

TESTIMONY
OF
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BEFORE THE
DEFENSE ACQUISITION REFORM PANEL
HOUSE ARMED SERVICES COMMITTEE
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THE DEFENSE ACQUISITION ENTERPRISE CHALLENGE

Mr. Chairman, Mr. Cooper, and members of the Defense Acquisition Reform Panel, thank you for inviting me to participate in today's hearing on Defense Department acquisition challenges. I am Norman Augustine, representing Business Executives for National Security, or BENS, a non-partisan organization comprised of individuals with business backgrounds in the commercial sector (and a few from the defense sector) that was created in 1982 to provide advice and support to the government in areas wherein its members possess particular experience and expertise.

Last year – 2009 – I chaired BENS' Task Force on Defense Acquisition Law & Oversight. We convened a group of experienced business leaders and former government officials* invited by then Deputy Secretary of Defense Gordon England and leadership of both Armed Services Committees – the Honorable Carl Levin and the Honorable Ike Skelton – to share their views on how best to reverse the spiraling cost and lengthening schedules of producing America's defense systems and delivering world-class services.

In July we issued a report containing 25 implementing actions for Congress and the Department of Defense to consider.** At about the same time the Congress passed the Weapons System Reform Act of 2009. We applaud that legislation, because it seeks to eliminate some of the fundamental weaknesses of our current system.*** Similarly, I will seek to point out where our recommendations extend and build on the foundation laid down in that recent legislation.

First, let me put a business perspective on the practice of defense acquisition.

Our system of government – established on a foundation of checks and balances crucial to preserving our democratic political traditions – stumbles when the same principles are applied to business functions. The inefficiencies overwhelm the benefits. This is because defense acquisition has much more in common with everyday business functions than it does with traditional government functions such as establishing policy, creating laws and regulations, and enforcing them. Today, government too often appears to place more emphasis on not letting anything go wrong than on assuring that most things go right. In doing so, it has produced an acquisition process that is agonizingly ponderous to manage and correspondingly slow to produce desired outcomes. This focus on process contrasts sharply with the demands of the business world, particularly in the high-tech arena where, for example, the Intel Corporation has stated that over 90 percent of the revenues it records on the last day of any fiscal year are derived from products that did not even exist on the first day of that same year.

* See List of Task Force members at Appendix 1.

** An abbreviated list of recommendations is at Appendix 2.

*** See The Canonical acquisition Program: A Cautionary Tale at Appendix 3.

While defense acquisition has far more in common with business than with traditional governmental functions, it is not easily recognized as a form of business. It consists of a monopsony run by the world's most powerful customer that makes the rules and enforces them. Yet, embedded within this monopsony are occasional monopolies in the private sector affecting specific products. The firms operating in this environment are expected to compete not only against each other but against the myriad of commercial firms around the globe that seek equity and debt from the same financial sources.

The findings and recommendations offered in the BENS report are based on a collection of fundamental business principles embraced by the Task Force. These include:

- Talented, dedicated, experienced leaders are the underpinnings of success; processes and organization charts are altogether secondary
- Goals must be clear and, to the greatest extent possible, measurable
- Clarity of individual responsibilities is essential – including assuring individual consequences...both positive and negative
- Authority must match responsibility
- Means must match ends
- Authority, responsibility and accountability must be delegated wherever practicable – and results monitored
- Organizational and individual overlaps and interfaces must be minimized
- Acquiring the skills sets and often unique expertise required for the acquisition of services and Information Technology must become an institutional goal

How, then, should defense acquisition be approached as a business?

First would be to move the enterprise to a new level of organizational equilibrium. Put another way, it means aligning the interests and incentives of all enterprise stakeholders.

Second, reform would begin to create an environment where, rather than striving to become error-free on the process side, the acquisition system is aimed at achieving successful outcomes – that is, providing users what they need, when they need it, and at a cost they can afford.

Third, would be to open lines of communications between DoD and its suppliers – the defense industrial base in particular as well as the larger commercial sector. The private sector operates as a community of buyers and sellers. In defense acquisition such relationships are “arms length” and legally restrained.

