November 11, 2011

The Honorable Leon Panetta
Secretary of Defense
United States Department of Defense
Washington, DC 20301-1000

Dear Mr. Secretary:

With significant austerity challenges facing the Defense Department, we wanted to provide you our assessment of potential industrial base impacts resulting from severe budget reduction scenarios under consideration by the Congress and the Department of Defense. To produce the assessment, the Aerospace Industries Association, National Defense Industrial Association and the Professional Services Council convened a joint Defense Industrial Base Task Force composed of small, medium and large aerospace and defense companies across the spectrum of manufacturing and services.

Twenty-eight of the companies represented on the Task Force ranked in Defense News' Top 100 (21 in the Top 50) Defense Companies with over $254 billion in 2010 defense revenues. Mid-tier and small business interests were represented through direct participation on the Task Force, as well as via extended outreach through the Association members.

The attached report provides our assessment of potential impacts under two scenarios: a $480 billion Defense budget reduction over ten years (2013-2022), and the $1 trillion 'sequestration' option. To an industry segment that is already executing significant personnel layoffs, planning on shuttering production facilities and reassessing near- term research and development investments, the added prospect of either of the above scenarios is both daunting and of grave concern. The defense industrial base that has reliably and oftentimes courageously contributed superior technologies, capabilities, and services to America's warriors over many years must not be allowed to wither or disappear as a result of imprudent budget reductions. It is critical that industrial base capabilities always 'be there' when needed to respond to immediate and urgent defense needs.

We know budget reductions are necessary. We also know the U.S. defense industrial base is a national strategic asset. We provide the information in the attached report in hopes that it will contribute to informed decisions and deliberate, well-thought out and well-managed actions.

Sincerely,

Marion Blakey
President & CEO
Aerospace Industries Association

Lawrence P. Farrell, Jr.
Lieutenant General, USAF, Retired
President & CEO
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DEFENSE EXECUTIVES ASSESS BUSINESS IMPACTS OF MAJOR BUDGET CUTS

Conclude further reductions will deter investment, weaken industrial base

According to senior executives at manufacturing and service companies that support the U.S. military, the $480 billion in additional budget cuts projected over the next decade could cripple certain defense sectors, resulting in an industrial base that is smaller, less innovative, and less responsive to urgent wartime needs. Impacts of major cuts would most likely include:

- Forcing firms to close production lines and lay-off skilled full-time workers – beyond the thousands already let go in the wake of previous budget cuts and program cancellations– specialized manufacturing capacity and human capital that cannot be regenerated without great cost and significant time;
- Reducing or eliminating investments in capabilities beyond those needed to meet existing contracts;
- Making defense companies and business units – manufacturing and service, up and down the supply chain – more likely to exit the sector altogether, consolidate further, or be divested by their parent corporation.

Consequently, defense executives predicted an erosion of the continuum of goods and services provided by industry – from R&D to advanced development and design, to production, and then sustainment and upgrade – that could result in critical gaps in military capability over time.

These conclusions, drawn from a questionnaire distributed to several dozen member companies of the Aerospace Industries Association (AIA), the National Defense Industrial Association (NDIA), and the Professional Services Council (PSC), confirm that the negative impacts have begun. The responses also suggest that the impacts could be mitigated over time if reductions are made, paced, and managed in a balanced manner and are combined with fundamental changes in the way DoD interacts with industry when it comes to compliance measures, cost- and risk-sharing, and program stability. Cuts beyond $480 billion, which most company executives expect in future budget requests even if sequestration is avoided, would render major segments of the defense industry unable to produce critical products and components, leaving wide gaps in the domestic capacity needed to sustain an acceptable margin of military superiority into the future.

Background & Assumptions

The aerospace and defense services industry finds itself in uncertain and potentially perilous times. The cancellation of several major weapons systems in the FY 2010 budget has already led companies to shed thousands of employees and curtail investment for the future:

- For example, at the beginning of this year Boeing announced the loss of more than 1000 jobs at its Long Beach factory, on top of the roughly 4,500 layoffs initiated in 2009;
- BAE Systems announced cuts of 600 positions at its Sealy, Texas facility, on top of 2,900 let go in 2010; and

- This summer, Lockheed Martin announced voluntary separation offers for up to 6,500 employees.

This cycle is playing itself out in increments of 50, 100, 200 jobs or more in labs, factories and other defense-related facilities across the country.

