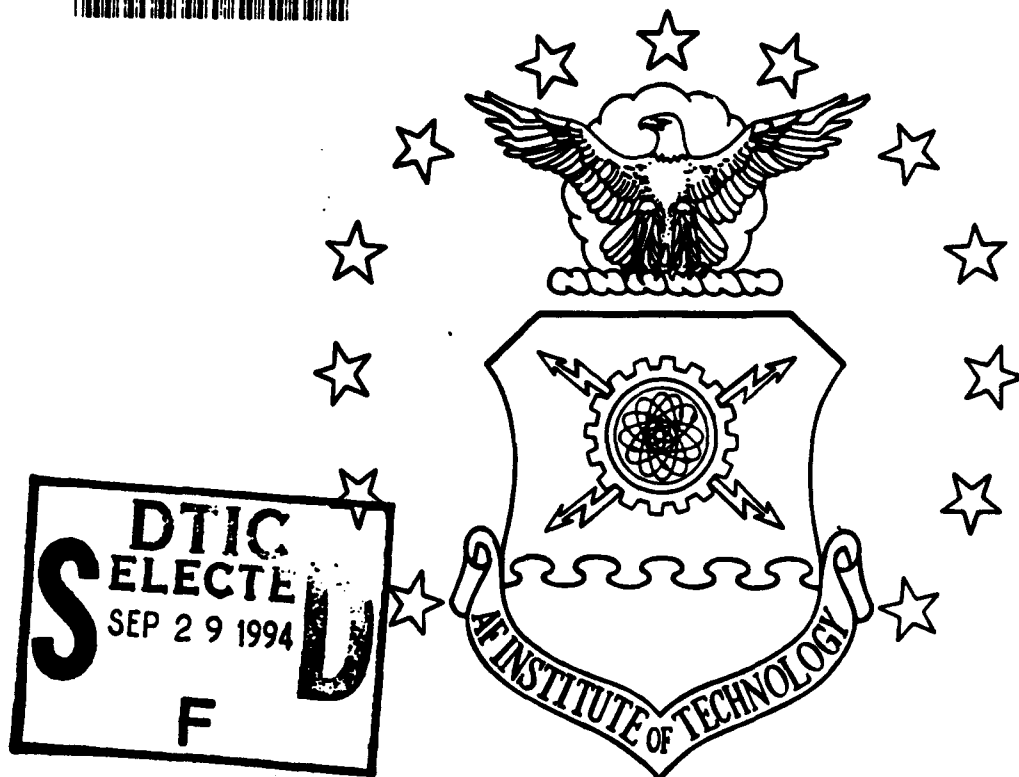


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THE PROCUREMENT OF NON DEVELOPMENTAL ITEMS:
PROS AND CONS

THESIS

Giorgio Scappaticci, Lt. Col., Italian Air Force

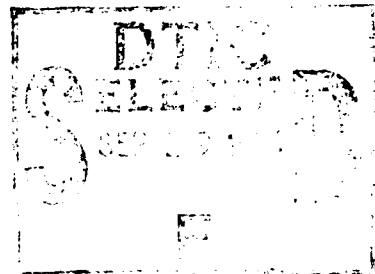
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THE PROCUREMENT OF NONDEVELOPMENTAL ITEMS: PROS AND CONS

THESIS

Presented to the Faculty of the School of Logistics and Acquisition Management
of the Air Force Institute of Technology
Air Education and Training Command
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistic Management

Giorgio Scappaticci,
Lieutenant Colonel, Italian Air Force
Degree in Aeronautical Engineering

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Giorgio Scappaticci

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Abstract

The acquisition of a new weapon system and its sophisticated components has become an extremely critical issue for every country, because costs associated with the development of the system have grown significantly.

In order to reduce those costs and maintain an efficient system of defense procurement the Congress recommended a wider use of Nondevelopmental Items (NDI) into weapon systems and the application of commercial practices when buying NDI.

This research examines the acquisition of commercial items as they exist under current statute and regulation, and how they will be handled in the future. The research involved interviews with high-level DOD officials and review of existing case studies concerning commercial acquisition of defense related items, current statutory and regulatory acquisition procedures, and proposed legislation.

The information gathered from all sources examined indicates that acquisition reform in the nature of NDI is necessary. The results of this research clearly show that, as a minimum, time and money will be saved by adopting these new procedures.

THE PROCUREMENT OF NONDEVELOPMENTAL ITEMS: PROS AND CONS

I. Introduction

1. Background

In the last decade great strides in technology determined a higher level of complexity in systems and products, and increased logistic support requirements. In particular, the acquisition of a new weapon system and its sophisticated components has become an extremely critical issue for every country, because costs associated with the development of the system have grown significantly.

Hundreds of individual laws create the foundation of the defense acquisition system. Significant and trivial, new and old, these laws emanate from the fundamental Constitutional responsibility of the Congress

To raise and support Armies (and) ... To provide and maintain the Navy [US Constitution].

Expanded many times by regulations, supplements to regulations, directions, directives, and established practice, these laws have been interpreted and applied by all contracting officers and the General Accounting Office. They govern the way tens of thousands of government workers buy, and hundreds of thousands of Americans manufacture, perform, and sell items and services required by one of the most modern fighting forces in the world.

Maintaining an efficient system of defense procurement has been a fundamental public policy since the Department of Defense (DOD) was created in 1947. In the decades that followed several major commissions separately examined the problem of defense management. The work performed by these commissions resulted in some

significant improvements in the applicable legislation. For example the recommendations of the 1972 Commission on Government Procurement "led to the establishment of the Office of Federal Procurement Policy and the Development of the Federal Acquisition Regulation" [US Congressional Records, 1972].

In 1986, a new wave of change resulted in the passage of the Goldwater-Nichols Act. This Act resolved some issues of the defense structure, as well as created the President's Blue Ribbon Commission on Defense Management headed by David Packard. The Packard Commission provided a comprehensive analysis of the major problem areas affecting defense management, and it also made specific recommendations to the Federal laws governing procurement:

...the legal regime for defense acquisition is today impossibly cumbersome. ... At operating levels within DOD, it is now virtually impossible to assimilate new legislative or regulatory refinements promptly or effectively. For these reasons, we recommend that Congress work with the Administration to recodify Federal laws governing procurement into a single, consistent, and greatly simplified procurement statute. [Packard, 1986: 55]

Although the Packard Commission's recommendations attracted public attention, they nevertheless failed to prompt the required legislative changes that many expected. A 1988 congressional report noted that the Packard Report was the latest of six major studies which addressed continuing problem areas in defense procurement.

In June 1989, Secretary of Defense Dick Cheney set forth in his Defense Management Review (DMR) an ambitious plan, not only to implement the Packard Commission's recommendations but to provide a framework for continuing improvements in Pentagon acquisition practices. One of the Commission's findings, endorsed by the DMR, was the need for broad changes in the acquisition statutes:

With the enactment of additional major legislation since 1986, when the Packard Commission finished its work, there is increased urgency to addressing the body of procurement law in its totality -- in order to simplify, and clarify the

framework under which DOD and other departments operate, and more broadly to make the acquisition process fundamentally more effective. [DOD, 1989: 26]

The DMR provided a benchmark for a number of important acquisition initiatives, of which the most important was the identification of 400 acquisition directives which were recommended for cancellation or consolidation.

This executive-legislative branch partnership was implicitly recognized by the Senate in 1990 in approving the legislation which authorized the formation of an "Advisory Panel on Streamlining and Codification of the Acquisition Laws:

The Packard Commission and Secretary Cheney's Defense Management Review represents the most recent efforts to promote efficiency in Government procurement practices. The purpose of the advisory Panel will not be to plow the same ground as previous studies; rather, it will be to take the general principles set forth in these studies and prepare a pragmatic, workable set of recommended changes to the acquisition laws. [US Congressional Records, 1990: 819]

With the passage of Section 800 of the National Defense Authorization Act for FY 91, Public Law 101-510, Congress directed the official responsible for administering acquisition laws and regulations --the Under Secretary of Defense for Acquisition-- to appoint an advisory panel of government and civilian experts. Under the leadership of the Commandant of the Defense System Management College (DSMC), the panel was to review all laws affecting DOD procurement, "with a view toward streamlining the defense acquisition process," and to issue a report for transmission by the Secretary of Defense to the Congress in January 1993.

After selecting and reviewing all the applicable statutes, the Acquisition Law Advisory Panel issued their report, "Streamlining Defense Acquisition Law", on January 12, 1993. The Panel's review produced specific recommendations to retain, amend, or repeal individual statutes. In a number of other instances, the Panel recommended the consolidation of several statutes or even the creation of new laws.

The report is a practical plan of action for moving from present law to an understandable code containing specific recommendations: to eliminate any law

unnecessary for the establishment of buyer and seller relationships in procurement; to ensure the continuing financial and ethical integrity of defense procurement programs; and to protect the best interest of DOD. Finally, the Panel was asked to prepare a proposed code of relevant acquisition laws. [DOD, Introduction, 1993b: 1-2]

In approaching this seemingly insurmountable task, the Panel developed goals to guide their journey through the maze of over the 900 procurement laws. After the first screening they reduced the number of laws for review to 600. Laws not necessary for the establishment of normal buyer/seller relationship were recommended for repeal, while laws necessary to maintain the continuing financial and ethical integrity of defense procurement programs and to protect the best interests of the DOD were recommended for retention. The report makes for interesting as well as educational reading. Divided into eight separate chapters, the report covers the following areas: Contract Formation; Contract Administration; Service Specific and Major Statutes; Socioeconomic Laws, Small Business, and Simplified Acquisition Threshold; Intellectual Property; Standards of Conduct; Defense Trade and Cooperation; and Commercial Items.

Although the complete report offers something of interest for everyone involved in federal procurement, the recommendations that we will primarily discuss in this report are those which offer the largest benefits for the DOD are those concerning the Simplified Acquisition Threshold and Commercial Items.

The Panel's recommendations to increase the threshold from \$ 25,000 to \$ 100,000 for simplified acquisition procedures, and an expanded use of commercial item procurement emerge as the panel's objectives to "strike a balance between creating an efficient procurement process and implementing socioeconomic policies; and facilitating access to commercial technologies and purchase of commercial or modified commercial products and services at or based on commercial market prices" [DOD, 1993a: 3]. These recommendations, if approved by Congress, will streamline

statutes, improve access to commercial technologies, and simplify the acquisition process. Significant savings in lead time and acquisition costs are expected upon implementation.

2. Key Terms and Definitions

Non Developmental Items(NDI): generic term covering materiel available from a wide variety of sources with little or no development effort required by the government. As described in Title 10 US Code, Section 2325, the term NDI includes items:

- Available in commercial marketplace.
- Already developed and in use by other US military services or government agencies or by a foreign government with which the United States has a mutual defense cooperation agreement.
- Already being produced, but not yet available in the commercial marketplace.

Commercial Item (current definition as per the Federal Acquisition Regulations): supplies and services regularly used for other than government purposes and sold or traded to the general public in the course of normal business operations. To be considered a commercial item, the following must also apply:

- Items must be "sold in substantial quantities" to the general public in numbers sufficient to constitute a real commercial market. Nominal quantities do not meet this requirement. For services to be sold in substantial quantities they must be customarily provided by the offeror, using personnel regularly employed and equipment regularly maintained solely or principally to provide the service.

- The "general public" means a significant number of buyers other than the government or affiliates of the offeror. The item involved must not be for government end use.
- Another test for commercial item can be price based on established catalog or market price. In order to qualify, the terms of the proposed purchase, such as quantity and delivery requirements, should be sufficiently similar to those of the commercial sales that the catalog or market price will be fair and reasonable. The price must be recorded in a form regularly maintained by the manufacturer or vendor; it must be published and state current or last price to a significant number of buyers constituting the general public. The established market price must be the current price established in the course of ordinary and usual trade between buyers and sellers that can be substantiated [FAR 15.804-3].

Commercial Items or Commercial Off-the-Shelf (COTS) Items (proposed):

generically defined as a subset of NDI, it has been clearly defined by the 800 Panel [DOD, Executive Summary 1993b: 14] as:

- Property, other than real property, which (i) is sold or licensed to the general public for other than government purpose; (ii) has not been sold or licensed to the general public, but is developed or is being developed primarily for use for other than government purposes; or (iii) is comprised of a combination of commercial items of the type customarily combined and sold in combination to the general public.
- An item which may be considered to meet the above criteria even if it is produced in response to government drawings or specifications, provided that the item is purchased from a company or business unit which ordinarily uses

customer drawings or specifications to produce similar items for the general public using the same work force, plant or equipment.

The term Commercial Item also includes:

- Services used to support items such as installation, maintenance, repair and training services, whether such services are procured with commercial item, provided that such services are or will be offered contemporaneously to the general public under similar terms and conditions.
- Modified items, if modifications required to meet government requirements (i) are of the type customarily provided in the commercial marketplace, or (ii) would not significantly alter the inherent non-governmental function or purpose of the item in order to meet the requirements or specifications of the procuring agency.

Barriers: those acquisition laws, regulations, requirements, and practices that, by their presence, prevent, dissuade, or limit manufacturers from doing business with government agencies.

3. General Issue

In the attempt to lower acquisition costs the DOD must find ways to benefit from savings which can accrue through the use of commercial practices. This is especially true in today's environment where the total defense budget has fallen by 30 % between 1985 and 1993, with a forecast of further reduction of 14 % by 1998 [Defense System Management College, 1993: 4b]. The Panel's recommendations clearly establish a priority for the use of commercial or other non-developmental items by exempting their procurements from statutes which have acted as barriers to military-commercial market integration.

Section 2325 in Title 10 US Code actually requires DOD to develop its acquisition requirements to ensure the maximum use of commercial and NDI. Since those items are required to be used "to the maximum extent practicable," it is obviously essential that DOD's requirements not be drawn in such a way that only defense-unique products can meet them. The Panel has therefore suggested amendments to Section 2325, reported integrally in Appendix "B", which would require DOD to:

- Define its requirements so that commercial and other nondevelopmental items may be procured to fulfill those requirements; and
- Prior to acquiring a defense-unique item, to perform market research to determine whether commercial or NDI, or modified commercial or NDI, can be used in place of a defense-unique item.

By removing the requirements for government-unique standards, product specifications and processes, and special accounting methodology, DOD's purchasing system would become more compatible with that of the commercial marketplace. In addition, preference for the use of commercial standards and processes will be established, technical data rights for commercial items would be protected, and a broadened exemption from cost data would be provided [Sullivan, 1994: 9].

