

**REPORT OF THE**  
**Defense Science Board**  
**Task Force**  
**ON**  
**Acquisition Reform Phase IV**



**July 1999**

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**  
**FOR ACQUISITION and TECHNOLOGY**  
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OFFICE OF THE SECRETARY OF DEFENSE

3140 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3140

DEFENSE SCIENCE  
BOARD

MEMORANDUM FOR THE UNDER SECRETARY OF DEFENSE (ACQUISITION  
AND TECHNOLOGY)

SUBJECT: Final Report of the Defense Science Board (DSB) Task Force on  
Defense Acquisition Reform, Phase IV

I am pleased to forward the Final Report of the Defense Science Board (DSB) Task Force on Defense Acquisition Reform, Phase IV. The report completes the Task Force activity on Defense Acquisition Reform.

The primary task assigned to the Task Force on Defense Acquisition Reform was to develop a set of metrics to measure the accomplishments of acquisition reform for the Department of Defense. The proposed metrics not only address the fundamental objectives of adequate security with minimum resources, they enable the Department to ensure that the progress remains connected to our Military Strategy and maintains the public trust in the process.

I concur with the proposed set of metrics and recommend that you review the report, and forward the study to the SECDEF.

A handwritten signature in black ink, appearing to read "C. Fields", is positioned above the typed name.

Dr. Craig I. Fields  
Chairman,  
Defense Science Board



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DEFENSE SCIENCE  
BOARD

MEMORANDUM FOR THE UNDER SECRETARY OF DEFENSE (ACQUISITION  
AND TECHNOLOGY)

SUBJECT: Letter Report of the Defense Science Board (DSB) Task Force on Defense  
Acquisition Reform. Phase IV

THOUGH: Chairman, Defense Science Board. *U*

Part of the task assigned to our Task Force on Acquisition Reform, Phase IV was the generation of a set of metrics to help assess departmental progress towards efficient and effective acquisition of superior forces. Attached is a set that we would recommend be applied to the Department's activities.

Full utilization of this set of measures as one of the primary bases for management of the Department will require a substantial adjustment of managerial attention and behavior. We believe that is appropriate. This outcome-oriented set of measures is needed to force a focus on capability efficiently acquired and provide the tools for eliminating ineffective expenditures in favor of those yielding high value in mission terms.

The metrics sets have been structured in four tiers.

- Tier I addresses the fundamental objective of adequate security with minimum resources;
- Tier II addresses "doing the right things";
- Tier III addresses "doing things right"; and
- Tier IV addresses public trust in the process.

We recognize that Tier III is the most natural set for the Department to assimilate because it is already assessing itself along these lines. However, we believe it is very important to formally address "doing the right things" in a way that is tied to formal mission assignments and coupled to the basic objectives outlined for the Department in Tier I.

The Tier IV metrics were generated because the Task Force believes that, as the Government continues to be successful in providing for a high state of security for its citizens, it will need increasing outreach efforts to tie the objectives of the Department to the citizenry.

A handwritten signature in cursive script that reads "Bob Hermann".

Robert J. Hermann  
Chair

Attachment:  
Metrics paper  
Task Force Terms Of Reference, May 25, 1998  
Task Force Membership

## ***METRICS BREAKOUT***

This paper is an attempt to provide a methodology for measuring the accomplishments of acquisition reform initiatives by the Department of Defense. It presumes that "accomplishment" must be explainable at the highest level in terms of the primary objectives of the Defense Department. It assumes that the set of acquisition reforms selected is connected to the primary objectives as elements of a strategy. Measures of success against these elements are measurable but only indirectly linked to the primary objectives by this strategy. For example, the lead times for system acquisition can be measured but that will say nothing about the value of those systems to meet the Department's primary objectives. At the same time, however, there is a presumption of a value link between an identified need and its prompt acquisition at an affordable price to the nation. Finally, this thesis recognizes that the acquisition reform strategy is tiered with important subordinate elements. For example, there are a host of things that must be put in place to achieve the acquisition reform objective - "Adopt Commercial Practices."

If, as for any other enterprise, the Department is to measure its progress towards a set of goals, it must have goals and a management information system that will yield insight about the steps taken toward those goals. To achieve that, one must know what information will be useful. The measurement breakdown outlined here is to display a plausible system. It is recognized that many others might be as good or that adjustments to this approach may be appropriate.

