Testimony to the House Armed Services Committee

Panel on Business Challenges Within the Defense Industry

By

Frederick M. Downey

Vice President National Security, Aerospace Industries Association

Monday, October 24, 2011

The week of September 12th was National Aerospace Week by Congressional Resolution. During that week we celebrated our legacy of global leadership in aviation, defense and space. In the coming months several momentous decisions will be made about the nation's budget, which will ultimately affect what kind of aerospace and defense industrial base we will have, what capabilities it will possess, and whether or not we will remain the global leaders. Those decisions will be taken in the absence of an industrial base strategy, and if history repeats itself, without full participation of those who must manage the industrial base during what may prove to be a time of tremendous reorganization.

I think most Americans would agree that the 20th Century was defined by aerospace. The Wright Flier opened the first century in human existence when man was able to leave the earth's surface, and indeed the earth itself. That event expanded war to the air, and thus to every person and place on earth. It also led to commercial air travel, which shrunk our planet and fundamentally changed the way humans move, live, and work. The 20th Century was America's century because we were "Second to None" in aerospace.

I believe that the 21st Century will also be defined by aerospace. Fifth, and probably later generation fighters, many probably unmanned, will increase aerospace's central place in fighting wars. Commercial aircraft with new technologies and with new and more efficient ways to control a crowded sky will further define how we travel and do business. And man will go into deep space, with the possibility of important new discoveries. The question is will America be at the forefront of these advances and remain "Second to None" in aerospace in the 21st Century?

Rising competitors, global economics, the national debt, and the threat of catastrophic decline in defense spending threaten the aerospace and defense industrial base that designed and produced these technologically advanced aerospace products. While most accept that the US aerospace and defense industrial base is a national strategic asset, too many choose to treat it with benign neglect, assuming that a free market will always work to ensure we stay "Second to None."

To be sure, there is a reason for this assumption. After World War II, the aerospace and defense sector was America's largest industrial sector. It consumed more than 50% of the US budget and contributed 10% of GDP. Although the industrial base never did operate by free market principles, market forces, mainly competition for a wide range and number of Pentagon programs that promised good, if not spectacular, profits resulted in cutting edge technologies that gave America aerospace dominance for 50 years. In fact, the aerospace industrial base was so successful that many have come to believe that this dominance is an American

birthright, and that the industrial base will continue to provide whatever is desired or needed whenever it is wanted.

But that was then. That aerospace and defense industrial base no longer exists. Today's defense and aerospace industry is a far cry from the "military-industrial complex" of the Eisenhower Era, when it represented the largest single segment of the American economy and fluctuations in the DoD procurement budget had clear macro-economic implications.

In the twenty years since the end of the Cold War, nearly 150 significant defense companies have consolidated to six. From the mid-1980s to 2007, a number of big companies left the defense market altogether, while nearly none entered it. The post-Cold War consolidation has created a situation where the top firms have grown individually via mergers and entry into other markets, but collectively the industry has shrunk significantly. Far from being the revenue powerhouse of 1960, today the largest seven aerospace and defense companies operate in a smaller market and their combined annual revenue is equal to about one-half the annual revenue of Wal-Mart.

They compete for fewer major programs, each with fewer systems, with longer periods of time between new starts. Consider combat aircraft. In 1960, 938 combat aircraft were delivered and about 700,000 people were engaged in building them. In 2010 there were 110 combat aircraft delivered and about 190,000 workers were engaged in building them. In 1960 there were eight combat aircraft in development and ten in production. Today there is only the UCLASS and possibly the long range bomber in development and five combat aircraft in production. It is a more unstable market, where a product considered an urgent "must

have" requirement for one administration, one service chief, or one year's budget request, can rapidly become an excessive and exquisite "nice to have" for the next.

Despite these changes, many still view the aerospace and defense industrial base as an outsized behemoth. The Pentagon still officially relies on a distorted free market model to maintain an effective aerospace and defense industrial base. As late as last year the Pentagon's annual industrial base assessment stated that it's the Pentagon's policy to rely on market forces to maintain the industrial base. We do not believe that is an effective policy, and when it does not produce the desired outcomes, the Pentagon will likely resort to more reliance on regulations, which will only increase cost.

