

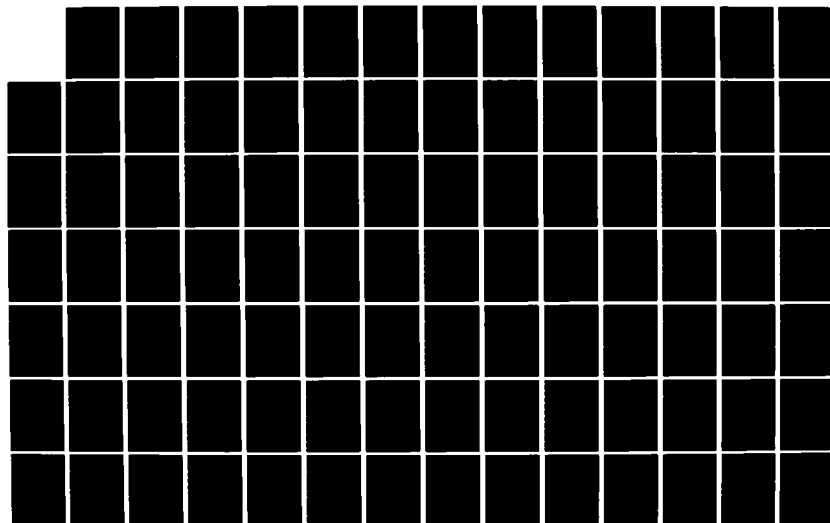
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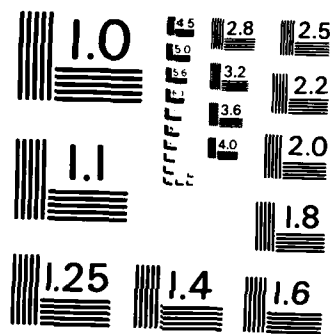
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EARLY ASSESSMENT OF AIR FORCE EFFORTS
TO ENSURE CONTRACTOR RELINQUISHMENT
(WITHIN FIVE YEARS) OF PROPRIETARY
DATA RIGHTS AS A METHOD FOR IMPROVING
FUTURE SPARE PARTS ACQUISITIONS

THESIS

Anthony L. Marshall
Captain, USAF

AFIT/GLM/LSM/85S-46

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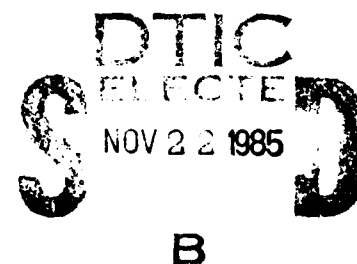
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CONTRACTOR RELINQUISHMENT (WITHIN FIVE YEARS)
OF PROPRIETARY DATA RIGHTS AS A METHOD FOR
IMPROVING FUTURE SPARE PARTS ACQUISITIONS

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Anthony L. Marshall, B.A.

Captain, USAF

September 1985

Approved for public release; distribution unlimited

Preface

On October 1983, Secretary of the Air Force Vern Orr issued a policy change in the form of a data rights clause which was to be included in new solicitations and contracts. The purpose of this study is to investigate the effect this policy change on Air Force procurement efforts. Interviews were conducted with personnel in the Aerospace Systems Division of the U.S. Air Force at Wright-Patterson Air Force Base. The personnel interviewed are especially knowledgeable in systems acquisition. These discussions proved to be exceptionally productive and should be followed up with an in-depth study over a longer period of time.

In conducting the research and writing this thesis I have benefited greatly from the assistance of others. I deeply appreciate the advice and counsel of my advisor, Dr. Melvin Wiviott. I also wish to thank Dr. Samuel Epstein, who served as the reader for this thesis; I could always count on him for fresh ideas whenever I was stalled. Finally, a word of thanks is also in order to the people I interviewed, who are listed in the Bibliography. Their sense of professionalism and dedication to their work deeply impressed and inspired me to strive for achieving that same degree of excellence.

Anthony L. Marshall

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Abstract

The research objective was to investigate the effect of Secretary of the Air Force Vern Orr's direction to use a contract clause limiting a manufacturer's rights in proprietary data to five years or less from the date of manufacture of the first production unit of a weapon system.

The Orr clause represented an abrupt shift in policy relating to a contractor's ability to restrict the government's releasing of proprietary information to a third party and how long the restrictions would last. The clause was written in broad terms and is viewed by private industry as an attempt by the government to siphon off the contractor's rights to data developed at private expense - including trade secrets.

There is no guarantee that sole-source spare parts contracts will be replaced by contracts obtained through open competition, even if the government has unlimited rights to all the data the original contractor used to make the item. Even with relatively simple items, there still remain possible aspects of blueprints and assembly instructions that are open to interpretation. As a result, there remains the probability that the end product will not work as intended, or, even worse, not work at all.

EARLY ASSESSMENT OF AIR FORCE EFFORTS
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DATA RIGHTS AS A METHOD FOR IMPROVING
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I. Introduction

Overview

Between fiscal years 1979-1982 the Air Force Logistics Command (AFLC) made several studies of spare parts pricing practices. One study revealed to the public rapid increases in the cost of spare parts for aircraft engines at the Oklahoma City Air Logistics Center. This revelation figured prominently in a series of Congressional hearings into prices being paid for spare parts by the Department of Defense (DoD) (2:1.2). A common feature of the internal Air Force studies and Congressional hearings were two key points:

1. "Competition will result in fair and reasonable prices".
2. For many reasons the Air Force does not and could not take maximum advantage of competitive 'market place forces' in executing its spares acquisition program (2:1.2-3).

On 20 May 1983, the Air Force Management Analysis Group (AFMAG) was formed at the direction of Secretary of

the Air Force, Vern Orr, and Air Force Chief of Staff, General Gabriel, and formally chartered by the Air Force Assistant Vice Chief of Staff. The AFMAG charter directed the group to focus on finding solutions that could be implemented in time to influence the fiscal year 1984 spares program and to make recommendations on long term initiatives that would significantly reduce overpricing of spare parts (2:1.3).

The AFMAG report cited lack of competition as one prominent reason for increased spare parts costs. Their analysis indicated the number of spare parts acquired by the Air Force through competitive bidding declined from 37.5% to 20.7% between 1973 and 1982 (2:2.12). Four factors contributed to the decline: The fielding of new weapon systems, the bureaucratic process, proprietary rights, and inadequate/non-existent acquisition data.

a) Fielding of New Weapon Systems: The number of on-going design changes still occurring at the beginning of the production process make sole source acquisition the most feasible solution (2:14).

b) Bureaucratic Processes: The cost of complying with rules and regulations generated by Federal government agencies, such as the Occupational Health and Safety Administration (OSHA), Small Business Administration (SBA), and Environmental Protection Agency, has reduced the number of firms willing to bid on Department of Defense (DoD) contracts and shrunk the defense industrial base. As this

base shrinks, the ability to achieve competition is reduced (2:15-16).

c) Proprietary Rights: A contractor is allowed by the "Rights in Technical Data and Computer Software" clause to identify and limit the government's distribution of "unpublished technical data . . . developed at private expense"(28:A.1). However, the AFMAG group indicated that the Defense Acquisition Regulation (DAR) did not adequately define what "developed at private expense" really meant (2:2.16). Furthermore, acquisition regulations and directives in effect at the time permitted contractors to retain limited rights in data for an unlimited length of time - even though the need for protection may have no longer existed (2:2.17).

d) Inadequate/Non-Existent Acquisition Data: "Approximately 57,000 or 16% of the 364,000 spare parts currently coded with procurement source code are usually purchased from the prime system contractor on a sole source basis because the requisite data is either missing or inadequate"(2:2.16).

According to the Office of the Secretary of Defense Technical Data Rights Study Group, "underlying much of the current discussion of data rights policy is the assumption that, if DoD had unlimited rights to use all the data it obtains, it could significantly increase competition in spares purchasing"(6:4). Department of Defense Directive 5000.1 C-2(a), "Major Systems Acquisition" (29 March 1982),

states that "effective design and price competition for defense systems shall be obtained to the maximum extent practicable to ensure that defense systems are cost-effective and are responsive to mission needs"(8:190).

In September of 1982, Secretary of Defense Casper Weinberger sent a memorandum to the secretaries of the military departments, the Chariman of the Joint Chiefs of Staff, and other DoD activities, on the subject of "Competative Procurement"(26:1). The memorandum stated, in part, that "no type of purchase is automatically excluded from this direction to maximize competition and this direction applies regardless of the level of the requesting official or the importance of the subject matter of the contract"(26:1).

In response to this statement, on 19 October 1982, the Under Secretary of Defense for Research and Engineering, Richard DeLauer, issued a memorandum addressing the subject of "Competitive Procurement of Spare Parts"(17:2.5). This particular memorandum established a Department of Defense Steering Group to investigate the high costs associated with the procurement of spare parts (17:2.5).

The group's report uncovered contractor abuse of limited rights provisions. In a subsequent memorandum on 15 March 1983, the Secretary of Defense emphasized the DoD High Dollar Spare Parts Breakout Program and pointed out

that two of the main reasons it was falling short of its goals were:

- a) the lack of adequate technical data to support reprourement from other than existing sources . . .
- b) less than full commitment of necessary technical support (17:2.5).

Furthermore, this shortfall was "detrimental to achievement of fair and reasonable spare parts prices and a sound defense industrial base" (policy letter 84-12). To eliminate this abuse, Secretary of Defense Casper Weinberger tasked each service, when negotiating new contracts, with establishing firm dates after which the government would receive unlimited data rights to all information delivered from the contractor. The purpose of this policy change was to ensure the government would have clear title to all data a second source would require to manufacture the item. The expected result was enhanced competition and reduced prices for spare parts purchased by the government (17:2.5).

In support of this policy, Secretary of the Air Force Verne Orr directed that a clause be drawn up which would substantially reduce the length of time a contractor could maintain full rights to proprietary data. Furthermore, he requested this clause be incorporated "in all future solicitations involving acquisitions of supplies and equipment which will require either significant numbers of spare parts or large expenditures of funds for spare parts" (20:1). The clause, to be written into new contracts as an

addition to the "Rights in Technical Data and Computer Software" clause [DAR 7-104.9(a)] stated that:

. . . the Government shall have unlimited rights . . . in all technical data and computer software used by the Contractor, including subcontractors and suppliers at any tier, in all phases of the development and manufacture of production items . . . [following] a period which shall not exceed 60 months" (20:2)

Contracting officers are authorized to request waivers to the five year limit, on a case by case basis, if they are satisfied that sufficient provisions have been made to obtain all necessary data to repro cure spare parts from a second source (19:1).

Statement of the Problem.