The concept of a baseline is essential for this approach to metrics. The first step in all of the measures should be the establishment of a baseline that characterizes today's situation and will serve as a reference point for future comparisons.

***Level I: Establish a Superior Military Capability Matched to the Security Objectives of the Nation. Acquire Superior Forces at a Reasonable Cost.***

In the end, what the nation needs and wants is the right set of forces at a reasonable cost.

At the same time, Defense expenditures meet other needs. Defense spending is distributed around the country and is, at any point in time, an important part of the economy and well being of many communities. Defense resources, policies and activities are an important part of the process of achieving social objectives such as equal treatment of individuals of diverse race, religion and ethnic background. Defense activities are a part of the Federal Government's support of small businesses. Historically, Defense activities have been a major part of the creation of new technological and industrial capabilities for the country.

Nevertheless, we judge that, given the choice, the political processes of the nation would choose to spend less for an equivalent level of security. We also believe that it is important to begin the process of metrics at this level of aggregation so that the discipline of holding to outcome-oriented assessments throughout the Department can be traced back to the most fundamental objectives of the enterprise.

The measures advocated for the whole enterprise are:

***Measure I a) For Superior Forces: The political acceptance of a Future Defense Strategy that guides resource allocation and other management decisions.***

At the pinnacle of this process, there must be some prime set of objectives that define the purpose of the Department. Adequate security is an inherently political assessment and can only be defined dynamically and qualitatively. We propose, therefore, that the first criteria against which the Department should be measured is whether or not it has a politically acceptable strategy for the future defense of the United States and its interests. It is against this strategy that all subordinate decisions must be measured.

There is currently a National Security Strategy, a National Military Strategy and Joint Vision 2010. All are important and useful documents but they lack the tangible resource constraints necessary to serve as a business guide to behavior for the Department. The first introduction of resource constraints into the process currently comes with the issuance of Defense Guidance (DG) by the Secretary of Defense. This document is primarily a guide to program and budget formation and does not serve well as a political strategy. We believe that this document should be given a front-end that describes how the Department intends to evolve over the



planning period, and be updated yearly. The Quadrennial Defense Review (QDR) could be a major input to this DG section.

***Measure I b)      For Superior Forces: Measure against threat scenarios with simulations, war games, and actual conflict results.***

We also believe that the Department's forces should demonstrate to themselves, our adversaries, our friends and the public that they are capable, efficient and superior against currently known and postulated future threats. These more tangible and realistic measures are needed to test as well as possible, short of conflict, the capability of the forces to meet the National Strategy.

We do not put forth specific scenarios, simulations and war games because these must be manifold, diverse and at many echelons. What we do propose is that these outcome-oriented measures become the norm for the Department at all levels. In simple terms, when asked whether the Department's forces are capable of supporting the strategy, the leadership should be able to say "We have trained, practiced, modeled, simulated, and exercised against the most representative scenarios and criteria for success we could imagine and demonstrated that we could dominate and prevail (or discovered that we could not). Further, these have all been done in an open environment observed by independent peers."

**The key is open, cross-service, joint modeling and simulation wargames, etc., observed by independent peers.**

***Measure I c)      For Reasonable Cost: Measure Annual Cost to sustain US Military Objectives; that is, track the past, present and projected DOD budget.***

The ultimate measure of efficiency is to do enough to be superior and sustain the superiority with reasonable expense. The simple aggregated total expense of the Department over 7-10 years is a reasonable surrogate for the cost of achieving the National Strategy. This is surely not difficult to measure but we note it here because it is a fundamental parameter of efficiency.

## ***Level II: Choosing the “right” things to acquire.***

Having money to spend is one thing and spending the money on the right thing is another. The issue of determining the right things to acquire for the future is probably the decision process with highest leverage of all. What we buy must be tied to the strategic objectives for the future, the threats and scenarios of the future, the legacy of the things we currently have and many other constraints.

