Date

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. JB		8/18/80
2. A-DD/Y ST		18 AUG 1980
3. DD/S		18 AUG 1980
4. D/S		20 Aug 80
5. C/SA		8/21

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	Coordination		Justify		

REMARKS

The DCI reviewed this leak on the "Stealth" bomber for us last Friday. His note is attached. It seems that Les Dirks told the DCI that the research on the low radar visibility bomber was widely known on capitol and would get out, so the decision was made to leak the information to the media before congress did.

Les Dirks apparently informed the DCI the info was going to be leaked. I would assume the White House and DOD worked on this one together.

2-4 - Info

6 - Comment

STAT

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OPTIONAL FORM 41 (Rev. 7-76)
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☆U.S. GPO:1978-0-261-647/3354

MEMORANDUM FOR:

Admiral -

Pls advise if you wish this leak investigated.

9113(2)

George

15 AUG 1980

No - I was told in advance they were going to leak it - by Dukes, I believe

Date

FORM 5-75 101 USE PREVIOUS EDITIONS

ROUTING AND TRANSMITTAL SLIP Date 8/14/80

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
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REMARKS

George Wilson, Washington Post 8/14/80 & Aviation Week 8/11/80 have articles on new DOD "Stealth Bomber" which we believe is highly classified program at DOD. Perhaps DCI may want to discuss with Secretary Brown concerning this leak.

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FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
[redacted]	4-E-13
	Phone No. [redacted]

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5041-102
☆ U.S. G.P.O. 1977-241-530/3090

OPTIONAL FORM 41 (Rev. 7-76)
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Carter to Support New U.S. Bomber

By George C. Wilson
Washington Post Staff Writer

President Carter will commit himself to developing a new strategic bomber, perhaps as early as tonight when he accepts renomination at the Democratic National Convention, government sources said yesterday.

Such a commitment would steal a march on GOP standard-bearer Ronald Reagan and his adherents who have lambasted Carter for canceling the B1 bomber in 1977.

Breakthroughs in technology, sources said, will enable Carter to argue that his cancellation was a good move because the contemplated new bomber could foil Soviet defenses which are becoming lethal enough to down a B1.

One key breakthrough is a top-secret way to make a long-range bomber virtually invisible to enemy radar used to detect invading aircraft and aim guns and missiles at them.

Some Air Force enthusiasts have nicknamed this new bomber "Stealth" because of its ghost-like qualities. Technocrats explain Stealth presents a small, virtually undetectable "cross-section" to radar beams searching for it. They call it the High Technology Aircraft.

Presidential aides have drafted remarks about a new bomber for Carter to deliver to the convention tonight. But the president could decide to hold off. It depends in part on how he reads the mood of the convention, sources said.

"You're going to hear about these new bomber breakthroughs sooner or later in this campaign," one knowledgeable official said in discussing the administration's plan for combatting Reagan's claim that Carter has let down the nation's guard by canceling the B1 and other actions.

Although the Air Force is secretive about the breakthroughs for foiling enemy radar, Lt. Gen. Kelly H. Burke, Air Force research chief, has said publicly that "high on our list of hardware explorations" in looking for a new bomber "is radar-absorbing material to reduce radar cross-sections,

See BOMBER, A17, Col. 1

Carter to Back New Strategic Bomber

BOMBER, From A1

which would improve survivability against both surface-to-air missiles and look-down, shoot-down" interceptor planes.

William J. Perry, Pentagon research chief, contends that Soviet strides in developing airborne radar that can look down and spot invading, low level bombers would doom the B1, which some members of Congress are still championing.

Perry also opposes the Strategic Air Command's proposal to stretch the F111 into a long-range bomber for the 1980s and 1990s. "Over my dead body," Perry once said in asserting that the stretched F111 did not make sense. He would rather go for new technology to stay ahead of Soviet defenses.

Carter is thus in position to contend that the Pentagon experts agree that a better bomber than the B1 was worth waiting for. He does not have to commit himself to putting a bomber in production since that decision is years away.