Switching now to specific findings and recommendations, the Task Force concluded that the *process*, not the *product for the warfighter*, has become the principal focus of the acquisition system. Specific problems tormenting the system end-to-end include requirements creep, funding instability, poor initial cost estimating, immature technology and the lack of flexibility to solve problems. These are compounded by the fact that many individuals with little or no accountability can profoundly impact funding, schedule, personnel assignments and administrative demands. Too often the problems that result are not uncovered until operational testing is underway – an activity that frequently overlaps the production tooling effort and thereby greatly increases the cost of correcting deficiencies.

We found that there are three overarching categories of shortcomings to which acquisition failures are largely attributable. These are:

- **Requirements: Linkages between the requirements determination, budgeting and acquisition processes.** Today's requirements process is a highly formalized rather sterile pursuit driven by perceived needs of warfighters, accommodated by engineers, with the suppliers of financial resources generally not consulted. It needs to become an iterative process involving warfighters who understand the nature and needs of combat, engineers who understand the limits of technology, and financial experts who can accurately estimate costs and assess the impact of future budget scenarios.
- **Personnel: Constraints to defense acquisition workforce excellence.** Today, the government too often finds itself with minimally experienced and transient individuals leading major acquisition programs, able to attract new people only after long delays, unable to couple rewards to performance, and with many senior leadership positions simply unoccupied. Talented and dedicated people can often overcome a poor organizational structure or incoherent policies, but the opposite is never true. When qualified people are combined with sound organizations and practices, success is virtually assured. The acquisition process, unlike most government pursuits, is a business function. In most instances it demands the skills and talents that are far more common to the business world than to government and military operations.
- **Execution: Adherence to program execution processes aimed at satisfying the needs of the warfighter.** Today, programs are begun without resources to address contingencies, with often unproven technology, poor estimates of production volumes, and essentially no funding flexibility – and are revised frequently. Programs should not be initiated until: 1) the requirement is clear; 2) funding, including adequate reserves, is available; 3) the technology is proven; and 4) the system concept is well defined. It should be difficult to start new programs and it should be difficult to change or stop them, once started, absent truly compelling reasons. Failure to respect the latter has historically led to large sums of money wasted on half-completed programs found to have problems... so as to chase new opportunities presumed not to have problems.

Let me discuss each of these findings in more detail:

REQUIREMENTS DETERMINATION

The initial step in the acquisition process is the establishment of the requirements for the goods or services to be provided – and a bad beginning nearly always portends a bad ending. A major problem with requirements definition is implicit in its very name: “*requirements*” – which seems to imply a certain sacrosanct quality or rigidity. A better term would be “*capabilities*,” a term that more readily allows for tradeoffs as additional information is gained concerning cost, schedule and technical feasibility.

The principal shortcomings of the existing requirements process are that: 1) it does not couple needs for specific future systems to an overall national defense strategy; and 2) requirements are largely determined by the military services without realistic input as to what is technically feasible from an engineering perspective, and without adequate input as to what is affordable from a planning, programming and budgeting perspective. As a result, performance overshadows cost and schedule, and affordability is rarely considered at all. Remarkably, in this construct reliability is rarely treated as a performance measure.

It is important that the Combatant Commanders (COCOMs), who are indeed the ultimate capability users of the products of the acquisition process, have an important role in requirements definition. However, the COCOMs are extremely focused on current operations, particularly in wartime, and in general do not possess systems engineering enterprises, future technology assessment capabilities, or cost analysis expertise. There needs to be a balance struck between determination of short-term capabilities where the COCOM’s views should be preeminent, and the long-term force-shaping developments, which can be conducted most responsibly under the guidance of those with enduring institutional responsibilities, the Service Chiefs.

ACQUISITION WORKFORCE

Today’s acquisition workforce is in many areas highly competent, but understaffed in comparison to its workload. It is also organizationally misaligned to permit it to feel professional and appreciated, and it faces an unprecedented loss of expertise due to aging and the pull of private sector opportunities. Fixing workforce problems is a leadership issue far more than a process issue. In this regard the Packard Commission stated that (acquisition leadership should have) “a solid industrial background.” Unfortunately, individuals with such backgrounds cannot – or will not – accept positions in the government acquisition process. To restore acquisition workforce to excellence balance must be achieved in proportion to the “three essential Rs”: requirements, resources, and – most importantly – the right people. There are many good people in the system, but that does not make them the right people. In optimizing the management of the skill sets, we will generate the flexible, innovative,

cost effective workforce needed for the 21st century. The bottom line for the acquisition enterprise is to recognize and reconstitute a professional acquisition workforce working side-by-side with its contractor support – and, most importantly, its operational counterparts.