According to the OSD Study Group, 27% of the spares purchased by the Services and the Defense Logistics Agency cannot be bought competitively because of insufficient, inaccurate, or illegible data. Another 4.1% of all active items cannot be competitively purchased because problems with proprietary data rights restrict dissemination to other contractors (6:7). Under these circumstances, the Air Force is prevented from obtaining a second source for spare parts unless it goes back to the original contractor and renegotiates the data clauses. Such renegotiation usually means an increase in contract costs.

Investigative Objectives/Questions. What effect does obtaining full rights to all proprietary data within five years have in obtaining competition for spare parts procurement? To accomplish this objective, the following research questions were asked:

1. Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?
2. If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?
3. Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

II. Literature Review

Background

Prior to World War II, most supplies purchased from private industry by the War Department or the individual service branches were commercial products or military-developed weapon systems the government had contracted out for actual production. Therefore, few questions arose concerning what data was proprietary and what data was in the public domain (18:4).

As the 20th century progressed, however, there was an increasing mixture of public and private funds expended during weapons system development. Furthermore, the technology used in a product often had possible civilian as well as military application. Therefore, the distinction between public and proprietary data became increasingly important. Decisions concerning which aspects, states, and components of articles were developed at private expense could mean the difference in profits to a company (or in costs to the government) of thousands of dollars on a small project or millions on a major weapon system (18:4).

In 1947, Congress passed the Armed Services Procurement Act, Title 10 U.S.C., Chapter 137, which governed acquisition activity within all DoD agencies and the National Aeronautics and Space Administration (NASA).

Under Section 2202 of the Armed Services Procurement Act:

. . . . an officer or agency of the Department of Defense may obligate funds for producing, warehousing, or distributing supplies, or for related functions of supply management, only under regulations prescribed by the Secretary of Defense (3:F-22).

. This section allowed the Secretary of Defense to direct the writing and publication of the Armed Services Procurement Regulation (ASPR).

The ASPR contained sections which addressed the issue of what data a contractor would be required to deliver during the performance of a contract. For example, if the contract dealt with a standard commercial item, the supplier would not be required to deliver proprietary data. Furthermore, the ASPR clearly stated that proprietary data would only be acquired if the government had a clear need for the information and after negotiations had been conducted which specifically addressed the data to be provided (18:6).

However, the ASPR did not specify the exact form or content of data supplied by contractors to the government; a great deal was left up to the interpretation of those supplying and those receiving the data. Nevertheless, the ambiguity did not become a major issue until the post-Korean War demobilization was underway (18:4).

. It appeared to observers outside DoD that with the end of the war fewer contracts were being let resulting in a decrease in number and variety of weapon systems fielded: The prices paid for weapon systems should have been

decreasing. Congress and private interest groups complained (not for the last time) that the two most significant reasons for increasing weapons system costs were sole-source procurement and the lack of opportunity for new companies to obtain DoD contracts (18:5).

DoD initiatives intended to expand opportunities for outside suppliers included using the original designer's data to obtain the item from a second source and further emphasis on "component break out". In a memorandum for the Assistant Secretary of the Army (Logistics and Research and Development), dated July 13, 1955, Assistant Secretary of Defense Pike said the government's position was that nothing in the ASPR prevented DoD from using any data delivered as it saw fit - subject to any contractual provision to the contrary (18:5).

Private industry protested the government's action, stating its belief that DoD was unlawfully passing on proprietary information regarding trade secret processes, methods, and design details. The industry position was that this activity, if not curtailed, would compromise the ability of the firm that originally created the design to make a profit and ultimately could put it out of business (18:6).

During the Korean War, most defense suppliers were operating near capacity with more business than they could handle. Because of this, they were not overly sensitive when the government used their data to create alternative

sources of supply. Once the war ended, however, many contractors found themselves with idle production facilities and each contract became more important to company survival. Contractors assumed a more protective attitude towards data supplied to the government and observed carefully what it was being used for (18:4).

In response to industry criticism, the government revised and expanded the ASPR in 1957 and again in 1958. The 1958 version contained the following general provision:

It is the policy of the Department of Defense to encourage inventiveness and to provide incentive therefore by honoring the "proprietary data" resulting from private developments and hence to limit demands for data to that which is essential for Government purposes (18:6).

It also included a "fail safe" provision, ASPR-9-203.4(c), which stated that:

. . . proprietary data need not be furnished for . . . items which were developed at private expense and previously sold or offered for sale, including minor modifications thereof, which are incorporated as component part[s] . . .

For the purposes of this clause "proprietary data" means those details of a contractor's secrets of manufacture . . . to the extent that such information is not disclosed by inspection of analysis of the product itself and to the extent that the contractor has protected such information from unrestricted use by others (13:53).

Furthermore, ASPR-9-203.2 (1958) stated that:

Notwithstanding any Tables or Specifications included or incorporated in the contract by reference, "proprietary data" need not be furnished unless suitably identified in the Schedule of the Contract as being required (18:12).

Contractors accepted the clauses listed as sufficient

justification for withholding any information they considered proprietary. The only exception, regardless of what the general provisions of the contract said, was if there were specific contract clauses requiring listing the data to be submitted. For example, "in a drawing of a specified part the contractor could eliminate any information relating to chemical processes, tooling, finishing, temperature tolerances, lamination, milling, and inspection techniques" (18:12).

Astute contractors were able to further manipulate the regulations by substituting their own list of material and process requirements for standard ones, placing limited rights legends on entire drawings when only a specific part was actually subject to protection, or withholding the information entirely. The government was at a disadvantage in claiming the contractor was illegally withholding information since it depended on the contractor to provide information that would prove whether or not his claim was valid. Lacking positive proof, the government could only infer that the claim was invalid because the data in question was similar to information already in the public domain (13:54).

This manipulation of the regulations by contractors resulted in submission of "swiss cheese" drawings, so named because they contained almost as many holes as bits of information. The bottom line was a general deterioration in the quality of data used for maintenance, repair,

overhaul, supply, and stockpiling (18:13).

At the same time DoD was facing inadequacies in data that it did need for reprocurment purposes, it faced a massive inflow of unnecessary data. In the absense of clear directives covering exactly what types of data were needed and how they should be prepared, contracting officers were ordering all the data produced by the contractor in developing the weapon system. The end result was millions of documents arriving at the data repositories; agencies who were wholly unprepared for the task of managing, updating, and retrieving the information. It is quite possible that the system could have broken down if contractors had not withheld information (18:14).

Applying a restrictive policy towards proprietary data brought up legal questions concerning the relationship between proprietary rights and the law of trade secrets. How far should the government go in recognizing a contractor's right to keep information secret from his competitors? How willing would a contractor be to compromise his competitive standing in the interests of national defense (18:7)?

The legal rights of a contractor concerning trade secrets has never been as clear as those concerning patent rights. Unlike a patent, which is a monopoly backed by the force of law, a trade secret is valuable only so long as the owner can keep it secret from his competitors.

Disclosure of the knowledge contained will compromise any "rights" that the possessor may have (18:7).

Under common law, the person or company attempting to protect information by calling it a trade secret does not have an absolute right to prevent others from using his information nor is the knowledge contained within it considered property the same way it is when discussing patent rights (18:7).

The company that originally develops the information has the authority to keep the information secret from rival firms. It also may take steps to prevent unauthorized disclosure when the information is released, in confidence, to others (including employees) during the manufacturing process. Finally, the company can prevent an innocent third party from using the information after giving proper notice - unless the third parties themselves have already made arrangements which have placed the information in the public sector (18:8).

If the information has already been released to the public sector, all the company can do is to try to recover damages for improper release. The reasoning behind this last point is that once the information is public knowledge, the originator will find it difficult, if not impossible, to put the genie back into the bottle - regardless of the circumstances of the disclosure (18:8).

Because of the importance of keeping the "genie" in the bottle, a contractor would prefer the definition of

what constitutes a trade secret stated in broad terms. This would allow him to designate a broader range of information as proprietary and maintain the advantage over his competitors for a longer period of time. On the other hand, the government would prefer to have the definition stated in narrow terms - limiting the amount of information that a contractor could withhold - so it could release the maximum amount of data possible to a second source (18:9).

From the late 1940s to the early 1960s, the government held to this narrow definition of proprietary rights, while at the same time attempting to balance government need and contractor rights to data developed with private funds. The first major change in official DoD policy was contained in Defense Procurement Circular (DPC) No. 6, dated 14 May 1964 and amended by DPC-24, 26 February 1965 (18:17).

This publication substituted the concept of "developed at private expense" in place of "proprietary rights" and tried to determine whether or not information qualified as being a trade secret. At the same time, the issue of contractor data rights was separated from the list of data a manufacturer was required to submit during the performance of a contract - two subjects that had been intermingled under ASPR-8. The changes introduced in DPC-6 were incorporated into the ASPR and a new directive published as ASPR-9 (a further listing of the changes introduced by DPC-24 are contained in Appendix A, Part I, of this thesis)(18:17).

This was the first time DoD clearly specified the conditions under which the government would possess unlimited rights to data in situations where the contractor could limit use and disclosure of data by the government. A contractor would be required to deliver all relevant data (relevant being clearly defined in the terms and conditions of the contract) pertaining to the operational weapon system but would be allowed to apply markings that restricted dissemination of proprietary data. These changes in policy did not completely eliminate contractor withholding of data. By following procedures authorized in the appropriate military specification governing data delivery, a contractor could still hold back information from the government (6:3).

The subsequent revisions to this policy have been minor. It should be noted, however, that the ASPR was later renamed the Defense Acquisition Regulation (DAR), effective 8 March 1978, and was later integrated into the Federal Acquisition Regulation (FAR) which became effective 1 April 1984. The primary result of the latter change was to condense and simplify the language in an attempt to make the regulation easier for government employees and contractors to use (6:3-4).

Current Data Acquisition Process

Air Force procurement is governed by the Armed Services Procurement Act, Title 10 U.S.C. Chapter 137, as

amended. Regulations implementing this Act are in the Federal Acquisition Regulation (FAR), which is the governing document for procurements done by DoD, the National Aeronautics and Space Administration (NASA), and the General Services Administration. FAR clause 27.412 (a)(1) specifies that the issue of technical data will be addressed in any systems acquisition. The Department of Defense has written a supplement to the FAR covering DoD acquisitions (see Appendix A, Part II of this thesis for an expanded list of appropriate clauses)(5:1-12).

Further guidance for Air Force managers whose duties involve implementing the data management program is provided by command directives, instructions, regulations, and standing operating procedures. There are three DoD publications of particular importance: DoD Directive 5000.19, "Policies for the Management and Control of Information Requirements," 12 March 1976; DoD Instruction 5010.12, "Management of Technical Data," 5 December 1968; and DoD D-1000B, "Military Specification Drawings, Engineering and Associated Lists," 28 October 1977, as revised by Amendment 3, 13 May 1983. These three publications implement DoD data rights policy, as directed by the FAR.