Beside combating Reagan, Carter's commitment to a new bomber would get him off the hook with Congress. The House and Senate, in compromising on a weapons money bill this year, directed the Carter administration to choose some kind of bomber by next March 15.

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Convention 1980

Democrats in New York

August 11-15

For fear the Pentagon would balk at putting a new bomber in production, as it has for two decades now with the B70 and then the B1, Congress said it wanted whatever bomber was chosen to be in service by 1987.

Although this sounds like plenty of time to design and produce a new bomber, it actually is not. Modern warplanes take about 10 years to advance from the drawing board to the runway.

To some Air Force leaders, this means Carter will have to settle for a bomber simpler to build than the Stealth, perhaps leaving an opening for a variant of the B1. But they concede going back to any kind of bomber resembling the B1 would be politically uncomfortable for Carter.

An attractive middle ground for Carter would be to promise to develop a new bomber, give the public a peek at the wonder technology now in reach—such as airplane skins which absorb or deflect radar beams—and leave the specific choice open until after the November election.

The Air Force Scientific Advisory Board studied various bomber options last month and concluded that the new plane should be able to perform a multitude of missions, not just deliver a nuclear weapon to a stationary target. Missiles are accurate enough to do that, the board reasoned.

A multimission bomber could attack moving targets, drop mines or fire missiles at ships, the board concluded and reportedly discouraged the idea that a virtually "invisible" aircraft like Stealth could be built anytime soon.

Jimmy Carter would not be the first Democratic president to disclose warplane secrets to dramatize a commitment to a strong national defense. President Johnson on Feb. 29, 1964, ripped the secrecy veil off the A-11 spy plane built at the Lockheed "Skunk Works" in California, a highly secret facility that is expected to contribute technology to any new bomber deployed by the United States.

Landsat Woes

Interior Secretary Cecil D. Andrus has written Commerce Secretary Philip M. Klutznick proposing cancellation of the Hughes thematic mapper as part of an operational Landsat system based initially on Landsat D. Andrus also is concerned about the threat to U.S. space leadership posed by France, Japan and the USSR. "A principal obstacle for proceeding at once to the preferred operational [Landsat] design appears to be the presumption that the Landsat D research missions must come first," Andrus wrote. "Two and three years ago, Interior proposed that priority be given to solid-state multispectral linear array (MLA) technology rather than the elaborate, expensive and research-oriented thematic mapper (TM). Since then . . . the TM development has been plagued by delay and cost overruns and it will probably be dropped from the Landsat D plans for 1982. I feel it may be time to consider putting the TM on a back burner and diverting some of these funds to an accelerated MLA procurement."

The Interior secretary is extremely concerned about competition from France, Japan and Russia in remote sensing markets. "I believe we need a thorough study of the implications for the President's policy of leadership in space if France and others are able to offer better resolution data at lower cost before our core system becomes operational," Andrus wrote Klutznick. "I am concerned that we are not moving as quickly as we could or as our national interest demands."

Budget Line Held

Defense Dept.'s estimated $195 billion in the Fiscal 1982 budget reflected in the program decision memorandum holds the line under firm White House pressure not to exceed $200 billion for Defense. The budget will terminate high-technology fighter production in favor of lower-performance fighters, but not necessarily lower-cost aircraft. While much of the funding in Fiscal 1982 is shifted from weapons procurement to tactical readiness programs, the Administration will move to improve U.S. early warning spacecraft survivability.

In the minimum funding band, mobile terminals for the satellites will be fully operational by Fiscal 1982, and the Pentagon will maintain the option to deploy a new-generation early warning spacecraft using infrared mosaic technology. At the minimum level, the USAF/Boeing E-4A national emergency airborne command post will be hardened against electromagnetic pulses as will Boeing EC-135 Looking Glass aircraft operated by the Strategic Air Command. Critical land lines used for strategic communications also will be hardened.