In the Report's chapter on Contract Formation, the panel stated that the minimum statutory time periods that offerors have to prepare bids or proposals after notice is published may be excessive if a commercial item is going to be procured. The panel therefore recommended that commercial items be exempted from these minimum time periods and that an appropriate period be developed by the administrator for federal procurement policy.

4. Problem Statement

The DOD procurement process is extremely complex. This has caused numerous problems for those within the DOD acquisition community and for those firms supplying material to the department. In contrast with more simplified commercial practices, government contracts for even inexpensive items are more complicated, voluminous, and difficult to award and administer. This in part has been responsible for the increased cost of supplies, the reluctance of firms to do business with DOD, and the high administrative costs associated with DOD acquisition [Cohen, 1987: 19].

The acquisition of commercial items, if the proposed definition is adopted, will significantly reduce the complexity of this aspect of the federal acquisition process. It is the purpose of this research to show how these proposed initiatives will improve the current acquisition process and will also contribute to significant monetary savings.

5. Investigative Questions

The investigative questions of the research are:

- (1) What is the content of the changes that will be implemented in the new acquisition law and how will these changes contribute to the streamlining of the overall acquisition process.
- (2) To what degree can commercial item procurements be applied to major systems acquisitions within DOD.
- (3) What are the problems associated with NDI/commercial item procurement implementation.
- (4) What are the advantages/disadvantages of a revised policy of a commercial procurement.
- (5) What are the present barriers to implement this policy.

6. Scope of The Research and Limitations

This research explores the current DOD policy on commercial item acquisition and the current initiatives proposed to assisting streamlining the federal acquisition processes through the use of a more liberal definition of commercial acquisition.

First, this research presents a review of the background and history of NDI acquisition within the DOD. Second, it addresses associated implementation impediments encountered by DOD in complying with the Congressional intent of 10 USC 2325. Third, this report identifies lessons learned by the Services: four major NDI procurement cases will be examined to understand the effects caused by those pilot experiments.

This research reviews acquisitions within military services only, and does not review acquisitions of other DOD Agencies, such as the Defense Logistic Agency, Defense Contract Audit Agency, and so on.

Fourth, an industry viewpoint is included to the extent that some US "world class" contractors participated on the Commercial Acquisition Streamlining Team (CAST) formed by the Department of the Air Force to develop an effective approach to implement acquisition reform.

7. Abbreviations

Abbreviations and acronyms may be found in the Glossary at Appendix "A."

II. Methodology

1. Introduction

The purpose of this chapter is to introduce the methodology that was used in conducting the study. This includes explanations of the process used in gathering information about the past and current situation of the procurement processes and the methods of data collection and data analysis.

2. Information On Procurement Processes.

The first strategy adopted in the research was to analyze the historical background of the acquisition processes. An attentive analysis has been performed of the documentation available in official archives such as the AFIT library, the Defense Technical Information Center (DTIC) and the Defense System Management College (DSMC) library. The archival research brought up several aspects of the current legislation which have been considered inadequate by the defense industry to compete in the competitive environment of today's market. The role played by bureaucracy and socio-economic protections have caused several defense suppliers to abandon the business, and the US to lose part of its competitiveness in industrial sectors always considered strategic for the developmental and economic growth of the country.

The bibliography also lists official acts and bills approved by Congress from 1986 onwards and reports of commissions from 1986 to date which have dealt with the streamlining of acquisition procedures --without any effective result. The research extended its analysis to the new proposals that have been put forward in 1993, which, it seems, have been seriously considered by the legislators. Those innovations are grouped into two main documents: the "Section 800 Panel Report", a global study

about the current situation on acquisition statutes; and the "Federal Acquisition Streamlining Act of 1993" still to be approved by Congress, which for the first time is offering the solution to the problems caused by the current statutes.

The second strategy of the research was to perform a series of personal interviews of senior managers and executives in the DOD community that are involved with defining the new procedures and methodologies to procure modern weapon systems following the new criteria completely. The 12 questions listed in Appendix "C" were used as a basis for formulating the interview questions. The main topic addressed relates to the role played by the present statutes which regulate the NDI procurement, such as the Federal Acquisition Regulation (FAR) 11.000, the DOD Federal Acquisition Regulation (DFAR) 211.70 and the DOD 5002, Part 6-L. Then the barriers to the commercial procurement such as the socio-economic laws, the buy American requirement, the property rights, the military specifications, and the DOD cost accounting standards, were evaluated. Finally, the role played by Congress in streamlining the acquisition procedures and the effective savings that fell out from the applications of the new procurement concepts in some pilot experiments, were discussed. The contents of interviews is discussed in Chapter 4.

The first manager that I interviewed was Lieutenant General Leo J. Pigaty, Deputy Commanding General, Army Materiel Command. His expertise in and knowledge of procurement matters are far beyond the needs of this thesis, and he is considered one of the promoters of acquisition reform within the US Army.

Some real cases of system acquisition performed in accordance with the new procedures, such as the acquisition of the New Training Helicopter for the Army, were shown by General Pigaty, who underlined the advantages of using the new discipline, both in terms of time and of money saving.

The second manager interviewed was Mr. Darold L. Griffin, SES, Principal Assistant Deputy for Research, Development, and Acquisition, Army Materiel Command. The discussion with Mr. Griffin clarified several aspects touched on by General Pigaty. The role of the contracting agencies was also discussed in detail. The role of suppliers in the old and new acquisition environment were explained, and long term contracting procedures were discussed. Mr. Griffin participated with his expertise in the panel that reviewed the 31,000 Military Specifications which constitute the technological background of every military procurement. After an in-depth review only 14,000 were considered for retention. The remaining 17,000 were recommended for deletion because they were obsolete or superseded by new ones. According to Mr. Griffin, the military specifications should be used only for procurement of those items considered Defense unique, while for those which have a corresponding civil application, the commercial specifications must be applied.

The third expert that I interviewed was Mr. Thomas J. Dolan, Jr., Acquisition Law Chair, Executive Institute, Defense System Management College (DSMC). Mr. Dolan participated at the works of the Section 800 Panel as one of the three Task Force Directors. His knowledge of the present statutes regulating the acquisition processes played an effective role in developing the suggestions that the Panel formulated for Congress. His opinions are analyzed later in Chapters 4 and 6 of this. The Mr. Dolan's interview was entirely recorded.

3. Data Collection

The research also involves the analysis of four cases of NDI procurement that were performed by the Services. The cases selected are considered probative examples of a commercial procurement and the data obtained can be usefully utilized to understand the implications of a commercial buy. The logistical implications are also evaluated to the extent that commercial items usually are not delivered to the civilian market with the full support required by the military.

The four cases selected were the acquisition of the C-20 H Gulfstream for the USAF, the procurement of the Beretta pistol for the Army, the acquisition of the C³I System for the US Navy, and the purchase of an Improved Mobile C³I for the US Army.

The four cases represent what is the current propensity within the services for buying NDI. The US Army took the lead in the process of restructuring the procurement regulations and their efforts are one step ahead of the practices currently applied in the acquisition processes. US Army initiatives to buy entire systems without military specifications, for examples, have been accepted with a certain degree of concern in the DOD environment. At the other end of the spectrum their job has been facilitated by a former Under Secretary of Defense for the Army, who personally supported the policy of buying commercially. The other two Services have been more reluctant to abandon their traditional way of buying for two main reasons:

- the high technological quality of products they need;
- the specific application of these products which must be designed to withstand severe environmental conditions, and to perform at the best of their capability for long periods of time. High reliability is one of the prerequisite for any Air Force and Navy important buy.

Nevertheless in today market there are products available that can fulfill the specific military requirements without having been specifically designed for them. The four cases examined report on this aspect of the commercial products.

The four cases examined have been selected within a set of cases available in the Defense Technical Information Center and could be considered pilot studies concerning new acquisition procedures.

4. Analysis of Data

All of the above documentation and case studies were used to identify the changes and revisions in the procurement policy. I initially reviewed the government studies conducted to identify what were their findings and recommendations regarding the acquisition policy. I also reviewed monographs, dissertations, and journal articles to determine any other findings used to support the use of commercial items in the procurement of DOD systems. The analysis of the literature provided a chronology of how NDI procurement evolved, and what specific changes occurred, and how the new policy would be better or worse than the current one.

The complete illustration of interviews is reported in Chapters 4. Brief summaries of the four cases are also provided, and advantages and disadvantages in terms of time and costs are discussed in Chapter 5.

Finally, the detailed analysis of data gathered is presented in Chapter 6, while the conclusions derived from the research is presented in Chapter 7 of this study.

III. Literature Search and Review

1. Overview

This literature review examines the complexity of the current DOD acquisition process, focusing attention in the area of acquisition of nondevelopmental items. It also investigates the attitude of many in the federal acquisition community, at all levels, toward streamlining procurement regulations and policies. Finally, this review outlines efforts spearheaded by a concerned industry in order to simplify the procurement procedures actually adopted by the government representatives.

2. Objective

The purpose of this review is to examine prior attempts at acquisition reform made by the DOD and their impact on the current legislation which is at present under evaluation by Congressional committee. More precisely, this study examines the history of commercial acquisition practices employed by the DOD; its laws, regulations, directives, and policies which have hindered the procurement of commercial items in the past.

3. Background

For more than 20 years it has been felt that DOD could benefit from a more broad application of commercial items in the defense acquisition process. For example, in 1972 the Commission on Government Procurement urged that commercial products replace government designed items to avoid the high costs associated with developing defense unique products. Toward the end of 1970s DOD again tried to simplify the acquisition of commercial products by eliminating government specifications and

contract clauses that did not reflect commercial practices through the implementation of the Acquisition and Distribution of Commercial Products programs. This action was blocked by Congress because it would have precluded small business, which sold its products primarily to DOD, from continuing to sell its products on the open market because they would not have been competitive. At the same time, various elements within DOD began assessing how commercial and foreign subsystems and components may be used in weapon systems [DOD, 1993b: 8-3].

In 1984 Congress enacted the Competition In Contracting Act (CICA) directing DOD to acquire commercial products or to promote the use of commercial products whenever practicable. CICA also provides a statutory basis for multiple award schedule contracting, which has become a primary method for government purchase of commercial products. Also in 1984, in the Defense Procurement Reform Act, Congress mandated that DOD use standard or commercial parts when developing or acquiring defense specific products whenever such use is technically acceptable and cost effective. Section 2323 of this law required the spare parts be purchased at a price no more than the lowest price allowed to commercial customers. This section did not prove to be necessary or cost effective and was repealed by the Defense Authorization Act of 1991 [DOD, 1993b: 8-3].

In 1986 the Packard Commission again emphasized that procuring commercial items within DOD would result in lower costs and shorter lead times in fielding new products and systems. It also emphasized greater use of components, systems, and services available "off-the-shelf." The report recognized a need for development of new or custom-made items only when it had been established that those readily available items were clearly inadequate to meet military requirements [Packard, 1986: 60].

No matter how DOD improves its organization or procedures, the defense

acquisition system is unlikely to manufacture products as cheaply as the commercial marketplace. A case in point is the integrated circuit.

This year, 1986, DOD will buy almost \$ 2 billion worth of microchips, most of them manufactured to military specifications. The unit cost of a military microchip typically is three to ten times that of its commercial counterpart. This a result of the extensive testing and documentation DOD requires and of smaller production runs... . Moreover, the process of procuring microchips made to military specifications involves substantial delay. As a consequence, military microchips typically lag a generation (three to five years) behind commercial microchips. [Packard, 1986: 60-62]

In the National Defense Authorization Act of 1987, Congress mandated DOD use nondevelopmental items where such items would meet DOD's needs. Non-developmental items were defined as any item of supply that is available in the commercial marketplace. It also required DOD to define its requirements so that they could be met through the use of nondevelopmental items and to undertake market research to determine whether nondevelopmental items are available or could be modified to meet agency needs prior to developing DOD unique product requirement. The purpose of this legislation was to break DOD's longstanding preference for using military specifications.

The Nondevelopmental Item Preference Act of 1987, required DOD to state requirements for supplies in terms of functions to be performed, performance required, and essential physical characteristics. This was a process of defining requirements so that NDI could be procured to fulfill them. The Act established a preference for NDI defense acquisition.

Numerous additional attempts were made between 1987 and 1993 to foster the use of commercial items and integrate commercial practices into the defense acquisition process. However, none of these attempts have been successful in getting DOD to purchase commercial items regularly or in large quantities.

Chapter 8 "Commercial Items" of the Report of the Acquisition Law Advisory Panel to the US Congress on Streamlining Defense Acquisition Laws, January 1993, also known as the Section 800 Panel, identifies the following reasons for the shortfall in commercial item purchase:

- Legislation has not created a uniform definition for commercial items. Instead, various, conflicting definitions have been implemented in regulation.
- Legislation has not created exemptions from socio-economic laws, trade restrictions, and Executive Orders and implementing regulations, or from procurement integrity, costing, audit, and other requirements, all of which require a commercial company to fundamentally alter the way it conducts business.
- Congress has consistently faulted DOD's practices and regulations for constricting the flow of commercial products, while often failing to recognize the effect that ever-increasing legislation has placed special burdens on companies solely because they contract with the Federal Government.

Recently, results of a study conducted by the Center for Strategic and International Studies carefully examined the DOD procurement environment, and found that an increasing number of companies are leaving the defense business [Silverberg, 1989: 24]. A survey of firms in selected industries, conducted by a faculty member of the Naval Postgraduate School, provides the following results:

On the 427 responding firms, ...213 firms either (i) had significant problems with defense procurement...,or (ii) did not want defense contracts. ...Almost 70 percent of the respondents identified burdensome paperwork as one of the leading causes of problems in dealing with the government. ...Explaining the situation, one respondent stated that a recent quote on the Government job required three weeks and 100 pages of paperwork, in contrast to a similar commercial job that required three hours and 10 pages of paperwork. [Lamm, 1988: 45-55]

This view was reiterated by the Semiconductor Industry Association's Government Procurement Committee (SIA/GPC) in their "White Paper on Government Procurement Issue", publicized in May 1993. They stated:

The SIA/GPC is encouraged by the work of the Section 800 Subpanel and urge the Congress to adopt the recommendations cited there. It is obvious that the panel understood the issues and listened to a broad spectrum of industry. ...Current acquisition regulations impede effective participation of commercial product contractors in the Government marketplace, particularly in technology-based products, design services, research and development, and manufacturing. We are in an age of partnering and strategic alliances, where customers and suppliers are involved in co-developing and designing products. ...We would like to see our Government benefit from the practices adopted by commercial marketplace to achieve price, cost, and technology objectives, particularly in commercially developed products. [SIA/GPC, 1993: 4, 5]

4. Simplification Efforts

Efforts are under way within the DOD to standardize procedures for buying non developmental items. The actual statute enunciated in Federal Acquisition Regulation (FAR) 11.000 and expanded for DOD by the Department of Defense Federal Acquisition Regulation Supplement (DFARS) 211.7000 and in DOD Instruction 5000.2 Part 6-L, has been severely criticized.