We believe that the best basis for this decision-making process includes a continuous competition of ideas and methods combined with a constructive tension between those assigned the responsibility for the mission and those assigned to organize, train equip and support the mission. Currently, there is an imbalance in favor of the supplying agencies and services. They have the money, the historical position of power, the majority of people with advanced skills and are present at the seat of power. Their advocacy, however, is not disciplined by a rigorous adherence to a strategy and they do not have an organic mission to serve as a guide. As noted before, the National Security Strategy, the National Military Strategy and Joint Vision 2010 are powerful and useful documents. However, none of these contains sufficient resource guidance to serve as the basis for a Departmental Business Strategy, that is, a strategy that forces attention to resources.

We believe that the development of the Future Defense Strategy, as described in Level I, will increase resource-constrained discipline in the process. However, it is at a highly macro level and not adequate to define thousands of important decisions. Today, these decisions are formed in an environment dominated by the supplying services and agencies against a supervisory Office of the Secretary of Defense. This bottoms-up, top-down construct has some strengths and many weaknesses. Without taking away from the Title 10 responsibilities of the Armed Services or the adjudicating role of OSD and the JCS, we believe that changes must be made to increase the advocacy and influence of the Mission CINC's to provide for a better balance between the supplying agencies and the using, customer organizations.

We, therefore, propose to increase the Mission CINC's role in resource allocation by:

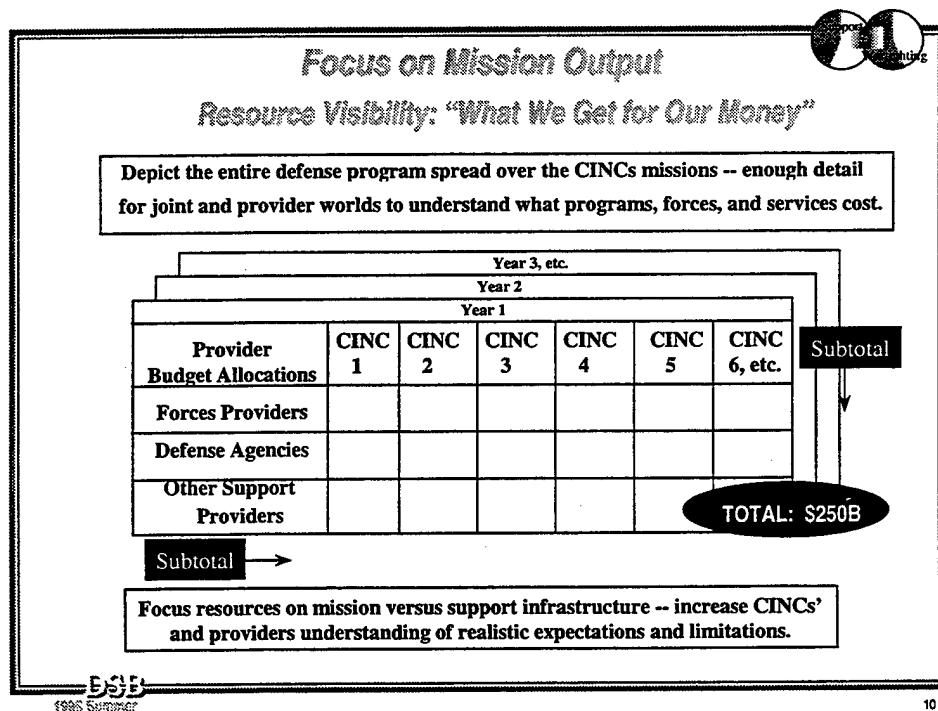
- Creating a “mission pull” process that uses the resource-constrained mission needs of the using CINC's and the Chairman, Joint Chiefs of Staff as the basis for service and agency program objective memoranda.
- Providing visibility of the resources applied to user mission purposes by forcing all DOD resources to be accepted by both a user and a supplier.

- Increasing the Mission CINC's and CJCS capabilities to participate in a user-supplier dialogue on an equal basis with the supplying military departments and agencies.

**Measure II a) A Resource Balance Matrix**

This measure is a user-supplier Resource Balance Matrix that tracks programs and resources to using command mission purposes. All DOD programs and resources of the current and five-year program period should be arrayed into a matrix with Mission CINC's along one dimension and the supplying military departments and agencies along the other. Each dollar and program in the approximately \$1.5 trillion, six-year program must be agreed upon by both a user and a supplier.