To take the temperature of the industry's corporate boardrooms in anticipation of further major defense cuts, the AIA, NDIA and PSC asked their companies' top executives to assess the impact of defense cuts of approximately $480 billion – the 10-year budget total expected to be submitted by the administration next year — up to the $1 trillion sequestration that would take effect if Congress does not enact a major budget reduction plan before January 2013.

Even if the trillion-dollar "doomsday" scenario is avoided, respondents were operating under the assumption that, based on past history, more cuts would be added on top of the $480 billion over the next decade. Respondents also believed that because savings to end-strength reductions and other personnel costs will take longer to materialize, cuts to the investment accounts – procurement, research, development, and testing – will be front loaded and could reach up to 60- to 70- percent of the total defense spending decreases in the first two to three years.

Defense Industry Boardroom Facts of Life

The United States relies on private, for-profit companies to produce the preponderance of the equipment and services needed by the U.S. military. Senior management at those companies must balance several key relationships in order to survive and succeed as a business enterprise: with investors in the capital marketplace; with skilled workers in the talent marketplace; and partnerships with suppliers and customers. These elements are intrinsically linked. Moreover, all rely on one quality above all else—stability.

Steady demand from the customer for the industry's unique products provides a generally stable revenue flow and basis for long-range strategic investment. Returns on investment for the defense industry traditionally have been modest compared to industries such as pharmaceuticals, petroleum, and software. It is the *stability* of revenue sources and levels that has made defense an attractive industry for investors.

Investors rely on this industry as a hedge in their portfolios to balance risk, and expect defense companies to make business choices that provide sufficient cash flow and an acceptable rate of return. Poor or declining returns in this sector will cause investors to put their money elsewhere, or incentivize corporations to divest themselves of their defense businesses, as happened when Northrop Grumman divested its Huntington Ingalls shipyard earlier this year.

Conversely, a financially healthy sector allows the U.S. defense industry to attract the technical and scientific talent needed to sustain innovation in new products and services, all of which enables the United States to retain its military edge.

Companies' Responses

Given these realities, the AIA/NDIA/PSC members' executives were asked to assess the impact of major defense budget cuts in the following areas:

- Investment – research and development, facilities, and intellectual property.
- Structure – supply-chain composition, mergers, acquisitions, and divestitures
- Workforce – retention of critical skills, attracting new talent, implications for science and technology education;
- Sector Health and Responsiveness

INVESTMENT

Companies are already curtailing new investments in plant, personnel, research and development. One company responded that "we have already put on hold any plans to expand to a second facility [consisting of] 50,000 additional square feet of manufacturing space."

Anticipating the next round of budget cuts, an aviation company has already reduced defense research and development spending, commenting that "if we do any R&D it will be in the commercial aviation sector." Generally, independent R&D expenditures are budgeted as a percentage of sales, thus expected declines in revenue will tie directly to less R&D spending and ultimately less of the kind of innovation that creates the products and technologies U.S. troops need to survive and succeed on the battlefield.

One of the greatest worries is that, collectively, government and industry leaders will miscalculate about what our military will need in the future and make investment and budget decisions accordingly. When future world events demand certain military capabilities at short notice, the manufacturing and intellectual capacity may not be there.

In the services industry, DoD's move towards "low price/technically acceptable" awards (even for complex needs) in conjunction with the Pentagon's efficiencies campaign, has shrunk margins and correspondingly the resources available for R&D, which traditionally comes out of a company's overhead. While this challenge will affect a wide array of companies, several respondents observed that the impact will be greatest on small and smaller mid-tier businesses—many of which are critical providers of engineering and other technical talent, that by definition are far less able to weather difficult times. Said one respondent, in a theme repeated by many: "cost pressure from both customers and competitors could further reduce internal R&D in order to maintain affordable and competitive overhead rates."

INDUSTRY STRUCTURE, SIZE & COMPOSITION

Many companies expect that, given the added uncertainty and perceived risk, even the lower $460 - $480 billion range of projected budget cuts could be the "tipping point" that causes capital markets – expecting a degree of stability in exchange for comparatively modest returns – to move money elsewhere. Larger companies would be incentivized to unload their defense portfolio altogether. However, the dim prospects for this sector are making it difficult to divest. "[I] don't think we will find buyers," one executive responded. "Probably better to shutter operations and wait."

