last August was based upon achieving a number of capabilities which we do not currently possess and cannot possess forcewide before 1985....The needed modification programs have been further eroded since then."¹⁴

Among the most important modifications, defensive avionics systems will have to be upgraded, and, in fact, one portion -- the development of a tail-warning system for installation in the Gs and Hs -- has already been completed. The estimate for all of the eventual modifications is conservatively set at from \$6 to \$8 billion.

During the same 1980-1990 time frame, the manned penetrating bomber force envisioned by the Carter Administration is to consist of only 96 upgraded B-52H bombers (90 operational aircraft and six spares), supported by 66 FB-111A medium bombers and 75 B-52D bombers. Although the H model of the B-52 bomber was produced later than the G model that will be used as a cruise missile carrier, it is still more than eighteen years old -- the last one having come off the production line in 1962.¹⁵ Like its sister aircraft, it was developed principally for high-altitude penetration of enemy airspace, at a time when the Soviet Union's air defenses were not judged capable of effectively tracking and decimating a high-altitude bomber force.

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13. See Report of Secretary of Defense Harold Brown to the Congress on the FY 1981 Budget, FY 1982 Authorization Request and FY 1981-1985 Defense Programs, January 29, 1980, p. 133; and Lt. Gen. Kelly H. Burke, USAF, "Future of the Manned Bomber," Aerospace, Spring 1980, p. 3.
 14. Answer to a question by Senator Sam Nunn on the B-52 Modernization Program. Senate, Committee on Armed Services, Department of Defense Authorization for Appropriations for Fiscal Year 1981: Hearings on S. 2294, Part 2: Nuclear Forces Report, Army Programs, Navy-Marine Corps Programs, Air Force Programs, Navy Shipbuilding Program, 96th Congress, 2nd Session, February 20, 26, 27, March 3, 11, April 17, 1980, p. 584.
 15. The Air Force is keeping open an option for externally mounting ALCMs on the B-52Hs in the event additional cruise missile capability is needed or the B-52Gs are found to be less reliable than expected. A decision on this point is expected in early 1982.

Of the rest of the Carter penetrating bomber force, the FB-111A medium bomber, a derivative of General Dynamic's F-111 fighter, began entering the Air Force's inventory in 1969 as a replacement for the obsolescent C through F models of the B-52. Its design incorporated features for low-level penetration of enemy airspace. Although it is a considerably more advanced aircraft than the B-52, the FB-111A's shorter range and far lower payload capacity keep it from adequately performing the role of a long-range penetrating bomber. And the B-52D aircraft, although clearly obsolete as a strategic penetrator and rebuilt after having been structurally weakened during its long service in the skies over Southeast Asia, remains in the inventory primarily because it is the only U.S. long-range bomber which still has the dual capability of carrying either strategic or conventional ordnance.

The Carter Administration contends that this mix of stand-off and penetrating bombers will be adequate to perform its tasks in the 1980s. In his DOD Annual Report released in January of this year, Defense Secretary Harold Brown noted: "The modernization and modification programs [for the bomber force]...should maintain the capability of our air-breathing leg of the TRIAD, at least through the 1980s and into the 1990s -- with further actions, through the 1990s."¹⁶ And William Perry, the Under Secretary of Defense Research and Engineering, testified that the cruise missile's penetration capability "will assure the effectiveness of the strategic bomber force into the future."¹⁷

GROWING B-52 VULNERABILITY

The accuracy of these assessments is at least open to question. The B-52's slowness and its general difficulty in adapting to the stresses of the low-level penetration mission have long been under discussion in the Pentagon. As far back as 1972, Air Force Secretary Robert Seamans testified: "[E]ven if we were to spend larger sums for beefing up the B-52 structure and retrofitting it with more efficient engines, its ability to survive an enemy attack and penetrate the air defense expected during the 1980s would be questionable."¹⁸ And two years later, the Department of Defense submitted an answer for the record that reaffirmed this negative appraisal of the B-52's post-1980 capabilities:

...To maintain an effective B-52 penetration capability in the post-1980 time period

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16. Report to the Congress on the FY 1981 Budget, p. 133.
 17. FY 1981 Program for Research, Development, and Acquisition, p. VI-1.
 18. Senate, Committee on Appropriations, Subcommittee on Department of Defense, Department of Defense Appropriations for Fiscal Year 1973: Hearings, Part 4: Department of the Air Force, 92nd Congress, 2nd Session, 1972, pp. 68-69.

through additional modifications would become a more difficult task considering the basic B-52 design and its inherent limitations in airspeed, low altitude flight capability, radar cross section, and nuclear hardness characteristics.¹⁹

The Boeing B-52 bomber is an aircraft that was essentially designed in the late 1940s and built in the 1950s. Having been designed for high altitude flight, it has only a limited low altitude penetration capability. At low altitudes, jet aircraft lose much of their maneuverability and their engines consume about twice as much fuel as at higher altitudes. In addition, aircraft traveling at the higher subsonic speeds at low altitudes (200 feet off the ground, for example) are subject to severe buffeting. The B-52's long wingspan design magnifies its low-level flight problems. Its maximum speed "on the deck" is 390 knots -- fast enough to subject the aircraft to severe air turbulence at low altitudes but not fast enough to allow the aircraft to escape a co-altitude tail chase intercept by Soviet interceptors.