PROGRAM EXECUTION

Most of today's program execution failures are already well documented and well examined. They tend to be the result of a system that substitutes oversight for insight; confuses management with rules; is risk-averse and failure-intolerant; is unnecessarily adversarial; is too often hidebound and encrusted in layers of legislative and policy guidance; and is administered by bureaucracies better suited, if at all, to a slower-moving, more resource-rich era.

As a result of imperfect law and misplaced oversight the acquisition system is at odds with best practices in the business world: it possesses insufficient systems engineering capability; cost estimating that injects unrealistic optimism into early program definition; depends on many individuals with limited relevant experience; and provides little management flexibility to fix problems as they occur. And when dealing with development – that is, providing something that has never existed before – problems *will* occur, even in the best -managed programs.

RECOMMENDATIONS

When prescribing modifications to the existing system it is important to recognize that one-size does not fit all. Some acquisitions are more urgent than others, some are of more modest cost than others, some contain less risk, and some are of a fundamentally different character (product upgrades, the acquiring of commercial items or services, international programs, and the procurement of information technology). Each acquisition needs to be treated in a fashion befitting its nature – making it important to have a “fast-track” available for the prosecution of some programs. Past developments have on occasion been “excused” from the regular acquisition process, but this was usually because they were considered too important to entrust to “the system.” (The latter category has included classified space programs, gunships during the Vietnam War, counter-IED measures in Iraq, and others.)

In general, Congress should insist on, and DoD should adopt basic, proven business practices relating to specific aspects of managing the acquisition process. These fundamental practices generally do not require changes in law:

- Conduct program reviews only at major milestones or when significant escapements from plan have occurred
- Provide sufficient funds and schedule time in program plans to assure intensive testing and appropriate training and the provision of logistics support

- Prohibit systems engineering contractors from participating in program execution, other than in their role as the systems engineering contractor, in order to avoid conflicts of interest
- When adopting commercial products, make changes only for absolutely the most compelling reasons
- Invest substantially in basic and applied research, focusing on potential breakthrough areas even though substantial risks may be present
- Establish development planning functions to coordinate the concept development and refinement phase of all programs to ensure that the capabilities required by the country as a whole are considered and that interoperability is addressed
- Produce end-items at an efficient rate unless a conscious decision is made that a warm base must be maintained. In the latter instance, the cost of such should be categorized as the premium on an “insurance policy,” not as a cost overrun

However, the Task Force believes that specific changes are needed to fundamentally correct the system’s deficiencies. **In some cases, legislation will be necessary and the Task Force indicates where that may be required; in others, Congress needs to establish its expectations for the acquisition system and through oversight ensure that such change occurs.**

The report’s major recommendations are these:

REQUIREMENTS DETERMINATION

It is recommended that the requirements process be modified in a fashion that permits greater emphasis on affordability, schedule compatibility and technical feasibility, and that responsibility for establishing requirements be segregated according to time-urgency.

ACQUISITION WORKFORCE

The government personnel management system should be modified to assure that key positions in the acquisition process are filled by individuals who are knowledgeable and experienced in acquisition, and who remain in place long enough to at least achieve major intermediate milestones (e.g., completion of development, establishment of rate-production, etc.).

PROGRAM EXECUTION

The acquisition process should be modified to incorporate relevant practices widely acknowledged in the commercial sector as essential to successful program execution.

The report itself contains 25 implementing actions designed to achieve the reforms in these three areas (See Appendix 2).

CONCLUSION

Congress in its constitutional role to raise and support an army and navy, *et seq.*, sets the expectations and tone for the entire enterprise – and must be at the forefront of any change. Once established either by law or sense of Congress, the acquisition enterprise must follow the resulting regulations and policies rigorously, but with common purpose.

The Task Force believes implementing its recommendations will lead to fundamental changes in the way the enterprise acquires defense goods and services. The Task Force urges Congress to adhere to the principles we have defined and vigorously pursue its oversight of the process to ensure that it embeds and promotes the equities of all members of the enterprise and, above all, serves the needs of the warfighter. For reforms to be implemented successfully, the Task Force believes that consistent leadership, accountability and effective oversight must prevail across the entire enterprise – Congress, the Defense Department, and industry.