One concern that is readily apparent from both large and small companies' inputs was the potential effects further down defense supply chains, often made up of smaller businesses that lack the capacity to withstand steep drops in orders. Those effects include:

- Verticalization - Dwindling revenue would push many 2nd and 3rd tier suppliers away from DoD-related business, thus forcing prime contractors unwilling to subsidize their ailing suppliers to bring many of those critical sources and services in-house. One prime contractor, reflecting the sentiments of most of his Tier I company colleagues, said his firm is already preparing to "in-source some of the (critical) functions we currently subcontract." The existing supply-chain "would be broken" according to a respondent from a prime contractor. Fewer suppliers would reduce competition and lead to higher costs overall.
- Globalization – Falling revenue and dim prospects would incentivize companies to shutter their U.S. factories and send remaining work to their facilities abroad. States like California, Texas, Georgia and Virginia, with large aerospace and defense presence, would be hardest hit, just as they were during the 1990s. To the extent business remains within the United States, lower tier firms would be the most adversely affected, as they would be unable to compete on a cost basis with operations based in developing countries. That will make it more difficult to control counterfeit parts, increasing cost.
- Innovation Loss – Lower tier suppliers have traditionally been a great source of innovation, given that new ideas can be rapidly prototyped and tested and the appetite for risk is greater. A broken supply chain combined with less incentive to invest means less new thinking, new technologies, and new products for our military.

WORK FORCE

Most of the industry is already reducing payrolls in response to previous program cancellations and current and projected defense spending reductions. In anticipation of future budget reductions, many companies have already decided to delay hiring highly technical positions, and "making do with hourly 1099 contractors." Others have begun reducing their workforces through attrition – by up to 5 percent in one company – but most view this as a first step to significant future layoffs. Looking towards the expected defense builddown, one respondent predicted "further layoffs of engineering and manufacturing workers of between 25 and 50 percent beyond current strained levels. "

On the services side, one company reported that it had laid-off 200 workers in the last two months and had frozen hiring in their government systems business unit. Other services companies were concerned about retaining employees with unique skills in systems architecture and program and sub-contract management, skills especially important to keeping costs under control. One respondent said: "We are losing people out of this industry who are seeing the writing on the wall that DoD is not the place to be if you want a stable job. Our customers are more and more…asking us to cut our staff with one day's notice."

All companies voiced concern about the ability to attract the best and brightest students to science and engineering degrees, and of those who do graduate with these skills, the

perception of a diminishing industrial base with fewer cutting edge programs will make them less likely to work in defense sectors. Even in a difficult economy, there are ample opportunities and competition in the commercial sector for skilled scientists, engineers, and technicians. This problem will be compounded as a generation of designers and other experts approach retirement, without the funding or work to support a new cohort of workers to take their place.

This problem is especially acute in design, development and production areas unique to military systems. One respondent pointed out that the design of advanced algorithms and software for military radars is distributed among a very limited number of experts in a handful of companies.

SECTOR HEALTH & RESPONSIVENESS

The major defense sectors – aircraft, shipbuilding, C4ISR, munitions, missiles, space, ground vehicles, plus related services – assessed budget impacts in the areas of design, development, production, maintenance, support and responsiveness to urgent military needs. In general, both large and small companies concluded that the general impact of cuts in the $480 billion-range on top of those already executed in recent years would be moderate to significant. Beyond that level of reduction almost all respondents believe the impact will be significant across the board.

Most expect significant impact to design and build capabilities. As it stands, there are no manned combat aircraft in development for the first time in nearly a century. Lack of any new starts will make aircraft investments "speculative" according to one respondent, who predicted that some firms will assume the risk of retaining design and build capacity if there is an expectation that programs will go forward on schedule.

However, budget cuts typically cause postponements in production and, ultimately, reductions in quantity procured. An aerospace executive recounted the case of one major supplier for a major engine program that "tooled up" for production based on forecasts of sales volume. "As the deliveries were pushed to the right, the supplier could not meet his financial obligations and was forced into bankruptcy. " Reductions in procurement quantities raise unit costs. Several companies noted that Nunn-McCurdy breaches can be triggered by these actions, thus generating adverse publicity for a situation beyond any firm's control.

The fact that delayed modernization would lead to an older, more maintenance-intensive fleet could create some opportunities in the support areas for some companies. One aircraft manufacturer responded that if defense budget cuts stayed at the $460 - $480 billion level, "the build portion of our income would be impacted significantly. The repairs and support/spares will be impacted but would be manageable." In particular, "we expect the lack of new aircraft starts to force additional service life extension and capability upgrades to existing aircraft." However, those gains would be nullified by large force structure cuts to the military's inventory of ships, aircraft, and combat vehicles and the sub-systems that go with them.