Reopening SALT

On the heels of the Olympic boycott and the Soviet grain embargo comes what one high-level military officer describes as "wiggles and noises from the White House for SALT." A number of Administration officials in the national security apparatus confirmed last week that President Carter still plans to complete a Strategic Arms Limitation Treaty with the Soviets. "If we open it [ratification], it will be viewed as another example of a lack of decisiveness on the part of the Administration, but there have been warning signals for several weeks on precisely this point," one Defense official said. "Going for SALT now is the equivalent of being the first pheasant off the ground on the first day of hunting season," a Pentagon official said.

Bomber Biases

White House officials see language emerging from the House Appropriations defense subcommittee on the newly authorized multirole bomber (AW&ST Aug. 4, p. 16) as "no problem" because it does not direct the construction of a Rockwell B-1 derivative. As long as the options remain open for the stretched General Dynamics FB-111, the B-1 and the advanced technology "stealth" bomber, the White House intends to continue studies. Some Administration officials believe a delay in the studies would allow more time to perfect stealth technology. One White House official said Carter's "bias" against the B-1 continues as strong as in 1977 when the project was canceled. Furthermore, Carter is not convinced there is agreement in the Air Force on the need for the new bomber authorized by Congress.

Both the House and Senate joined in support of an aircraft that can carry conventional bombs, cruise missiles and perhaps penetrate Soviet defenses, although penetration is not the top priority of pro-B-1 derivative forces in Congress. Several in the Senate contend Under Secretary of Defense for Research and Engineering William J. Perry oversold the "stealth" aircraft in order to stop a Senate amendment for a new but more conventional bomber. Perry's stealth bomber, one senator complained, is too small, will cost $14-15 billion for 50 aircraft and cannot be ready by 1987, the date requested by Congress. —Washington Staff

Carter Strategic Policy Under Scrutiny

By Clarence A. Robinson, Jr.

Washington—High-level military and congressional leaders will watch closely over the next few months for signs the Carter Administration is adhering to a flexible response nuclear weapons targeting strategy recently signed by the President.

President Carter's signing of the presidential directive (PD-59) was heralded within the White House and the Pentagon bureaucracy last week as a move away from the mutual assured destruction policy to which the superpowers have adhered since the beginning of the nuclear weapons age.

Mutual Assured Destruction

Mutual assured destruction, or MAD as it is commonly called, came of age when an effective defense to nuclear warheads could not be envisioned.

The basic tenet is that the populations of the Soviet Union and the U.S. are held hostage to a retaliatory attack if the other side strikes first.

Both President Carter and Vice President Walter Mondale have strongly supported the mutual assured destruction concept in planning the U.S. military structure over the past three years, according to high-level military officers in the Pentagon, even though the move toward flexible response started in 1974 at the time James R. Schlesinger became secretary of Defense.

Flexible strategic options are aimed at a gradual escalation of nuclear war instead of all-out attack, if possible (AW&ST June 16, p. 63; May 10, 1976, p. 29).

"If the President's approval of PD-59 is only a political ploy to disassociate his Administration from the MAD label tacked onto it, there will be few changes in providing funds for certain key systems required to implement this policy," one top-level Defense Dept. official said. "If, on the other hand, the Administration is serious about flexible response there will be emphasis to improve areas such as survivable command, control and communications."

Other areas where almost immediate emphasis would be placed, according to congressional members, include:

- Approval of the funding for research and development and long-lead production funding for a new multirole manned penetration bomber taking advantage of the technology from the Rockwell International B-1.
- Move to a second generation Lockheed Trident 2 submarine-launched ballistic missile with improved accuracy and larger nuclear warheads capable of striking Soviet ICBM silos and other hardened targets.
- Programs to improve the U.S. stockpile of special strategic nuclear materials required to produce warheads for the inventory of weapons needed to cover the targets in the USSR.

One top-level Defense Dept. official said last week the PD-59 provides only the theory for flexible response and added that there is a great deal of skepticism over whether Carter will develop programs to carry out the policy in an effective way.