A representative example of a Resource Balance Matrix is shown in Figure 1.



**Figure 1**

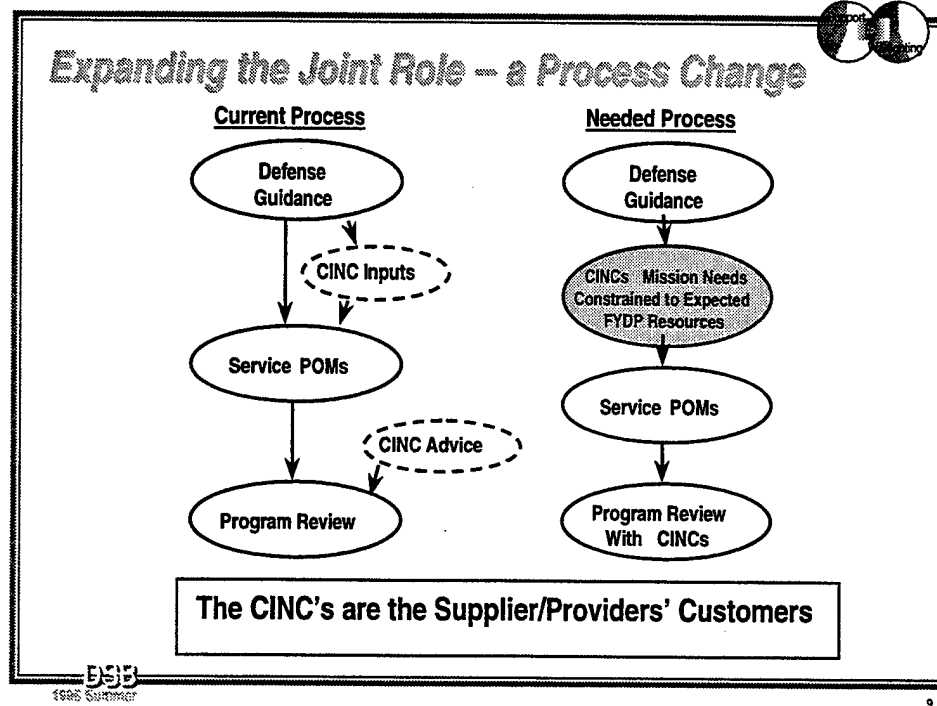
The first step in this process is to establish a baseline. OSD must provide the guidance, rules of accounting and the first set of entries in the matrix. This will clarify such matters as how to allocate dual use forces, manpower costs, logistics costs, transportation costs, intelligence/surveillance costs, healthcare costs, and other costs not organic to the Mission CINC's.

The second step is the formation, by each Theater CINC, of a proposed set of balanced programs and resources for its future mission needs within the resource constraints of the baseline. The CJCS and the Joint Staff must play an important

integration role to harmonize the proposals of the CINCs and the plans of the Armed Services and Defense Agencies.

Figure 2 displays how this process differs from current practice. Both Figure 1 and Figure 2 are taken directly from the DSB Summer Study Report of 1996 on Optimizing Operations and Support Costs.

**Figure 2**



### ***Level III: Acquire things of value with speed, efficiency, effectiveness and reduced total ownership costs.***

With a strategy and a balanced process for deciding what to acquire, it is important that the Department be able to acquire those things with speed, efficiency and effectiveness including attention to total ownership costs. To achieve this, the Department must adopt buying practices that will not discriminate against the participation of commercial firms in national security. This will broaden the industrial base upon which the Department depends and permit access by the DOD to those technologies, products, processes, facilities and firms that are preeminent in the commercial market place.

We advocate a limited set of measures to determine if these objectives are being met. They are currently used in the Department but require some clarification of definition and baseline development to serve as a formal set of management measures.

#### ***Measure III a) For Speed:***

- III a.1 Time from program initiation (Generally Milestone I) to IOC.
- III a.2 Cycle time for system upgrades and modifications.

#### ***Measure III b) For Effectiveness and Efficiency:***

- III b.1 Percent of programs and contracts using performance specs without detailed statements of work or detailed specifications.
- III b.2 Percent of contracts using price-based acquisition.
- III b.3 Amount of military and commercial production integration that is occurring by sector (e.g., engines, space, air transports, electronics, software).