For most of its penetration mission, the B-52 will have to fly at higher altitudes and because of its large radar cross section will have to employ almost continuous high-power jamming to prevent targeting by Soviet air defense radars.²⁰ And the B-52H's jamming equipment will have to be significantly upgraded just to maintain its penetration capability through 1985. In fact, Air Force Chief of Staff Lew Allen recently remarked on SAC's lack of confidence in the B-52H's ability to penetrate "some of the more heavily defended targets beyond the early 1980s" without modifications to the aircraft's defensive avionics.²¹

The stand-off bomber component also suffers from certain problems. Even though the B-52G bombers carrying ALCMs do not have to penetrate far into Soviet airspace, they must approach close to Soviet territory in most mission flight plans to ensure target coverage of high priority Soviet targets located in the central part of the USSR by their cruise missiles. They will be flying all of the time at higher altitudes (to achieve maximum range the cruise missile must be launched at higher altitudes) where they can be quickly spotted by Soviet air defense radars.

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19. Answer to Question 45. Answers to questions on the Air Force B-1 Development Program. Submitted for the Secretary of Defense to Senator John McClellan, Chairman of the Senate Appropriations Committee on June 6, 1974. In Senate, Committee on Appropriations, Subcommittee on Department of Defense, Department of Defense Appropriations for Fiscal Year 1975: Hearings, Part 4: Department of the Air Force, 93rd Congress, 1st Session, 1974, p. 572.
 20. The amount of power that must be radiated by a jammer is proportional to the radar cross section of the aircraft to be obscured.
 21. Quoted in "Cruise Missile Carrier Technology Sought," Aviation Week & Space Technology, Vol. 112, June 16, 1980, p. 66.

And their slow approach speed (550 knots maximum at altitude) makes them likely targets for Soviet long-range interceptors vectored by airborne warning and control aircraft.

CRUISE MISSILE CAPABILITIES

The Boeing cruise missile that will be arming the B-52G stand-off bombers is a very versatile weapon, but it is not the wonder weapon that some of its adherents have been claiming it to be. This first-generation long-range ALCM relies entirely upon its low-level flight capability and its small visual, infra-red and radar cross section signatures for penetration of Soviet airspace. Powered by a turbofan engine, it flies at medium subsonic speed to its target.

The cruise missile's flight plan is preprogrammed before launching. It can be programmed to fly around known Soviet air defense complexes, but once launched, it cannot deviate from its flight plan to avoid unexpected defenses. In addition, this first-generation ALCM (the AGM-86B) has no ECM equipment to mask its presence from look-down radars. Once discovered, it can be successfully engaged by either ground-launched terminal defense missiles or aircraft look-down shoot-down missiles. In 1976, Dr. Malcolm Curry testified about the cruise missile's lack of defensive protection:

Well, first of all the cruise missiles will do a reasonable job against the present Soviet air defenses, because they fly very low.

Now the Soviets understand this threat to them very well. It causes them to invest money in radars which are [placed aboard aircraft or situated] on hills that can look down, just kind of like our AWACS does. And when they get that capability together with the new generation of surface-to-air missiles for terminal defense, then the cruise missiles will become very vulnerable....

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But the cruise missiles will be attrited at fairly high rates when²² the Soviets get an improved air defense.

22. The material supplied in brackets is based upon a contextual reading of the testimony. In the printed transcript, the actual language within the brackets was deleted. Testimony of Dr. Malcolm R. Currie, Director of Research and Engineering, Department of Defense. In House of Representatives, Committee on Armed Services, Hearings on Military Posture and H.R. 11500 [H.R. 12438] Department of Defense Appropriations for Fiscal Year 1977, Part 1: Military Posture and H.R. 11500, 94th Congress, 2nd Session, January 27, 28, 29, February 2, 4, 6, 9, 10, and 11, 1976, p. 1567.

Back in 1977, it was generally believed in DOD that cruise missiles would be manufactured and deployed in such numbers that they could simply saturate Soviet air defenses.²³ Such a deployment policy would have mitigated the ALCM's defensive shortcomings, at least through the 1980s and early 1990s. However, in the ensuing years, the ALCM deployment program has been drastically scaled down.

Under the SALT II Agreement signed at Vienna in June 1979 (which President Carter has announced would be honored by the U.S. even though it has not been ratified), the United States is allowed to have only 120 long-range ALCM-equipped heavy bombers under the aggregate number of 1320 allowed for MIRVed systems. If the United States desires to increase this stand-off bomber force, it must retire -- on a one-for-one basis -- a similar number of MIRVed ICBMs or SLBMs, in order to remain within the limit of 1320 MIRVed systems.²⁴

Under the Carter Administration's present deployment plan, the stand-off bomber force will be armed with a maximum number of only 1812 ALCMs by 1985 (151 aircraft x 12 missiles) and will reach its full complement of 3020 (151 aircraft x 20 missiles) in 1990. These numbers are hardly adequate for the type of ALCM saturation attack envisioned back in 1977.