In February, 1989, the report "DOD Efforts relating to NDI" was issued by the General Accounting Office (GAO). Among other things, the report listed nine claimed impediments to the acquisition of NDI. Contract clause requirements, specifications, and regulations were cited as the primary causes of the problems. They included:

- inappropriate product descriptions and specifications;
- unnecessary and burdensome contract terms and conditions;
- inappropriate request for certified cost or pricing data;
- unnecessarily burdensome quality assurance requirements [Adams, 1992: 8].

Later in 1989, the Defense Management Report was issued. It recognized previous findings in the NDI arena and attempted to enhance the NDI acquisition. Two legislative proposals were then recommended:

First, the Commercial Product act of 1989 authorized procurement of NDI product under simplified competitive procedures. Second, a commercial Acquisition Pilot Program Act was established to demonstrate advantages by adopting a full range of commercial style buying practice. [Adams, 1992: 8]

These recommendations, once implemented, will contribute to the anticipated saving of \$ 70 billion by 1999, with more than \$ 15 billion a year in recurring savings thereafter [DOD, 1993b: viii].

Finally, the National Defense Authorization Act for 1990 (P.L. 101-189), enacted in November 1989, established the requirement for NDI training.

Since then, several publications have been released and training courses initiated during the early 1990s to assist acquisition personnel with the acquisition of NDI. Most notably, "the 'DOD 5000-series publications'; 'SD-2, Buying NDI'; and 'SD-5, Market Analysis for NDI' provide useful directions for the procurement of non-developmental items.

In somewhat of a departure from the past, the Section 800 Panel, provided detailed comments and recommendations in regard to the amendment and repeal of a number of acquisition statutes. Commissioned under Section 800 of FY 1991 National Defense Authorization Act (Public Law 101-510), the Section 800 Panel reviewed over 600 DOD related procurement laws in line with its congressional mandate. Chapter 8 of the Panel's Report is dedicated to the extensive reforms needed to enhance the acquisition of commercial items. Another important move towards the

streamlining of acquisition procedures was in June 1993, the appointment of a Deputy Under Secretary of Defense for Acquisition Reform to oversee the reform effort.

In July 1993, a report of the Defense Science Board (DSB), which established a task force to deal with acquisition reform, recommended:

- Adopting commercial practices to the maximum extent possible, while assuring the mixture of tools available in the DOD and the commercial marketplace to protect public trust.
- A closer linking of the systems requirements process to the operational plans and objectives of the Unified Commands as well as the cost constraints of the long-term budgetary process [DSB, 1993: 2].

Finally the Senate has taken a step in the right direction by introducing the "Federal Streamlining Acquisition Act of 1993 (S-1587)", as mentioned in Chapter 1. Title VIII of the proposed legislation (also known as "The Glenn Bill", from the name of one of its sponsors, Sen. Glenn from Ohio) is titled "Commercial Items" and addresses the section 800 Panel recommendations.

To complete the panorama of literature review, a study of the Department of the Air Force was issued in March 1994. The study titled "Report of The Commercial Acquisition Streamlining Team for Microelectronics" is an effective approach to implement acquisition reform within the Air Force. It was chartered to create a new approach through the developmental strategies for acquisition reform using best commercial practices, but focused on a specific industry sector --the microelectronics industry. The study was Performed by the Commercial Acquisition Streamlining Team (CAST), which included representatives from both the Air Force, Defense System Management College (DSMC) and a representative sample of Original Equipment Manufacturers (OEM) such as Motorola, Texas Instruments, Hewlett & Packard, Intel LSI Logic and other microelectronics manufacturers that could be

identified as “world class” contractors that truly know what are “best commercial practices” [CAST, 1994: 2].

To develop effective recommendations, the team needed an understanding, not only of specific changes, but of the issues and processes involved in best commercial practices. Industry participants provided the team with specific recommendations on changes to specifications, standards, contracting, logistic, and management. The recommendations fell into three categories: those that the Air Force can implement within a short period of time; those that require coordination and approval by other organizations such as Office of the Secretary of Defense (OSD) or Defense Logistic Agency (DLA); and those that require Congressional approval. The Team also felt that one reason for the lack of success on prior study recommendations was that so many of them were aimed at senior levels in DOD and were never really implemented within the organization. Conversely, the Team focused its recommendations on those people who make the acquisition system work --the program manager, the contracting officer, the requirements developers, and the many functional experts throughout the Air Force acquisition community (CAST, 1994: 3).

The following table summarizes the major efforts made by Government agencies to expedite procurement processes of NDI acquisitions.

Table

Summary of Government Efforts Related To NDI Acquisition

Date	Title
June 1986	President's Blue Ribbon Commission on Defense Management (Packard Commission)
February 1989	GAO: DOD Efforts relating to NDI
July 1989	Defense Management Report
November 1989	P.L. 101-189 (National Defense Authorization for FYs 1990 and 1991) Mandated NDI Training
October 1990	SD-2, Buying NDI, released
February 1991	DOD 5000 - series publications released
February 1992	SD - 5, Market Analysis for NDI, released
March 1993	Section 800 Panel Report: Streamlining Defense Acquisition Law
June 1993	Deputy Under Secretary for Acquisition Reform appointed
July 1993	Defense Science Board Report on defense acquisition reform
October 1993	Federal Acquisition Streamlining Act of 1993 (S 1587) introduced on Senate floor
March 1994	US Air Force Commercial Acquisition Streamlining Team Draft Report

[Source: Durkin, 1993: 9, 11]

IV - Interviews

1. Introduction

This chapter concerns interviews conducted with LTG Leo J. Pigaty, Deputy Commanding General, US Army Materiel Command (AMC); Mr. Darold L. Griffin, SES, Principal Assistant Deputy For Research, Development, and Acquisition, Army Materiel Command; and Mr. Thomas J. Dolan Jr., Acquisition Law Chair, Executive Institute, Defense Systems Management College. The interviewees were selected because of their extensive knowledge of procurement laws and processes within the DOD and for their active participation in streamlining the acquisition processes in buying NDI.

2. Interview with Lt. Gen. Leo J. Pigaty - Deputy Commanding General, Army Materiel Command.

Question: What changes do you feel would be necessary to current law or statutes to implement a new commercial policy? What do you feel will have to be changed to make this process work? Do you foresee a change to the concept of commercial procurement? What would envision as a timeline for implementing any change?

In light of the requirements that we put on defense contractors, such as multiple reports, detailed military specifications, and a very restrictive commercial procurement system, in what areas do you see AMC saving money if you go to revised commercial procurement? How much do you think can be saved? Do you have any studies to support this?

Answer: Commercial programs and also NDI have been around for some time. In answer to your question, what has to be changed, take into consideration that

- a. Resistance is a self imposed policy,
- b. Resistance is based on preconceived notions, and
- c. We, in the AMC, have all the regulations we need to implement a correct NDI procedure.

During Desert Storm /Desert Shield the soldier had the Global Position System (GPS), and because it was used and tested in battle we decided to buy it in large scale. If we had to follow the military specifications each GPS would have costed \$ 34,000, and this figure was considered excessive. After conducting a market survey we found a commercial GPS for \$ 1200 each (see Fig. 1). We bought it and fielded it immediately without any change in the item --for example, we accepted the plastic case instead of the metal case. The theory is that we have to break the mindset of following the military specifications and to buy commercial-off-the-shelf (COTS) items whenever is possible, and to get them issued right away.

The second mindset that we have to change is to allow commercial items as components of weapons systems because some items, such as electronic components, change every 6 months. By the time we get through the acquisition process the item will be out of date and it will cost more to produce the old one than the new one. All we need to specify in the procurement specifications are the form, fit, and function, and have suppliers provide the newer version. Another example of a recent commercial buy was the new helicopter for our basic training school at Ft. Rucker. The guidance was to use a commercial helicopter that could be used for the basic



Precision Lightweight Global Positioning System

- Cost of "Militarized" System = \$34K
 - Eliminated MILSPECS
 - NDI Acquisition
- Results
 - Cost of Commercial Item = \$1.2K
 - Item Weight Reduced 618%
 - Cost Per Item Reduced 96%
 - COTS Allowed for Immediate Fielding

Latitude	Longitude	Elevation
10	10	10
10	10	10
10	10	10
10	10	10

AMC/bcd

Figure 1

familiarization of new pilots. This program had interest at the highest levels of the Army, and approval to use military specification would have to come from a very high level. The program was set up as an off-the-shelf buy and each successive level of command had to ensure that military specifications were not applied unless absolutely necessary.

We advertised for a simple helicopter that would be used for student familiarization. We developed a 97-page request for proposal (RFP) that contained no military specifications but only Federal Aviation Administration (FAA) standards. Even the requirement for crash-worthy seats was satisfied with a commercial item in accordance with FAA specifications. The buying command tried to get a different paint color for the helicopter because the commercial item was white, not Olive Drab (OD), and was not CARC (Chemical Agent Resistant Compound) painted. Since the helicopter's typical mission is only for the student familiarization and is not going to leave Ft. Rucker, it was decided to purchase the helicopter in white. Even the tail number was issued by the FAA and not by the Army.

The overall cost of the New Training Helicopter (NTH) program, including support, was about \$ 130 million with an estimated savings of \$ 370 to 600 million (See Fig. 2 for further details).

Even on major weapon systems we are looking to strike out military specifications for commercial specifications. An other example of this new way of buying is "The Command and Control Vehicle" for the Army (see Fig. 3 and 4), where the commercial ISO 9000 Quality Standards were applied instead of Mil-Q-9858. AMC requested ISO 9000 in their contracts instead of Mil-Q because they are the industry standard, and costs are lower if you use

New Training Helicopter



Draft RFP

RFP Scrub
Industry RFP Comments
Face-to-Face Mtgs
Presolicitation Conf

Final RFP

Documentation : 40% Less
SOW: 64% Less
Special Prov: 50% Less
Clauses: 42% Less
Instructions : 32% Less

97 Page RFP
No MILSPECS
6 CDRLS
FAA STDS
Best Commercial Practices

Preproposal Conf

NDI Buy

Streamlining Works

AMCDDA

Figure 2



Command & Control Vehicle

Features:

Functional Disciplines Integrated Into Single System Engineering Plan
Integrated Functional Review
Performance Specification
ISO 9000 Quality Provisions
Contractor Controls Configuration at Product level
Allows Contractor Data Formats

Draft RFP

Industry RFP Comments
Functional Templating

SOW: 61% Less
CDRL: 63% Less
Reviews: 80% Less
MILSPECS: 57% Less
& STDS:

Final RFP

Templating Works

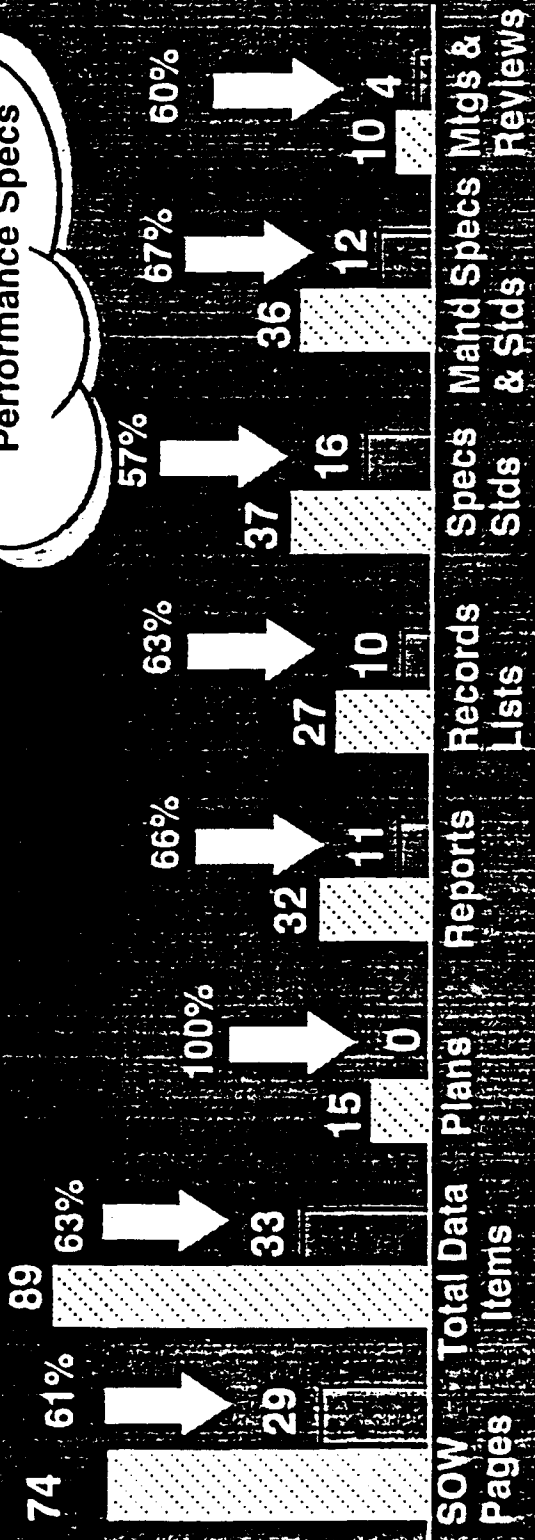
Figure 3



Command & Control Vehicle

\$36M
Development
RFP

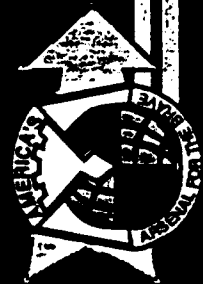
Teaming
Integration
Flexibility
Commercial Practices
Performance Specs



SOW Total Data Pages
Plans Reports Records Lists Specs Sids & Stds Mand Specs Mtgs & Reviews

