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TESTIMONY

Long-Range Strike

Testimony Before the

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Introduction

On April 6, 2009, Defense Secretary Robert Gates announced eleven programmatic decisions he planned to recommend to the president for inclusion in the Pentagon's Fiscal Year 2010 budget. These decisions represented an attempt to reshape "the priorities of America's defense establishment" via a "holistic assessment of capabilities, requirements, risks and needs." Gates' stated goal was to shift the Defense Department's strategic direction.

Having failed to generate momentum for a similar rebalancing of priorities across the boundaries of the military Services during my brief tenure directing the office of Program Analysis and Evaluation (PA&E) in 2001-2002, I applaud what Secretary Gates is trying to do. In fact, I agree with all his programmatic choices save one: the decision not to pursue a development program for a follow-on Air Force bomber at this time. And even in this case, my disagreement is not over the decision itself but the reasons given for it. If Secretary Gates had said that developing a next-generation long-range strike system (LRSS) is simply unaffordable at this time in light of more pressing needs and priorities, I would have been inclined to defer to his judgment. But the rationale Secretary Gates offered was that the Pentagon needed to wait until there is "a better understanding of the need, the requirement, and the technology." My view is that the need, requirement, and technology are all reasonably well understood. Indeed, all three have been quite clear for some years.

The Need

What is the need for a new long-range strike system? Since the collapse of the Soviet Union in December 1991, the United States has been—and remains—the world's only global military power. At the core of the U.S. position is the capability to hold at risk, or strike, targets anywhere on the globe within hours-to-days. Currently, this capability is widely understood to mean primarily the capacity to do so with conventional precision munitions. However, it need not be limited to non-nuclear weapons. While the B-2 has, thankfully, only delivered conventional weapons such as the Joint Direct Attack Munition, (JDAM), the aircraft also has a nuclear mission.

With regard to conventional long-range strike, the United States first demonstrated a genuine global reach on January 17, 1991, the opening night of the First Gulf War (Operation Desert Storm). As part of the initial Air Tasking Order for the air campaign, five B-52s launched from Barksdale Air Force Base (AFB) in Louisiana and delivered thirty-five Conventional Air Launched Cruise Missiles (CALCMs) against targets in Iraq. Since then, the B-2 has demonstrated the same global reach. During Operation Allied Force in 1999, B-2 bombers, launching from and recovering at Whiteman AFB, Missouri, mounted forty-five successful sorties against Serbian targets. These sorties delivered some 1.3 million pounds of precision munitions, mostly Joint Direct Attack Munitions (JDAMs).

The other significant change in the utility of the older B-52 and B-1 since Allied Force in 1999 has come from equipping both bombers with inexpensive precision munitions. During the major combat phase of Operation Iraqi Freedom, B-1s carrying

twenty-four JDAMs provided round-the-clock, on-call precision fire support for Coalition ground forces. The integration of JDAM and even laser-guided bombs (LGBs) on heavy bombers has dramatically increased their effectiveness in conventional operations.

However, for targets located deep in enemy territory—meaning more than 1,000 nautical miles from the last air-to-air refueling—the only air-breathing strike platforms the United States possesses today with reach and survivability to have a chance of successfully executing such missions inside defended airspace are the twenty surviving B-2s. But even with upgrades to their signatures, how survivable will these twenty B-2s be in coming decades against advanced air defenses? The B-2, after all, was designed in the 1980s and achieved initial operational capability (IOC) over a decade ago. Moreover, the crash of the twenty-first operational B-2 during takeoff at Guam in early 2008 is a reminder that attrition can and does occur even in peacetime.

Global strike is a critical mission for the U.S. military—a strategic "business" in which the United States needs to retain a credible and dominant capability. Long-range, penetrating strike systems provide, among other things: a hedge against being unable to obtain access to forward bases for political reasons; a capacity to respond quickly to contingencies such as the failure of a nuclear-armed state; the ability to base outside the reach of emerging adversary anti-access/area-denial capabilities; and the ability to impose disproportionate defensive costs on prospective U.S. adversaries, as the bomber leg of the nuclear triad did on the Soviet Union during the Cold War. Addressing these needs constituted much of the rationale behind trying to field a next-generation bomber by 2018. Granted, the 2018 IOC was ambitious. The early or mid-2020s would probably have been adequate. But to end the 2018 bomber development effort at this time appears to be a short-sighted decision.