CONGRESSIONAL INITIATIVES

The House of Representatives

A sizeable number of congressmen have been displeased for some time with President Carter's program for the air-breathing leg of the TRIAD. However, the dramatic events in Afghanistan served to highlight their concern in early 1980, as the annual authorization and appropriations cycle began in Congress. In January, Representative Charles Wilson sent a letter to the President urging him to reverse his 1977 decision on production of the B-1 bomber. And a few days later, Representative Robert Dornan introduced a Concurrent Resolution calling for accelerated production and development of the B-1 strategic bomber.²⁵

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23. At that time, one DOD official was quoted as saying: "The U.S. will turn out cruise missiles like Fords and use them to saturate Soviet defense if we are attacked." Quoted in Clarence A. Robinson, Jr., "Cruise Missile Flyoff Planned," Aviation Week & Space Technology, Vol. 107, July 18, 1977, p. 17.
 24. Even within this bomber force, the total number of cruise missiles deployed must be such that the average number per aircraft is only twenty-eight. See SALT II Agreement, Vienna, June 18, 1979, Selected Documents No. 12A (Bureau of Public Affairs, United States Department of State, 1979), pp. 17 and 37.
 25. House Concurrent Resolution 257, introduced on January 24, 1980.

These actions were just two indications of a larger congressional dissatisfaction with the Administration's bomber program. Nevertheless, although there was a good deal of agreement in Congress that an interim bomber program was necessary to upgrade the United States' strategic retaliatory capability during the middle and later years of the decade, little common agreement existed on just what kind of bomber was needed. Administration testimony during the committee hearings on the FY 81 defense budget complicated rather than clarified this situation.

Secretary Brown, for example, testified that the Administration's program of putting cruise missiles aboard the B-52G bombers and continuing to use B-52Hs as strategic penetrators was sufficient to maintain the U.S. bomber leg through the 1980s. While he did note that the B-52H aircraft's efficacy as a penetrating bomber would drop off after 1985, he also asserted that the acquisition of the B-1 as a replacement for the older aircraft would not be useful, since the B-1 would have "considerably more trouble" penetrating Soviet airspace in the late 1980s and early 1990s than it would in earlier years of this decade.²⁶

If the United States wanted a new penetrator, Secretary Brown indicated that it should look to other aircraft alternatives, since this would be a more effective way to go. What he failed to indicate in the course of his testimony was how these unnamed better alternatives would be available soon enough to have an influence on the 1985-1990 time frame. The Administration was requesting only \$15.1 million in FY 81 funding for its Strategic Bomber Enhancement program, and this money was earmarked for study of advance bomber concepts for the early 1990s.²⁷

In an appearance before the House Armed Services Committee, SAC Commanding General Richard Ellis proved much less sanguine about the Administration's bomber program. He testified that the strategic deficiency which the United States faced in the 1980s could only be met by the procurement of an interim penetrating bomber. He remarked:

[I]mmediate steps are required to bring an improved or new manned strategic bomber on line as soon as possible. According to our analysis, such a bomber would not only help to correct the serious decline in U.S. retaliatory capability between now and 1985, but

26. See Brown's testimony in House, Committee on Appropriations, Subcommittee on the Department of Defense, Department of Defense Appropriations for 1981: Hearings, Part 1: Budget Preview by Secretary of Defense, Secretary of Defense and Chairman, Joint Chiefs of Staff, Reprogrammings, FY 1979, 96th Congress, 2nd Session, 1980, pp. 504, 514.

27. See FY 1981 Program for Research, Development, and Acquisition, pp. VI-10, 11.

close the gap earlier than current programs
in both the alert and generated case.²⁸

According to the General, there were only two current options available to fulfill this mid-term requirement -- the stretched FB-111 (the FB-111B/C) and the B-1 aircraft.

THE FB-111 OPTION

Of the two options, the SAC commander told the members of the Committee that he favored the FB-111B/C. This is the designation for a stretched version of General Dynamic's F-111 multi-role aircraft.²⁹ Under this SAC-proposed plan (advocated as well by the Air Force Systems Command and the Logistics Command), the 66 FB-111A medium bombers in inventory and 89 F-111D tactical fighters would be redesigned by adding additional length and width to their fuselage and by replacing their existing engines with the GE F101 engines which had been developed for the B-1. These enlarged bombers could then undertake the strategic penetration mission, since they would have greater weapons capacity (capable of carrying 10 SRAMs on a typical penetration mission, rather than 6) and vastly increased range (6000 versus 3800 nautical miles) over the original aircraft. The total FB-111B/C force would number 155 bombers (140 operational aircraft plus spares and support aircraft) -- a size which SAC felt would be equivalent to 100 B-1 bombers.