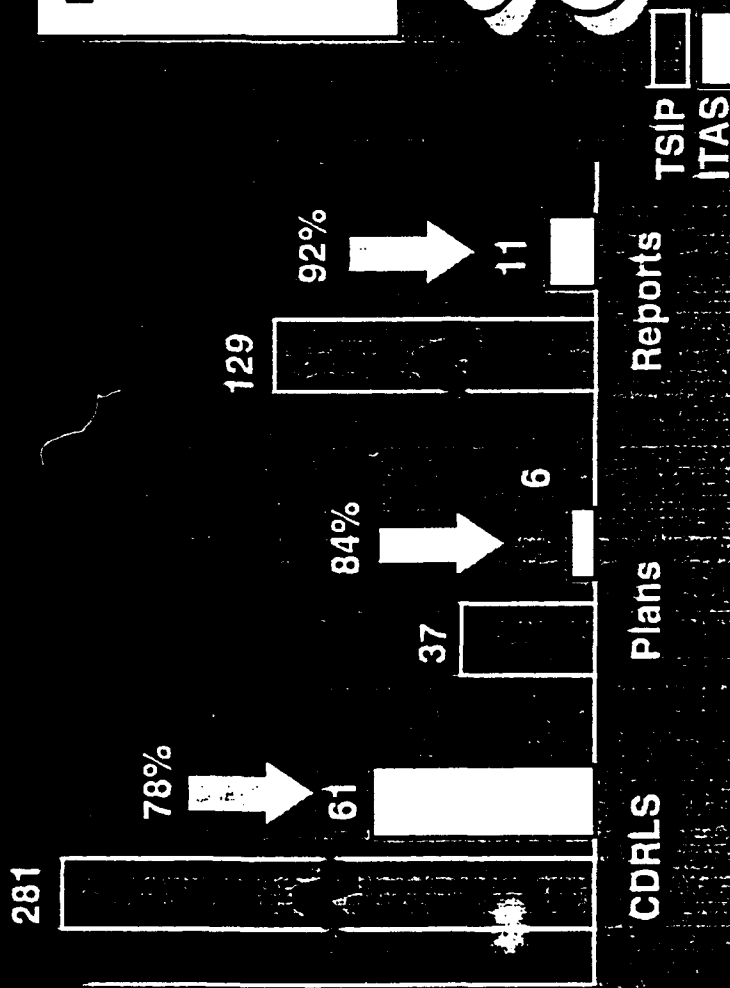
AMCbed

Figure 4



TSIP/ITAS

TOW Sight Improvement Program (TSIP) Improved Target Acquisition System (ITAS)



ITAS Characteristics:

- Lower Profile
- 2nd Gen FLIR
- Improved Range
- Integrated Day/Night Sight
- Built In Test
- Imbedded Training

• System Complexity UP

• RFP Complexity DOWN

AMCDDG

Figure 5

the industry standard rather than military specifications. Overall, 57% fewer military specifications were used, compared with similar programs.

The "TOW Sight Improvement Program/Improved Target Acquisition System (TSIP/ITAS)" displayed in Fig. 5 and the "Advanced Gunnery Training System" in Fig. 6 are two other examples of military buys supported by commercial products and documentation. AMC is involved in a three year program for acquisition streamlining to change the current concept of using military specifications and to do away with worthless plans. We want to give the contractor the requirements and let him define the technical content.

With regard to environmental matters, contractors are told that they have to comply with local, state and federal environmental regulations.

With respect to the timeline for implementing the changes, there is a Process Action Team (PAT) working on reducing the number of specifications and standards. This team will develop numerous recommendations for eliminating those documents considered superfluous or outdated. In this action AMC is leading the way.

Question: How do you feel Congress will react to the need to change? Do you see them changing anything in the near future? What will be the impact of the change on procurements during the transition period?

Answer: Congress as a whole would like to change the red tape but the individual congressional members could have different constituent with different agendas. For example, there is a proposal to use contractor test data and facilities for testing. There is no need to duplicate them in the government facilities even this could go against some local interest.



Advanced Gunnery Training System

Electronic RFP

Integrated Statement of Work

Electronic Delivery of Data Item Descriptions (DIDs)

Minimized Reporting Requirements

Integrated Program Management Structure

Requirements Document:

No MILSPECS

1 MILSTD

Supports
Commercial Products &
Documentation

AMC/bcg

Figure 6

AMC is not changing the laws, we are working within the latitude of our laws and regulations and we are still streamlining. A major portion of that is to train the work force on how to work smarter with these new concepts.

Question: The acquisition of foreign-made commercial items is one of the possibilities foreseen by the DOD Acquisition Law Advisory Panel. This practice will greatly reduce weapon system acquisition costs (e.g. JPATS, Beretta). What role do you see for foreign commercial item acquisition, if any?

Answer: This should be handled case by case. It is a political effort and it depends on lobbies. We do have data exchange with overseas countries such as the United Kingdom, France, and Germany. We need more common baselines to work from. But at the very same time we do have to be worried about our own industrial base. The effort has to be coordinated and balanced between the US intelligence community and State Department.

3. Interview with Mr. Griffin, Principal Assistant Deputy for Research, Development and Acquisition, Standards Executive and the NDI Advocate for Army Materiel Command.

The interview with Mr. Griffin was an unstructured speech that started from the questions reported in Appendix "C" and went on for about two hours. Mr. Griffin is considered an expert within DOD for streamlining the NDI procurement process. His expertise and his knowledge of the procurement process is based on years of active service within DOD.

In procuring NDI, he sees two basic problems: the first is how to specify what you want when you buy, and the second is the configuration management.

The Army Materiel Command approach is to write "performance specifications" that are considered generic once the government agrees on what the specifications

should do for it, then AMC and the user can agree on the specification. Once the item has been defined, and a supplier selected, the supplier is tested.

As far as the configuration control is concerned, the decision about who controls should be made in the early phase of the procurement and drawings will be required only if the Army (or more in general the DOD) is going to perform some maintenance. There will be cases in which the Army will use an item without knowing any detail about its configuration. Drawings could be kept as references, without any specific control of them.

The Army would like to develop a policy to establish long term contracts (three to five years or longer) with suppliers. In long term contracting, the selection of the supplier is very critical, and one of the first things Army contracting officers will look at is the contractor's past performance. This aspect has become so important that the Army is developing a very comprehensive "past-performance evaluation criteria" guide. During the source selection, there will one team which specializes in evaluating past performance. This will help the contracting officer in selecting suppliers.

The second aspect is currency and relevancy. This is very important because when problems are found they are brought to the contractors' attention immediately for resolution.

The next aspect is process control. If we are dealing with a good contractor, we should be able to expect him to repeat his process again and again. We want to have the capability to check the process rather than the product.

As far as the flexibility of the contracting officer is concerned, the AMC is ready to assume more responsibility at levels above the contracting officers. This will remove some of the burden from the contracting officer level. For example, they will be allowed to select among the different specifications available --military or commercial

specifications-- the ones that better fit the requirements of the new item being procured. The use of integrated procurement teams will be encouraged, so the contracting officer can rely on the expertise of specialists in various areas.

For the New Training Helicopter (NTH), AMC was going to have industry develop the specification for the Military. Mr. Steven Conner, Under Secretary of the Army for Acquisition, decided that this would be an NDI buy. AMC was given the authority to eliminate all the military specifications and to use performance specifications.

AMC went through all the applicable specifications, one page at the time, and took out all the military specifications that they felt unnecessary. In the end, they decided to define the NTH capabilities in the performance specifications and let the contractor build and certify the helicopter according to Federal Aviation Administration (FAA) standards.

The FAA required additional data to support the NTH certification for the particular use of the Army. For example, more accurate information was required to certify the landing gear. The landing gear will be stressed more in the military usage than in the normal operative life of a civilian customer because of more frequent take-offs and landings.

A big effort has been made within the DOD to revise 31,000 specifications and standards, and 8000 military handbooks and commercial specifications. The purpose is to get rid of those considered obsolete or try to find similar commercial specifications that could replace part of them. This would also help to expand the industrial base by giving to more suppliers the chance to enter into the market.

In the short run, there are three things to be accomplished:

- a. Replace military specifications with performance specifications
- b. Use a larger number of suppliers with commercial specifications. The use of military specifications should be justified on a case by case basis.

c. In every contract negotiated, insert a clause stating that "if you have a better way of doing this, submit it and we will evaluate it".

As a result of the investigation, 18-20 % of the existing military specifications were found obsolete and were recommended for removal, and 10 % were used infrequently and therefore were not authorized for new work. It was decided to work together with the other National Standard bodies, in order to include military requirements into existing specifications which included our requirements. After the scrub, only an estimated 17,000 military unique specifications remained.

A policy letter detailing these findings was submitted for approval of the Under Secretary of Defense for Acquisition Dr. Deutch and the Secretary of Defense, Dr. Perry. This is considered the starting point of the new concept of buying NDI in the Department of Defense.

In the past we used military specifications for every buy. Now we have to justify the use of military specifications.

Activity Based for Costing (ABC) analysis will be introduced to evaluate DOD suppliers. We have found that 25% of contract costs are due to military unique requirements. Under ABC a more accurate explanation of the indirect costs associated with the military acquisition should be provided by the suppliers. Only those costs originated by military requirements will be borne by the DOD, while for the others a better allocation shall be found. Specialized acquisition teams review all aspects of a contractors cost system and make recommendations for improvements. In one instance, a contractor had a 37 % scrap and rework rate and 2000 corrective actions per quality (method C&D). Acquisition Review Teams were responsible for helping the contractor to get government costs down to 8 % and scrap down to 7 % with quality being the best the contractor has never had. Finally, profits were higher with reduced costs to consumer.

As far as the Small Business is concerned, alliances with big companies will be their future if they have no engineering capabilities. The Government will release contracts to full service houses.

With respect to the acquisition of foreign-made commercial items, it will depend on the need for US industry to go into partnership with foreign countries. An item can be restricted based on security classification or need of the industrial base, in which case parts must be made only in the US and Canada. However, if we feel that there are plenty of suppliers, we may let foreign companies compete

Finally, these changes will be implemented DOD wide in FY 95.

4. Interview with Mr. Thomas J. Dolan Jr. Acquisition Law Chair, Executive Institute, Defense System Management College.

The interview with Mr. Dolan was held on April 1, 1994 and followed the question scheme reported in Appendix "C." The interview lasted about two hours, almost double the scheduled period. It revealed much about the new theories on NDI that will be addressed in the new law on streamlining the NDI acquisition process. Mr. Dolan's expertise has been usefully applied in implementing the new concepts of how to buy commercially into the new regulations that will form the guidelines for the procurement of commercial items. As one of the directors of the 800 Panel's Task Force, he directly worked in reviewing all the laws related with NDI procurement, and provided suggestions for a streamlined process in the DOD acquisition reform. The integral version of the interview has been reported in the followings.

Question 1 What changes do you feel would be necessary to current law or statutes to implement a new commercial item policy? What do you feel will have to be changed to make this process work? Do you foresee a change to the concept

of commercial procurement? What would you envision as a timeline for implementing any change?

Answer 1 To make commercial acquisition a reality you need to look to the policy statement which is currently in Section 2301 of Title 10 of The United States Code, which is mostly related to procurement within the DOD. The actual policy statement already contains a clause for procuring commercial items, but the Panel felt that the statement needed to be strengthened. This was necessary to leave no doubt with anyone, including Congress, as to how commercial items would be procured within DOD. In fact, if you do not strengthen the definition there will be always some reluctance in the acquisition community to buy commercial items, because of the feeling of risk involved in buying commercial items. Traditionally, DOD does not buy commercially, but puts specific requirements on the item to be purchased, adopting specifications and standards focused on military applications that are considered as "protections" for the buyer. Without them the buyer could be subject to criticism and consider himself vulnerable because the item will be used for military purposes and not the commercial application for which it was originally intended.

In conjunction with the above, the Panel also provided a new definition of what a commercial item was. This was mostly accepted in the proposed legislation which is expected to be approved very soon (The Federal Acquisition Streamlining Act - 1993). It greatly expands the type of products that can fall under the definition of commercial items. Further the Panel added another section specifying that, in case of a commercial item, it does not have to apply all the other laws that traditionally apply to the DOD purchase of products. Those laws, commonly called "barriers", are a group of

socio-economic regulations that must be included in every DOD contract when a unique DOD item is purchased. Socio-economic laws are those laws that protect union wages, the Buy American Act, the preference for small business activities, the Clean Air Act, veterans preference in hiring worker practices, and other laws that protect special rights of minorities, whichever is applicable.

A second area of major concern to the Panel was that of raising the ceiling of the Simplified Acquisition Threshold (SAT). The current ceiling of \$25,000 was set in 1978 and has never been changed. It is the recommendation of the Panel that this ceiling be raised to \$100,000 and be indexed so that this figure will be reviewed and evaluated every five years to determine if the \$100,000 should remain as the SAT or be changed to allow for inflation.

For purchases that fall within the SAT the contracting officer is authorized to use a simplified methodology for buying. For items that cost more than the SAT, the contracting officer has to apply more detailed procedures that define all of the actions to be performed for such a buy.

The implication of this recommendation is that 98.6 % of the contracts that DOD lets every year are less than \$100,000 while only 43 % are under \$25,000. A tremendous number of contracts could then be simplified if the ceiling is raised to \$100,000. There is another aspect to be considered: All of the contractual actions with a contract price of less than \$100,000 (98 % of the total number) account for only 15 % of the total dollars spent yearly by the DOD. Most of the defense budget goes for few awards for major system acquisition. Currently, our acquisition process is so detailed that we have a lot of manpower tied up with low dollar procurements. We have got to

change it! These procedures are being written into the current legislation. When this legislation is approved, the bulk of the manpower will be dedicated to major system acquisitions.

The second aspect of Simplified Acquisition Threshold considered by the Panel when they wrote the recommendations, was to raise the threshold for all the socio-economic laws to \$ 100,000. The actual threshold range goes from \$ 2,000 to \$ 25,000, and higher. All socio-economic laws currently have a different threshold. For example, the Davis-Bacon Act requires a certain rate of pay on all architectural-engineering contracts. The threshold to trigger this rate of pay currently stands at \$ 2,000. This rate of pay is higher than the amount used in commercial contracting. Also, the \$ 2,000 figure is an extremely low amount to be used as the threshold. What can you buy for \$2,000 in the architectural-engineering arena today? Therefore, it costs more for a contractor to comply with the socio-economic laws that pertain to DOD contracts than it does to contract commercially. For this reason, the Panel says make all socio-economic laws apply at the \$ 100,000 threshold. This has caused a firestorm in the socio-economic community.

The third proposal on threshold put forth by the Panel was that all the simplified-acquisition-threshold contracts (98 % of the total number of contracts) would be set aside for small business if you have two or more small business contractors that can produce the product or do the work. The Competition In Contracting Act (CICA), approved in 1984, established that the contracting officer must pursue competition of at least two suppliers every time he procures an item for the US Government, unless only one producer or supplier exists. This recommendation has raised several complaints by big business.