In reality, over the past 20 years, the defense and aerospace sector has grown ever more remote from being a "free market" in any classical sense. For militarily unique systems it has devolved into a niche industry servicing a highly narrow and technical market:

- A market of one buyer, that is also the regulator and a handful of major sellers that in many cases are required to collaborate with one another;
- A market with many barriers to entry and little in the way of usable and timely information;

The defense sector *is* similar to a typical market in one important sense: firms seeking higher profits and more stable conditions can go elsewhere. Many already have, and more may yet follow.

Other nations, including our closest allies, comprehend these realities and thus they have adopted systematic, comprehensive policies to sustain what they consider to be strategic national assets.

If these trends continue, and the defense budget continues to be cut, the capability to deliver critical militarily unique systems will atrophy, and the capability our troops and the American people expect may not be available. In order to retain the ability to deliver the technology that is expected of us, we must have the capability to design, develop, produce, and support complex systems. Over $178 billion has been cut from the defense budget so far, and DoD has already cancelled or delayed a large number of programs. According to a recent speech by Secretary Panetta, we will see another $460 billion in cuts over the next ten years and a significant portion of that will come from procurement.

Further cuts to existing programs coupled with fewer new starts means that the companies that make up the defense industrial base cannot continue to invest in the workforce, plant, and research for programs that may one day be needed. We will see the impact first on our workforce. Our industry has only half the workers it did thirty years ago and has already shed more high skilled jobs in response to the recession and reduction of the national budget for aerospace and defense. Recent analysis performed by Dr. Stephen Fuller with George Mason University and the Center for Regional Analysis together with Economic Modeling Specialists Incorporated shows that the total American job loss of just the first part of the Budget Control Act will be approximately 432,000. If the super committee fails to reach an agreement, or that agreement includes further cuts at the level subject to sequestration, that job loss will increase to just over 1 million American workers. Approximately one third of the

lost jobs will be in the defense industry and our supply chain. The remaining two thirds of lost jobs will be in those areas of the economy such as retail, construction, health care, education and even arts and entertainment. The total reduction to America's economy will be just over $84 billion annually.

But it's not just jobs we will lose. The industry will lose its most valuable human capital. For generations, some of the most brilliant and ambitious technicians, engineers, and scientists sought out work in the aerospace and defense industry – inspired by the opportunity to work on the most cutting-edge, innovative technology projects. Today, in an economic marketplace infused with technology, the defense industry has to compete with many more sectors for top talent. The combination of fewer programs, shrinking funding, and growing uncertainty about the future already calls into question our ability to attract and retain a workforce of this caliber.

A cohort of scientist, technicians, and engineers with unique expertise in military systems is eligible to retire and is already poised to leave the workforce – up to 50 percent in some companies – and is not being replaced with talent in the numbers or quality needed to allow the U.S. to maintain our critical technology edge. In terms of capability, we will see the impact first in design and development. In its 2010 Industrial Base Report, DoD noted an immediate risk from the atrophy of key design and development capability unique to military needs. Such critical areas include low-observable technology, sophisticated radars, electronic warfare, precision weapons, and complex systems integration – expertise not found in the commercial market, existing largely within the large defense firms.

The U.S. Government has recognized in other areas – most notably, the nuclear weapons infrastructure – that rare and perishable skill sets within a particular work force are strategic assets that should be preserved as a matter of strategy. But the Defense Department has yet to systematically address the urgency of retaining the human capital of its industrial base.

If we are to remain "Second to None" in the 21st Century, we need a sufficient number of sustainable programs with stable funding and requirements. To some extent, the trends I have described here were present to varying degrees for much of the past two decades. The result has led to a difficult but manageable challenge for industry leaders – *remain capable and healthy in a market with fewer companies competing for fewer programs with fewer active production lines*. The challenge will be far more difficult, but we conclude manageable, at the defense budget level recommended by Secretary of Defense Panetta. However, history reveals that the investment accounts—R&D and Procurement—are often the first cut when defense reductions are on the table. Cuts to military modernization are often easier than making the difficult choices about cutting personnel and benefits. However, if we do the same this time we will be likely cut below the level of ongoing and new programs needed to fully sustain an effective industrial base. Our research reveals that our equipment is best in terms of age and capability, and our industrial base is healthiest when the investment accounts are sustained at about 35% of the defense top line.

