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AIR FORCE BOMBERS

Conventional Capabilities of
the B-1B Bomber

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to assist the Subcommittee in its considerations of the capabilities of the B-1B bomber.

Let me say at the outset that, in our view, the jury is still out on the question of just how effective the B-1B aircraft will be as a conventional bomber. Transitioning the aircraft from a nuclear to a conventional role has increased the requirements placed on the bomber -- primarily in terms of maintaining its mission capability after repeated conventional sorties -- and the extent to which the B-1B will be able to meet the increased requirements has not yet been determined. With that backdrop in mind, I will focus my remarks today on the B-1B force structure, the Conventional Mission Upgrade Program, the status of some of the bomber's recently reported operational problems, and the congressionally mandated 6-month operational readiness assessment.

As you know, as the United States draws down its overseas presence in response to the end of the Cold War, the Air Force views its long-range bomber force as critical to its ability to be able to deliver a conventional strike anywhere on the globe within hours of receiving orders from the National Command Authorities. Currently, this capability is provided by the B-52 and, to a lesser extent, by the B-1B. The B-52 can carry a wide range of conventional munitions, such as cluster bombs, general purpose bombs, and sea mines. It can also deliver guided missiles that can be launched at standoff range from outside enemy air defenses.

In contrast, the B-1B has limited conventional capability. It can currently carry only one type of conventional munition--the

500-pound unguided bomb. Currently, about 40 B-1Bs are capable of performing combat missions. As you are aware, the B-1B has been designated by the Air Force as the backbone of the conventional bomber force and is in the process of being transitioned from primarily a nuclear to a conventional bomber.

RESULTS IN BRIEF

The number of B-1Bs, including training aircraft, available to theater commanders is being reduced from 84 to 60. Likewise, the number of B-52s available for combat is being reduced--from about 80 to 32. The reduced bomber force will not be able to destroy the 24 percent of the target base that the Air Force expected to be destroyed by the combined B-1B/B-52 force in the first 5 days of a war. The Air Force acknowledges that there is risk associated with the downsized force in that it does not meet existing bomber requirements. The Air Force plans to reduce the risk by eventually adding precision guided munitions, otherwise enhancing the B-1B capabilities through the Conventional Mission Upgrade Program, and bringing back some of the bombers to the combat ready force.

The Conventional Mission Upgrade Program is encountering delays and cost increases. The program was originally scheduled to be completed in 2005, but it is currently scheduled to be completed in 2007. The cost has increased from about \$2.5 billion to about \$2.9 billion.¹ A major component of the program, an upgraded electronic countermeasures system, is now planned to be installed after some of the precision guided munitions slated for the B-1B are expected to be operational. This raises concerns about the

¹Of the \$2.9 billion, about \$1.28 billion is for an upgraded electronic countermeasures system and about \$1.62 billion is for the integration of precision guided munitions and their related equipment.

bomber's survivability and, in turn, its effectiveness in the event it is required to deliver precision guided munitions before the upgraded electronic countermeasures system is available. On the other hand, there is a question of whether the precision guided munitions planned for the B-1B will meet current schedules.

As you know, we have reported on the problems that limited the use of the B-1B at times. These include engine and aircraft availability and structural cracking. Although the number of available spare engines recently increased, the Air Force still does not have enough serviceable spare engines to meet its war readiness requirements. In terms of the structural cracks, corrective actions have been implemented on some of the problems; however, some corrective actions are still pending. Because of the B-1B's limited availability, the Congress directed the Air Force to conduct an operational readiness assessment of the aircraft. We are required to monitor and report on that assessment upon its completion.

B-1B FORCE STRUCTURE

The Air Force Bomber Roadmap, presented to the Congress in 1992, recognizes that U.S. national security will increasingly depend on conventional bombers, and states that the B-1B will be the backbone of the conventional bomber force. Using Desert Storm experience as an example of future requirements, the Bomber Roadmap identified over 1,250 target elements² that must be destroyed in the first 5 days of a war to provide maximum support to a theater commander. In 1992, the Air Force estimated that the B-1Bs and B-52s could destroy about 300, or 24 percent, of

²These target elements were derived from a hypothetical list of 238 initial, high priority targets which were further divided into the 1250+ target elements. They include, for example, aimpoints or corners of buildings.

the target elements. That destruction rate, as limited as it is, assumed a theater commander would have about 80 B-1Bs and 80 B-52s, with each fleet capable of maintaining a 75-percent mission capable rate. According to the Bomber Roadmap, after installation of the precision guided munitions and other enhancements planned in the B-1B Conventional Mission Upgrade Program, the bomber force was expected to be able to destroy all 1,250 plus target elements.