- a) DoDD 5000.19 places controls on the gathering of data by requiring that the cost of acquiring the data be balanced against the penalties and risks of not having the data available.

- b) DoD D-1000B describes the requirements contractors must meet in supplying engineering drawings and associated lists to support DoD acquisitions.
- c) DoDI 5010.12 covers selection and administration of data acquired during the execution of a contract and establishes procedures for data management (27:3-4).

DoDI 5010.12 is augmented by DoD-D-1000B, which describes data requirements and DoD-STD-100C which describes the form and format of engineering drawings. Air Force Regulation 800-34 "Engineering Data Acquisition" further amplifies DoDI 5010.12 requirements by taking into account service peculiar data regulations and procedures. The Directorate of Lessons Learned (AFALC/PTL) explains the purpose of AFR 800-34 in this manner:

The premise of AFR 800-34 is early and continuous emphasis on planning and managing engineering data. Program managers are required to appoint an engineering data management office (EDMO). The EDMO maintains surveillance over the program by scheduling and performing in-process reviews of contractor's engineering data preparation effort, challenging data rights, planning for follow-on phases, and other functions required by AFR 800-34 (27:1).

The activity group with jurisdiction over system design is responsible for procuring sufficient data to support the initial fielding of an operational weapon system. Data originates with the manufacturer, who is required by the contract to submit a recommended method of procuring a spare part using Contractor Recommended Codes (CRC) and suffix codes to indicate the basis for assigning a particular code. Detailed descriptions of each code are contained in MIL-STD-789B, "Acquisition Methods Coding

of Replenishment Spare Parts". An Acquisition Method Code (AMC) is assigned to describe the results of the teams screening review for the acquisition of spare parts (10:12).

Once the recommended method of procurement is submitted, the CRC's are reviewed by an evaluation team from the Air Force Logistics Command (AFLC) that will have primary responsibility once the system is fielded in an operational capacity. During the review process, the team looks for items that can be coded for competitive procurement. These items require acquisition data (10:13).

Engineering data, on the other hand, refers to "engineering drawings, support indexes, specifications and related engineering documents used in the manufacture of an item" (4:259). DoD-D-1000B requires that engineering drawings and associated lists be acquired in one or more of three levels. These three levels provide for the natural hierarchy of information as a design transitions through the acquisition process (see Appendix A, Part III, for definition of each level).

According to DoD-D-1000B, "engineering drawings shall include details of unique processes, i.e., not published or generally available to industry, when essential to design and manufacture" (3:4). Because of this, the preparation of engineering drawings often involves the use of limited rights data - the degree of involvement depends on the nature of the design and associated manufacturing process.

At the beginning of the weapon system acquisition cycle, the Program Manager, the person responsible for all aspects of the program, appoints a Data Management Officer who will act as the central receiver of all data and the focal point for management of data actions. Before the contract is awarded, the Data Management Officer will issue a data call - a request to all agencies that have a potential need for data - to identify the type needed and the delivery schedule required. Each individual request must be justified by its originator (10:15).

The Data Management Officer will take the results of the data call, along with the justification for each request, and submit the package to the Data Requirements Review Board. The members attempt to screen out unnecessary requests using guidance provided by AFR 310-1, "Management of Contractor Data." Once the review is completed, the revised package is written into the procurement contract through use of a DoD Form 1423, "Contract Data Requirements List" (CDRL) (10:15-16).

When the development contract for a system is being drawn up, it is essential that the responsible agency use the CDRL in conjunction with appropriate DoD FAR data clauses (see p.18 and Appendix A, Part II of this thesis) to address data rights issues in precise and definitive language. However, because terms and conditions must be tailored to an individual contract, it is difficult to translate requirements specified by regulation into

language that will realize this goal. The most important thing to remember is that once the manufacturer signs the contract, he is obligated to provide all identified data in the form, quantity, and detail specified - but only that which is clearly identified in the contract (17:3.2.3)!

The first time difficulties are likely to become known is after the primary responsibility for managing the system has been transferred from Air Force Systems Command (AFSC) to Air Force Logistics Command (AFLC). After this transfer (referred to as Primary Management Responsibility Transfer, or PMRT) has occurred, records, contracts, and other historical data relating to the system may not be available. This information provides Air Force auditors with an audit trail to trace a contractors costs and make sure every dollar spent can be justified. Without an audit trail, the possibility that the Air Force will be able to successfully challenge a contractor's limited rights legend greatly diminishes (17:3.2.3).

Additional problems with limited rights claims which have been noted by the Directorate of Lessons Learned (AFALC/PTL) include:

1. Contractors have been successful in the past in convincing Air Force personnel that the costs of developing data necessary for a second source to build the part are considerably higher than costs for developing data that simply identifies the part.
2. Lack of AFLC involvement.
 - a) Often the Air Logistics Centers (ALCs) are not even asked to support the program office; are not asked what the data

requirements are; and are not involved in the in-process reviews.

- b) When the ALCs are asked, the affected center often could not provide Temporary Duty (TDY) Assignment funding or TDY personnel to support it (27:1).

Previous Research Studies

There are two works which contain especially relevant information concerning the discussion on data rights policy. The first is the final report by the Office of the Secretary of Defense (OSD) Technical Data Rights Study Group, entitled "Who Should Own Data Rights: Government or Industry? Seeking a Balance" (22 June 1984). The second is a report by the RAND Corporation, "Proprietary Rights and Competition in Procurement" (June 1966).

OSD Report

The OSD report was prepared in response to the House Committee on Government Operations, Fifteenth Report, November 9, 1983, "Failure to Implement Effectively the Defense Department's High Dollar Spare Parts Breakout Program is Costly." The background provided by the OSD Study Group indicates the committee was concerned that one of the primary reasons for increasing spare parts costs was due to limitations placed on DoD use of contractor generated weapon system data (6:1).

To research the problem, the Study Group focused on a few basic questions:

- a) Do contractor claims of limited rights in data represent a significant factor in preventing DoD from obtaining competition in spares purchasing?
- b) To what extent do unjustified claims of limited rights represent a problem?
- c) Should the limited rights only be valid for a fixed time limit? (6:4)

The research methods used by the Study Group involved a survey of previous studies, a summary of the professional experience of each member of the group, and original research based on interviews and meetings with personnel in government and industry (6:9).

One of the chief sources of data was the DoD quarterly status report (IMSS-11, 31 March 1984), prepared by the Defense Logistics Service Center. This report used data provided by the services and the Defense Logistics Agency to summarize the source of purchase for all parts managed by each component and the reason a particular source was used (6:5).

The acquisition method codes as source data are defined in the Department of Defense Federal Acquisition Regulation Supplement (DOD FAR SUP) No. 6, 1 June 1983. Codes of particular interest in identifying items bought non-competitively are identified in Appendix A, Part IV of this thesis. The raw data provided by the Defense Logistics Service Center was analyzed and the distribution of codes was computed against the total population of items managed by DoD (6:7).

According to the OSD Study Group, the amount of spare

parts which had to be purchased sole source because of difficulty with proprietary rights only represented 4.1% of all active items managed by DoD. A more significant problem, in their eyes, was that 27% of spares had to be purchased sole source because of insufficient, innaccurate, or illegible data (6:7).

The basic premises underlying the conclusions made by the OSD Study Group are listed in Appendix A, Part V, of this thesis. Based on their analysis, the OSD Study Group reached the following conclusions, as of June 1984, regarding data rights policy:

- a) Data rights are not the major problem preventing DoD from obtaining competition for the purchase of replenishment spare parts.
- b) The quality (accuracy, legibility and completeness) of data is a far greater obstacle to competition than limitations on the government's rights to use the data.
- c) The government does not need unlimited rights to all data for all items because many parts cannot be competed for valid reasons. To adopt an across-the-board policy requiring the purchase of unlimited rights to all data would result in unnecessarily increased costs.
- d) To force contractors to give up unlimited rights as a condition of doing business with the government is not in the long-term best interests of the nation (6:44-45).

RAND Report

The analysis by the RAND Corporation, stated that the difficulties encountered by the government in attempting to use reprocurment data to enlarge the defense industrial base and enhance competition for weapon system contracts

presents only one side of a much broader policy issue. The real question, which is seldom asked, is how much competition is feasible - or even desirable - when the defense industry is being discussed? (18:19)

A competitive marketplace works best when the item being produced is simple, unchanging, homogenous, interchangeable, and easy to separate from other products in the marketplace. However, weapon systems usually have characteristics quite different from these. DoD does not choose between rival producers of the same design but between different designs based on the price of the product and the production capacity of rival contractors. Once a design is selected, the contractor that created the design is usually given an exclusive contract to produce it and the rival contractors are frozen out entirely (18:19).

Once the production design has been selected, the only way to reintroduce competition is to find points of cleavage - places where parts, components, subassemblies, etc. - can be separated (the official term is "break out") without losing production efficiency - and contract them out to other suppliers (18:19).

A point to be considered is that even when the data is available, there is a certain amount of "learning" that must take place before a second source is equally capable of producing the item. People on the production line will use excessive raw materials and time to find the most efficient means of producing the item in their facility.

Many of these costs will be charged to the government depending on the terms of the contract.

The government goal in increasing price competition is to reduce the cost of weapon systems without adversely affecting the performance of defense contractors. However, the more the government attempts to force competition, the greater the potential that duplicate facilities will be built that will produce similar items which are not interchangeable. The bottom line is that the ability of higher level subcontractors, or even prime contractors, to meet established production schedules can be seriously affected when substitution of parts made by a second source leads to unreliable performance in military missions and inability to guarantee the safety and capability of the end product (18:20).

The methodology described in Chapter III will use expert opinion to estimate the future impact of limiting the time frame proprietary rights are held by contractors working on Air Force system acquisitions.

III. Methodology

Introduction

This chapter describes the methodology by which the research questions and objectives in Chapter I were answered. Included in this chapter are descriptions of the research instrument (including a discussion of why it was chosen), and the means of choosing the sample population. The chapter concludes by listing assumptions and limitations relevant to the methodology, and provides the reader with a brief summary of the methodology.

The research objective deals with identifying the effects of placing a five year maximum term where the contractor's limited data rights are in force. After five years the data would automatically revert to unlimited (unrestricted) rights - any limitations on the government's use of the data for competitive reprocurement of spares would be removed.

The five year term was initiated by Secretary of the Air Force Vern Orr, this research will forecast the effect of this policy on sole source procurement spare parts by the Air Force. The first step in addressing this objective was an extensive review of literature covering data rights. The second step was to interview a sample of

mid-level civilian and military managers who are employed by the Air Force to negotiate new contracts with private industry and maintain existing ones.