The fourth aspect of the Simplified Acquisition Threshold recommended by the Panel was to adopt the Electronic Commerce / Electronic Data Interchange (EC/EDI) for every bid made with the government within the threshold. "We have to get into the electronic information flow." Small business opposes this proposal because it is worried about competition. They argue that the electronic copy of an offer made in response to a request for proposal (RFP) can be seen by a larger number of readers than a hard copy, and therefore the competitors can take advantage of it. The government should therefore assure that the bid can be seen only by authorized personnel.

Small business has also complained that it cannot get into the electronic information flow because it is not sophisticated enough and does not have the equipment to get into the system. "In my opinion, that was just a smoke screen. What small business is really concerned about is the competition. This levels the playing field." We are also talking about electronic commerce after the selection is made. "I can envision the award being made electronically: No paper. Payment made electronically: No paper. Even being audited electronically: No paper."

As far as the timeline for implementing the above changes is concerned, the law actually is in the various Congressional Committees and could be approved by September, 1994. "If all of this falls into place, this will truly allow DOD to become a commercial buyer." There is a strong demand to implement this immediately. However, from an education and training standpoint, we have to educate our buyers on how to go out and buy commercially because we do not do it.

The Panel was very sensitive about going too far and making mistakes. They thought it would be disastrous to implement these changes and then

have a major problem erupt. This could have a detrimental effect on the implementation and on Congress's attitude of supporting change.

Question 2 What do you see as the main advantages/disadvantages to a revised policy on commercial procurement?

Answer 2 The main advantage is a price reduction, saving money, as a result of buying commercially. A study performed by the American Defense Preparedness Association (ADPA), a group that represents major defense contractors, made a comparison between two similar products. The first was procured in accordance with the DOD regulations while the second followed commercial practices. The study demonstrated a price reduction from 30 to 50 % when the product was bought commercially. The report identified a many reasons for the price increase when complying with the additional requirements imposed by the government. They included Cost and Pricing Analysis, Quality Assurance, Internal Controls, Accounting Principles, and Cost Standards.

Question 3 In light of all the requirements that we put on defense contractors, such as multiple reports, detailed military specifications, and a very restrictive commercial procurement system, in what areas do you see DOD saving money if we go to revised commercial procurement? How much do you think can be saved? Do you have any studies to support this?

Answer 3 When you buy a commercial product instead of a defense unique product, the price of the item is reduced. The ADPA study estimated savings varying from 30 to 50 %, but this figure has not been either quantified or audited.

Question 4 In recent years the defense industrial base has been eroding, what impact do you see on it if you change the process of buying commercial items? How

do you see the redefinition of "commercial items" revitalizing the industrial base?

Will small business be edged out of the market or will they form alliances with larger companies?

Answer 4 One of the major impacts is that companies that have been traditionally selling their products to the Defense Department are getting very concerned because the market has been decreasing since 1985 and is expected to reach a 65 % decrease by 1997. That means that two-thirds of the market will disappear in that period of time. The Panel was concerned about this erosion of the industrial base and found the solution in buying more and more commercially, in order to allow defense companies to stay in the business. If we buy commercial products and the defense industrial base starts making their products look more and more like commercial products, and they can sell more of these products commercially, they will remain in business. "This is why acquisition reform is so important." The redefinition of commercial items will definitely revitalize the industrial base because those companies that had previously only dealt with the defense industry will now be able to produce items for the commercial market.

Small business will not be edged out of the market for two reasons:

a) They have a dedicated market set aside for them by DOD, and

b) The big business depends greatly on small vendors for a lot of their work. If big business stays healthy then the small business that supports the big business will stay healthy. "Acquisition reform will support the small business as well as the big business."

What we need to do is not create barriers that treat big business differently when they are working on the DOD contract from when they are working on a

commercial contract. For example, many big businesses use subcontractors that they have used for years. They may even pay them more for their products because they are a quality supplier. Contracting with the government requires that most, if not all, subcontractor work be competed. This will require the prime contractor to change subcontractors in this example. This can create problems for the big business that they would not ordinarily face when performing on the commercial contract.

Question 5 Do you feel that contracting officers would have the authority to make decisions based on established catalog or market prices, taking into consideration adequate competition and fairness and reasonableness of prices? Which will be their flexibility to modify or waive standard terms and conditions of a contract if the need of a commercial item outweighs the benefits of contracting with the DOD standard form?

Answer 5 Yes, the Panel covered this aspect in its report and the market research performed on price will be one of the activities performed by the contracting officer. The major concern is that the DOD has not trained the work force how to do it yet and if the law will be implemented by 1995, there is not much time left. If an item falls under the new definition, the contracting officer will not have to comply with many of the standard terms and conditions of the contract.

As far as the contracting officer flexibility to modify contract standard terms and conditions is concerned, the topic is still under discussion. Because the contract will be audited later, it could happen that the auditor will not agree with the contracting officer that a buy falls under the definition of a commercial buy. The matter is still open and lawmakers are evaluating the

possibilities, however, if it is felt that the contractor has committed fraud, the auditor always retains the right to look at the contractor's records.

Question 6 Do you feel that the redefinition of commercial items will have any impact on the social-economic programs mandated by current law? If so, what impact?

Answer 6 The topic has already been covered before (see Question 1).

Question 7 What do you feel are current barriers to getting maximum benefit from commercial items/practices? What can be done to overcome them?
(Some of the barriers mentioned in the 800 Panel Report are in 4 areas: expensive accounting system; specifications and standards; rights in technical data; and government unique statutes that mandate fundamental changes in business practices.)

Answer 7 The DOD has the requirement that the contractors have to prove that the government received the best price. Therefore they are obliged to keep a separate and expensive accounting system to prove that they provided the lowest price and should be able to show all the details that contributed to building the lowest price. Conversely, in the commercial business the arm-length transaction is used and the price is established by the market (demand/offer rule).

The government, when it buys a product, asks specifically for the rights of the data, but the companies may not be willing to accept this procedure any longer, especially when they have large capital invested in developing the product itself.

Question 8 How do you feel Congress will react to the need for change? Do you see them changing anything in the near future? What will be the impact of the change on procurements during the transition period?

Answer 8 Congress is very interested in changing the commercial procurement process and this is very encouraging. The Senate set up several committees which are dealing with the subject, and Sen. Glenn presented a bill that will streamline the NDI acquisition. The problem is that a large portion of voters will be affected by the changes foreseen in the socio-economic aspects of the law. Minimum wages, clean air, small business subcontracting, warranties, all of them have been recommended for repeal by the Panel, and this could be in contrast with the personal interest of the individual Congressional delegate. At present, pilot experiments are being run by all services, with interim rules containing a new philosophy of buying commercially.

Question 9 What do you feel will be the impact on future major system development/procurement if we go to a redefinition of commercial items? Will you be able to go with leading edge technology even if you eliminate the development phase?

Answer 9 For major systems a lot of components, especially electronic components, will be bought commercially. For those defense-unique systems that need special environmental protection or ruggedization, the military specifications will still be applied, because the integrity of those weapon system cannot be compromised. All the other products that traditionally were bought in accordance with the military specifications, will now have commercial specifications applied, even if the former specifications were completely military.

Going to the second part of the question, there is a major concern in the US how to maintain the work-force to design and build equipment considered at the leading edge of the technology if there are not funds available to launch new programs.

Anyhow, it is recognized that DOD does not play the leadership role any longer in several areas of new development (such as electronics) where commercial applications have taken DOD's place. There are certain applications that are peculiar to the defense industry, such as submarines, fighter aircraft, tanks, and missiles that should be maintained for the sake of keeping the work-force capable and ready to built weapon system as there is the need. An example is the submarine industry in Connecticut. They are continuing to build submarines not because there is a real need of them, but to keep the capability of the people in that industry. In conclusion, the leading edge will be kept in strategic areas by not eliminating the development phase.

Question 10 What changes to current policies on contractor financing do you foresee as a result of proposed changes in commercial items (for example progress payments)?

Answer 10 The Panel did not consider any aspect of progress payments, although there is some concern in that area. The area the Panel did support was on problems for small business. The small business community has been supported by the Panel in many ways, as the set aside procedure previously mentioned. An additional focus that will be implemented very soon is how to improve the financing techniques for small business.

Question 11 The use of certified cost and pricing data formulated by the "Cost Accounting Standard" (CAS) is considered a big obstacle by contractors that wish to do business with the government.

Do you feel that the government will be willing to accept commercial items based on a fair and reasonable determination rather than on Generally Accepted Accounting Practices (GAAP)?

Answer 11 The answer is firmly positive. In case of a commercial item, one of the barriers to be removed is the requirement for cost and pricing data. But of more importance, is the state-of-the-art technology where the Defense Department is the first customer. An example would be a new stealth painting produced by the chemical industry. According to the old definition of commercial item this product was not considered NDI and therefore was subject to cost and pricing data, but the producer, who was willing neither to implement a new cost system nor to share its data with anybody, preferred to not sell the product to DOD.

The Panel then made the recommendation that if the state-of-the-art technology and the contracting officer make the determination that the price for this product is fair and reasonable, and if the company uses the same production processes to make the product for the DOD as it does for making a commercial product, then the contracting officer is allowed to waive the requirement for cost and pricing data for that item. This would also apply if the product was similar to the commercial product, but not exactly the same

Question 12 The acquisition of foreign-made commercial items is one of the possibilities foreseen by the DOD Acquisition Law Advisory Panel. This practice will greatly reduce weapon system acquisition costs (e.g. JPATS, Beretta). What role do you see for foreign commercial item acquisition, if any ?

Answer 12 The Panel went deeply into detail of foreign acquisition, and established that the US has to strengthen the acquisition system in the area of international acquisition. A new chapter will be identified in Title 10 with three subchapters: the first dealing with buying American, the second dealing with cooperative agreements with US allies, and the third specifically dealing

with NATO in term of standardized acquisition procedures.

The mindset is to go for a more global concept of acquisition. This does not mean only Foreign Military Sales (FMS), but a much larger concept that considers the US Allies in cooperative agreements, not as adversaries --as the Arms Export Control Act was interpreted-- but as partners. The same is applicable for the NATO countries. The Secretary of Defense will have the authority to allow a joint weapon system development with those countries.

V. The Case Studies

1. Introduction

Four recent cases of procuring NDI, taken from the available literature, are examined in this chapter. I will first examine the acquisition of the C-20 H Gulfstream for the Air Force. Next, I will review the procurement of the Beretta semiautomatic pistol for the Army. I will then review the purchasing of the C³ I system for the Navy. Finally, I will examine the acquisition of the C⁴ I system for the Army.

2. The C-20 H Acquisition

The Air Force has procured commercial aircraft for many years. In the following paragraphs the acquisition of the Gulfstream C-20 H, a commercial aircraft, is discussed.

a. The Aircraft

The Gulfstream C-20 H is an executive aircraft, a version of the well-known Gulfstream IV, capable to carry up to 19 passengers plus a crew of three, or a 2500 pounds of maximum payload for a range of 3650 NM at maximum payload. The contract foresaw the purchase of one new aircraft, with the option to purchase two additional aircraft.

The acquisition program baseline was defined on 31 August 1991. In the last quarter of the same year the "green aircraft" was ready for the roll-out. For information purposes, a new aircraft coming off the assembly line is called a "green aircraft" due to the application of a temporary protective green coating applied to the bare fuselage [Nash, 1993: 1]. The machine had a minimum set of cockpit

instruments, no insulation for the passenger compartment and few compartment seats. Since then the aircraft has embodied all the modifications required by the USAF, and has performed the trial tests. It will be ready for delivery by the end of the second quarter 1994.

b. The Air Force Requirements

The main modifications required by the USAF concerned the communication/navigation system and the environmental support.

- (1) Communication/Navigation System. Air Force aircraft use the Tactical Air Control Auxiliary Navigation (TACAN); commercial aircraft do not. With more commercial aircraft going to a heads-up video display, the installation of a TACAN as well as the integration into the aircraft's management system was a fundamental decision. The Air Force also requested the installation of the UHF radio, as well as a more powerful HF radio than the commercial version. The complement of UHF and HF radios to satisfy the basic Air Force requirement for a safe communication in a jammed electronic environment, is significantly different than the normal off-the-shelf configuration. The same is true concerning the Global Positioning System (GPS) and the Multiwave Landing System (MLS). These items will be procured by the Air Force and provided to the contractors as government furnished property for integration into the commercial aircraft.
- (2) Environmental Support. The interior was customized to provide more room for passenger work. The aircraft was also equipped with a passenger oxygen system.

c. Logistic Implication

The Air Force will perform only first level maintenance and will purchase spares with the aircraft acquisition. Conversely, commercial users often do not buy stocks of spares, but order them from the manufacturer using overnight delivery as they are needed. Consequently, the necessary maintenance is performed using contractor logistic support (CLS) rather than internal organic capabilities. On the other hand, software maintenance and updating will be performed maximizing the use of CLS [Nash 1993: 2].

d. Technical Data and Publication.

The level of technical data was inadequate for the purpose of the USAF and was not useful in supporting first line maintenance. The contractor was requested to redraft the set of manuals necessary to perform the in-house maintenance operations, and to integrate the unique Air Force TACAN system.

e. Testing and Certification.

Ad hoc flight trials were performed to test the specific USAF equipment and the FAA certification was requested to ascertain that the safety of the basic aircraft was not influenced by the modifications.

3. The Beretta Pistol

A handgun is a soldier's weapon of last resort. Face to face with the enemy, with no other means of fighting, he reaches for the gun holstered at his side. Since 1911 he would have reached for the legendary Colt .45. In the last 20 years, his sidearm

might also have been a .38, a .22, a .357, a 9-millimeter or a .44 caliber magnum; officers could carry just about any kind of gun they desired.

a. Background

In 1978, the House Appropriation Committee decided that it was inefficient to maintain this diversity of handguns and to buy unique ammunition for each size weapon. The committee called on the DOD and the Army to adopt a standard sidearm for all US armed forces [Simon, 1988: 158].

From 1911 until after WW II, the Colt .45 had been the standard military sidearm. The .45 was selected following turn-of-the-century fighting in the Philippines. Durability was a Colt .45 trademark: The pistol had a reputation for being almost impossible to wear out. Although the military stopped buying them after WW II, spare parts kept hundreds of thousands of the aging weapons in service through the 1970s.

Publicly in 1978, the Office of Secretary of Defense (OSD) cited the practical advantages of replacing the .45 and other miscellaneous handguns with a more modern weapon. The old .45s were hard to maintain, inaccurate, bulky and heavy, hard for women and left-handed shooters to use, and susceptible to corrosion. Finally they were difficult to silence.

DOD's top candidate was the 9 millimeter (mm) semiautomatic handgun. Faster and more deadly than the powerful, but slower .45, the 9-mm pistol was the standard weapon with which the NATO country equipped their troops [Simon 1988: 158].