Although the 1,250 plus target elements are still considered valid, the bomber force available to a theater commander is being reduced significantly. According to the Air Force, because of budget constraints, and the current lack of precision guided munitions, the number of B-1Bs available to theater commanders will be reduced from 84 to 60 by about August 1995. The following table shows the planned B-1B force structure by that date.

Table 1: B-1B Force Structure
in August 1995

<u>Combat aircraft</u>		<u>Training</u>	<u>Test</u>	<u>Backup inventory</u>	<u>Attrition reserve</u>	<u>Total</u>
<u>Active</u>	<u>Air Guard</u>					
38	10	12	2	6	27	95

To give you a better picture of the status of the total B-1Bs in the inventory after the Air Force's reassignment plan is completed, it might be beneficial at this point to briefly describe the various aircraft categories that are listed in the table.

As shown in the table, the Air Force has five inventory categories of aircraft: combat coded aircraft, training aircraft, test aircraft, backup aircraft inventory, and attrition reserve aircraft. Of these five categories, only the combat coded aircraft (which include the 38 aircraft in the active force

and the 10 in the Air National Guard) have aircrews, maintenance personnel, bomb loading crews, and mission readiness spares packages specifically assigned to them. The training and test aircraft categories are self-explanatory. The backup aircraft inventory is comprised of those aircraft that are required to support the fleet during scheduled and unscheduled maintenance, modifications, inspections, and repairs.

The attrition reserve category is probably the least familiar. The 27 aircraft in this category are to be used to backfill combat coded aircraft and the backup aircraft inventory in the event the fleet is attrited through peacetime or combat losses. These aircraft are planned to be configured, modified, maintained, and flown the same number of hours as the 48 bombers available to theater commanders. The Air Force, however, will not have to fund the aircrews and support needed for combat operations for these 27 aircraft. The Air Force plans to bring the attrition reserve aircraft back into the combat forces when precision guided munitions start to become available, around the year 2001, eventually bringing the total number of combat coded B-1Bs to 72. Also, the Air Force would then be able to retire the F-111s that are being retained for their precision guided weapons capability until the B-1B attained that capability.

B-1B CONVENTIONAL MISSION UPGRADE PROGRAM

Until 1991, the B-1B was dedicated to nuclear deterrence and was optimized for the nuclear role. To date, the B-1B has never had a conventional capability beyond the ability to deliver 500-pound gravity bombs, and its fully mission capable rate has been zero due to the lack of an effective electronic countermeasures system. The aircraft now needs to be modified for world-wide conventional missions.

To accomplish the change to conventional missions, the Air Force

is implementing the Conventional Mission Upgrade Program, which involves upgrading both the B-1B electronic countermeasures and weapons delivery systems and adding an anti-jam radio. The electronic countermeasures system is planned to be upgraded to enhance survivability against world-wide threats by improving situational awareness and jamming functions, and by improving the system reliability and maintainability. The weapons delivery modifications will add the following capabilities and precision guided munitions.

- Additional unguided weapons (cluster bombs).
- Joint Direct Attack Munition (JDAM).
- Naval mines.
- Joint Stand-Off Weapon (JSOW).
- Tri-Service Stand-off Attack Missile (TSSAM).
- Standard electronic interface between the aircraft and planned precision guided munitions (known as Class II MIL-STD-1760).
- Increased computer memory and processing speed needed for delivering precision guided munitions.
- Global Positioning System (GPS).

Upgrade Program Schedule and Cost Growth

The Conventional Mission Upgrade Program has been restructured due to fiscal year 1994 congressional cuts and fiscal year 1995 Department of Defense RDT&E cuts. As a result, the start and completion of the upgraded electronic countermeasures system are being delayed. The electronic countermeasures system is now scheduled for a limited operational capability and full operational capability in February 2003 and June 2007, respectively, which is several years after some of the precision guided weapons are planned to be available. For example, JDAM is now scheduled to reach full operational capability before the electronic countermeasures system installations are planned to

begin. Without the upgraded electronic countermeasures system capability, B-1B survivability and, therefore, effectiveness to deliver JDAM and other precision guided munitions, are questionable.

Having said that, I think it is necessary to comment on the status of the development programs for the precision guided munitions that are planned for the B-1B. In February 1993 we reported that, if delays were encountered in developing these precision guided munitions, the planned conventional capabilities of the B-1B would likewise be delayed.³ In fact, delays have been encountered. For example, the original limited operational capability for JDAM, the first precision guided munition to be installed on the B-1B, was estimated to be August 1999. That date has slipped to November 2001. Similarly, in October 1993, we reported that the planned schedules for developing the TSSAM system might not be met and that there was some uncertainty as to which launch platforms would be capable of firing TSSAMS.⁴ We are currently reviewing the development programs for each of the precision guided munitions planned to be carried by the B-1B and will be reporting more detailed information at the completion of that work.