Literature Review

The purpose of the literature review was twofold: To provide an information baseline to compare the post-Orr clause environment with the prior environment and to ensure that past research was not being duplicated. The sources for the literature review came from:

- a) Defense Technical Information Center (DTIC). Several searches were made to gather information related to data rights. However, little success was realized in gathering current material specifically on data rights.
- b) Defense Logistics Studies Information Exchange (DLSIE). The information obtained from the DLSIE search consisted mainly of executive summaries and not detailed studies. The same difficulty was encountered in obtaining current data rights studies. In addition, the same key words produced entirely different results from DTIC and DLSIE.
- c) Air Force Institute of Technology (AFIT) course materials. Several collections of material provided by instructors teaching Professional Continuing Education (PCE) courses on data management and spare parts acquisition were particularly useful in providing background information.

In the initial exploratory research, several points were uncovered which altered the scope of the proposed research. The five year data rights clause by Secretary Orr was a recent policy change and had not been included in

a sufficient number of major weapon system contracts to form a data pool for statistical analysis. This fact meant that collecting data for the purpose of comparing before and after costs of data rights acquisition would have to be deferred to future research efforts.

After taking into account the limited time and resources available for this research project, the decision was made to interview qualified individuals and obtain their comments on what effect the policy change appeared to be having. In other words, instead of trying to statistically prove a hypothesis, the goal would be to take a pulse reading, or snapshot, of the systems acquisition process and from that make an estimate of future trends and recommendations for further research.

Method of Approach

The method of approach for this study was based upon an in-depth analysis of several on-going, new, and future major weapon system acquisition programs. The time frame for these efforts extends from the early 1970's for the Air Force F-15 fighter aircraft to the 1990's and beyond with the Advanced Tactical Fighter (ATF) and other advanced research projects.

The following aircraft programs were selected for closer observation: the F-15, F-16, B-1, ATF, and Aeronautical Systems Division (ASD), Research and Development Branch. These particular programs were

selected for the following reasons:

- a) To discover the full impact of the five year data rights clause, it was important to investigate how the clause was being applied in a variety of situations.
- b) Active System Program Offices (SPOs) or System Program Divisions (SPDs) within ASD, were available at Wright-Patterson AFB.

In addition to these major programs, additional material was gathered by interviewing personnel assigned to the Directorate of Lessons Learned (AFALC/PTL); the Office of the Staff Judge Advocate HQ, Air Force Logistics Command (AFLC/JANP); the Directorate of Policy and Source Selection (ASD/PMP) and Contract Review Committee (ASD/PMC). These interviews were important because personnel in those agencies are involved in broader policy issues than persons who operate solely in the program offices. However, the JANP, PMP, and PMC members were not so far up the chain of command that they had forgotten what is involved in carrying out policy by negotiating contracts on a day-to-day basis.

Two of the programs (F-15 and F-16) had been on contract for a number of years at the time Secretary Orr issued the policy change. The B-1 program was a new acquisition program; any change in data rights policy could alter the cost estimations in the overall program cost which had been provided to Congress. Within future major weapon system acquisition programs, actual procurement data negotiations were not underway but decisions were being made that would affect the product design and the Air

Force's ability to obtain unlimited rights data from a contractor.

Interviews

After considering the scope of the research effort and the conditions imposed by dealing with a very recent policy change where the "dust had not yet settled", the personal interview approach was selected as the most appropriate means of gathering data. The primary reason this method was chosen was its improvement in depth and detail over information that could be secured from a telephone or mail survey. A contributing factor was the opportunity this method offered to probe with follow-up questions, where appropriate, or to digress into other, relevant areas which were not originally considered but arose in the course of the interview (7:294).

Once the personal interview method was selected as the means of data collection, work was begun on an interview outline that would provide a guide for keeping the discussion on the topic at hand. There were two primary reasons an interview guide was selected over a list of specific questions: Since the respondents would be working in a variety of occupational areas, not every question would apply equally. In addition, word emphasis, tone of voice, question rephrasing, and general appearance of the interviewer could bias the responses of the subjects being

interviewed (7:302).

The following general guidelines were used in developing the interview outline:

- a) Questions should be appropriate to the research topic.
- b) Questions should be stated in plain language to the greatest extent possible, limiting the use of acronyms and buzzwords wherever possible.
- c) Follow-up questions and clarifying statements should be expressed in such a manner so as to orient the responses towards the research topic but should not be structured such that the respondent was led to believe one particular response was desired.
- d) Biased and inflammatory language should be avoided.
- e) The questions should not be stated in such a manner that no further discussion on that topic was possible (15:62).

A sample of the interview outline is included in Appendix B.

Survey Plan

The following discussion describes the universe, population of interest, and sample selection used for the research project.

Universe Description. Since an engineering or acquisition data package is a part of every major weapon system contract signed with a prime contractor, the universe for the author's research project consisted of all firms, including tiered subcontractors, within the defense industrial base and all DoD personnel who deal with the

issuing and administration of such contracts.

Population of Interest. The population of interest for this research project is composed of Air Force civilian and military personnel who support Air Force programs by working directly with preparation, submission, and evaluation of contracts which will obtain complete acquisition data packages during the life of the contract.

Sample Selection. The survey sample was selected by calling various program management offices and asking the program manager, or someone of equivalent status, to suggest one or more senior contract managers who were familiar with data rights clauses on contract. From these contacts, a sample size of twelve managers was chosen. All members of the sample were division chiefs or mid-level managers.

Once qualified sources were located, a preliminary telephone contact was made to enlist their participation. At this point, an introduction to the researcher and a general discussion of the purpose and scope of the interview was accomplished. In addition, a tentative date for the actual interview was established. At least two days prior to each interview, as a courtesy, the subject was contacted to confirm his or her availability for the interview. Using this procedure the researcher was able to enlist considerable support for the project and achieved a 100 percent response rate.

Summary of Assumptions

Due to the method of sample selection described above, the following assumptions were made in researching this topic in order to make it easier to analyze the responses:

- a) The individuals interviewed were totally aware of the requirement for obtaining unlimited rights to data beginning within five years of the delivery of the first production item and knew this is established policy which must be considered when future contracts are negotiated.
- b) The individuals who were interviewed are knowledgeable and expert in their field, were representative of the particular group of which they are a member and, to the best of their ability, gave unbiased answers.

Limitations

While the interviewed subjects were chosen because the large programs they were in are fairly typical of large scale development programs, the reader is cautioned to remember that the Air Force also manages a vast number of small scale programs. Air Force wide, system development costs range from several thousand to several billion dollars and the technological complexity varies from very low to state of the art.

The results obtained from looking at these high dollar, high visibility, and high interest programs might not be exactly the same as results obtained by observing programs with lower dollar value or less visibility. In addition, the weapon systems acquisition process is a

dynamic and continually changing process with shifting emphasis on policy issues. As a result, rules, directives, and regulations are not fixed and static; they change over time as new knowledge is gained about the impact and effect.

Because the research objectives previously stated in Chapter I are subjective in nature and the research instrument is based upon gathering subjective data in the form of expert opinion, it follows that the method of analyzing the results will also be subjective. Regardless of the best efforts of this researcher, and the people who were interviewed to exclude bias and parochial attitudes from the data gathered, there remains the potential for misinterpreting questions or responses when it comes to drawing conclusions.

Therefore, it is important to reemphasize that this study represents a small sample of a large population where the environmental conditions are presently in a state of flux. The results that follow, while useful in illustrating present conditions, are preliminary and extreme care should be taken in attempting to apply the conclusions to the total population.

IV: Case Narratives

This chapter provides the reader with a series of abstracts covering the points relevant to the research topic. Although the data rights policy change embodied in the clause issued by Secretary of the Air Force Vern Orr applies to all system acquisitions whose life cycle spare parts costs will exceed \$500,000, the actual means of implementing the policy was left to the individual SPOs.

Because of this, there are contradictions in the perspective of the various interview subjects and differences in the manner the policy is applied within their divisions. This is not meant to indicate that one method is more valid than another, but to illustrate the difficulty in implementing an Air Force wide policy change.

As mentioned previously, the F-15 and F-16 were selected as representative on-going major system procurements; the B-1 as a major new system procurement; the ATF as a near-term future procurement; and Division Research and Development as the far-term system

development. In addition, personnel in ASD/PMP, ASD/PMC, and AFALC/PTL were interviewed to obtain current information on the policy from a broader perspective than that available to the people in the buying offices.

F-16

The F-16 Falcon is a lightweight single-engined fighter intended as a low cost alternative to the complex and expensive F-15 Eagle. The production decision on the F-16 was originally made in January 1975 and the first delivery to an operational unit was to Hill AFB in November 1978.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

At the present time, the F-16 office has not been able to sign General Dynamics (GD), the prime contractor, to the clause. GD has no objection to the clause because all GD data is delivered with unlimited rights. GD's objections center around the expense involved in reaching down through all the layers of subcontractors and either obtaining data with unlimited rights or "clear and convincing evidence" that will prove the validity of the subcontractor's claim.

GD is proposing an alternative data rights clause

which states that it will make the best effort possible to obtain unlimited data rights from its subcontractors, but if it is unable to acquire them, General Dynamics could bundle up all correspondence and data acquired to that point, hand it over to the Air Force, and let the Air Force resolve the issue with the subcontractors.

The contracting process was at a standstill at the time the interviews were conducted until General Dynamics either provided the F-16 program office with the information it needed to go forward to Systems Command and request a deviation, or agreed to include the Orr clause in new contracts. The problem with requesting a deviation was that each item where a dispute over data rights existed required a separate waiver package. For Systems Command to grant the deviation, the program office would have to supply clear and convincing evidence - evidence which had to be obtained from the contractor.

In the meantime, the need for the aircraft would not be diminishing. The program office cannot endlessly delay production or deployment of an aircraft solely because there is insufficient information for a deviation to be granted.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

The subjects interviewed were not working on any Air Force initiatives which would substitute for the Orr clause at the time the discussions took place.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

The language in the Orr clause itself is too broadly written because it does not take into account the various development stages of a program. Two things work against the Air Force concerning data rights: (a) When a system is initially developed, the Air Force does not know if the requirement will exist to compete it; and (b) Level 3 engineering drawings do not necessarily contain all the information necessary for a second source to manufacture the item.

The Orr clause stated that no more than sixty months

. . . after the first delivery of the production items under this contract, the Government shall have unlimited rights . . . in all technical data and computer software used by the contractor, including subcontractors and suppliers at any tier, in all phases of development and manufacture of production items including, but not limited to, all components, modules, assemblies or parts thereof" (20:2).

However, it is possible that the baseline might not be finalized even by the time the first production item is delivered. A baseline can be established for the purposes of delivering aircraft but still have quite a number of

items not included in the baseline.

For example, when the first F-16 aircraft were delivered to an operational unit, the reliability qualification testing had not been completed on the radar. The aircraft was capable of being flown without radar, or at least radar that had not passed all the required tests, but mission capability was certainly degraded. Only when testing had been completed was the baseline established.