Flexible Response

One reason for the doubt over the Administration's sincerity with PD-59 is based on remarks by President Carter that all the U.S. really needs to keep the Soviets at bay is one boatload of Poseidon submarine-launched ballistic missiles.

"Just one of our relatively invulnerable Poseidon submarines comprising less than 2% of our total nuclear force carries enough warheads to destroy every large and medium-size city in the Soviet Union," President Carter said in his January, 1979, State of the Union address.

One official who worked on PD-59 said,

Appropriations Panel Funds New Bomber

Washington—The Defense subcommittee of the House Appropriations Committee has approved $175 million for a new bomber that will be designed to penetrate current Soviet defenses and carry conventional weapons and cruise missiles. During discussion of the new bomber, several members were unsuccessful in approving a mixture of $125 million for research and development and $75 million for procurement. The subcommittee then compromised on a total of $175 million for research and development.

The subcommittee expects the final aircraft to be an advanced derivative of the Rockwell B-1 bomber that takes advantage of new technology developed since the bomber was canceled by President Carter in 1977. It would continue in the roles of a conventional weapons carrier and cruise missile carrier when Soviet air defenses become too sophisticated for successful penetration with current technology, which is expected to be in the 1990s.

The Carter Administration's new CX transport got only $20 million of the $81.2 million originally requested. The subcommittee cut $120 million from MX missile funds, because the money is not needed in Fiscal 1981. Funding was eliminated for the precision location strike system and the deployment of 50 stored Minuteman 3 missiles that were to be substituted for Minuteman 2 missiles. The last action may, however, be reversed in conference with the Senate. The Senate has taken no appropriations actions on the Fiscal 1981 defense bill.

The subcommittee actions must be approved by the full House Appropriations Committee, then be approved by the House and go to conference with the Senate. The conference may occur after the November elections if a lame duck session of Congress is called, as is now expected. The subcommittee approved funding for these quantities of aircraft and ships:

- $243 million in research and development and $90 million in procurement for the McDonnell Douglas AV-8B attack aircraft.
- 60 McDonnell Douglas F-18 fighters.
- 30 Grumman F-14 fighters.
- 12 Grumman A-6E attack aircraft.
- Six Grumman EA-6B electronic warfare aircraft.
- 12 Lockheed P-3 antisubmarine warfare aircraft.
- Two SSN-688 nuclear-powered Los Angeles class attack submarines.
- No funding for recommissioning of the battleship New Jersey and the aircraft carrier Oriskany. The subcommitee deadlocked in a 6-6 tie on the New Jersey and did not consider the Oriskany.
- 42 McDonnell Douglas F-15 fighters, and advanced procurement funding for an additional 42.
- 180 General Dynamics F-16 fighters, and advanced procurement funding for an additional 180.
- 60 Fairchild Republic A-10 single-seat attack aircraft; $24 million in research and development for a two-seat version.
- Six Lockheed C-130E transport aircraft.
- 17 Bell Helicopter Textron AH-1S Cobra helicopters.
- 60 Sikorsky Aircraft UH-60A Black Hawk helicopters.
- Four McDonnell Douglas KC-10 transports.
- No funding for the strategic satellite system.
- $60 million for the joint tactical information distribution system.

[Defense Secretary Harold Brown] was told by the White House to toss out the flexible response concept that was articulated under Schlesinger. Under prodding from deputies, Brown wrote back that it was a complicated matter, even though his instincts were to go along. He believes that any limited nuclear weapons exchange will quickly escalate to all-out exchanges."

Under PD-18 the Defense Dept. was ordered by Carter to perform a study of U.S. strategic targeting policy. That study took more than a year to complete and eventually evolved into PD-59, according to Pentagon officials.

Policy Extension

"PD-59 is really an extension of NSDM [National Security Decision Memorandum]-242 largely referred to in the press as Schlesinger's flexible targeting doctrine," according to one former State Dept. official.