Late in 1978 the Army, on behalf of all the Services, was given responsibility for the 9-mm procurement. DOD remained committed to and involved in the effort, primarily by encouraging the Army to expedite the acquisition.

b. The Bid

The House Armed Services Investigation Subcommittee saw some merit in adopting a single standard for ammunition but argued that the Colt could be converted to accept the smaller 9-mm bullets for far less than the new handguns cost [Simons, 1988: 162]. They noted that the Army had received proposals from the manufacturer to convert its .45 to 9-mm for between \$ 70 and \$ 107 per pistol. The unit cost of the new 9-mm handgun was estimated to be \$ 200, and the total program cost (including the cost of spare parts, maintenance, and so on) about \$ 400 per unit. But the Appropriation Committee and OSD restated their intention to buy a new 9-mm weapon as soon as possible.

The Army sent out a Request For Proposal (RFP) and four companies participated in the bid. In March 1982, the Army announced the results of the exhaustive tests performed on the weapons proposed by the competitors: All of the bidders had failed. None of them met the Government's absolute and essential requirements of the service life test and the ability to fire any type of 9-mm NATO bullet. For example, three Smith & Wesson pistol were tested. During the service life test, which would determine if the pistol would hold up to being fired 5,000 times, one of the pistol tested had cracked sometime after the 4,500th round had been fired. In the evaluation of the pistol's ability to fire any type of 9-mm NATO bullet the metric NATO standard for firing pin energy was converted erroneously. This error caused the second failure.

As a result, several complaints were raised against this decision from the OSD and a second test was set up. The requirement that very small women (the fifth percentile) and very large men (95th percentile) be able to operate the gun was considered nice-to-have, but redundant and it was eliminated. The standard that

specified how many times the gun had to fire without breaking down, or cracking, was also lowered. It was found that the number could be cut in half and still give the user odds of about 99 out of 100 that the gun would not fail when firing two 15-round clips. Technical specifications were changed and an Army re-testing plan was officially submitted to DOD on April 1, 1983. Late in the same year the testing process began again. Gun manufactures from around the world were asked to submit pistols to the Army. Eight competitors replied to the RFP and the Army began testing the eight competitors' weapons early 1984.

c. The Contract

The test was completed late in the summer of 1984. In the meantime, two companies withdrew and one was eliminated on technical grounds; three of the remaining five were found unacceptable.

The two companies left competing when the shoot-off was over were the Maremont Corporation of Maine, which proposed to supply a weapon designed by the Swiss firm Sig-Sauer; and the Beretta USA Corporation, which would manufacture the Italian-designed weapon at a plant in Maryland. This is the American branch of the Fabbrica D'Armi P. Beretta S.p.A., a family-owned company that had been making guns since 1526.

Of the two remaining competitors, Beretta offered the lower price and won the contract.

After seven years, the Army was finally ready to sign up a company to start supplying the US Armed Forces with a new standard-issue side arm, known as the M9. The coveted five-year, \$ 75 million contract for about 316,000 pistols, most of them produced in the US, was signed in April 1985.

4. The Navy C³ I System

A Command, Control, Communications, and Intelligence (C³ I) System is the most important means by which a Navy tactical commander controls/executes authority over his forces. Effective C³ I enables the tactical commander to adequately visualize the disposition of his forces, address the tactical problem in proper perspective, and respond with a rational and intelligent decision.

a. Background

The tactical command afloat requires a C³ I system that can assimilate the necessary information quickly and accurately which then enable the commander to make a decision and disseminate orders to subordinate commanders. Further, the quality and capability of the system must adhere to stringent standards to ensure the commander receives accurate information. A C³ I system containing deficiencies can severely impair the tactical commander's decision making capability and possibly be detrimental to his mission. To ensure the commander has an effective C³ I system, the Navy established a program to evaluate the operational effectiveness and suitability to support the tactical commander afloat, of two C³ I systems. The first system, Joint Operational Tactical System (JOTS) 1, was designed with commercial components while the second, Flag Data Display System (FDDS) was designed to meet applicable military specifications.

b. Systems' Description

FDDS. The FDDS [(N/USQ - 81 (V))] system consisted of:

- AN / UYK - 19 computer
- Associated peripherals

- Operator Interface Terminals (OITs) networked, Carried Intelligence Center (CIC), Combat Direction Center (CDC), and Supplementary Plot (SUPPLOT)
- Disk memory
- Hard copy plotter
- Sanification terminal

The system was designed following the applicable Mil-Spec's. The first system was installed aboard the aircraft carrier USS America [Yee, 1993: 51].

JOTS 1. The JOTS 1 system consisted of:

- HP 92020 A/C desktop computer, with a built-in monitor and keyboard
- Rocky Mountain BASIC operating system
- Hard drive ranging from 55 Mb to 120 Mb
- Terminal systems connected via a local network to CIC, CDC, and SUPPLOT.

The master terminal was located in the Tactical Flag Command Center (TFCC)

- Hardcopy printer/plotter
- Other peripherals such as a large screen display and remote monitors and remote control devices (digipads) for manipulating the displays.

The JOTS 1 was composed of a commercial Hewlett Packard HP 9020 desktop computer that received inputs in data link from the actual communication systems present afloat.

c. The Operational Testing and Evaluation

The two systems were compared to evaluate the operational effectiveness of providing timely and accurate data to support the commander afloat. System performance was subdivided and evaluated by function.

Operational suitability was also tested to the degree in which a system could be placed satisfactorily in the field with consideration given to factors such as

operational availability, maintainability, reliability, logistic supportability, survivability, training, interoperability, safety, human factors, and compatibility.

Overall, test evaluation of JOTS surpassed FDSS in hardware and software capabilities, but was not significantly better in supporting the tactical commander's C³I operational requirements. Those effectiveness and operational issues better suited to meet the requirements of the tactical commander in JOTS were offset by poor logistic supportability, inadequate compatibility and interoperability when compared to the FDSS. These shortcomings were being experienced in commercial applications as well as military applications and therefore I have not considered them a deficiency in the NDI process. Conversely, JOTS provided some tactical decision aids not available in FDSS and did prove to be an invaluable planning tool for the tactical commander in his decision making.

In Commander, Operational Testing and Evaluation Force (COMOPTEVFOR) conclusions, both systems were evaluated as having the potential to be operational effective and suitable once corrections to those deficiencies revealed by the testing phase were corrected. In this case, correction of problems identified by military use will be used to enhance the commercial system.

5. The Army C⁴I System

The rapid development of communications and computer technology in the commercial market provided the Army with a unique opportunity to re-look the way they provided Command, Control, Communications, Computers, and Intelligence (C⁴I) on the battlefield.

a. Background

Desert Shield/Storm experiences demonstrated the capability and reliability of off-the-shelf equipment and enhancements in battlefield awareness provided by new military systems. However, after action reviews also revealed significant problems for operational commanders with command and control "on the move." As result, the Chairman, Joint Chiefs of Staff approved a program called "C⁴I for the Warriors." However, these problems were not associated with NDI, but were directly related to the confusion on the battlefield and the command and control problems associated with this confusion. The thrust of the program was to provide a seamless C⁴I architecture to support the warfighter.

b. The Need

The C⁴I for the Warrior concept was born to

...give the battlefield commander access to all information needed to win in war and will provide the information when, where, and how the commander wants it.

The C⁴I for the Warrior starts with the warrior's requirements and provides a roadmap to reach the objective of a seamless, secure, interoperable global C⁴I network for the warrior. [Joint Chief of Staff, 1992: 1]

The objective was to develop a widely distributed network to which the warrior "plugs in" through the tactical command and control system to gather in real time all the information he/she needs to "see" the battlefield and to give/receive commands. The better the information and more rapid the communications the more likely the commander will be able to defeat the enemy and protect his own forces.

Some generic types of information can be grouped as:

- Position/location of your unit, of the friendly units, and the location of the enemy units.

- Status, current and projected, of personnel, equipment, weapon systems, and supplies.
- Mission/situation of the unit and associated timelines.
- Equipment capabilities and requirements [Fox, 1993: 8].

c. The C⁴I System

The new system configuration has been achieved through modifications of the actual system and with off-the-shelf procurements. The recommended solution integrated the following subsystems:

- Global Positioning System (GPS). This is a satellite based, radio navigation system that provides precise, world-wide, three dimensional position, velocity, and timing data. During Desert Shield/Storm GPS was a winner. The DOD report to Congress said

Use of space-based navigation and positioning was an unqualified success. The NAVSTAR Global Positioning System (GPS) played an important role in the success of the overall operation. [DOD 1992: 806]

During the conflict 4,490 commercial (85 %) and 842 military GPS receivers were deployed. They provided continuous, all-weather 25 meter accuracy for the commercial small lightweight system and 16 meter accuracy for the military model [Fox, 1993: 5].

- Combat Net Radios (CNR). A military standard radio is the AN/VRC-12 that normally transmits the information in Frequency Modulation (FM) mode. During Desert Storm this system broke down every 200 hours, on average. In the same theater the new Single Channel Ground and Airborne Radio System (SINCGARS) were also experimented for the first time in a war. This new system worked in FM mode with a capability of frequency hopping. This was

done manually by operators in the field. The system, which worked an average of 7000 hours, had a core made with commercial components. The new improvement asked by the Army after the Desert Shield/Storm experience was to read the time from GPS and use it to update the SINCGARS internal time. Time is very critical to frequency hopping and requires all operators within the same net to manually enter a time accurate within four seconds throughout the net in order to operate [Fox, 1993: 20].

- **Common Hardware/Software Computers (CHS).** Many commanders today have desktop and laptop computers that are routinely used in a field environment. Most are commercial and there is no standard configuration nor software. The C⁴I for the Warrior project foresee a radical renewing of the CHS. The computer is the heart of the system. It maintains multiple database for status report and manages the inputs and outputs from the GPS and the CNRs. It is comprised of a data input/output device to interface with other computers; a removable hard drive to facilitate data back-up, drive replacement, and security; a fax/modem card using commercial standard data compression and transmission protocols; and a multimedia Compact Disk, Read Only Memory (CD ROM) drive. A high definition color monitor will be used primarily to display maps, overlays, and digital photographs and a combination of printer/scanner/copier which is commercially available (called Hydra or Multifunction Printer) will also be used. Finally, the system need the software capable to tie all these components together and to provide the integration necessary to make the battlefield interoperable in a seamless communication architecture. The computer and Hydra printer are typical NDI equipment.

- **Mobile Subscriber Element (MSE).** This is the field telephone connected by wire to the tactical corps and joint wide-area switching system that links with other networks to provide a wider communication connectivity. This is a typical military application with a capability to be connected to commercial systems such as the GPS and the CHS.

6. Conclusions From Case Studies.

The Air Force used commercial payment procedures on the C-20 H program. This involved providing a significant amount of money at contract signing and at four major milestones throughout the program. This practice led to a reduction in the overall aircraft price that would not be feasible in a normal military type contract, where no money is released up front and the numerous payments are subject to reviews and audits.

The acquisition of the C-20 H is a sound case of a nondevelopmental-item buy for the USAF. Some changes were requested to fulfill the particular needs of a military operation of the aircraft, whose primary role is transportation of senior personnel of the Air Force and of the government in the safest possible way. For the C-20 H acquisition the concept exploration and definition and research and development phases were eliminated. This saved the USAF a significant amounts of time and money. For this reason, this case can be considered a successful NDI buy for the USAF.

This experience has shown that even if modifications were implemented and a dedicated set of manuals was required, the cost were contained at the level of a commercial buyer showing that the policy of buying commercial items could lead to good results even for more sophisticated items like an aircraft.

The Beretta case exemplifies how two or more companies can compete for commercial off-the-shelf requirements. The military was looking for a durable 9-mm pistol to replace the .45 caliber. They competed the requirement and, although there were problems experienced during the initial testing and standards were set too high, they ended up with a commercial pistol at a very reasonable unit cost. This case also highlighted what can happen when test standards are not held as absolute, but rounded off, thus causing the initial failure of Smith & Wesson.

As far as the Beretta case is concerned, the biggest benefit was that for a price of \$ 178 per unit the DOD was able to provide the US Armed Forces a weapon whose market price in 1985 was at least \$ 400. The benefit to Beretta was not the contract itself, however. The real earning was to sell guns to police departments and armies around the world. Today it is difficult to find an M9 that costs less than \$ 800, and this is not due to the inflation rate. This supports the theory that defense contractors will be able to develop items for the defense industry that will have commercial application and will enhance the entering of their product into the commercial marketplace. Conversely, the companies whose guns were rejected as unfit would find future sales difficult. The contract took seven years to be finalized, but this was mainly due to the strong resistance that Beretta supporters found within the services to buy a non-American product.

For the Navy C³I system, although JOTS 1 was not significantly better than FDDS in the pure tactical commander's operational requirements, there were some obvious trade-offs in fielding a rapid NDI system. Research and development costs were zero, for a total investment of approximately \$ 55,000 per unit. The Navy installed the system on eight carriers that had not previously had the FDDS installed [Yee, 1993: 52]. The JOTS 1 was a low cost system. In the beginning it was entirely supported by Navy Operational and Maintenance funds. When the Navy decided to procure the

system in large scale, procurement costs for 219 JOTS systems acquired were approximately \$ 2,200,000; and operations and maintenance costs \$ 500,000 [Yee, 1993: 52].

Conversely, the total FDDS Research, development and testing costs were over \$149 million, procurement costs for six FDDS systems were circa \$ 103 million, ship's integration \$ 75 million; and operation and maintenance \$ 57 million [Assistant Secretary of the Navy, 1990: 3].

As far as the Army C⁴I system is concerned, the choice of using commercial components such as the CHS is forced by the fact that no military system is currently available that could compete with them. Timeliness in delivery and saving of money are the key points that led the Army decision to select a C⁴I for the Warrior mainly composed by commercial items. An example of the savings experienced during the purchase of the Global Positioning System shows a 98 % reduction in cost when procuring the commercial version as opposed to purchasing an item made to meet military specification.

VI. A Comparative Analysis Of The Data

This chapter consists of a comparative analysis of the critical issues and problems identified as a result of the interviews and research conducted. The discussion involves an interpretation of responses to research questions, researcher views of responses, and researcher synthesis of the foregoing with the information gathered during the literature review. The purpose of this chapter is to scrutinize the data presented in the preceding chapters. The first part of the discussion will be focused on specific legislative issues which limit NDI acquisitions. The second part will be focused on evolving initiatives to overcome legislative barriers which limit NDI acquisition. The third part will summarize the results obtained from the case studies. Finally the fourth part involves the acquisition process model and the need to shift to a new model that contains the preference to procure NDI products and use commercial practices.