From the initial design stages, the F-16 was intended to use off-the-shelf equipment which was already developed and available to the greatest extent possible. If that equipment was developed by a subcontractor who was also claiming proprietary rights to its procurement data, it was not seen as an insurmountable problem - at the time the original production design was being definitized.

F-15

The F-15 is a twin-engined, high-performance air superiority aircraft designed to operate in all types of weather conditions. The aircraft was initially flown on July 27, 1972 and entered the Air Force inventory on November 14, 1974. The F-15 was the first U.S. fighter to have engines capable of producing more pounds of thrust than the normal weight of the aircraft. This allowed the plane to accelerate while in a verticle climb and, combined with a low aircraft weight to wing surface area ratio, to make the aircraft highly maneuverable.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

The F-15 program office had been unable, at the time the interviews were conducted, to include the Orr clause in any new contracts. The subcontractors in particular were unwilling to commit themselves to a clause which would require them to relinquish all data rights to a product which, in many instances, represented their sole reason for existence. The prime contractors did not have any particular heartburn with the Orr clause because nearly all their development work has been done at government expense; so there is question that the government owns the data rights.

The prognosis given by the contract managers interviewed was that there is little chance the Orr clause, as originally formulated, will be placed on a contract because the program has been going on for too long and very few changes in the aircraft design are being made for the new buys. The original production design for the F-15 contained a substantial number of parts which the government did not obtain unlimited data rights for. Without unlimited data rights to a part supplied by McDonnell-Douglas or one of its subcontractors, the government cannot take the information, give it to a second source, and ask him to make a substitute part by using that data.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

The original guidance received by the F-15 program office stated that all solicitations sent out after 1 October 1983 were to have the clause issued by Air Force Secretary Orr included. Because of this, the 1984 and 1985 advance buys were excluded from full compliance; payments for the 1984 purchase had already been made and the RFP for the 1985 buy had already been issued prior to that date.

As an alternative to the original Orr clause, a modified data rights clause was drawn up which stated that the McDonnell Aircraft Company, prime contractor for the F-15 and a subsidiary of McDonnell-Douglas Corporation, would do all it could to obtain unlimited rights to all data from its subcontractors. However, the F-15 office had a considerable amount of trouble obtaining higher headquarters approval for the modified clause.

The ASD JAG (Judge Advocate General) lawyers helped write the clause and concurred on the language. ASD contracts and AFLC JAG also approved it as written and the junior legal counselors at AFSC JAG also went along with it. However, the chief of the AFSC JAG made the decision that pressuring McDonnell Aircraft Company into signing up to the original Orr clause would prove to Secretary Orr that his office was doing its job properly.

As a result, he would not approve the modified clause. Darleen A. Druyun, Director of the Directorate of Contract Clearance and Policy Development (AFSC/PKC) and Chairperson of the Contract Clearance Office (AFSC/PKCC), did not want to take the proposed contract before the three-star general in charge with Systems Command JAG non-concurrence (39:3). Because the F-15 program had been operating on a letter contract issued before the Orr clause was issued, the F-15 program did not have to include any version of the clause in the definitive contract. However, if the McDonnell Aircraft Company was willing to include the modified clause, the F-15 office should go ahead with the contract as written.

Therefore, Air Force Systems Command had not officially approved of the F-15 program office's modified clause; it simply decided that it did not have sufficient justification to disapprove it. The other initiative that was being worked was direct licensing arrangements. Other than those two alternatives, the F-15 office was at a standstill in negotiations at the time the interviews were conducted.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

Personnel interviewed in the F-15 office did not believe that the problem of sole source procurement of

spare parts would be solved by the Orr clause. The problem is created by the very nature of the way the Air Force buys weapon systems. The Air Force, constrained by the budget, seeks to purchase effective weapon systems at the lowest possible cost. This policy leads to prime contractors selecting subcontractors which have already accomplished the development work and have parts ready for inclusion into the final design.

Having spent their own time and money becoming "smart enough" to make a part at a competitive price, the subcontractor is often unwilling to provide the reprocurment data with unlimited rights. One reason for this reluctance is many small subcontractors make only a single component and much of the information relating to how that part is made is in the form of a trade secret. As discussed in Chapter II, a trade secret is only valuable so long as it remains unknown to the competition. If the government gains unlimited data rights to the part and makes the information common knowledge to the rest of the industry, it effectively puts that contractor out of business.

The original clause was issued by Secretary Orr with:

- (a) No implementing directives stating how the policy was to be carried out;
- (b) no additional funding to pay for travel to challenge contractor claims or to purchase unlimited data rights; and
- (c) no additional people to do the additional challenges or negotiations with contractors.

For example, finding the people who have the experience and providing them with the funding to go even one tier down and track a subcontractor's development costs is often impossible. On the other hand, because proving the validity of his claim may represent the difference between staying in business and going under, a contractor is willing to pay for the most experienced personnel he can find. What is more, if he has any basis at all for his claim he will probably win.

A third reason the Orr clause will not solve the problem is that the Air Force does not make effective use of the data it buys under the current system. The Air Force purchases a reprourement data package with unlimited rights from a contractor. This package, according to DoD D-1000B, must contain everything a second source would need to reproduce the component.

However, what often happens is: (a) Contractors who reply to the Request for Proposal (RFP) or Invitation for Bid (IFB) will say the reprourement data package is inadequate to reproduce the part; (b) the proposal will not describe the component the Air Force really wants to buy; or (c) the contractor who eventually gets the bid will reproduce it exactly as required under the terms of the contract and it will not work properly - if it works at all. Then the government has to provide additional money and manhours to find out why it does not work.

A final criticism of the Orr clause was that it was

too broad. It did not tell the program offices to purchase unlimited data rights if it was cost-effective or was otherwise good for the Air Force, it simply said to buy the data. While it may be cost-effective to purchase unlimited data rights for small, technologically simple parts which the Air Force buys in quantity and whose design will not change in the near future, it is seldom cost-effective to buy the same rights for high-technology components (i.e. electronic countermeasures equipment) that will probably be obsolete by the time replacements are needed.

B-1

The B-1 is a strategic manned bomber intended to be a replacement for the fleet of aging B-52s and the predecessor to the stealth bomber. It has the capability of carrying a greater payload than the B-52, yet presents a far smaller radar and heat signature.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

When the data rights clause was first issued by Secretary Orr, the B-1 program office developed a briefing to be presented to him covering its rationale for exempting the B-1. Among the points briefed were: (a) The new lot buys would be additional purchase agreements based on the

original production contract and would not be new contracting initiatives; (b) the B-1 program had a cost baseline of \$20.5 billion for the initial multiyear procurement which would be affected by any change in data rights policy; and (c) there were a number of advance buys which were already on order.

The data rights clauses in the original production contract formed the basis of the acquisition plan. The price estimates submitted by contractors had formed the basis for the savings estimates of multiyear contracts versus annual buys. If the B-1 program office tried to implement a stricter data rights policy, negotiations for the purchase orders would have to be reopened. The original \$20.5 billion baseline which the President had to annually certify to Congress would be jeopardized.

The B-1 program office convinced Secretary Orr that the data rights clauses which were in the existing contract would allow the Air Force to identify and challenge items which it felt should not be delivered with restricted use legends. In addition, the clauses would permit negotiations with individual contractors to purchase unlimited data rights and compete spare parts buys at a later date. Finally, to try and secure unlimited data rights on a wholesale basis and stay with the \$20.5 billion baseline might have involved trading data for aircraft capability.

After the briefing, Secretary Orr's comments were that

it was never his intention to force the new data rights policy on old programs and the B-1 was to press on with the current data rights clauses. Therefore, the B-1 program was granted an exemption to the Orr clause.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

Because the B-1 program was granted an exemption, research question two did not apply. However, if there were to be an additional purchase, beyond the original 100 plane buy, then the provisions of the Orr clause would apply. The clause itself would have to be included or alternative measures would have to be introduced to ensure effective competition.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

If the problem is viewed as sole source procurement of high-value spare parts, and the solution revolves around obtaining unlimited rights to items in the production baseline, then the Orr clause will go a long way towards solving the problem. There are two reasons this will occur:

First of all, with the Orr clause on the books, Air Force contract managers will have increased leverage with

the contractors. The fact that a clause requiring delivery of all data with unlimited rights within five years exists will demonstrate that the Air Force is indeed serious about reducing spare parts costs. Secondly, the presence of the clause may motivate Air Force personnel to do a more thorough job in the predetermination and source selection phases of the acquisition process where critical decisions are made.

Advance Tactical Fighter (ATF)

The ATF program is intended to develop a follow-on weapon system to replace the F-15 as a first line fighter aircraft. At the time this interview took place, the ATF program office was in the process of preparing the RFP for the demonstration and validation program. The next step after that would be the full scale development effort - which would probably last at least three and one-half years. The ATF program office was projecting an IOC (initial operating capability) date of 1995.

Washington wanted the ATF program to go through a Defense System Acquisition Review Council (DSARC) review before it released the RFP to private industry. By regulation, the ATF program was not required to prepare for this review but the politics involved in starting a multi-billion dollar program created intense interest by Congress, the media, and private industry. Therefore, the

situation demanded that the ATF program withhold the RFP until the review process had been completed.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

At this stage of development, the Orr clause did not apply because delivery of the first production item was not even scheduled. Therefore, the ATF program office has not attempted to negotiate with contractors to get the original Orr clause on contract.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

The ATF program is attempting to head off potential problems with sole source procurement downstream by including a modified data rights clause in the RFP for the demonstration and validation program. It states that while the government recognizes the difficulty in obtaining unlimited data rights from subcontractors for parts to a system that has yet to be designed, the contractors involved in the development contract will be required to do their best at this stage and the follow-on full scale development contract will require full unlimited data rights.

The purpose of this policy is to let potential

contractors know up front that the government is serious about obtaining unlimited data rights and it should select subcontractors accordingly. Potential prime contractors have stated a willingness to supply data for any work done on the development contract with unlimited rights. There are two possible reasons: (a) contracts at this stage are one form or another of cost reimbursement, so their development costs will be covered; (b) much of the data being supplied at this stage will be outdated by the time a production system is developed and not suitable for reprocurment purposes.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

The only means of discovering with certainty that a reprocurment data package is adequate is to take the information out to private industry and ask someone to build that part. However, even with relatively simple items where the data passes inspection by Air Force engineers, the contracting office, and the contractor, there have been problems. What seems clear on first glance at a drawing often becomes an engineering nightmare when actually trying to produce the item. More times than most contract managers would like to think about the contractor comes back for clarification and the Air Force has to spend time and man hours trying to decide why the component does

not work as intended.