General Ellis advocated adopting this approach rather than procuring the B-1 bomber because of both time and cost savings. He told the Committee that the estimate for the cost of the FB-111 stretch programs was \$5.5 billion, while that for a restarted B-1 program was \$12.5 billion.³⁰ Thus, according to the

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28. House, Committee on Armed Services, Hearings on Military Posture and H.R. 6495 [H.R. 6974], Part 1: Military Posture, 96th Congress, 2nd Session, January 25, 29, 30, 31, February 1, 4, 5, and March 3, 1980, p. 4.
29. This should not be confused with the FB-111H -- an Air Force proposal for building 100 new FB-111 bombers with extended range and payload characteristics and combining them with 65 stretched FB-111As. This older proposal, considerably more expensive than the FB-111B/C idea, was advocated by the Air Force after the cancellation of the B-1 program but failed to garner approval.
30. It should be noted that cost estimates for both programs differ considerably depending upon who is doing the estimating. During the Ellis testimony, General William Campbell, Ellis's Deputy Chief of Staff for Plans, presented charts which broke down the estimated costs (in FY 80 dollars) as:

	<u>FB-111B/C</u>		<u>B-1</u>
R&D	- \$.36 billion	R&D	- \$ 1.2 billion
Production	- 4.7 billion	Production	- 11.3 billion
Modification	- .43 billion		
Total	\$5.49 billion	Total	\$12.5 billion

Strategic Air Command, the proposed FB-111B/C would provide 97 percent of the B-1's nominal payload capability at only 44 percent of its cost. Yet the time factor was even more important in General Ellis's view. He testified that the FB-111B/C would come on line a year before the B-1.³¹

THE B-1 PROGRAM

There were some initial reservations in the House Armed Services Committee about General Ellis's advocacy of the stretched FB-111 program. A number of its members agreed with him that the United States needed an interim penetrating bomber, but most of these congressmen believed that the B-1 was a better aircraft for the mission. For example, Representative Robert Badham questioned the SAC commander on how the two crewmen in the FB-111 could cope with the mission responsibilities that seemingly required four crewmen to handle in the B-1. And Congressman Don Bailey commented that the B-1's larger payload made it the superior weapons system.³²

Those advocates of the B-1 bomber on the Committee were obviously encouraged by Air Force Chief of Staff Lew Allen's testimony, two weeks later. Under questioning as to his preference, while he denied that an interim penetrating bomber had a high priority in Air Force thinking, he indicated his support for the B-1 over its competitor. He noted:

The B-1 is a substantially better airplane. The B-1 remains a very good design in a number of characteristics. We would not know how to do it any better if we started over. That includes such things as safe-base escape and various hardening characteristics, and this is as well as we could do, I believe, even starting over.

So the B-1 is a good airplane and a better airplane than the FB-111. It is also a more expensive airplane.

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The B-1, in comparison with the FB-111, would have an added, substantial conventional

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31. Although the FB-111B/C would reach an initial operational capability (using a common base of 30 aircraft) about seventeen months before the B-1, actually it would reach full operational capability only eight months earlier. The FOC for the FB-111B/C is calculated as July 1986, that for the B-1 as February 1987.
 32. House Armed Services Committee, Hearings on Military Posture, Part 1, pp. 49 and 51-52.

capability that would be important for force projection. In the context of which airplane I would prefer between the FB-111B/C and the B-1, I would have no particular reservation in opting for the B-1.³³

Despite the support of some Committee members for the B-1, there were a number of influential members of the Armed Services Committee who were disturbed by talk of starting a program for an interim penetrating bomber of any kind and, in the end, these members won out. Representative William Dickinson, the ranking minority member of the Research and Development Subcommittee, spoke for these members when he told Under Secretary William Perry:

Now, speaking for this member alone, and also I think for the majority of the committee, let me say that you, Dr. Perry, have a tough selling job if you are going to sell this committee on spending between \$10 and \$20 billion to upgrade the B-52 and equip it with cruise missiles, when the life of the B-52, according to expert testimony before us, will be extended maybe to 1985 and maybe to 1990.

In the same breath, the Air Force says we have to go forward with the development of the new manned penetrating bomber. We have not heard the echo yet from slamming the door on the B-1. It boggles the mind that in one breath you say we are going to support the President's program to kill the B-1 -- and that is what General Jones had said -- and in the same testimony say we have got to go forward with the program to develop a new manned penetrating bomber.

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I do not think the committee will go that way unless you can convince us. I do not think the full committee will go that way, either.³⁴

33. Ibid.; p. 876.

34. House of Representatives, Committee on Armed Services, Hearings on Military Posture and H.R. 6495 [H.R. 6974] Department of Defense Authorization for Appropriations for Fiscal Year 1981, Part 4: Research and Development, Title II, Book 1 of 2 Books, 96th Congress, 2nd Session, February 7, 12, 13, 19, 20, 21, 27, 28, March 3, 4, 5, 6, and 11, 1980, pp. 5-6.