Legislative issues concerning the acquisition of NDI have a long and documented history. In the last 40 years lawmakers have tried to improve the procurement procedures dealing with NDI and several commissions were created with the only purpose of streamlining the process. Maintaining an efficient system of defense procurement has been a mandatory issue of DOD since its creation in 1947. The Packard Commission's recommendations, issued in 1986, are considered the milestone of this new tendency. But, as frequently happens, they were not taken into consideration until 1989. Secretary of Defense Dick Cheney, in his *Defense Management Review*, promulgated a new concept of continuing improvements in Pentagon acquisition practices. In this report most of the recommendations issued by the Packard Commission were revitalized with the purpose of giving a push to the stagnant policy of defense acquisition.

As previously depicted in the table displayed in Chapter 3, numerous efforts have taken place over the years to study legislative issues facing NDI. In 1988, then-Congressman Les Aspin was quoted as saying that perhaps the next executive commission on acquisition should be created, not to propose the reforms, but to implement them. These efforts provided the foundation for the Section 800 Panel to review more than 600 laws applicable to the procurement process. The Panel issued a comprehensive report in 1993 that eventually provided the lawmaker with the right direction to follow in streamlining the acquisition process. This time, the recommendations made by the Panel have been transformed into a draft bill that will be considered by both houses of Congress during the second half of 1994. This will be known as The Federal Acquisition Streamlining Act of 1993.

A key recommendation of the Panel is that Title 10 US Code shall be amended to contain a requirement for DOD to ensure the procurement of commercial items to the maximum extent practicable. Prior to acquiring a defense-unique item, DOD has to perform a market research to determine whether commercial or nondevelopmental items, modified or not, can be used in place of the defense-unique item. This is a big step forward since acquisition reform began. Other improvements recommended in the legislation are that statutes such as the Simplified Acquisition Threshold will be raised from \$ 25,000 to \$ 100,000; and the Bacon-Davis Act and the Truth In Negotiation Act (TINA) will not be applicable when a commercial form of buying is adopted due to exemption.

Many of these (which could also be barriers to the proposed legislation) are a result of Congress' attempt to protect the interest of the American public. The history of the commercial product acquisition effort is one of good intentions that have failed to bear fruit because none of the efforts to date have created a complete, systematic, statutory and regulatory structure for buying commercial products [DOD, 1993a: 8-10].

The DOD Acquisition Law Advisory Panel went about as far as one could expect to help implement acquisition reform from a legislative standpoint within the Defense Department. In spite of this voluminous effort, however, there is industry concern that the Panel's recommendations have not gone far enough. A specific example was identified whereby the waiver process was considered to be lengthy and difficult.

A request for waiver of Government clauses in a basic ordering agreement for standard commercial aircraft spare parts took four years to process and ultimately provided only a small part of the relief required to achieve commercial equivalence. [Aerospace Industries Association, 1993: 3]

This specific example is used to illustrate the cumbersome process which currently exists within the procurement system even though it is not considered part of the commercial item issue.

Another issue of great concern to industry is the Government propensity for cascading of regulations in response to Congressional enactment of new statutes. The Section 800 Panel reviewed this issue and made the following comment:

While the Panel's charter called for legislative rather than regulatory reform, there is an important linkage, often missed in public and congressional criticism of DOD contracting methods: many of the regulations which impose the most burdensome controls are specifically mandated by statute. This missing link between law and regulation was addressed in a study specifically prepared for the Panel by the American Preparedness Association (ADPA). It found that acquisition laws represented the apex of a "cascading pyramid" of restrictive regulations, and common procurement practices that typically added 30-50 percent to the costs of doing business with the Department of Defense. [Defense System Management College, 1992: 3]

An industry analysis of the Panel's Chapter 8 (Commercial Items) recommendations applauded their effort but offered several recommended changes. The focus of industry's counter recommendation is to enhance the business relationship between the DOD and industry, to become as non-adversarial as possible, and provide incentives to both parties. As previously identified, industry has

expressed concern in regard to the waiver process [Durkin, 1993: 67]. The following examples reflect industry sentiment:

- *Exemption from Truth In Negotiation Act (TINA) and requirement for cost or pricing data because many most commercial companies do not have accounting systems set up to provide the necessary data required by Government regulations.*
- *Use of uniform terms and conditions that provide for only those contract clauses determined to be consistent with standard commercial practices or required to implement provisions of the law applicable to commercial item acquisitions. [Aerospace Industries Association, 1993: 2,5]*

Congress has attempted to strike a balance between the needs of both parties as well as to preserve the National good. Title VIII-Commercial Items, of the proposed Federal Acquisition Streamlining Act of 1993 incorporates many of the Section 800 Panel recommendations. Specifically:

- *Section 8001 would amend the Office of Federal Procurement Policy (OFPP) Act to add new definitions of "commercial items," "nondevelopmental item," "component," and "commercial component."*
- *Section 8002 would add a new section 31 to the OFPP Act to create a preference for the acquisition of commercial items and other nondevelopmental items.*
- *Section 8003 would add a new section 32 to the OFPP Act to require the issuance of uniform contract clauses for commercial item contracts.*
- *Section 8004 would authorize the applicability of future enacted procurement statutes to contracts and/or subcontracts for the acquisition of commercial items to be waived on a class basis, through the Federal Acquisition regulations (FAR).*
- *Section 8005 would exempt commercial items procurement from the requirement to identify suppliers and sources of supplies, the prohibition on contingent fees, the requirement to identify suspended or debarred subcontractors.*
- *Section 8006 would authorize greater flexibility in setting deadlines for the submission of offers in contracts for the purchase of commercial items.*
- *Section 8007 would amend the OFPP Act to expand the responsibilities of OFPP's commercial items advocate and to give agency competition advocates*

the added responsibility of promoting the acquisition of commercial items and other NDIs.

- *Section 8008 would identify certain provisions that are not intended to be affected or modified by the Title.*
- *Section 8009 would require a Comptroller General review of Federal Government use of market research. [US Congressional Record: 1993, Section 14423]*

Conversely, the proposed Act did not adopt some Section 800 Panel recommendations such as the deletion of the Buy American Act; the special provisions regarding disabled Vietnam veterans and handicapped people, and exemptions to small business subcontracting plans [US Congressional Record: 1993, Section 14423]. In substance, there are some practical and legal issues that have not been addressed.

Given the Administration's policy of military-commercial integration, it is important that Congress closely consider industry recommendations in regard to the acquisition of commercial products. Likewise, compromises may be required by industry. It is likely that the solution lies somewhere between the position held by industry and that of the Congress. The underlying goal of the legislation should be to maintain the defense technology industrial base and to provide DOD with the tools to accomplish its mission.

Legislative reform and acquisition streamlining were topics discussed during the interviews. The interviewees all responded that the time for acquisition reform and streamlining is now. The American public, as well as Congress, are ready for change. This attitude is necessary to make the broad changes that will be required in the acquisition process. This attitude will also be necessary to overcome the resistance to change policy, and the preconceived notion of resistance that General Pigaty spoke of during his interview. As he pointed out, we have all of the tools available to us now

to implement NDI acquisition procedures. However, it takes high level interest and involvement to commercially procure weapon systems within current regulation.

He also pointed out the need to change the attitude of contracting officers so they will easily adapt to commercial buying. This will involve training the work force on the procedures of procuring NDI and how to work smarter with this new concept.

The idea of using military specifications in all defense related procurements must also be changed. Performance specifications need to be used whenever possible. A justification should accompany each request for approval to use military specifications. Without adequate justification to use military specifications, commercial specifications should be insisted upon when appropriate.

General Pigaty also referred to several cases in which the acquisition of commercial items saved both time and money. Most notably was the acquisition of the New Training Helicopter referenced in Chapter 5. This procurement was released on the 97-page request for proposal which contained no military specifications. The helicopter was certified to FAA standards at a cost of approximately of \$ 130 Million, with savings estimated at three to five times that amount.

Also noteworthy is the acquisition of the commercial Global Positioning System (GPS) during Operation Desert Shield/Desert Storm. A single GPS built to military specifications cost 28 times more than the commercial version. It also weighed over six times more, and the commercial version was available for immediate fielding. This clearly demonstrates savings that can be realized through acquiring commercial items.

Another aspect that is being addressed is the number of military specifications which are currently available for use. The second interviewee, Mr. Griffin, was directly involved in an effort to reduce the number of military specifications. A comprehensive review of all military specification was conducted. Thirty percent of

the existing military specifications were found to be obsolete or not authorized to be used for new work. Other military unique requirements were incorporated into existing commercial specifications. These actions resulted in reducing the number of military specifications to less than half.

Quality Assurance military specifications were also recommended for elimination and the commercial ISO 9000s were then recommended for adoption. This represents the international commercial standard adopted by several countries in the world.

Many of the issues discussed by Mr. Dolan have already been covered earlier in this chapter. His discussions dealt mainly with legislative issues, a revised definition of commercial acquisition, and raising the Simplified Acquisition Threshold. He also discussed the impact that the socio-economic programs might have on the pending legislation. He also stated that the current laws have to be changed and now is the time to do it.

He emphasized that much of the acquisition workforce is tied up handling contractual actions valued at less than \$ 100,000. However, this large effort, approximately 98 % of all contracts, represents only 15 % of the dollars spent yearly by DOD. This was a major argument behind raising the simplified acquisition threshold to \$ 100,000.

The four case studies presented in Chapter 5 support the premise behind any commercial off-the-shelf acquisition --that you save time and money. This is particularly true in the case of the C³I for the Navy and the more modern C⁴I for the Army. The systems were promptly available and Research and Development costs were completely avoided. This is also true for the C-20 H , where the Air Force eliminated the development costs by using the existing Gulfstream IV, modified only where necessary. These COTS acquisitions caused some problem as evidenced by

the problem with the C-20 H manuals, but lessons learned are factors to be used in future purchases.

A definite lesson learned from the Beretta case study is that contracting officers must have their requirements clearly defined before they begin the acquisition process. The knowledge of the testing pass/fail criteria is a fundamental step to be undertaken before the commercial market is investigated. This criteria cannot be manipulated as it was in the original testing of the Smith & Wesson. Had the testing criteria for firing pin energy not been rounded off, and the test not deemed a failure, Smith & Wesson might possibly have received the contract and delivered a new weapon much earlier. This could have also been true had the number of service life test firings been reduced from 5,000 to 4,500 initially.

Overall, one of the lessons learned is that the decision about the content, format, and educational level of the training manuals, the type of contractor's support required when the system is in operation, and the level of maintenance to be performed within the services must be defined before the system Request For Proposal is sent out. The logistic requirement, in fact, is getting more and more important when you buy commercially because you must agree with the supplier well in advance of your needs in terms of quantity, maintenance, storage, and availability of a particular item.

Interview respondents identified the culture of the acquisition workforce as the main problem facing the acquisition reform movement. The continued use of military specifications instead of performance specifications is, in many cases, a classic example of a cultural mindset. Training, education, and professional development are associated problems identified during the interviews. All of the respondents identified that DOD can no longer conduct business as usual, that is, preferring developmental programs over nondevelopmental programs. Sharing

lessons learned is another avenue that could provide fruitful results in changing the model. For example, the Army acquisition of the New Training Helicopter, described by LTG Pigaty, in the interview reported in Chapter 4, presents logistical support challenges and lessons learned worthy of dissemination. Another significant example is the innovative contracting techniques for C⁴I NDI acquisition implemented by the Army, which represents a new methodology for computer acquisitions. It is current DOD policy that the acquisition strategy should be tailored to accomplish established program objectives and to control risk [DOD Directive 5000.1: 1991, 1-4]. Further, it is also DOD policy that the acquisition strategy should be tailored to the extent feasible to employ commercial practices when procuring commercial products or other NDI's [DOD Directive 5000.2: 1991, 6L-4].

Legislative issues and a deeply rooted mindset have precluded the DOD from taking full advantage of opportunities available in the commercial marketplace. Substantive efforts have taken place and continue to evolve in this area. NDI acquisitions could be well-served by enactment of legislation that would eliminate barriers, effectively enhancing the government-industry business relationship, while also ensuring public interests are satisfied.

In a world revolutionized by change, the acquisition process is changing. To a slower degree, there is the acquisition workforce [Durkin, 1993: 80]. There are many reasons why this slowdown occurs and among them we can enumerate training, education, and professional development.

VII. Conclusions

1. General

This section will summarize the results of the data analysis gathered in the literature review, in the interviews, and in the case studies reported in the previous chapters. Conclusions about the five investigative questions are also drawn.

2. Investigative Questions

Data analysis of this research included examination of the investigative questions which relate to the study objectives. The following conclusions have been drawn as result of analyzing the investigative questions.

Investigative Question (1). The first question asked: "What is the content of the changes that will be implemented in the new law and how will these changes contribute to the streamlining of the overall acquisition process?"

The main changes defined in the documentation examined and in the interviews are that the Title 10 US Code will amend the definition of nondevelopmental items, including the definition of commercial items, broadening both and adding a special section completely dedicated to NDI and to the preference of buying commercially. A change in the Simplified Acquisition Threshold is also envisioned. The threshold will be raised from \$ 25,000 to \$ 100,000, to cover all small purchase type contracts that do not need to comply completely with all of the rules and controls that the government imposes on its large suppliers.

A big change in the way DOD will procure its systems is through the partial deletion of the military specifications. Only very special buys, such as fighter aircraft, submarines, tanks --the so called defense-unique weapon systems-- will use military specifications. For all the other cases the contracting officers will have the flexibility

to utilize commercial specifications that will lead to lower prices, a product standardization with the commercial market, and a quicker availability of the systems to the customer.

The use of commercial practices will lead to the use of Electronic Commerce/ Electronic Data Interchange (EC/EDI) implementation, as Mr. Dolan pointed out in his interview. This will help the dissemination of the DOD's Request for Proposals to suppliers who did not have the chance to compete in the defense market, either because they did not know about DOD's intention to procure a particular product that they may produce, or because they did not have the capability to comply with the burdensome regulations which the government imposed on the suppliers. This would also then apply to the requirement that small contractors establish and maintain an EC/EDI capability.

Finally, contracts valued below \$ 100,000 will then set aside for small business, if true competition among them exists.

Investigative Question (2). The second question asked: "To what degree can commercial item procurements be applied to major system acquisitions within the DOD? "

"To the maximum possible extent!" was the unanimous reply of all the persons interviewed. New weapon systems, that will be designed to the defense-unique requirements, will include commercial subsystems and components to the extent that they are compatible with the technical specifications of the system. This will allow state of the art, off-the-shelf products to be utilized in the weapon systems. No new components will be developed if a market survey reveals that similar commercial products will be available in the marketplace at the same time that the new system will be produced.