The need to move ahead with a penetrating, follow-on LRSS to the B-2 has historical roots that reach back to the early 1980s. At White Sands in 1982, the Assault Breaker program demonstrated the feasibility of combining wide-area sensors with missile-delivered terminally guided sub-munitions to attack tanks and armored fighting vehicles deep in an enemy army's rear echelons. This demonstration argued that, sooner or later, military systems exploiting Assault Breaker technologies—"reconnaissance-strike complexes" as the Soviets called them—would be able to dominate large areas from long ranges with precision fires. This prospect, in turn, posed a long-term challenge to U.S. power projection capabilities based on short-range strike platforms and forward bases. In the hands of prospective U.S. adversaries, reconnaissance-strike complexes offered the possibility of holding at risk American forward bases such as Kadena AFB on the island of Okinawa and even carrier battle groups operating in the Western Pacific.

When the Office of Net Assessment's 1992 preliminary assessment of the late twentieth century military-technical revolution—more widely known as the "revolution in military affairs" or RMA—appeared in 1992, even the U.S. military could not claim to possess the kinds of reconnaissance-strike complexes Soviet military theorists had been forecasting since the 1970s. Today, however, China's 2nd Artillery Corps is developing area-denial/anti-access capabilities that could compel U.S. power projection forces to operate from distances of 1,000 nautical miles or greater from the Chinese mainland.

Granted, from the Korean and Vietnam wars to the current conflicts in Afghanistan and Iraq, the U.S. military has been able to rely primarily on in-theater bases and short-range strike systems to project power in distant overseas theaters. Looking ahead to the second decade of the twenty-first century, however, it seems clear that the era in which the United States could get away with forward basing for power projection by short-range systems is coming to a close. As Secretary Gates himself stated in an article in the January/February 2009 issue of *Foreign Affairs*, the Chinese military, among others, is fielding a range of disruptive systems to blunt the impact of U.S. power, narrow the United States' military options, and deny the U.S. military freedom of movement and action.

The force-structure implications of these developments for the United States are also clear. China's growing anti-access/area-denial capabilities will, as Gates wrote in his *Foreign Affairs* article, "put a premium on the United States' ability to strike from over the horizon . . . and will require shifts from short-range to longer-range systems, such as the next-generation bomber." Moreover, this article does not constitute the only occasion when Secretary Gates articulated the need to shift from short-range to long-range systems. In a speech at the National Defense University in September 2008, he used virtually the same language to support the need for a follow-on LRSS. It is difficult, therefore, to see why, in April 2009, a better understanding is suddenly needed of a "need" that appeared clear as recently as January is suddenly called for.

The pre-April 2009 Secretary Gates is right. The U.S. military needs to begin shifting its force structure more in favor of long-range systems. However, investing exclusively in short-range systems such as the F-35 Joint Strike Fighter (JSF) in the near term is not going to bring about the needed shift.

The Requirement

What would we want a new long-range strike system to do? What would be its primary mission requirements? In 2008 the Center for Strategic and Budgetary Assessments took another look at these questions. The resulting report identified six generic scenarios for conventional operations that a new LRSS should be able to address. Of these six scenarios, four appear to be the most important in defining the requirements for a new LRSS. They are:

(1) Situations requiring a sufficient radius of action from the last air-refueling point to reach targets deep in defended airspace;

(2) Conflicts in which there is a need to strike targets at intercontinental distances from the continental United States because in-theater bases are not available;

(3) Missions requiring the survivability to persist in defended airspace in order to prosecute emergent and time-sensitive targets; and

(4) Operations in which U.S. forces must have the radius of action to be able to operate from beyond the reach of anti-access/area-denial capabilities.[1]

The first, second, and fourth of these scenarios emphasize the range or reach of the platform. For these scenarios a straightforward design goal would be a combat radius of 2,500 nautical miles from the last air refueling at altitude in benign airspace.