BOMBER OPTIONS: SWL AND SAL CONFUSION

These members were concerned instead that the aging B-52 bombers would not be able to reliably handle the cruise missile carrier mission in the latter half of the 1980s. For this reason, they were favorably disposed toward a plan advocated by Rockwell International for producing a new CMC aircraft that was a derivation of the B-1 bomber. This new aircraft, designated the Strategic Weapons Launcher or SWL, would be built around Rockwell's B-1 core aircraft, but unlike the original strategic bomber, it would have a fixed rather than a variable-sweep wing and would be equipped only for the role of a stand-off bomber.³⁵

Unfortunately, when this concept was broached to Administration witnesses in committee, a misunderstanding arose as to just which CMCA was under discussion. While the committee members kept referring to the SWL, Defense witnesses talked about the Air Force's preferred near-term, follow-on choice -- another B-1 derivative designated the Strategic ALCM Launcher or SAL. One exchange was particularly illustrative of this confusion:

Mr. Ichord: I talked with some Rockwell people the other day at a reception and I asked them what had happened, and one of them replied that they had gotten some money to proceed with the SWL. Is that what you call it?

Dr. Perry: Yes. The Strategic ALCM Launcher, or SAL.

Mr. Ichord: Does that mean that you've already decided that the B-1 is, if we are to have a cruise missile carrier other than the B-52, that the SWL is the one? That's the result of the study, in other words?

Dr. Perry: The study has indicated that that [the SAL] is the best near-term option....³⁶

Unlike the committee-favored aircraft, however, the SAL, although also a derivative of the B-1, was to be designed as a multi-role bomber -- intended to perform both stand-off and

35. For information on Rockwell's conception, see Jeffrey M. Lenorovitz, "B-1 Proposed as Core Aircraft," Aviation Week & Space Technology, Vol. 111, September 17, 1979, pp. 14-15.

36. House Armed Services Committee, Hearings on Military Posture, Part 4, Book 1, p. 544.

penetration missions.³⁷ Thus, when William Perry testified to the Committee that the Air Force's choice of this CMC aircraft was the "best near-term option," he was not referring to the Strategic Weapons Launcher, as the Committee members mistakenly assumed.

A further confusion that remained in the Committee members' minds concerned the nature of Defense's FY 81 CMCA program. Apparently unaware that the Air Force had switched in late September 1979 from support for a wide-bodied transport to a B-1 bomber derivative as its initial choice for the CMCA program, and unable to link the discussion of the Strategic ALCM Launcher during Administration testimony to DOD's FY 81 CMCA funding requested, Committee members continued to think that the requested CMCA money was for development of a wide-bodied transport. Therefore, in its report on the 1981 Department of Defense Authorization Act, the House Armed Services Committee commented:

The committee's recommendation to delete the request for authorization of \$30.3 million for development of the CMCA is based largely on Air Force trade-off studies indicating that the SWL is the best alternative against the future postulated threat and is more survivable and capable than the wide-bodied CMCA.³⁸

STRATEGIC WEAPON LAUNCHER SUPPORTED BY HOUSE

In the end, the Committee's decision on the bomber program was to provide funding for the Strategic Weapons Launcher as a mid-term replacement cruise missile carrier aircraft for the B-52. The Committee's report noted: "The committee believes that the quickest and most effective way to shore up the strategic triad is through a combination of new aircraft and cruise missile technology."³⁹

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- 37. DOD initially asked for \$30.3 million in FY 81 funding to test just the cruise missile capabilities of the SAL concept, using the third B-1 prototype. However, in the Defense Department's amended budget request (designed to offset the increase in inflation) on April 14, 1980, CMCA funding was cut in half -- to \$15 million. Initial Air Force studies of the SAL concept had called for it to be a swing-wing aircraft with a slightly narrower range of wing positions (15 to 60 degrees) than the original B-1 (15 to 67.5 degrees). However, the core aircraft proposed by Rockwell would have had a fixed wing. In testimony before the House Armed Services Committee, it became apparent the DOD thinking was turning toward the fixed-wing proposal. See, for example, William Perry's testimony in *Ibid.*, p. 545.
 - 38. House of Representatives, Committee on Armed Services, Department of Defense Authorization Act, 1981: Report, 96th Congress, 2nd Session, April 30, 1980, p. 104.
 - 39. *Ibid.*, p. 37.

The Armed Services Committee approved an authorization bill providing \$200 million for procurement of long-lead items and tooling and \$400 million for research and development for the SWL. However, it directed corresponding funding cuts of \$41.3 million from the Air Force request for its B-52 Squadrons and \$71.1 million from the request for B-52 Protective Systems. In addition, the Committee deleted entirely the Air Force requests for \$30.3 million for development of the Cruise Missile Carrier Aircraft (the Strategic ALCM Launcher), \$30.7 million for Bomber Penetration Evaluation (the testing of the B-1's nuclear hardness capability), and \$15.1 million for Strategic Bomber Enhancement (the program for advanced development⁴⁰ of concepts and technology for strategic aircraft in the 1990s).