Several munitions companies predicted dire consequences even at the $480 billion reduction level because this sector has little connection to any civilian market. "As the DoD budget goes, so does the munitions industrial base" replied one producer. In general, those

companies considered to be at greatest risk are those of moderate or small size and with narrow product and service lines concentrated in the defense sector.

The services sector is already seeing diminishing margins because of DoD's increase of Lowest Price/Technically Acceptable (LPTA) contract awards, even for complex requirements. This "flight to price" rather than "flight to quality," as one respondent characterized it, will require significant process adjustments within the department, as well. Service companies believe that DoD's approach to pricing is at odds with its desire to improve innovation and access the best talent from its service support contractors. As a result of LPTA practices, "we are reevaluating investments in infrastructure and employee development and benefits… [The government seems] to think that the number of [contract employees] in chairs is more important than the quality of the work."

Insofar as budget cuts would delay purchase of new information technology, one services company anticipated that the resulting personnel cuts would have the most impact on the government's "outdated legacy systems that require expensive, but extremely outdated, technical knowledge."

Real concern also exists that the on-going reductions could potentially "hollow out" key capabilities, particularly those needed to support contingencies and sustain technology innovation. According to some respondents, a number of segments of the defense services market (cyber security, IT, equipment maintenance) are expected to stay in high demand for the future and thus will remain relatively stable at the lower end of projected budget cuts.

Both manufacturing and service companies responded that a smaller and less financially healthy defense sector will not have the capacity to surge weapons, equipment, and services to the battlefield in a way that the U.S. military has come to expect and rely on over the past decade.

Mitigating Measures

The companies were asked to consider measures that would ameliorate the impact of defense cuts on their ability to stay in the industry and produce the capabilities needed. Reflecting a common sentiment, one respondent said the government should "ensure cuts are moderate in the first three to four years to allow companies to smoothly transition downwardly from DoD programs." However, the historical record of past draw-downs plus the difficulty of achieving prompt savings in other areas strongly suggests that the department's investment accounts will bear the brunt of early cuts, giving companies little time to prepare or respond.

A company representative urged Congress and DoD to "carefully weigh cuts and cancellations to programs that are unique to the military and have no connection to the civilian sector… if cuts at this range are not carefully managed with an eye to the industrial base, critical capabilities and facilities could be lost even at the [$480 Billion] level of reduction."

An aerospace executive asked that Congress abstain from the recent habit of governing through Continuing Resolutions, which "limit the ability of the government and industry to execute programs and negotiate contracts efficiently, thus raising costs and constricting the critical flow of funding."

Many of the mitigation measures reflect longstanding industry priorities that are now all the more urgent given new budget realities. Those include:

- Creating a more equitable and sustainable arrangement for sharing the risks and costs associated with major weapons programs, especially during concurrent development of complex systems.
- Reducing compliance burdens and other unnecessary cost drivers. For example, the attempt to get cost data on commercial items will actually increase cost to the government by requiring collection of data that is not now kept and reduce the pool of suppliers willing to compete for DoD contracts.
- Approving multi-year budgets for long-term design and development programs, establishing firm requirements early in the acquisition process in order to avoid "requirements creep."
- Streamlining DoD acquisition processes by eliminating lower priority reviews, with a goal of accelerating the timeline for issuing contract awards by 30 percent.
- Increasing use of the private sector for research and development, as well as maintenance, repair, overhaul, and other key services, a sustainment model that preserves the industrial base while supporting exports, which benefits innovation and increases domestic employment.
- Accelerating implementation of export control reform, along with other actions to open international markets to U.S. industry.
- Investing more funding in science and technology education, research and mentorship programs, inspiring talented young people to pursue a defense-related aerospace career, in spite of the difficult budget situation.

With respect to services, respondents recommended a renewed focus on "how" the Department buys, in addition to what it buys. The "better buying initiatives" create some positive incentives for firms to retain core capabilities to meet the department's critical missions. However, services acquisitions continue to be treated monolithically, when each sector has a different character and competitive dynamics.

In this environment, a more intense collaborative dialogue between industry and the DoD would help mitigate the risks associated with constrained resources. In the past, increasing defense budgets could mask systematic flaws in the U.S. government's approach to dealing with the nation's industrial base; this is no longer possible.

In conclusion, both the executive and legislative branches must take sensible, long-term, measures to mitigate the negative impacts of the expected $480 billion reduction. Cuts beyond that, up to the $1 trillion sequestration level, would severely damage the Defense Industrial Base as a commercially viable enterprise, as a reliable and responsive provider of urgent wartime needs, and as a national strategic asset that is indispensable to the defense of the United States.

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