The integration of commercially procured items will apply to all procurements, including major weapon systems, whenever possible. However, it may be necessary to apply defense-unique items for some major systems because of special military requirements for systems such as submarines, tanks, fighter aircraft, and missiles. Military specifications may need to be utilized in many of the war fighting systems solely because of their peculiar capabilities.

Investigative Question (3). The third question was: "What are the problems associated with the NDI/commercial item procurement implementation? "

The literature analyzed and the interviewees were in agreement that changing the mindset of the buyer will be a major problem in the implementation of the new procurement policy. The lack of flexibility of contracting officers and of audit personnel in applying commercial rules is a main hurdle in implementing the new procedures. New incentives for applying commercial rules should be established and, as General Pigaty pointed out, more responsibilities should be borne at higher levels, to allow contracting personnel to perform their work in an environment which accepts their ideas and supports their decisions.

Additionally, there will be other problems associated with procuring commercial items, as pointed out in the case studies. Two main problems surfaced in the Beretta case show what can happen when the requirements that are applied are too stringent or interpretation of required data is erroneous. The USAF C-20 H case was a good example of the military purchasing a system that did not have a complete set of training manuals, or information required by the services on the operation and maintenance of the system. These problems may be indicative of the type of problems that may be experienced when buying commercial items, depending on the type of item to be purchased. The problem cited were those associated with major system

purchases. It is possible that these problems may not exist for the myriad of consumable or repairable items purchased every day by DOD.

Investigative Question (4). The fourth question asked: "What are the advantages/disadvantages of a revised policy of a commercial procurement?"

This question constitutes the main point of the research, and both the data provided by the literature review and the case studies and the answers provided by the interview respondents were in agreement in supporting the argument that a commercial way of procurement will bring more advantages than disadvantages to DOD. The list of the pros greatly outweighs the cons. There is practically nobody within the DOD today who is still supporting the present procuring methodology, however, the statutory and regulatory provisions must be changed to reflect the current attitude.

The advantages are briefly summarized in the price reduction and the money saving aspects that commercial practices and NDI procurement will lead to. Mr. Griffin and Mr. Dolan are enthusiastic supporters of this, and General Pigaty provided a recent example of how the commercial procurement of the New Training Helicopter led to a conspicuous saving for the Army. Furthermore, all of the case studies reinforced the savings for the systems procured. Saving money and time is assured when using commercial specifications rather than military specifications, if system performance is the same or similar.

The use of commercial items will lead to a better and longer relationship between DOD and its suppliers and a quicker availability of the desired product to the field. The case of the Global Positioning System (GPS) in Operation Desert Shield/Desert Storm and the C³I System for the Navy are classic examples examined in this research. The commercial version of the GPS was immediately available for fielding during operation Desert Shield/Desert Storm while the GPS developed to military specifications would not have been available for months. The commercial GPS was

also available at 98 % less cost than the military model. The Navy C³ I System is also an example that reflects a commercial components available off-the-shelf at significantly reduced costs than the military version.

The fall-out of the NDI procurements is the uniformity between military and commercial requirements, as the several studies on the topic have highlighted. No dual specifications should be necessary for the same product, and the industrial base should be revitalized by the effort to design and produce items that will have commercial, as well as military applications, as Mr. Dolan affirmed in his interview.

Conversely, the list of disadvantages contains the loss of the propriety rights by the DOD and a different approach to Configuration Management, when NDI are procured. DOD could not require contractors to sell the items only to the US government, and the modification which will be embodied later in the product will be completely supervised by the contractors. The DOD will monitor and record changes only when conducting its own configuration management is necessary.

Another aspect is the deletion of all socio-economic laws within the Simplified Acquisition Threshold. These laws currently create a burden in the DOD acquisition system because of their varying thresholds and implications. The workers will have to work in a different environment, where the minimum wage limits for certain types of work and various requirements for economically disadvantaged groups are not imposed by the government, but comply with commercial practices.

Lastly as a result of the change the cost and time necessary for the concept exploration and definition phase and the research and development phase of a major system acquisition will not be borne entirely by the DOD. This will result in a saving of time and money for the DOD itself, and should lead contractors to seek customers in the commercial market before starting to develop a new product. This will also lead to an increase in production in areas where there is a sufficient demand, and also

a decrease in areas where the product could be easily found at lower prices elsewhere. The defense industry will have to cope with this new challenge in competition, where American NDI products will compete together with NDI products made in other countries at the same technological level.

Examples of savings of cost and time were exhibited in each of the cases reviewed in Chapter V. In the case of the C-20 H Gulfstream, the Global Positioning System and the Multiwave Landing System were purchased off the shelf by the Air Force and provided to the contractor as government furnished property. Those components will then be integrated into the commercial aircraft, thus saving time and money that would have been necessary for the development if they had not been available in the commercial marketplace. Similarly, the Beretta case is an example of taking an off-the-shelf, commercial item and competing it against other commercial items for the new handgun contract. Concept exploration and definition as well as research and development phase expenditures of time and money were saved due to this being an off-the-shelf buy. Cost were held to a minimum for the basic unit price and additional for spare parts and maintenance.

The C³I system is a very good example of saving research and development time and cost. The use of the Joint Operational and Tactical System (JOTS) 1 permitted rapid fielding at very low cost to the Navy, with savings realized in excess of \$ 350 million.

The C⁴I mobile system was made up of numerous commercial components. These consisted of the Global Positioning System (GPS), commercial computers, monitors, printers, and commercial components for the Mobile Subscriber Element. Together, the cost saving realized were such that other system could compete with it. Cost savings for the GPS alone were 98 % less than a similar model built according to government specifications.

Investigative Question (5). The fifth question asked: "What are the present barriers to implement this policy? "

This argument was analyzed deeply in the literature review and during the interviews. The Truth in Negotiating Act (TINA), the Competition in Contracting Act (CICA), and the socio-economic laws, are all considered barriers to integrating commercial practices into the DOD acquisition reform. Exceptions will be made to these statutes when applying the new provisions of commercial practices and fulfilling the requirement of streamlining the acquisition process.

Another barrier will be the formulation of performance specifications that will be submitted to suppliers for implementation. The present mindset of government representatives who oversee the acquisition of new weapon systems must change: The role of the DOD will be less and less in writing technical specifications, and more into defining what is actually needed through the use of performance specifications. Once the performance specifications are released the DOD will establish validation/verification methods to ascertain if suppliers can provide the expected product. The close collaboration between customer and contractor will help to define if the product needs to be refined to accomplish the requirements dictated by the Armed Services.

3. Summary

This research was initiated to examine the acquisition of commercial items as they exist under current statute and regulation, and how they will be handled in the future if proposed legislative changes are enacted. The research involved interviewing high level DOD officials and reviewing of existing case studies concerning commercial acquisition of defense related items, current statutory and regulatory acquisition procedures, and proposed legislation.

The information gathered from all sources examined clearly indicates that acquisition reform in the nature of commercial item procurement and a raising of the Simplified Acquisition Threshold is necessary. It is also generally felt that the time is right to have Congress pass legislation to require these changes. Changes in a definition of commercial items, and procedures for implementation, must be addressed if DOD is going to reduce budget expenditures while at the same time supporting the industrial base.

The results of this research clearly show that, as a minimum, time and money will be saved by adopting these new procedures. Each person interviewed and case studies examined support this theory. The examples provided give overwhelming evidence to this fact. Each example cited reflects these savings.

The proposed legislation will require that many statutory provisions and socio-economic programs will need to be revised, or provisions developed to exclude them. Though there will be much controversy raised by advocates of this program, these changes are necessary to streamlining the acquisition process.

APPENDIX "A"

Glossary

ADPA	American Defense Preparedness Association
AMC	Army Materiel Command
CICA	Competition in Contracting Act
COTS	Commercial Off-the-Shelf Item
DLA	Defense Logistic Agency
DFARS	Defense Federal Acquisition Supplement
DMR	Defense Management Report
DOD	Department of Defense
DSB	Defense Science Board
DSMC	Defense System Management College
FAR	Federal Acquisition Regulation
FY	Fiscal Year
GAO	General Accounting Office
ILS	Integrated Logistic Support
NDI	Non Development Item
OASD	Office of Assistant Secretary of Defense
OSD	Office of the Secretary of Defense
R & D	Research and Development
RFP	Request for Proposal
TINA	Truth In Negotiation Act
USA	United States Army

USAF

United States Air Force

USN

United States Navy

APPENDIX "B"

Title 10 USC Section 2325

(Changes proposed by the Section 800 Panel)

Sect. 2325. Preference for nondevelopmental items.

(a) PREFERENCE. - The Secretary of Defense shall ensure that, to the maximum extent practicable:

(1) requirement of the Department of Defense with respect to a procurement of supplies are stated in terms of:

- (A) function to be performed;
- (B) performance required; or
- (C) essential physical characteristics;

(2) such requirements are defined so that nondevelopmental items may be procured to fulfill such requirements;

(3) such requirements are fulfilled through the procurement of nondevelopmental items; and

(4) prior to developing new specifications, the Department conducts market research to determine whether nondevelopmental items are available or could be modified to meet agency needs.

(b) IMPLEMENTATION. - The Secretary of Defense shall carry out this section through the Under Secretary of Defense for Acquisition, who shall have responsibility for its effective implementation.

(c) **REGULATION.** - The Secretary of Defense shall prescribe regulations to carry out this section.

(d) **DEFINITION.** - In this section, the term “nondevelopmental item” means:

- (1) any item of supply that is available in the commercial marketplace;
- (2) any previously developed item of supply that is in use by a department or agency of the United States, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;
- (3) any item of supply described in paragraph (1) or (2) that requires only minor modification in order to meet the requirements of the procuring agency; or
- (4) any item that is currently being produced that does not meet the requirements of paragraphs (1), (2), or (3) solely because the item:
 - (A) is not yet in use; or
 - (B) is not yet available in the commercial marketplace.

APPENDIX "C"

Interview. List of Questions

1. What changes do you feel would be necessary to current law or statutes to implement a new commercial item policy? What do you feel will have to be changed to make this process work? Do you foresee a change to the concept of commercial procurement? What would you envision as a timeline for implementing any change?
2. What do you see as the main advantages/disadvantages to a revised policy on commercial procurement?
3. In light of all the requirements that we put on defense contractors, such as multiple reports, detailed military specifications, and a very restrictive commercial procurement system, in what areas do you see DOD saving money if we go to revised commercial procurement? How much do you think can be saved? Do you have any studies to support this?
4. In recent years the defense industrial base has been eroding, what impact do you see on it if you change the process of buying commercial items? How do you see the redefinition of "commercial items" revitalizing the industrial base?
Will small business be edged out of the market or will they form alliances with larger companies?
5. Do you feel that contracting officers would have the authority to make decisions based on established catalog or market prices, taking into consideration adequate competition and fairness and reasonableness of prices? Which will be their

flexibility to modify or waive standard terms and conditions of a contract if the need of a commercial item outweighs the benefits of contracting with the DOD standard form?

6. Do you feel that the redefinition of commercial items will have any impact on the social-economic programs mandated by current law? If so, what impact?
7. What do you feel are current barriers to getting maximum benefit from commercial items/practices? What can be done to overcome them?
(Some of the barriers mentioned in the 800 Panel Report are in 4 areas: expensive accounting system; specifications and standards; rights in technical data; and government unique statutes that mandate fundamental changes in business practices.)
8. How do you feel Congress will react to the need for change? Do you see them changing anything in the near future? What will be the impact of the change on procurements during the transition period?
9. What do you feel will be the impact on future major system development/procurement if we go to a redefinition of commercial items? Will you be able to go with leading edge technology even if you eliminate the development phase?
10. What changes to current policies on contractor financing do you foresee as a result of proposed changes in commercial items (e.g. progress payments)?
11. The use of certified cost and pricing data formulated by the "Cost Accounting Standard" (CAS) is considered a big obstacle by contractors that wish to do business

with the Government.

Do you feel that the Government will be willing to accept commercial items based on a fair and reasonable determination rather than on CAS/GAAP?

12. The acquisition of foreign-made commercial items is one of the possibilities foreseen by the DOD Acquisition Law Advisory Panel. This practice will greatly reduce weapon system acquisition costs (e.g. JPATS, Beretta). What role do you see for foreign commercial item acquisition, if any ?

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VITA

Lieutenant Colonel Giorgio Scappaticci was born on 12 February 1953 in Caserta, Italy. He joined the Italian Air Force (IAF) in 1971 entering the IAF Academy with the course named "Marte III." After receiving his degree in Aeronautical Engineering from the University of Naples in 1978, he became a registered professional engineer in 1978, and he graduated from the Air War College in 1984. He served as Chief of the Technical Branch and head of Quality Control of the 3rd Wing Maintenance Center in Villafranca, Verona and then Chief of the Quality Assurance at the IAF surveillance office at Alenia, Turin. During this last assignment he was appointed as National Quality Assurance Representative (NQAR) for the production of the Tornado aircraft.

Then he worked as specialist of mechanical equipment at the development of the European Fighter Aircraft (EFA), today known as Eurofighter 2000, at the NATO EFA Management Agency (NEFMA) at Munich, Germany. Before entering the School of System and Logistic, Air Force Institute of Technology, in May 1993, he served as member of the EFA Program Office of the Airstaff in Rome, where he worked at the logistic acquisition process of the weapon system.

From 1990 to 1993 he participated in international meetings within NEFMA as representative of the Italian Air Force at the Equipment Selection Panel and the Change Control Board. In the same period he also contributed at the Concept Exploration and Definition phase of the Future Large Aircraft, the newest European transport aircraft.

Permanent address: via del Mare 50
00042 Anzio - Villa Claudia (Roma)
Italy

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13. ABSTRACT (Maximum 200 words) The acquisition of a new weapon system and its sophisticated components has become an extremely critical issue for every country, because costs associated with the development of the system have grown significantly. In order to reduce those costs and maintain an efficient system of defense procurement the Congress recommended a wider use of Nondevelopmental Items (NDI) into weapon systems and the application of commercial practices when buying NDI. This research examines the acquisition of commercial items as they exist under current statute and regulation, and how they will be handled in the future. The research involved interviews with high-level DOD officials and review of existing case studies concerning commercial acquisition of defense related items, current statutory and regulatory acquisition procedures, and proposed legislation. The information gathered from all sources examined indicates that acquisition reform in the nature of NDI is necessary. The results of this research clearly show that, as a minimum, time and money will be saved by adopting these new procedures.			
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