When the Armed Services Committee's SWL proposal came up for debate on the floor of the House on May 14, Congressman Jack Edwards of Alabama immediately offered an amendment to cut the \$200 million proposed for long-lead SWL procurement.⁴¹ Mr. Edwards asserted that Committee testimony had revealed that the Strategic Weapons Launcher was neither needed nor wanted by the Air Force. Accordingly, he claimed that the money provided for this program could be better spent elsewhere. He told the members: "I would argue to you that rather than going off on an unbudgeted \$12 billion program that has not had any real support, that we ought to be putting this kind of money into those areas that are so necessary to keep our military working in good fashion...."⁴²

The Edwards amendment incited a spirited floor debate. Congressman Richard Ichord, a strong supporter of the Committee's SWL proposal, stood up and informed the House that the R&D Subcommittee -- the members of which "have spent years and years studying the problem of the B-1 bomber and the problem of the cruise missile carrier" -- had already defeated Congressman Edwards' amendment by a vote of 8 to 3 and had opted instead for the SWL.⁴³ However, James Wright of Texas argued that the real need was for a new manned penetrating bomber and that a practical interim solution was therefore the stretched FB-111B/C called for by General Ellis. Congressman Bob Carr used the argument about the need for a penetrating bomber rather than a cruise missile carrier to side with Jack Edwards.

Nevertheless, when the vote on the amendment finally came, it was heavily in favor of the Committee's position. By a vote of 119 to 297, the attempt to cut the money for the Strategic Weapons Launcher was defeated.

Following the Edwards defeat, Congressman Dornan offered an amendment to convert the SWL procurement money to money for the

40. *Ibid.*, p. 104.

41. Following passage of this amendment, he was prepared to propose cutting the other \$400 million in SWL R&D funding.

42. *Congressional Record*, Vol. 126, May 14, 1980, p. H 3621.

43. *Ibid.*, pp. H 3622-3623.

B-1 strategic bomber. The Dornan proposal would have set the FY 81 procurement money for the B-1 aircraft at \$500 million -- a \$300 million increase over the Committee proposal for SWL procurement.⁴⁴ The Dornan amendment immediately ran into opposition from members who shared his views on the worth of the B-1 bomber but who believed that such a proposal could never garner President Carter's approval and could thus cause the whole authorization bill to be vetoed.

For example, Congressman Jim Lloyd remarked: "How does the gentleman propose to get it signed down at the White House? Has he had some indication that the President has had a change of heart on this, and that he will now go forward with that, or are we really going into a function of futility?"⁴⁵ And Congressman Bob Wilson asked Dornan to withdraw his amendment because it would do "great violence" to the SWL program just overwhelmingly passed and would stand little chance of surviving a Carter veto.

In the end, Congressman Dornan acceded to the requests of his California colleagues and withdrew his amendment. The House Armed Services Committee's Strategic Weapons Launcher program was passed intact.

SENATE

Armed Services Committee and FB-111 Conversion

The Senate Armed Services Committee was much more favorably disposed toward General Ellis's plan for stretching FB-111As and F-111Ds into FB-111B/C strategic penetrators than the House committee had been. The senators heard JCS Chairman David Jones testify that obtaining funds for stretching the FB-111 was far down the Defense Department's list of priorities. They also listened to Air Force Secretary Hans Mark explain that, in his opinion, modification money for the FB-111 (or B-1) could be better spent elsewhere. Secretary Mark told them:

With respect to the B-1, if we were to go ahead with the program today, the B-1 could be ready almost at the same time as the FB-111, say 1 year later, but it is not a big time difference. We are talking about 3 or 4 years in either case. But the same argument applies to the B-1 that applies to the FB-111. The airplanes have a problem in terms of meeting the strategic nuclear deterrent

44. See *Ibid.*, p. H 3630. He also planned to offer a later amendment that would have made a compensating \$100 million cut in strategic R&D. *Ibid.*, p. H 3631.

45. *Ibid.*

requirement, and my judgment is that accelerating M-X or accelerating the cruise missile program, would be better ways of spending that money.⁴⁶

And yet a majority of the senators on the Committee remained unconvinced.

Many of them shared General Ellis's belief that an interim penetrating bomber was needed to close the strategic gap in the 1985-1990 time period. And like Air Force Chief of Staff Lew Allen, they felt that both the FB-111B/C and the B-1 "would provide capable and effective weapons systems" for the near-to-mid-term.⁴⁷ Some of these senators, including John Tower, favored a B-1 derivative aircraft for the interim penetrating mission, but the bulk of the Committee moved behind Senator Robert Morgan, who favored the FB-111B/C as the most likely program to be adopted.

One thing the members did not believe, however, was that there was a similar requirement for a new cruise missile carrier aircraft. Unlike their House counterparts, they found the B-52 to be capable of performing the stand-off ALCM mission well into the 1990s. Therefore, they quickly rejected the idea of supporting the House's \$600 million addition for a Strategic Weapons Launcher program.