We have a Defense Department today that is led by extremely capable individuals who are well aware of the problems I have cited. This affords an opportunity where, working with Congress and the private sector, an acquisition system can be built that, unlike today's, is *greater* than the sum of its parts.

An appropriate rallying cry is the statement of David Packard, who conducted the seminal study¹ of acquisition reform over 20 years ago: "We all know what needs to be done. The question is why aren't we doing it?"

Thank you for inviting me to testify before your panel today.

¹ The President's Blue Ribbon Commission on Defense Management (The Packard Commission), Final Report June 30, 1986. <http://www.ndu.edu/library/pbrc/pbrc.html>

Appendix 1 - Task Force

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Appendix 2 – Implementing Actions

REQUIREMENTS DETERMINATION

It is recommended that the requirements process be fundamentally changed to emphasize early consideration of affordability, schedule compatibility and technical feasibility, and that responsibility for establishing requirements be assigned according to time-urgency.

- *Modify the existing requirements establishment process to make it highly iterative and interactive as opposed to declaratory, but with strong inputs from the systems engineering, cost analysis and program planning and budgeting communities. (Implementing Action R-1)*
- *Reconstitute a strong systems engineering capability within each of the Military Departments; i.e., within the Service Chiefs' chain of responsibility. (Implementing Action R-2)*
- *Legislate Executive Branch reconciliation of the logical sequence and timing in development of the national strategy and its related military planning documentation so that they guide, rather than merely affirm, the development of capabilities-based assessments. Require the major decision support systems in the Department to harmonize the relationship between national security strategy, military strategy, requirements determination and fiscal constraints. (Implementing Action R-3)*
- *While the 1986 Goldwater-Nichols legislation has proven highly effective in enhancing joint Service activities, it should nonetheless be modified to qualify the current role of the COCOMs in determining requirements. The modification should assign responsibility for near-term needs to the COCOMs and for long-term, sustaining needs to the Service Chiefs (and Defense Agencies, as appropriate). In each case the "other" party should provide input but not have primary responsibility for the preparation of requirements. In either case, it should be the responsibility of the lead organization to assure operational compatibility among the Services for all joint items, working through the joint requirements organizations. (Implementing Action R-4)*
- *Establish an authority led by the COCOMs for near-term projects and by the Service Chiefs for long-term programs. The purpose of the authority is to conduct tradeoffs and, where appropriate, modify requirements as additional information is gained on cost, technical risk, schedule and external factors (e.g., threat changes) during the Pre-Milestone A (Material Solutions Analysis Phase). (Implementing Action R-5)*
- *As a prelude to defining requirements, make explicit consideration of a time-value in fielding capabilities. (Implementing Action R-6)*
- *When establishing requirements for new programs, appropriate capacity should, when practicable, be provided for future upgrades (space, weight, power, etc.). In seeking new or additional capabilities, preference should be given to upgrading existing systems as opposed to initiating all-new systems. Upgrades should be introduced in discrete "blocks," not in a piecemeal fashion. An aggressive prototyping program should be maintained to build and test non-production prototypes that offer significantly enhanced capabilities (perhaps implying unusual risk). This would have the additional benefit of preserving difficult-to-rebuild design teams in periods when all-new developments are not being actively pursued. (Implementing Action R-7)*
- *The government should strengthen the communication of its needs to the industrial sector and encourage the exchange of technical information between the private sector and the government within the bounds of security and competitive propriety.*

It is the private sector that provides the overwhelming share of the goods and services used by the government and owns most of the nation's research, development and production assets. (Implementing Action R-8)

ACQUISITION WORKFORCE

The defense acquisition personnel management system should be modified to assure that key positions in the process are filled by individuals who are knowledgeable and experienced in acquisition, and who remain in place long enough to at least achieve major intermediate milestones (e.g., completion of development, establishment of rate-production, etc.).