Defense and aerospace executives, as a matter of fiduciary duty, cannot continue to invest huge sums in skilled workers, technology, and facilities for programs that are being dramatically scaled back, delayed to fit budget limits, or may never come to fruition. If the

defense budget cuts exceed $460 billion there will be real consequences for our warfighting capability and to the industrial base that supplies our warfighters. More firms could follow the path of Northrop Grumman, which divested its shipbuilding business earlier this year. Some of these consequences may not be reversible.

But sustaining the world's best aerospace and defense industrial base requires more than budgets. We need a real aerospace and defense industrial base strategy to give the direction and predictability that the industry leaders need to make sound strategic business decisions. There are many critical elements to a sound strategy, but two are essential. The first are decisions about what forces and with what capabilities and technology we want now and later with specific plans to get there. The second is much better communication and coordination between the Pentagon and industry than has been our historical norm.

My colleagues on this panel have noted in their work that the Pentagon has largely ignored industrial base considerations during their deliberations about strategic plans. And the resulting products have been short on specific plans and guidance that can be used by industry leaders to make investment decisions. The industrial base of the 20th century was robust enough to react. The 21st century industrial base may not be.

To make a strategy work, there needs to be a more constructive relationship between DoD and industry that includes formal and regular channels of communications between the most senior levels of industry and DoD. The key objectives for industry are clarity, communication about where we need to go, and a plan for what comes next. This plan needs to include dealing with the things that are getting in the way of implementing the strategy. An important aspect is to identify and remove paperwork, process, and regulation from

government employees and military personnel that serves no real purpose. While most of this was intended to save the taxpayers' money, the effect is to add extra layers of delay on top of a procurement process in which a major driver of cost-growth is time.

Ben Rich, the former president of Lockheed's Skunk Works division, reflected on how much has changed in the DoD-industry relationship since his division, with minimal supervision from its corporate or military overseers, developed the U-2, SR-71, and F-117 stealth fighter. He wrote: "Oversight is vitally important, but we are being managed to death and constantly putting more funds and resources into the big end of the funnel to get an ever smaller trickle of useful output from the small end." Rich wrote those words in 1994, and since then, the compliance processes and paperwork have only grown more onerous. The number and variety of programs has since declined sharply, while the amount of regulation and day-to-day inspections has increased, often as a result of new laws from Congress or DoD-driven cost initiatives. Concurrently, despite the new tone being set by top DoD leaders, some government officials seem to have become more adversarial – with a chilling effect on initiative and openness on both sides of the contract relationship. For some aerospace firms, this dynamic –more bureaucratic red-tape for less return on investment – is making it more difficult to justify remaining in the defense sector given the opportunities in other markets that offer more profit and less adversarial interaction with government.

Unfortunately, there have been few ways to address these concerns sensibly at a level where effective action was possible. Between 2001 and 2008 there were no meetings between the Secretary of Defense and the major defense company CEOs as a group. Industry is encouraged that former Secretary Gates and Secretary Panetta have begun to meet with

industry leaders, and Undersecretary Carter has been a strong proponent of this dialogue, taking important steps to institute a creative and effective partnership. But creating a strong partnership rooted in a comprehensive industrial strategy will require major cultural and institutional shifts at DoD, which can come only as a result of a continuing substantive strategic-level dialogue.

Most of the issues I have discussed have been a source of concern and study ever since the end of the Cold War. One commission, which included a former deputy defense secretary and Air Force secretary, assessed the state of the U.S. aerospace industry. It concluded that:

- The nation needed a national aerospace strategy.
- A government-wide framework was required to implement that strategy.
- The administration and congress should level the international playing field for the export market and remove prohibitive legal and regulatory barriers – such as dated export control restrictions – that impeded the sector's growth.
- U.S. leadership in aerospace could be achieved only by investments in the future -- the industrial base, workforce, long-range research and national infrastructure.

The commission warned: "We stand dangerously close to squandering the advantage bequeathed to us by prior generations of aerospace leaders." That report was written nearly a decade ago. And even after the post-9/11 spending increases, all of these conclusions, which would apply to the defense industrial sector as a whole beyond aerospace, are as valid today, and addressing them is even more urgent. What is required now is a willingness to cooperate, communicate and make tough choices in a collaborative way about the future.