In the contracting world there are a number of tradeoffs that have to be made if the system is to meet the delivery schedule. One of the tradeoffs involves data rights. If the Air Force insists on trying to predetermine every part before going on contract, the process will grind to a standstill. On the other hand, if the Air Force does not do a good job of challenging during source selection and exercising predetermination of data rights there will be increased occurrences of sole source procurement downstream.

Program offices are trying to complete more contract negotiations with fewer, less experienced people than before. One reason is that pay raises, benefits, and retirement are being cut back in an effort to trim the budget (32:5). Many senior civil servants, those with the most experience, are retiring. Other, younger persons - in their late 20's to mid-30's - are observing the pay cuts and the extra work being generated by competition in contracting, data rights, etc. and also leaving (32:5).

Development Branch, Avionics Division
Aeronautical Systems Division

In Division Research and Development the purpose is to end up with a working prototype, not production items that will have to stand up to actual combat conditions. Therefore, this agency is not directly covered by the Orr clause. However, research and development is the

birthplace of proprietary rights. It is here that decisions are made which dramatically affect the rights in data the government will possess when the final production item begins rolling off the assembly lines.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

Because this program office does not deal with production items research question one did not apply.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

Often, the contractor files proprietary data rights claims only when the production baseline has been established. To avoid this situation, the Development Branch, Avionics Division will send the contractor a letter as soon as there is any indication the contractor will be claiming limited rights to some or all of his data.

In this letter, he is told that it is not the government's intention to demand data for which he has a legitimate claim to, but a clear and convincing position is necessary in order to establish that claim. The letter does not require the contractor to provide the information but it does indicate what the government might like to see.

This letter was developed unilaterally by the Avionics

Division legal office by paraphrasing the language found in JAG 60 day challenge letters. A challenge letter is filed when the claim of limited rights is made once a contract is in effect and the government feels the contractor's claim is invalid.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

It is a great deal easier to track costs associated with a situation that has already occurred, than to estimate the costs and benefits of a future course of action. When a problem, such as sole source procurement of high value spare parts, gains attention someone can sit down and draw a line of demarcation stating the nature of the problem and necessary corrective action to prevent reoccurrence of the problem.

Taking action once a problem has been officially recognized also makes it easier to punish those responsible and reward those who correct the deficiencies. The person who finds and takes action to correct a problem receives recognition as a top performer. However, if the same person takes the initiative to head off the problem so it never occurs no comparable effort is made to recognize the individual's contribution to the Air Force.

The Orr clause was really aimed at on-going production

runs and sole-source negotiation problems. The goal was to obtain the data, compete spare parts, and use the force of the marketplace to drive down the price the government pays for spares. The solution to the perceived lack of competition has been to increase the number of competition advocates in the Air Logistics Centers (corrective action). The value of the policy change depends upon how long the items bought by the Air Force are in production.

The interview subject had been a member of a team that investigated purchasing activities at the Air Logistics Centers. When he went in he firmly believed there were abuses and actively sought to find them. However, the final tally indicated that the reported abuses simply were not occurring. Most of the excessive prices paid for spare parts could be grouped into three categories:

(a) The Air Force buys only one or two of an item where the contractor has to use special techniques or processes to engineer the item to meet Air Force specifications. The material and procedures used to actually make the item are not worth the final price but the overhead costs are generally defensible because they are only being applied across a very limited production run.

(b) The use of a parametric pricing structure where the contractor does not separately price the items for a limited production run. The contractor will gather together the expenses for all spare parts that he is

producing for the Air Force. For example, if the total value of all contracts is \$100,000 he divides this into equal sets (i.e 10 kits at \$10,000 each regardless of what is in the kit, how many individual items there are, or the original price of each item).

The end result is that one kit may have two wrenches originally worth fifty dollars each and another may have a data package worth \$50,000 but the Air Force pays \$10,000 for both. The reason for this practice is that in a multimillion or multibillion dollar contract it is simply not cost-effective for the contractor to try and price each and every item separately or for the Air Force to try and nail down every expense to the penny. What seems like a overpricing is just the end result of an accepted accounting practice.

(c) Roughly 20% of the spare parts cost 80% of the dollars spent so those are the ones that get close attention. However, the remaining 80% of the spares, the ones that only take up 20% of the money, are the ones that often end up under the parametric pricing structure.

Directorate of Lessons Learned

The mission of the Air Force Acquisition Logistics Center is to maintain a corporate memory bank of the lessons learned and to provide feedback for improving the acquisition process. The bottom line is that these lessons

must be communicated to the decision makers in current programs if problems identified with previous procurement efforts are not to reoccur. The primary means of educating field offices of the results is the Lessons Learned Tailored Packages for individual programs which contain decisions being made in the current acquisition phase.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

The Orr clause itself is not being placed on contract as originally written. Instead, other measures such as increased emphasis on predetermination of rights in technical data and challenging during the source selection process are being used to obtain the same amount of reprocurement data as would be obtained under the full-up Orr clause.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

In addition to the two alternatives listed under question one, additonal measures such as dual sourcing, technical assistance, licensing, or second sourcing have been taken to obtain reprocurement data. In these situations, it is not required that the Orr clause be included nor did a waiver have to be approved. In

addition, since Air Force Acquisition Circular (AFSC) 85-16 was issued early this year, commercial and Foreign Military Sales (FMS) items have been exempted.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

The Orr clause itself was not necessarily a good policy decision. Up to the point it was issued, the government has recognized that the contractor had certain limited rights that he should be entitled to retain. The government required delivery of data but would protect contractor rights if the contractor had a legitimate claim that certain data was proprietary. The language of the Orr clause led contractors to believe that the government was out to get them.

The Air Force has not actively worked to ensure that information submitted in reprourement data packages meets the standards set by DoD-D-1000B, "Military Specification Drawings and Associated Lists", 28 October 1977. For example, prior to Secretary Orr's directive, program offices would place a clause in the contract requiring formal predetermination of data rights but would not follow through by challenging during the source selection process.

Formal challenging was usually carried out by the Air Logistic Centers (ALCs) long after the data had been delivered to the data repository. The presence of the Orr clause is motivating Air Force personnel to do their jobs

more effectively by using previously available regulations and directives as they were intended to be used.

The Air Force cannot simply place a requirement that a clause be included in future contracts and expect the contractors to automatically deliver better reprocurment data packages with unlimited rights. It takes more well-trained people who know the regulations and know how to negotiate contracts.

Finding additional people to manage data rights acquisition, to function as competition advocates, and accomplish actual contract negotiations is less difficult in a major program office such as the B-1 than in the smaller SPOs (those with a very limited number of people to begin with, perhaps two to four). Because of new requirements aimed at improving competition in contracting the smaller SPOs are finding it increasingly difficult to work their programs. Difficulty in working programs translates into additional time to negotiate a contract to purchase spare parts.

If the cases where competition is not cost-effective were weeded out it might reduce the long lead time to get spare parts. However, program offices are not being allowed the latitude to make those decisions and it is taking more time to negotiate an agreement with a contractor than it did before there was increased emphasis on competition in contracting (40:3).

Procurement Committee - (ASD/PMC)

Members of the procurement committee review contracts of \$3.5 million or more in dollars obligated for completeness - that all the required clauses, terms, and conditions are included in proposed contracts - and accuracy. After the review is completed, a recommendation will be made that the contract be disapproved, be revised and then approved, or approved as written.

Members of the committee will also review acquisition plans of \$3.5 million or more; solicitations that will be \$5.0 million or more (including options); and review requests for deviation or waiver the the FAR or FAR supplement. Other tasks include attending prenegotiations on contracts of \$3.5 million or more and business strategy panels. A business strategy must be drawn up for programs where the research and development will cost \$50 million or more or production will cost \$100 million or more. The business strategy covers such items as when the program expects to meet development milestones.

Finally, the committee coordinates on the "1279 Report". The 1279 Report is sent to the legislative liason office - which is located in the Secretary of the Air Force's office in Washington - on any award of \$3.0 million or more (not including options). The liason office will release an announcement to the media and to members of Congress who represent the state and district where the

manufacturer who won the contract operates his plant. Over \$50 million the announcement is given to every committee chairman in Congress and in the Senate.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

The clause is not being included in a significant number of contracts at the present time. When the Orr clause was first made available for use there were quite a few requests for deviation from the program offices. However, AFAC 85-16 relaxed the Orr clause by exempting commercial items and Foreign Military Sales. Based on what flows through the committee, it seems as if the situation has reverted to the rights in technical data clause that existed before the Orr clause was created.

The majority of prime contractors were willing to include the Orr clause in the proposed contract, but many subcontractors and vendors were not. In some instances, a prime contractor had signed an agreement with the Air Force to supply a system, only to find out that one or more subcontractors refuse to submit data with unlimited rights. As a result, the prime contractor was forced to tell the Air Force he could not live up to the agreement that had just been signed.

In addition, the time it takes to negotiate terms and conditions of a proposed contract and produce a signed

agreement has been increasing. Most of the extra time has been added to the initial contract phase, when the Request for Proposal (RFP) is released to private industry. Before a prospective prime contractor can submit his proposal for the system, he must query his normal subcontractors and find out their position on supplying data with unlimited rights and the price for purchasing unlimited rights to data that would otherwise be supplied with restricted use legends.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

When the Orr clause first was made available for use there were a significant number of contracts that came through with requests for waiver and attempts to include alternative measures as an alternative. However, since the requirements of the Orr clause were relaxed the number of requests for deviation have slowed to a minimal amount.

Although it is not impossible that other measures are being worked, the member of the committee that was interviewed was not aware of many contracts at the present time that involved the use of alternative measures. One item that has made his task easier is that AFLC and AFSC commanders have been delegated the authority to make waiver decisions relating to commercial items and Foreign Military Sales (FMS).

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

Prior to Secretary Orr's issuance of the five year data rights clause, Aeronautical Systems Division had not been aggressively using predetermination of rights in technical data and computer software to challenge contractors on their listing of data to be submitted with limited rights. The Orr clause represented a swing of the pendulum to the other side; however, as often happens with an abrupt shift in established policy, it was too grasping, attempting to siphon off the rights to privately developed data.

Furthermore, the clause did not exempt FMS purchases, even when the FMS customer was not interested in obtaining unlimited rights in data. A majority of the requests for deviation seen by the committee involved FMS sales. Providing the information necessary to justify a deviation or waiver placed a tremendous burden on the prime contractor. He had to agree that every subcontractor would submit data with unlimited rights or provide clear and convincing evidence why not.

It is unlikely that the Orr clause will make a significant contribution to reducing sole-source procurement of spare parts. Even if a contractor submits all his data with unlimited rights, there remains a significant possibility that the information will be

insufficient for reprocurement purposes. The first indication that something is wrong will not come until one of the five Air Logistics Centers attempts to use data from the data repository in a Request for Proposal or an Invitation for Bid. At that time the potential prime contractors will look at the data and tell the Air Force he cannot manufacture the indicated part with the information available. The Air Force then has to go back to the original contractor and try to resolve the issue - resolution almost certainly absorbing additional man-hours and dollars.