In the end, even the B-1 supporters assented with the majority of the Armed Services Committee to funding for the stretched FB-111, in hopes that during the conference committee, Senate supporters could turn the House's B-1 derivative stand-off bomber into a true B-1 derivative penetrator.⁴⁸

The Senate Armed Services Committee reported out an authorization bill that recommended the addition of \$66 million in research and development and \$25 million in procurement to begin the conversion of 66 FB-111As and 89 F-111Ds into the FB-111B/C strategic penetrators requested by the Strategic Air Command. The Committee's decision was based upon its concern "over the need to strengthen our strategic forces in the mid-1980s."⁴⁹ And

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46. Senate, Committee on Armed Services, Department of Defense Authorization for Appropriations for Fiscal Year 1981: Hearings on S. 2294, Part 1: Defense Posture, Defense Management Report, Pacific Area Report, Atlantic Area Report, Indian Ocean and Rapid Deployment Report, 96th Congress, 2nd Session, January 31, February 1, 5, 6, 19, 21, 1980, p. 173.
 47. See the answer supplied by General Allen to a question on a new penetrating bomber by Senator Stennis, in Senate Armed Services Committee, Department Authorization for Fiscal Year 1981: Hearing, Part 2, p. 985.
 48. See Senator Tower's comments during the debate on the authorization bill, in Congressional Record, Vol. 126, July 1, 1980, pp. S 9098-9099.
 49. Senate, Committee on Armed Services, Authorizing Appropriations for Fiscal Year 1981 for Military Procurement, Research and Development, Active Duty, Selected Reserve, and Civilian Personnel Strengths, Civil Defense, and for Other Purposes: Report, 96th Congress, 2nd Session, June 20, 1980, p. 97.

because the Committee felt that a new cruise missile carrier aircraft would not be needed until the mid-1990s, it deleted the Air Force's FY 81 funding request for the CMCA, while managing to restore FY 81 funding to the original level for the Air Force's B-52 squadrons.⁵⁰

SENATE SUPPORT FOR DELAY ON DECISION

Nevertheless, when the Senate Armed Services Committee's version of the authorization bill reached the floor, its recommendation for the FB-111B/C did not get away unscathed. During the course of floor debate, Senator John Glenn submitted an amendment which proposed the deletion of the \$91 million in funding for the FB-111B/C and called for the substitution of an equivalent amount for the design of a strategic bomber which could perform conventional, stand-off and penetrating missions and which could achieve an IOC in the mid-1980s. Among the choices of aircraft advanced in the Glenn amendment to fulfill these requirements (from which the Defense Department was to choose), were the FB-111B/C, a multi-role⁵¹ bomber, a B-1 variant and an advanced technology aircraft.

A number of the senators who had dealt with the issue in committee were not happy with the Glenn amendment. Senator Tower, for example, believed that the result of such an amendment would simply be a delay on work toward a needed interim penetrating bomber. He told the Senate:

This has been but a sham if I ever saw one.
All we need is another study.

* * *

I know that the administration is very interested in this amendment because it really requires them to do nothing but study. I think that is all that they want.

If Senators vote for this amendment, it is not a vote for the B-1, it is not a vote for a near term bomber. Rather, it is a vote for another year's delay.⁵²

While hoping that another senator would propose tabling the amendment, Senator Tower concentrated on attempting to add language to it that would at least force a deadline on the Defense

50. Ibid., p. 95.

51. Unprinted Amendment No. 1387, submitted July 1, 1980. For the original version, see Congressional Record, Vol. 126, July 1, 1980, p. S9097.

52. Ibid., p. S 9103.

Department for choosing the aircraft for performing the missions required. His first amendment called for the strategic bomber to achieve an initial operational capability in 1985.⁵³

Senator John Culver argued unsuccessfully against the 1985 deadline because it would preclude the choice of an advanced bomber design.⁵⁴ Senator Glenn did accept some modifying language provided by Senator John Warner, which tightened up some of the amendment's weak language.⁵⁵ However, Senator Robert Morgan's attempt to table the amendment was less successful. It was defeated by a vote of 37 to 53.

After two more tries at adding a decision deadline to the language, Senator Tower finally convinced Senator Glenn to agree to a 1987 deadline for Defense compliance. With this final addition, the Senate passed the Glenn amendment by voice vote.⁵⁶ The Senate's decision to provide funding for an unnamed strategic bomber with an IOC of 1987 was, in reality, a victory for the Carter Administration, which had no desire to procure a specific new penetrating bomber.

CONCLUSION

There is a definite need for the continuation of a U.S. manned penetrating bomber program. Penetrating bombers offer certain capabilities that cannot be duplicated by any other portion of our strategic forces. They can be launched under positive control and recalled if necessary. They are able to avoid or counter enemy air defenses to insure penetration to the target. Manned bombers can assess target damage for necessary restrike or can divert to alternate sites. They can also seek out mobile targets or those that have been imprecisely located. Penetrating bombers, when used in conjunction with attacks by standoff bombers armed with cruise missiles, complicate enemy defensive measures since they can approach from all azimuths and at varying altitudes and speeds. And strategic bombers can be used for conventional and theater nuclear warfare, as well. In short, their versatility makes them a vital complement to the other forces in the strategic TRIAD.