#### ***Measure III c) For Reduced Ownership Costs:***

- III c.1 Percent of programs (new systems and modifications) that make total ownership cost or life cycle cost a requirement.
- IIIc.2 Percent of systems that effectively track total ownership costs.
- IIIc.3 Satisfactory benchmarks to best in class for those functions appropriate for external comparisons.

## ***Level IV: Maintain the Public Trust.***

It is admittedly difficult to assess whether the Department has “the trust of the public” at any particular time but this same difficult problem occurs regularly in the private sector and some best practices have been developed there. We believe it is essential that the Department be seen as making a serious and competent effort to assess whether it has the trust of its public constituency. We advocate a particular set of measures that were selected because, we believe that, if they are satisfied, the Department should have reasonable confidence that it has the public trust.

We believe the American public depends heavily on the existence of competition and choice as the most fundamental test of trust. We believe that they will accept dependence on competitive market forces to help assure fairness. We also believe that some objective, external opinion survey process will be accepted for this function as they are for other aspects of American life.

### ***Measure IV a) Broaden the Use of Competition.***

IV a.1 Track the dollar value of investment programs that are continuously challenged by competition between potential alternative courses of action (strategic competition) for the DOD.

IV a.2 Track the dollar value of fielded systems that are challenged by strategic mission competition; and, *fielded systems that are challenged by* competition against a common performance specification.

### ***Measure IV b) Establish the value of things to be acquired through user involvement.***

IV b.1 Determine the existence and use of a process for user assessment of relative military value (in mission performance and dollars) of unlike systems. The user-supplier matrix outlined in Level II partially fulfills this measure.

### ***Measure IV c) Depend on competitive market forces (rather than regulation) for higher performance and lower costs.***

IV c.1 Track the dollar value of goods and services acquired from firms that do not have any DOD peculiar Compliance processes.

### ***Measure IV d) Assess public perception of the acquisition process.***

IV d.1 Formal, independent, periodic surveys of public awareness and confidence in the DOD acquisition process.

# Terms of Reference



ACQUISITION AND  
TECHNOLOGY

## THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3010

11 23 1993

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Terms of Reference--Defense Science Board Task  
Force on Defense Acquisition Reform - Phase IV

Over the past four years, the Defense Science Board (DSB) has provided recommendations on useful techniques and actions for reforming the acquisition processes of the Department of Defense. Internal teams and study efforts have also provided recommendations. Progress is clearly being made towards reform of the process but much is yet to be done and we need better metrics for measuring our progress. It would be useful to have an external perspective on the current status of reform implementation and appropriate set of metrics.


I request that you establish a DSB Task Force for Defense Acquisition Reform - Phase IV to review the status of current implementation and recommend further actions for the Department to accelerate progress. You should utilize an encompassing definition of acquisition reform, including R & D, logistics, the requirements and budget process, and civil/military industrial integration. A particular focus of this effort should be the development and implementation of metrics that could be used by the DoD to periodically measure success in the effectiveness of the overall acquisition reform efforts.

In addition, the Task Force should also put a special focus on reviewing the organization and functions of DoD acquisition activities with a view towards streamlining those organizations, the acquisition workforce, and the Department's infrastructure.

This Task Force should become a permanent sub-panel of the DSB for the next few years and provide reports semi-annually. The Under Secretary of Defense (Acquisition and Technology) will sponsor this Task Force. Dr. Robert Hermann will serve as Chairman of the Task Force. The Executive Secretary will be Mr. Ric Sylvester. LTC T. Van Horn, USA, will serve as the DSB Secretariat Representative.



The Task Force will be operated in accordance with the provisions of P.L. 92-463, the "Federal Advisory Committee Act," and DoD Directive 5105.4, the "DoD Federal Advisory Committee Management Program." It is not anticipated that this Task Force will need to go into any "particular matters" within the meaning of Section 208 of Title 18, U.S. Code, nor will it cause any member to be placed in the position of acting as a procurement official.



J.S. Gansler



## ***Task Force Membership***

### ***DSB TASK FORCE -- DEFENSE ACQUISITION REFORM PHASE IV***

#### **Members**

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