- *Assign to the Service Chiefs responsibility for establishing, managing and maintaining a highly competent acquisition workforce, including education, training, career path development and succession planning—the latter is rarely done today in any institutional fashion. Appropriate staffing standards should be created for all critical positions. (Implementing Action P-1)*
- *Legislation should be established that streamlines the hiring and rewarding of key acquisition personnel, including providing appropriate compensation and other forms of incentives. Authority to quickly employ qualified individuals as well as to dismiss individuals who are not performing in their assigned responsibilities should be vested in the Secretary of Defense. While the intent of government ethics regulations is to be applauded, those aspects that unduly discourage individuals from accepting government employment (extensive paperwork, financial burdens, redundant security clearance processes) should be reevaluated as to their necessity. (Implementing Action P-2)*
- *Amend the Goldwater–Nichols legislation to reinstate the Service Chiefs in the chain-of-responsibility over the Program Executive Officers (PEOs) and Program Managers (PMs). Program Managers are the heart of the defense acquisition process and should be granted commensurate authority. They should be required to have corresponding training and experience. Career paths should be established that permit program managers and other key personnel to remain in their positions at least from one major milestone to the succeeding major milestone. Service in the acquisition process must not damage to a military career. (Implementing Action P-3)*
- *Establish standards for workforce skills and attention to detail for service contracts and information technology (IT) programs that are equivalent to those required for major weapon systems. (Implementing Action P-4)*

PROGRAM EXECUTION

The acquisition process should be modified to incorporate relevant practices widely acknowledged in the commercial sector as essential to successful program execution.

- *Employ a set of system acquisition processes tailored to match capability development and implementation durations to the threat-response cycle and urgency of operational needs (currently permitted in the DoD 5000-series documents). Revisit the dollar-value of the program as the sole criteria associated with designating a Major Defense Acquisition Program (MDAP). (Implementing Action E-1)*
- *Sustain development planning capabilities throughout a system's life to permit periodic insertion of new technology. Related systems engineering capabilities should be consolidated in the Services and resident in the program offices throughout the system lifecycle. (Implementing Action E-2)*
- *Do not initiate Milestone B (Engineering and Manufacturing Development) until: 1) the need is firm; 2) the system concept is clear; 3) the necessary funds are likely to be available throughout the proposed effort; and 4) the technology is proven. Do*

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not enter serial production until operational testing is satisfactorily completed, including reliability demonstration. (Implementing Action E-3)

- *Establish major program milestones and measures of success and approve advancement past milestones only when such measures are satisfied. Systems tests normally should not begin until key component tests have been satisfactorily completed; and low-rate initial production normally should not be initiated until key systems tests have been satisfactorily completed. Whenever feasible, properly monitored development tests should be used to augment operational tests in order to reduce costly, redundant testing. (Implementing Action E-4)*
- *Reinforce reliability as a bona fide performance parameter as current regulation requires. Reliability should be considered to be on a par with such performance parameters as range, payload, accuracy, etc. This will demand substantial component environmental testing as well as extensive system tests. (Implementing Action E-5)*
- *Delegate primary responsibility for the execution of a project to the Program Manager, subject to periodic review by a highly limited number of senior officials within the chain of command. (Implementing Action E-6)*
- *Amend Goldwater-Nichols legislation to reinstate the Service Chiefs in the chain of responsibility for executive management of acquisition programs. (Implementing Action E-7)*
- *Grant authority to the appropriate configuration steering board to modify requirements, as appropriate, when new information becomes available during development. It is emphasized that the intent of this recommendation is to adapt requirements to evolving realities, not to open the floodgates to an avalanche of additional requirements. (Implementing Action E-8)*
- *Provide resources to deal with contingencies. Funding reserves should be provided in all program plans, sized according to the risks entailed. Backup technical approaches should be provided for risky components, and plans should be prepared for the identification, amelioration and monitoring of program risks. (Implementing Action E-9)*
- *Maintain program stability: minimize changes to requirements, funding, schedule and personnel when brought about by external forces. Fund programs incrementally from major milestone to major milestone rather than on a year-by-year basis. (Implementing Action E-10)*
- *Maintain competition among industry suppliers to the greatest extent possible—recognizing that in a few cases (e.g., small buys of items requiring major tooling expense) competition may be inappropriate. Under the latter circumstances it may still be possible to compete components or subsystems. When conducting competitions, past performance and capability should be important considerations, particularly as they relate to specific individuals assigned to the project at hand. Independent (of both the contractor and the project office) government-performed cost assessments should be generated to accompany all contractor proposals. (Implementing Action E-11)*
- *As current law provides, appropriate contract types should be used for all acquisition pursuits: fixed price instruments for work whose scope is well-defined and cost reimbursable instruments (including incentive- and award-fee types) for work that cannot be precisely defined, such as research and development. Multi-year fixed-price contracts should be used for production procurements to the greatest extent possible but only after a proven data package is available. (Implementing Action E-12)*