The cost of the Conventional Mission Upgrade Program has grown. According to the Bomber Roadmap, the program was estimated to cost about \$2.5 billion. The current estimated cost is about \$2.9 billion.

³STRATEGIC BOMBERS: Adding Conventional Capabilities Will Be Complex, Time-Consuming, and Costly (GAO/NSIAD-93-45, Feb. 5, 1993).

⁴MISSILE DEVELOPMENT: TSSAM Production Should Not Be Started as Planned (GAO/NSIAD-94-52, Oct. 8, 1993).

STATUS OF OPERATIONAL PROBLEMS

The B-1B has experienced several problems that have, at times, limited its use. Spare parts shortages and maintenance problems have caused fewer aircraft to be combat capable than desired. As I said earlier, about 40 B-1Bs are currently capable of performing combat missions. This equates to a mission capable rate of about 56 percent, as compared to the Air Force objective of 75 percent.

Engine problems during the past few years have, on occasion, prevented some aircraft from flying because they did not have the required four engines, and spare engines to support war readiness generally have not been available. As a result, the Air Force has identified a need for several engine modifications, which are expected to cost about \$83 million. These modifications are expected to improve engine reliability and reduce the need for unscheduled engine removals. Although engine availability has recently improved and all aircraft now have the required four engines, the Air Force is still having difficulty meeting its war readiness spare engine requirements. During March 1994, only 18 of the required 29 war readiness spare engines were available. According to officials at the Air Logistics Center at Tinker Air Force Base, engine availability problems are expected to continue during the next several years as engines are removed for modifications and safety inspections. Engine availability is expected to improve over the longer term as the needed modifications are completed. Because the engine modifications are not expected to be completed until around 2000, it is too soon to tell how effective the modifications will be.

The B-1B has also experienced instances of structural cracking. The nose landing gear, shoulder longeron, and more recently, the horizontal stabilizer have experienced problems with structural cracking. The nose landing gear and longeron problems are

believed to be fixed. The horizontal stabilizer, however, has a serious cracking problem. The Air Force, after inspecting about 25 percent of the fleet and finding all with cracks, has concluded that all 95 aircraft will require repair. While the Air Force believes the aircraft are flyable, some may require flight restrictions until repairs are made. The estimated cost of these repairs is \$55 million, with repairs to begin in March 1995 and end in the year 2000. I want to emphasize, however, that these are early estimates and, therefore, could change.

B-1B OPERATIONAL ASSESSMENT

The Congress has expressed its concerns with the Air Force's inability to achieve the planned mission capable rates for the B-1B fleet. Specifically, in an attempt to address how much improvement is needed and how much it will cost to achieve the required 75-percent mission capable rate, the fiscal year 1994 Defense Authorization Act directs the Air Force to conduct a B-1B operational readiness assessment.

The assessment is intended to determine the operational readiness rate that one B-1B bomber wing could sustain if that wing were provided the full complement of spare parts, maintenance equipment, maintenance manpower, and logistics support equipment. Our work indicates that the Air Force is committed to conducting the legislatively required assessment. The assessment plan, which has been submitted to the congressional defense committees, indicates that the assessment will be conducted at Ellsworth Air Force Base from June 1, 1994, through November 30, 1994. A 2-week portion of the assessment will be conducted at the Air Industrial Center in Roswell, New Mexico, to simulate the operational capability of the B-1B when deployed to a forward operating base.

Our office is required by the legislation to monitor and report

on the implementation of the operational readiness assessment. We have reviewed the Air Force's assessment plan, and our future work will be to ascertain whether that assessment is carried out in accordance with the plan. As we stated in our January 1994 report,⁵ we believe the assessment will provide the Congress and the Department of Defense a better basis than has heretofore been available for measuring the deployability and supportability of the B-1B aircraft. That, in turn, will provide for more informed decisions on (1) committing funds for upgrading the B-1B bomber and (2) defining the future conventional roles of the bomber force.

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Mr. Chairman, this concludes my statement. I will be happy to answer any questions you or members of the Subcommittee may have.

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⁵STRATEGIC BOMBERS: Issues Relating to the B-1B's Availability and Ability to Perform Conventional Missions (GAO/NSIAD-94-81, Jan. 10, 1994).