The third scenario, by contrast, arises from the natural responses of intelligent adversaries to U.S. precision engagement capabilities. Since Operation Desert Storm in 1991, American adversaries have become acutely aware that if U.S. strike platforms can locate a target, they can hit it with conventional guided rounds such as JDAM or a LGB. The logical response has been to use hiding, concealment, movement, and relocation to deny U.S. forces the precise targeting information weapons like JDAM require—or at least limit the amount of time their high-value assets would be exposed to American precision fires. A mobile missile launcher that moves rapidly from a concealed location to a firing position, launches its missile, and then returns to a hidden position is a classic example of a time-sensitive or emergent target. It is this problem that leads to the requirement that the next LRSS be able to persist or loiter inside defended airspace so as to be nearby when such targets do expose themselves. Thus, the basic requirements that a new long-range platform should meet for conventional operations do not appear to be particularly mysterious. Without the reach and survivability inherent in the four generic scenarios, one could not justify the likely costs—at least $15 billion—of developing a new LRSS.

Additionally, CSBA's 2008 report argued that the platform should also have some capability for delivering nuclear weapons. The B-52, it is worth remembering, was designed exclusively for nuclear operations. Like the B-2, the B-52 has never delivered a nuclear weapon in anger. Since the late 1960s, however, B-52s have delivered conventional munitions in every major conflict in which the United States has been involved. If the next long-range LRSS can meet the range and survivability requirements for conventional operations outlined above, there seems no compelling reason to make the platform conventional only, so long as the costs of hardening against electromagnetic pulse (EMP) are kept under control. After all, some electromagnetic hardening of the platform will be needed in any case. Again, the core need that a new LRSS must meet is to be able to hold at risk, or strike, targets anywhere on the globe with whatever weapons the contingency requires.

The Technology

How mature are the technologies that would be needed to develop a new LRSS able to satisfy the generic scenario requirements just described? If the system is optimized for high-altitude penetration at high subsonic cruise speeds, the requisite aerodynamic, structural, and low-observables technologies already exist in B-2 and fifth-generation fighters such as the F-35. Only the engine technology to achieve both long

[1] Barry D. Watts, "The Case for Long-Range Strike: 21st Century Scenarios," CSBA, 2008, pp. 19-30. This report is available online at http://www.csbaonline.org, as is CSBA's 2005 report on the same subject, "Long-Range Strike: Imperatives, Urgency and Options."

range and a supersonic dash capability to avoid being run down by enemy interceptors is not yet in hand. This vulnerability to enemy fighters is the main reason why the (now retired) F-117 and B-2 have operated exclusively at night when inside enemy airspace.

How might this vulnerability be addressed in a new LRSS lacking a supersonic dash capability? The logical answer is to equip the platform with advanced air-to-air missiles and the sensors to provide sufficient situational awareness for the LRSS to be able fight its way into, an out of, defended airspace. Much of the required sensors and other avionics already exist in the JSF.

Another major design choice is whether to make a new LRSS manned or unmanned. Given the current state of the art, one suspects that situations could arise in which a manned platform would be preferable. One the one hand, a manned platform would enable strike execution to be aborted right up to the very last moment. On the other, an important vulnerability of an unmanned LRSS would be the possibility that sophisticated adversaries could interfere with the data links used for oversight and remote control of the platform. Such interference has not, so far, emerged as a serious problem with ISR (intelligence, surveillance and reconnaissance) platforms such as Predator, Global Hawk, and Reaper in Iraq and Afghanistan. However, both the Russians and Chinese are not only well aware of this vulnerability, but have the technical potential to exploit it themselves or sell the capability to others. Thus, one would want to think twice about making a new LRSS exclusively unmanned.

Conclusion

The need for a need for a new LRSS has been fairly clear for some years. Up until April 6 of this year, this need appears to have been understood by Secretary Gates. Equally clear are the operational requirements that a follow-on LRSS would need to meet and the maturity of most of the requisite technologies. As with a new tanker for aerial refueling, the Air Force and the Office of the Secretary of Defense have, for one reason or another, been unable to reach a firm decision to move ahead with a new LRSS for nearly a decade now. This is a strategic choice that cannot, and should not, be deferred any longer.