- *Continually assess adequacy of the future defense industrial base and take appropriate actions to maintain its ability to support the nation's military needs. (Implementing Action E-13)*

Appendix 3 – The Canonical Acquisition Program: A Cautionary Tale

A group of individuals who served their country with distinction in combat is assigned to define requirements for the next generation of a much-needed item of military equipment. Wanting to assure success for U.S. and allied forces in any future conflict and knowing that the item must perform for many years, the group establishes demanding requirements. The engineers, excited by the technical challenges implicit in the requirements, and hoping to substitute technological capital now for troop fatalities later, design a responsive piece of equipment.

Intense but healthy competition ensues among contractors seeking to develop and produce the new item, each needing to win the contract due to the immense pressures of the financial markets in which defense firms, operating in a monopsony, must vie against purely commercial firms for shareholders and access to debt. Each bidder is optimistic that its attractive cost and schedule estimates will win the work. A winning contractor is finally selected by the government, but must endure a one-year delay before beginning work while protests submitted by losing bidders – each of which finds in the labyrinthine Request for Proposal what they believe to be legitimate reasons they should have won instead – are resolved.

Work on the project finally begins, but within a year the Program Manager discovers that the technology needed to meet the established requirements is not yet fully available. Congress had previously declined to appropriate contingency funds for the contract or to pay for schedule slack, so it takes nearly two years to obtain additional resources to bring the technology to maturity. The Program Manager reluctantly proposes a schedule slip – even though this will substantially raise overall costs because of the need to keep the physical plant open and the personnel associated with the project on payroll for a longer time. The senior Defense Department executives overseeing the acquisition process, many of whose positions will be occupied for only a few years by individuals with limited on-the-ground R&D management experience, approve the schedule change. (Well-intentioned conflict-of-interest rules and other obstacles had discouraged individuals with requisite experience from accepting the government positions they had been offered.)

As the development effort stutters and stalls, unforeseen new military threats force modifications in the original requirements for the piece of equipment. It soon becomes apparent that the projected unit cost of the item is significantly underestimated, an outcome exacerbated by unrealistic inflation-rate estimates dictated by the Office of Management and Budget. Senior acquisition managers therefore decide to halve the total number of items to be produced; to reduce the test program; to eliminate the reliability growth program; and to defer the purchase of spare parts and training equipment. Having been in place so long as to jeopardize his military career, the Project Manager moves on and a replacement assumes the position.

Seeking to prevent such problems from recurring, a chastened acquisition bureaucracy establishes new regulations, policies and oversight to better monitor and control future activities, large and small. Seeing this, some politicians who had questioned the need for the project at its outset, and had doubted its eventual success, seize on a new opportunity to reduce further the production buy. Understandably frustrated with the program's progress, Congress also imposes several additional stipulations, reviews and controls, some of a detailed technical nature.

As a consequence of these developments, unit costs skyrocket further due to the now over-capacity production line that had been constructed, the low rate of production, the need to amortize fixed costs over a significantly smaller procurement buy, the need to renegotiate thousands of subcontracts due to schedule changes, the demand for additional reports and reviews, and the inability of the factory to take full advantage of the learning-curve benefits of larger, more rapid and more stable procurement processes. Unit costs also increase because the law stipulates that most component parts be purchased in one-year increments rather than in larger, more cost-effective lots.

While the program has slowed, been diminished and grown more expensive, additional demands on the overall government budget emerge, some due to unforeseeable events and some due to cost overruns in other government programs, both military and civil. There is now significantly less money available for the production program than had originally been hoped (no overall assessment or projection of affordability had been conducted during the initial requirements process), so production is further curtailed as to both rate and quantity. The media begin quoting the unit cost as a fraction of GDP.

The troubled program is finally terminated due to widespread sticker shock, even though the equipment being developed is – belatedly – performing up to and even beyond requirements. Everyone involved with the program is shocked that this could have happened, even though it has happened to program after program for more than fifty years.

The contractor is lucky to break even, and program termination drives experienced personnel away from the defense industry. Meanwhile, the military officers who served as requirements generators return to their field assignments where they prepare their troops to go into combat with 40-year-old equipment.