The Carter Administration continues to insist that a patchwork collection of modified B-52Hs, FB-111As and B-52Ds will provide a sufficient manned penetrating capability in the 1980s. This is

53. Unprinted amendment No. 1388, submitted July 1, 1980. See Congressional Record, Vol. 126, July 1, 1980 - Part II, p. S 9107.

54. Until Senator Culver's speech, Senator Glenn had been about to accept the Tower amendment, under the misconception that it was merely a perfecting amendment to his own.

55. Congressional Record, *ibid.*, pp. S 9114-9115.

56. For the final version, see *ibid.*, p. S 9120.

clearly overly optimistic. The B-52H bomber is already near the end of its useful life as a strategic penetrator. Although its airframe will continue to be structurally sound for some years to come, it is already hard-pressed to maintain a mission profile that requires extended low-level flight at .55 Mach and its avionics equipment (both offensive and defensive) is antiquated and becoming ever more expensive to maintain. In fact, because the stockpile of mass-produced parts for the B-52s has become exhausted in recent years, the Air Force has had to have many of the aircraft's replacement parts specially made and at very high cost. Those avionics updating programs already underway (or in planning stages) do not go far enough in making the aircraft survivable for a penetration mission in the mid-1980s.

What is needed is a new interim penetrator for the 1985-1990 time frame. There are three aircraft which can meet an IOC in the mid-1980s: the stretched FB-111B/C advocated by the Strategic Air Command; the Strategic ALCM Launcher, a B-1 derivative; and the original B-1 strategic bomber. Of these three, the best choice for the interim penetrating mission appears to be the original B-1.

The B-1 bomber is the most expensive of the three alternatives and would take a slightly longer time to achieve a full operational capability than the others, but it is clearly the most mission-capable. SAC has estimated that the program cost for its choice -- 155 FB-111B/C penetrators -- would be \$5.49 billion (now up to \$5.6 billion). This figure, however, is not valid for direct comparison with the cost of the B-1 restart program, since it ignores associated support costs for the additional 55 aircraft that the FB-111B/C fleet requires (155 FB-111B/Cs versus 100 B-1s), including the costs for additional KC-135 tankers and crews and attendant bases.

The addition of these necessary monies would bring the FB-111B/C program costs much closer to the \$12.5-\$14.4 billion range projected for a B-1 restart program than SAC would like to acknowledge. The amount of time difference in bringing both aircraft on line is also less important than some would allege. With a start-up of the program by October 1 of this year, the IOC for a 30 aircraft force of FB-111B/Cs is estimated to be January 1984. Similarly, the IOC of a 15 aircraft force of B-1s is January 1985 -- just 12 months later. And there would be only an eight month difference between the FOCs of the two aircraft.

For the additional cost and slightly longer production time of the B-1, the Strategic Air Command would get an interim penetrating bomber that would be much more survivable in the late 1980s and early 1990s (just given the B-1's superior ALQ-161 defensive avionics package) and which plane-for-plane would be more mission-capable than the stretched FB-111. However, the choice of the B-1 over its SAL derivative is more problematical. The SAL would be somewhat cheaper. Nevertheless, the key determinant would be whether the SAL design retained a variable wing or moved to a fixed wing.

B-1 DELIVERY

CALENDAR YEAR	80	81	82	83	84	85	86	87
FISCAL YEAR	81	82	83	84	85	86	87	
MILESTONES								
	GO AHEAD 1 OCT 80				IOC 15A/C			
TOTAL BUY - 100 A/C								
BUY		10	41	49				
DELIVERIES				4	30	48	18	

Source: Adapted from SAC Chart Presented to the House
Armed Services Committee, January 25, 1980.

The choice of a fixed-wing Strategic ALCM Launcher aircraft would entail a significant loss of operational flexibility. Such an aircraft would be limited to subsonic flight throughout its operating envelope. Its altitude ceiling would be reduced from 70,000 feet to 42,000 feet. And its penetration speed would drop to .80 Mach from the .85 Mach of the B-1. Clearly, the lower cost of the fixed-wing SAL would not make up for the reduced mission performance it would provide. On the other hand, a swing-wing SAL (estimated to cost in the range of \$11.8-\$13.4 billion), would not suffer these drastic reductions in capability and might prove a useful alternative to the B-1 if the relatively small cost differential was of paramount importance to Congress.

The House-Senate conference committee has agreed to authorize \$375 million in R&D and procurement in FY 81 for a new multi-role bomber. Following the Senate language of the Glenn amendment, the Defense Department will have to choose its aircraft from among a number of candidates, including the FB-111B/C, the B-1 and B-1 derivatives. It is vital that Congress judge carefully, lest it appropriate money for a new bomber that looks attractive because of cost factors but which could fail to meet mission requirements in the last part of this decade and the first part of the next. It should be remembered that whichever aircraft is chosen, it must be able to penetrate and survive in Soviet airspace until an advanced development bomber can enter the inventory, sometime in the 1990s.

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