ASD - Policy (ASD/PMP)

ASD/PMP interprets current regulations, directives and statutes and then issues guidance on policy matters to the various program offices within ASD. Personnel will also draft additional policy, or an expansion of policy, where gaps exist and consult with personal in the contracting offices to try and resolve policy questions by providing a solution - or at least informing the questioning agency of the entire scope of the problem.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr, being included in new procurement contracts?

When the Orr clause was first issued, there was substantial difficulty in negotiating agreements with contractors which included the clause. The major hang-up

was when the prime contractors attempted to clear the clause with their subcontractors. Adverse conditions faced by the prime contractors included the necessity of clearing the clause with all subcontractors and vendors who would be working on components, subcomponents, and parts of the proposed system. Since the Air Force could not negotiate directly with the subcontractors, it was the prime contractor's responsibility to prepare information that will be included in a waiver or deviation package.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

The person interviewed was fairly certain that alternative measures were being attempted; on several occasions he had been asked to comment on whether or not something was possible under the clause. However, he was not personally aware of specific measure being used or specific contracts being worked and without something definite to go on did not choose to speculate.

However, in his opinion, a desirable alternative to the original Orr clause would have been a modified data rights clause that was narrower in scope and more specific in the wording used to write it. The original Orr clause was so broadly written that program offices were sending requests for relief to AFSC HQ for situations that should never have arisen - or should have been able to be settled

at a lower level of authority.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

The Orr clause was an attempt to secure unlimited rights to all data submitted by contractors during the production of a weapon system. The tasks required to accomplish secure unlimited rights seemed simple, on paper. However, as the clause was originally worded, the language was too all-encompassing and left no room for judgement on the part of program managers. Practically speaking, in order to implement the original Orr clause an army of people would have been required - and the Air Force does not have those people.

Personnel attempting to negotiate contracts were submitting requests for deviation to the Office of the Chief of Staff for Contracting and Management Policy for minor details that could have been settled much easier at lower command levels. In addition, the original Orr clause required data to be obtained with unlimited rights regardless of whether the data was needed, would be used, or would benefit the government.

There is no assurance that if all data were obtained with unlimited rights the Air Force would be able to take a reprocurment data package to a second source and have the second contractor make the item. When the original

contractor made the part, the people on the assembly line would consciously follow the production drawings but unconsciously fill in any gaps with their own system knowledge.

If no problems arose during production and the data conformed to contract requirements the data package was accepted by the Air Force. However, when the Air Force attempted to take the data package to a second contractor, one who did not have the benefit of the extra knowledge, the second source would often be uncertain about how the information supplied by the Air Force was to be interpreted.

It is not enough to purchase unlimited rights to a reprourement data package, the Air Force has to purchase the updates as well and then ensure that the data on file is continually and accurately updated. Even with a perfect case the Air Force will probably never have enough people to see that the data is updated over the interim time from when the data is secured to when it is actually used for reprourement purposes. In addition, the Air Force has never settled who is responsible for determining the data is adequate.

Over the time the person interviewed had been a procurement analyst, he had almost never seen an acquisition that was successful based on data and included in a follow-on contract. Holes and deficiencies (missing and/or incorrect data) continue to bedevil people at the

Air Logistics Centers attempting to buy parts and the situation is not likely to be corrected in the near future - regardless of how much data the Air Force obtains from contractors with unlimited rights.

V: Conclusions and Recommendations

Introduction

This research was conducted in recognition that there might be difficulty in obtaining definitive answers to the problem of sole source procurement of spare parts. This research was an attempt to investigate how Secretary Orr's policy change was being implemented and to try and determine whether or not it would prove a valid solution to the problem. In Chapter IV, the results of interviews with various experts in the System Program Offices (SPOs), divisions of Aerospace Systems Division (ASD) and Air Force Logistics Command (AFLC) were reported. To the greatest extent possible, this researcher has attempted to report this information in an unbiased manner.

In this chapter, the researcher's answers to for each of the research questions that were identified in Chapter I are stated. Next are conclusions on how well Secretary Orr's five year clause seems to address the issue of sole source procurement of high value spare parts. Finally, this chapter will conclude with recommendations based upon information uncovered during the research effort.

Answers to Research Questions

The narrative that follows reflects the conclusions of the researcher after evaluating the replies to each of the specific research questions by individuals who were interviewed during this research project.

Research Question One

Is the five year data rights clause, as proposed by Secretary of the Air Force Vern Orr being included in new procurement contracts?

Based upon the information gathered, it would appear that it is not. There are two reasons: First, because the clause has only been available for use since October 1983, very few contracts contain it. Solicitations for Invitation for Bid (IFB) and Request for Proposal (RFP) for many current procurement efforts were sent out to contractors prior to 1 October 1983 and do not come under the jurisdiction of the Orr proposal. That information was received from discussions with contract managers in the F-15 fighter and B-1B bomber program offices.

Another reason for lack of contracts containing the Orr clause is the extreme reluctance of subcontractors, especially those with a single product line, to supply the prime contractors with unlimited rights to data or to provide the information which would allow the prime to prove to the satisfaction of the Air Force that a waiver to the clause should be granted. One possible reason for this

reluctance is that providing clear and convincing evidence would, in some instances, require the submission of information relating to trade secrets. The subcontractor may be concerned that such information could be obtained from the government through the Freedom of Information Act and the competitive advantage previously enjoyed by the contractor would vanish.

It is noted that the program offices are being pressured by Air Force Systems Command and the Air Staff to include the Orr clause on new solicitations. However, at the same time, the program offices are being pressured by users in the field (i.e. operational aircraft wings) to get the system on contract and in production. The impatience by users in the field is created in part by an apparent increase in the time consumed by the negotiating process.

There are situations where only one contractor is qualified to produce a certain item and there are no other contractors who currently possess the equipment and technical expertise to be qualified as second sources. Under these conditions, even if the Air Force were to obtain unlimited rights to all data produced by the original manufacturer, creating a second source would be more expensive than any future savings.

However, because the original Orr clause did not allow the program offices the option of not purchasing unlimited data rights where it was not cost-effective, the program office either had to go ahead and purchase unlimited rights

to data that would not be used, or try and obtain the necessary information from the prime contractor to write a waiver package. Furthermore, each item where unlimited data rights were not obtained required a separate waiver package. Under either condition, the time expended in negotiating an contract would increase and it would take longer to get the parts to users in the field.

Many of the initial requests for waivers to the Orr clause dealt with F-16 sales to foreign countries. Because Foreign Military Sales (FMS) customers usually chose the option of buying into the United States Air Force supply system and had no intention of attempting to manufacture the spare parts in their own countries, there was little to be gained in purchasing unlimited rights in data. However, because the original Orr clause did not exempt FMS sales, the F-16 program office had to submit a package for every deviation request. This also seemed to extend the length of time required to negotiate and sign an agreement with the prime contractor.

Finally, there was a considerable delay in issuing any formal guidance as to how the Orr clause was to be implemented. The original clause issued by Secretary Orr was released with no implementing directives, no additional funding to provide temporary duty assignment (TDY) pay for Air Force personnel to investigate and challenge contractor claims of limited rights in data, and no extra people to take on some of the additional workload.

Research Question Two

If the Orr clause is not being included on new solicitations, what alternative measures are being attempted to increase competition and reduce sole source procurement?

In the F-16 program office General Dynamics (GD) proposed an alternative clause that stated GD would make the best effort possible to obtain unlimited rights to data supplied by its subcontractors. This is similar to a modified data rights clause that the F-15 program office developed for use in their contracts with McDonnell-Douglas. These modified clauses recognized the intent of the Orr clause was to obtain all data with unlimited rights but that some subcontractors would be wholly uncooperative and the acquisition process should not be completely halted by these subcontractors.

Another example of a modified clause is one which has been drawn up by the Advance Tactical Fighter (ATF) program to be included in the Request for Proposal (RFP) for the demonstration and validation (demo/val) phase of that program. Potential prime contractors were notified that the government recognizes the difficulty with obtaining unlimited rights in data from subcontractors when the final design is not yet firmed up. However, the prime contractor will be required to make the best effort possible during the demo/val phase and the follow-on full scale development contract will require the inclusion of the full unlimited rights in data clause (or whatever is in effect at that time).

The most frequently mentioned alternatives actions were: increased use of predetermination of data rights, option pricing, challenging the contractor during source selection, and technical assistance agreements such as leader-follower, direct licensing, or dual sourcing.

Predetermination of Data Rights. The prime contractor is requested to identify which data he intends to deliver with restricted use markings - including data which will be supplied by subcontractors. The Air Force reviews the data supplied and if the analysts believe the contractor has misapplied restricted use markings, the Air Force can require the contractor to provide "clear and convincing evidence" to justify use of the markings. If, in the eyes of the Air Force, the evidence is insufficient, the markings may be removed. This can be a lengthy process and may require the contractor and the Air Force to commit additional financial and personnel resources.

Option Pricing. The Air Force negotiates an agreement with the contractor that gives the government an option to buy unlimited rights to data previously supplied with restricted use legends. This agreement provides a specific list of data and establishes a fixed price for purchasing unlimited rights to that data.

Challenging During Source Selection. The prime contractor provides the Air Force with a list of subcontractors he intends to use in producing the system. If the Air Force has just cause to believe that a

subcontractor is unacceptable, then that contractor may be stricken from the list.

Technical Assistance. The contractor that originally creates the item agrees to furnish any new contractor obtained by the Air Force with all know-how, including technical analysis, advice, and training; computer software; special tooling; and any other assistance the second source needs in order to become fully qualified in producing the item.

Leader-Follower. Leader-follower is a form of technical assistance where the original contractor signs an agreement which requires him to provide any assistance required to make the second source fully qualified. The original contractor is compensated for the information given to the second source, but the second source is not restricted on how he decides to use the information.

Direct Licensing. The original source, in return for a royalty and/or technical assistance fee, provides technical data and all assistance necessary to qualify the second source. However, the original source retains ownership of the information; the second source is prohibited from revealing the information to a third party without the consent of the original source.

Dual Sourcing. During the development phase, the Air Force makes the decision to bring along two contractors as fully qualified sources instead of awarding one a sole-source contract as is the usual practice. To work, the agreement has to be structured so information is shared

equally between the two contractors.

Research Question Three

Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

The Orr clause was directed at lowering spare parts costs. Spare parts costs were assumed to be high because many contractors the Air Force dealt with were sole sources (they had no competition). Without competition the contractor had no incentive to minimize his production costs and these costs were then passed on to the Air Force in the form of higher prices. The corollary was that if the Air Force possessed unlimited rights to all technical data submitted by contractors, the government could reduce the price paid for spare parts.