That study was started in the early 1970s under then Defense Secretary Melvin R. Laird, and headed by John Foster, former director of Defense research and engineering. One State Dept. official who took part in the study is Seymour Weiss, former director, Politico-Military Dept. Another is his deputy, Leon Sloss.

[SNF, has been the major architect of the] policy now in PD-59. He worked with Walter B. Slocombe, principle deputy assistant secretary of Defense for international security affairs, and Andrew W. Marshall.

"While it is an extension of NSDM-242," according to one U.S. official, "they were fully prepared to abandon that concept if needed.

"But it didn't go that way; the more they looked at it, the more they became convinced there was a requirement to go beyond the limited options in 242.

"The overriding issue was and still is do you reject nuclear war fighting capability as absurd or do you try to cope with it," the official said. He added that there are three facets to the strategy in PD-59. "One is conceptual—can you plan a war fighting capability. The study concluded that it can be done even though we may not like it. The second facet is the Administration believes now that as an initial step we may have to face this planning as an option. The next phase is what do we need developed?"

In considering the U.S. nuclear weapons war fighting capability, the Mk. 12A reentry vehicle developed for the Minuteman 3, and for possible use on the MX [advanced ICBM and Trident 2 SLBM,] SS-18 ICBM silos. The SS-18s now pose a severe threat to the Minuteman ICBM fields.

The U.S. plans to have 300 Minuteman 3 missiles each equipped with three Mk. 12A reentry vehicles carrying nuclear warheads. There are 248 SS-18 silos operational in the USSR and 60 more being prepared.

Those silos are believed to have a 4,000 psi. hardness. With the 335-kiloton yield of each Mk. 12A W-78 warhead and an accuracy of approximately 0.08 naut. mi. the single shot kill probability against the SS-18 is 0.78. If two warheads are used against each SS-18 silo the probability of kill becomes 0.95.

Trident 2 Missile

But to have an effective, flexible response option, according to Pentagon officials, the U.S. must rapidly move to the Trident 2 SLBM, which could be used against hardened command, control and communications bunkers and other Soviet ICBMs such as the SS-19. There are 300 of these missiles operational and two versions, including one with a 4.3-megaton warhead.

Bombers will have to be used for second echelon attacks if flexible response is to

Conferees Authorize Defense $52.8 Billion, Inclu

Washington—House-Senate conferees have completed a Defense authorization bill of $52.8 billion, or $6.9 billion more than requested by President Carter, that contains a bomber Carter is not convinced is needed and funding for a new transport that is far less than he wanted.

The conferees authorized $300 million for research and development and $75 million for procurement for a new multirole bomber that would take advantage of early Rockwell B-1 bomber technology (AW&ST Aug. 4, p. 16). So far, however, the House Appropriations defense subcommittee has approved only $175 million for research and development. The House subcommittee figure is expected to stand in further House action, but could change during conference with the Senate, which has yet to take action on Defense appropriations.

The Air Force CX transport initiated by the Carter Administration but unsuccessfully sold to Capitol Hill committees by the Air Force received only $35 million of the $81.3 million requested. Only $10 million can be spent for CX until 90 days after transmittal to Congress of a mandated report by the secretary of Defense on overall mobility requirements.

Conferees decided on 60 McDonnell Douglas F-18 fighter aircraft, 12 fewer than what the House has approved but far above the Carter Administration request of 48 aircraft. Funding, including long-lead items for advance procurement, is $1.7 billion. In other action, the conference approved:

- $1.55 billion for the MX missile system, with report language requiring the study of split basing.
- 180 General Dynamics F-16 fighters.
- Six Vought A-7 attack aircraft for $112.6 million.
- 42 McDonnell Douglas F-15 fighter aircraft for $845 million.
- Six McDonnell Douglas KC-10 tanker/cargo aircraft for $298.4 million.
- Six Lockheed C-130H cargo aircraft for $70.8 million.
- $38.1 million for engine spares for the F-15 and F-16, out of an Administration request for $253.3 million. Reprograming will make up part of the shortfall.
- 30 Grumman F-14 fighter aircraft for $701.6 million.
- 12 Grumman A-6 attack aircraft for $225.3 million.
- Two McDonnell Douglas C-9B cargo aircraft for $37 million.
- 50 General Dynamics BGM-109 cruise missiles for $163 million.
- 770 Raytheon AIM/RIM-7F/M missiles for $141 million for the Navy.
- 210 Hughes AIM-54A/C missiles for $148.8 million.
- 500 General Dynamics RIM-66 missiles for $120.5 million.
- 80 Texas Instruments AGM-88A missiles for $100.4 million.
- 88 Sikorsky Aircraft UH-60A Bl[ack] Hawk helicopters for $368.4 million.
- 17 Bell Helicopter Textron AH-1S Co[bra] helicopters for $44.5 million.
- Six Beech C-12D transport aircraft $9 million.
- $10 million for upgrading and expans[ion] of U.S. Air Force Minuteman 3 missiles.
- $139.9 million for Raytheon AIM-7F missiles for the Air Force.
- $90.1 million for 280 British Aerosp[ace] Rapier short-range air defense missi[le] including eight fire units and four radars, airfield defense in Britain.

In research and development the con[ferees] approved an item not in contention, McDonnell Douglas AV-8B attack air[craft] with $243 million in research and deve[lop]ment and $90 million in procurement. B[oth] the House and Senate had agreed previ[ously] on the same funding levels, despite the l[ack] of a request from the Administration.

Other research items approved by conferees for the Air Force include:

- Advanced radiation technology, $7[5] million.
- Satellite communications syste[m] $39.8 million.
- Enforcer attack aircraft, $6 million.
- Precision location strike system, $3[0] million.
- Navstar global positioning sate[llite] $150 million.

High-energy laser research for the A[ir]

in both the House and Senate, especially a new bomber to replace the aging Boeing B-52 armed with cruise missiles.

"While the cruise missiles serve a useful purpose to overwhelm air defense radars and have good accuracy to attack relatively soft targets," one senator said, "they do not overcome the need for a manned penetrating bomber like the B-1."

Even if the Carter Administration begins to plan for a strategic nuclear weapons force to handle the new targeting policy in the coming months, it will encounter major difficulties in the area of strategic nuclear materials. There is a shortage of the special materials required to produce nuclear warheads.

Since the 1960s the U. S. committed itself not to produce any more oralloy material.

The USSR also made the commitment to stop producing this major special material, but there is no evidence that they ever stopped production, one U. S. nuclear weapons expert said.

The U. S. has only a limited supply of oralloy or weapons grade enriched uranium available through 1989 in finished weapons, in the Energy Dept. stockpile, or in the production pipeline.

Other elements or materials required for warheads are in relatively short supply in the inventory.

One of these special materials is tritium, and it is an expendable material with a 12.6-year half life. The material is in such short supply that U. S. experts said another reactor to breed the material must be started right away.

"If we never make another nuclear weapon, we still must have tritium to replace it in existing weapons, and the facilities for tritium are worn out. They will be completely off line before a new facility can be built and operations begun," one high-level U. S. nuclear weapons expert said. "We need tritium to maintain the weapons stockpile, but we also must have plutonium if we are to build additional weapons without retiring ones in the inventory first," he added.

Nuclear Production

The U. S. can produce either plutonium or tritium at the three Savannah River reactors, but not both simultaneously. Plutonium is produced by a chemical separation using what is called a purex process. Plutonium and tritium are produced by capturing fission neutrons using suitable blanket material.

The blanket for plutonium is uranium; for tritium it is lithium.

The Savannah River reactors are almost 30 years old, and since they eventually will be closed for reasons of age, a new source must be found. One possibility is to use the reactor facility at Hanford, Wash., to produce these special materials.

Hanford has not produced special materials for the military for years, but the facility is used to produce breeder reactor fuel.

