

## Presentation by Tom Davis, General Dynamics

May 4, 2010

1. Opening:
  - a. HR McMaster and no power point
  - b. Unique qualities of the defense industry from Len Sullivan:
    - i. GM builds a car and hopes to sell it; DIB sells a ship and hopes to build it.
    - ii. Most manufacturing industries make a million things with a thousand parts; DIB makes a thousand things with a million parts
    - iii. Most industries have millions of customers with preferences that change slowly and can be shaped with marketing; DIB has one customer with preferences that can change with each change of command
2. Two of the most frequently cited Presidential addresses of the last half century occurred 3 days apart. President Kennedy's Inaugural Address of January 20, 1961, with its soaring rhetoric and a national call to action: "Ask not what your country can do for you; ask what you can do for your country." And Dwight Eisenhower's Farewell address given from the oval office 3 days earlier offering the caution for the nation, "to guard against the acquisition of undue influence, whether sought or unsought, by the military-industrial complex."
3. Eisenhower never imagined that his farewell speech would be remembered for this original reference to a "military-industrial complex." Indeed, his National Security Assistant, Andrew Goodpaster, reported that Eisenhower had softened the words just before the speech was aired, and did not consider the military-industrial commentary a key message. And for good reason as earlier in the speech the President had stated:

A vital element in keeping the peace is our military establishment. Our arms must be mighty, ready for instant action, so that no potential aggressor may be tempted to risk his own destruction.
4. So why did he raise the caution, one having the unintended consequence of leaving an enduring image of a defense industry with a broad presence on the American economic and political landscape. One reason might be that at that particular time, it did have a broad presence. During the Eisenhower Administration, defense spending ranged between 9% and 13% of the GDP. Nearly 60% of the nation's industrial R&D was invested in the defense sector. The defense industry was the largest industrial sector of the US economy, larger than automobiles, steel, or – interestingly – oil. Some attributed the 1957 recession to a slowdown in progress payments to defense firms in an effort to avoid raising the federal debt ceiling. But today, the annual revenue of the top tier oil companies is nearly 4 times the defense top tier, and even in its current state the top tier automobile companies are over double their aerospace and defense counterparts. Only steel, a shadow of its previous size, is smaller than A&D.

5. The industry of that period was large and broad-based. When I was growing up I was excited about the space program, and like most – I suspect – felt that NASA was the one who actually made the major components of the effort to get to the moon by the end of the 1960s. But who actually did?
  - a. Mercury Capsule – McDonnell Aviation
  - b. Redstone booster – Chrysler Corporation
  - c. Atlas Booster -- Convair
  - d. Gemini Capsule – McDonnell Aviation
  - e. Titan booster – Glenn L. Martin Corporation
  - f. Apollo Command Module – North American
  - g. Lunar Lander – Grumman Aviation
  - h. Saturn V – North American, Boeing, Douglas Aircraft, and IBM
  
6. But that was then, this is now. The size, and shape of the Aerospace and Defense sector, as it is widely called, bears only some resemblance to that of the 1950s and 1960s. Since 1993, as suggested at the famous “Last Supper,” hosted in the Pentagon by Secretary Bill Perry, the defense industry has largely consolidated. About 30 major firms are now down to 5. Let’s just look at the major space providers:
  - a. McDonnell is now the Integrated Defense Sector of The Boeing Company
  - b. Chrysler largely exited the defense business years ago, with its major move being the sale of its combat vehicle group which is now General Dynamics Land Systems. In 2003 General Motors did essentially the same selling GM Defense to GD.
  - c. Glenn L. Martin has now wound up a part of Lockheed Martin as has Convair, after a time with General Dynamics
  - d. Grumman merged with Northrop and is now Northrop Grumman.
  
7. So, we now have five major defense firms having combined annual revenue of about \$165 billion, including their commercial sides which accounts for about half of Boeing revenue. This amounts to about 1.2% of current GDP. Or stated somewhat more comparatively, the top five defense firms combined have about half the annual revenue of Wal-Mart. In other words, the industry which was once such a major presence on the national economic landscape is now actually a niche business. But, as Norm Augustine has argued, we now have five very healthy firms, and healthy firms make good decisions whereas unhealthy firms often make desperate decisions.
  
8. The Defense industrial base has narrowed along with the national manufacturing base. In 1950, 1 in 3 jobs in the US economy involved manufacturing. Now that number is 1 in 10, with the national security industrial sector accounting for 15% of the 1. Attracting new entrants into the industry is difficult, compounded by two factors: (1) a need for indigenous engineers and scientist, and (2) a decreasing demand for the engineering skills that underpin the industry. As Bob Stevens of LMT has pointed out, we are about to enter a period where for the first time in about 100 years no new US aircraft will be actively worked on the design board. Clearly, this is not an incentive for those with an interest in engineering to pursue aeronautics.
  
9. The days of large serial runs of items which could be simultaneously produced on only slightly re-tooled commercial lines, such as Chrysler’s production of the M-4 Sherman tank powered by a Ford V-8 engine, are unlikely to be repeated. In WWII, to cite just one example, Chrysler produced about 40,000 M-4s, of which about 30,000 went to Europe where they faced about 2,000 German tanks (600 Tigers and 1500 Panthers). Such serial runs no longer exist. Today’s defense industry looks less like Ford and more like

Lamborghini. In the three years of 1942-1945, American industry produced over 200,000 aircraft. Between 1999 and 2002, the modern defense industry produced 574.

10. This all suggests an industry significantly transformed to address a fundamentally different American philosophy of war. Whereas we once crudely equipped large forces, we now elaborately (dare on say exquisitely) equip smaller forces. Even today's infantryman has a complex and expensive ensemble. In WWII, my father-in-law went to war with about \$200 worth of equipment:
  - a. A mass produced M-1 rifle
  - b. A helmet
  - c. Two pairs of fatigues
  - d. Some Load Bearing equipment
  - e. A canteen
  - f. A mess kit
  - g. A first aide pouch
  - h. Shoes with leggings (no boots)
  
11. Today's soldiers may have as much as \$20,000 of equipment
  - a. A semi-automatic or automatic rifle
  - b. A Kevlar helmet
  - c. Light weight body armor
  - d. An LBE
  - e. A "Land Warrior" ensemble
  - f. A squad radio with a GPS locator
  - g. And behind him an elaborate medical evacuation and treatment complex
  
12. Why? Because every soldier is quite dear. So each one must present a capability that is technologically enhanced to the maximum extent possible. This makes modern American soldiers the most effective in the world -- and that is what the Defense Department and the American people demand.
  
13. Barry Watts from CSBA has written, "if one had to choose a 'military-industrial complex' that has stood above all others since the early 1940s, and continues to do so today, the American military-industrial complex would surely be the one most people and most nations would choose." This industry has given the United States a major strategic advantage over the years, the question is will it continue to do so in the years ahead? The paradox is, we simultaneously have a healthy industry, but one whose basic underpinnings are rather fragile, and one having skills that once lost will unlikely be resurrected.