"The failure to produce oralloy—enriched U-235—is purely a political decision," one Energy Dept. official said. "We could convert the N reactor at Hanford to produce oralloy, but it would be costly, or we could get plutonium from there. If we try and use plutonium in what we call thin warheads because of shortages we are moving close to the edge of not having them work."

Another nuclear weapons laboratory official said that with the projected production of plutonium and new strategic weapons the quantity may be adequate, but that the U. S. may be plutonium limited in what can be deployed.

"There is a sufficient amount in the stockpile and in the projected supply for MX, but after we go through MX, Trident 2 warheads and cruise missile warheads, then we are in a bind," the laboratory official said. "The U. S. is over a cliff and hanging on for a viable nuclear warheads research and development program and for adequate nuclear weapons testing."

The official concluded that for the last decade the nuclear weapons design and production programs have had an eroding base. "We try and balance between theory, design and testing. But because of prior funding cuts we have lost engineering and physicist teams. For the last three years manpower and research and development have been at a constant level. However, with inflation that's an unrealistic approach. Test resources have been cut, and there is no way to have an innovative nuclear warhead program without increasing tests."

The nuclear warhead design and production area must become one of the first priorities if the U. S. is serious about the new flexible targeting policy and moves to implement it by providing the weapons required, one high-level Defense Dept. official said.

Tilt-Rotor Vehicle Reaches New Testing Phase

Ft. Worth—Bell Helicopter Textron XV-15 tilt-rotor second test air vehicle has completed its testing here and will be airlifted to National Aeronautics and Space Administration's Dryden Research Center Aug. 13 in a Lockheed C-5A for the next phases of the NASA/Army/Navy-funded research program.

The No. 1 XV-15 test vehicle is at Ames Research Center, where it had been cocooned following full-scale wind tunnel testing.

The plan is to put both aircraft through brief tie-down testing and checkout and then go into a flight test program in the fourth quarter of this year, with the No. 2 aircraft probably flying first at Dryden followed by No. 1 at Ames. One XV-15 will be utilized to explore the flight envelope; the other will evaluate potential civil and military applications of tilt-rotor technology.

NASA plans to hold a workshop at Ames Dec. 2 to brief commercial helicopter operators on the XV-15 and the flight test program and to seek input on how the program could be oriented to include tests and data relevant to civil applications.

To date the two XV-15s have accumulated 278 hr. of testing, including a total of 60 flight hr., plus approximately 20 hr. of wind tunnel tests. Of this, the No. 2 aircraft accumulated 126 hr. of tests at Bell Helicopter Textron's research and development center here, including 57 hr. of flight time. Total flight time exceeded that initially planned by approximately 10 hr.

During testing here, the No. 2 XV-15 achieved a 346-mph. true airspeed in level flight at 16,000 ft., 2g pull-ups and turns up to 60-deg. bank angles.

The aircraft have performed more than 100 in-flight propeller-rotor conversions from helicopter to aircraft mode and vice versa.

Bomber

was funded at the level requested by the Carter Administration of $20.58 million, the amount approved by the Senate and higher than the House figure of $15.58 million. The Navy high-energy laser figure was authorized by the conferees at $52.52 million, the figure approved by the House and $20 million higher than that requested by the Carter Administration. The Senate had approved $32.52 million. The choice of the higher figures is an indication of congressional interest in the high-energy laser research program.

Other items approved for the Navy are:

- AIM-9C semiactive radar improvement, $8 million.
- Light aircraft carrier design, $30 million despite the lack of a funding request from the Carter Administration.

Items for the Army include:

- Terminally guided projectiles, $15.5 million.
- Ballistic missile defense system technology, $149.1 million.
- High-to-medium air defense development, no funding, despite a request from the Carter Administration for $36.2 million.
- Bell Helicopter Textron UH-1 modernization, no funding despite a request from the Carter Administration for $3.07 million.
- Rockwell heliborne Hellfire missile, $50.4 million.
- Rockwell fire and forget Hellfire, $14 million.