This would be accomplished by using the reprourement data packages to qualify additional contractors as second sources in situations where only a single contractor was producing the item. With at least two qualified sources, competition for follow-on spare parts contracts would drive down prices and reduce the Air Force's spare parts costs.

If these assumptions were correct, the Orr clause would enable the Air Force to lower spare parts costs by giving the government unlimited data rights to all technical data and computer software used by the contractor, including subcontractors and suppliers at any tier, at the end of five years. However, preliminary

results indicate that the problem the Orr clause was created to solve may be a phantom condition.

Sole source procurement results, in part, from the very nature of the way the Air Force buys weapon systems. The Air Force is constrained by the budget and seeks to purchase the greatest number of effective weapon systems at the lowest possible cost. This leads prime contractors to select subcontractors with the lowest prices; the prices are low because the manufacturer has accomplished the development work and become "smart enough" to produce the item at a competitive price.

Many subcontractors produce only a single item and the price paid to them by the prime is seldom set high enough to recover their development costs. Therefore, the subcontractor will be reluctant to furnish unlimited rights data. In addition, information relating to how the item is produced could be a trade secret. A trade secret has value only as long as it remains unknown to the competition. If the government gains unlimited data rights to the part, the information will be common knowledge and the contractor that originally developed the information could be forced out of business.

Also, the original Orr clause did not fully take into account the various development stages of a program. In larger programs, especially those which are pushing the state of the art, development of subsystems proceeds concurrently. In this situation, the weapon system as a

whole may have reached full scale development (the threshold stated in the Orr clause) but individual parts or subsystems may still be in the demonstration and validation phase. Furthermore, it is possible that, even by the time the first production item has been delivered, the final system design might not have been finalized.

The Air Force will sometime opt for low rate initial production with new systems in order for the manufacturer to uncover problems with the system before full-scale production is undertaken. This process is only intended to be used when the final design is relatively firm but that is not always the case. With the F-16, when the first aircraft were delivered to an operational aircraft wing, the reliability qualification testing had not been completed on the radar. An aircraft can be flown without radar but cannot perform a combat mission.

Until reliability testing was completed there remained a possibility that items in the test unit would not be in the production design. If the Air Force had been purchasing unlimited rights in data to the pre-production units, the government could have ended up with a data package that had little value since the production F-16 data would have been different.

In addition, the Air Force does not make effective use of the data it purchases under the current system. According to DoD-D-1000B, a procurement data package must contain everything a second source would need in order to

reproduce the item. However, contractors who reply to the Request for Proposal (RFP) or Invitation for Bid (IFB) that includes the information will often state that the information is insufficient for them to make the part.

Insufficient data can result because factory workers employed by the original manufacturer may assemble the component differently than that called for in the original manufacturing instructions because the item works better that way. However, workers on the assembly line may not inform management of the changes and as a result, when the procurement data package is turned over to the Air Force, the contractor uses the original drawings. These look fine to his engineers and the Air Force engineers but do not contain the latest production "know how".

For example, there was a subcontractor working on a component for the F-16. The manufacturing instructions specified a certain type of lubricant for the fasteners that helped seal the system. The subcontractor was encountering a high failure rate on the component because the lubricant was not holding up. Unknown to the subcontractor's management one of the workers on the assembly line brought some grease from her husband's garage at home and began using it as she worked on the assembly line. The system held up and was included in the final product.

However, because the subcontractor's management was not informed of the change, no alteration was made to the

manufacturing specifications in the reprourement data package. The first time the Air Force found out that something was wrong with the data package was when a second source attempted to build the item using only the drawings provided by the Air Force. Because no changes had been made to the manufacturing specifications, the originally specified lubricant was used and the end item experienced an abnormally high failure rate - the fasteners did not hold. The second contractor returned to the Air Force for clarification and the Air Force technical experts were unable to decide why the component did not work as intended. The Air Force went back to the original subcontractor and that was when the alteration was discovered.

Another reason the Orr clause might not lead to lower spare parts costs relates to the way spare parts are priced in some contracts. Many contractors use parametric pricing methods to compute what the Air Force is charged for a part. Parametric pricing, as noted in the ASD Research and Development interview in Chapter IV, is when a contractor totals the costs of all spare parts built for the Air Force and divides this into equal sets (i.e. 10 kits at \$10,000 each regardless of what is in the kit, how many individual items there are, or the original price of each item). The end result is that some kits may consist of items worth more than the average and some may be worth less.

If the Air Force were to force a contractor to

separately price all spare parts purchases, considerable savings would appear possible in some areas. However, it is possible that the money involved would only be paper savings because you do not make a pie bigger just by changing the size of individual slices. Furthermore, in a multi-million dollar (or in the case of the F-15 a multi-billion dollar) program, the cost to the government in terms of man-hours and dollars, to investigate each line item in every contract would more than likely exceed the possible savings.

Conclusions

The beginning portion of this paper noted that difficulty with proprietary rights only affected about four percent of all spares procurement managed by the Department of Defense. A more significant problem was incomplete, inaccurate, or illegible data. If the Orr clause were included in all new solicitations as originally written, the Air Force would obtain more data with unlimited rights but there is nothing in the language which says the Air Force would get better data. In fact, as indicated in the answers to the research questions, the Air Force might obtain more data of lesser quality.

Furthermore, regardless of what has been implied or intended by guidance messages issued by the AFLC HQ or the Office of the Secretary of the Air Force to clarify the

purpose of the clause and how it should be implemented, the wording of the Orr clause actually represents a near total reversal of government data rights policy in effect since World War II. As discussed in Chapter II, the contractor has traditionally been required to only supply data to the government which originated in contracts funded directly by the government. Under the Orr clause, the contractor would now be required to supply proprietary information, including trade secrets.

Even beyond that, if the contractor had used someone else's information in developing the product for the government, the contractor was now required to provide unlimited rights to that data as well - whether or not he had the legal authority to deliver the information. Remember, the language of the clause itself states this and not what someone else had stated the "intent" of the clause is. Therefore, the clause has primarily served to further convince contractors of the "overly grasping nature" of the government and further make negotiations an adversarial relationship.

Recommendations

1. Preliminary research indicates that the data rights clause released by Secretary of the Air Force Vern Orr was directed at solving a problem that may not exist - at least not in the form assumed when the original clause was

written. Additional research is needed in the following areas:

a) Is the time required to negotiate and sign a spare parts contract actually increasing and to what degree does the requirement to include the Orr clause contributing to the increase?

b) What additional costs, in terms of dollars, man-hours, and time have been incurred by the Air Force in attempting to include the Orr clause in all new solicitations? Do the costs offset potential benefits?

c) If the Orr clause enabled the Air Force to obtain perfect reprourement data packages so a second source could make the part directly from that information alone, would that improve readiness?

The answers to these questions should provide data to estimate the actual costs and benefits of purchasing unlimited data rights to all contractor-supplied data. A cost/benefit analysis may indicate the need for further modification or revision to the Orr clause.

2. Additional funding should be provided to the Air Force Institute of Technology at Wright-Patterson AFB OH to implement a proposed course for Engineering Data Management Officers (EDMOs).

a) AFSC/AFLCP 800-48 is a pamphlet presently being written to guide the EDMO through the planning and management process by providing examples of plans and

checklist of actions applicable to new and existing programs.

b) However, the primary purpose of AFSC/AFLCP 800-48, based upon a review of a draft copy, appears to be providing day-to-day guidance. It does not provide the theory and background of data management policy that the proposed AFIT course would, in order for the EDMO to implement the provisions of the Orr clause and most effectively deal with complex and changing conditions.

3. Locate the people within the Air Force who have exceptional knowledge in contracting, data management, and the engineering field. They should be put on "smart teams" whose role would be to study acquisition data packages and make recommendations in the following areas:

a) At what level of detail should engineering data be acquired?

b) Should a reprourement data package be acquired with unlimited rights to all data?

c) Technical sufficiency of information in the reprourement data package.

Upon conclusion of their investigation, the smart team may conclude that conditions (i.e. the presence of only one qualified source and no manufacturers capable of being qualified as second sources or there will be no follow-on buy) are such that a complete reprourement data package with unlimited rights to all data, is not required.

Once the smart team is formed, the following conditions should be established:

- a) Raise the level of authority of the team so the recommendations it makes have weight behind them.
- b) Provide promotion opportunities and incentives to attract and keep the best and brightest people on the team.
- c) Recognition by the Air Force of the worth of the team concept and a commitment to keeping the team together as a unit unless exceptional circumstances dictate otherwise.
- d) The original teams formed should be used as instructors to train additional smart teams where needed within the Department of Defense.

Appendix A: Part I

Changes Involving Ownership of Proprietary Data
Embodied in Department of Defense
Procurement Circular (DPC) No. 6, 14 May 1964;
As Amended by DPC-24, 26 February 1965
and included in ASPR-9

1. "Technical data resulting directly from an R&D contract or subcontract would be acquired by the Government with unlimited rights. So would data necessary to enable others to manufacture end-items or components developed under any government contract or subcontract in which experimental, development, or research work was specified as an element of contract performance, except data pertaining to items, components or processes developed at private expense. The contractor was obliged to certify that a data package was suitable for the stipulated purpose"(18:17).
2. "Technical data prepared for the purpose of identifying sources, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements ("form, fit, function" data), would be acquired with unlimited rights (18:17).
3. "Technical data pertaining to items, components and processes developed at private expense would be acquired with limited rights if ordered. This means

that data would not be used for manufacture or procurement nor released outside the government, except for overriding reasons of national security. (The burden of proof of 'limited' rights was on the contractor)"(18:17).

4. "No data in any category would be acquired automatically. Data requirements would be separately determined, subject to particular directives, and its form and type specified in contract clauses. Data could be ordered when needed at any time during the performance of the contract and up to two years after termination" (18:17).
5. "The government and the contractor could agree in advance on which data would be furnished with unlimited rights and which with limited rights. This "predetermination" was optional. If it were not included, rights in data would be determined according to the standard criteria, when the government ordered the data to be delivered. If it were included, a special provision called the "h" clause was inserted in the data clauses of all R&D contracts, requiring the contractor to notify the government in advance if it intended to use any component or process for which it intended to furnish data with limited rights, including items

obtained from subcontractors. This provision was not designed for use in production contracts"(18:17-18).

6. "It is the policy of the Department of Defense that prime contractors shall not use their power to award subcontracts as economic leverage to acquire rights in data of their subcontractors for themselves"(12:18). Accordingly, if a subcontractor's data were to be acquired with limited rights and if he were unwilling to deliver it to the prime, he could now submit it directly to the government when ordered" (18:18).

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EARLY ASSESSMENT OF AIR FORCE EFFORTS TO ENSURE
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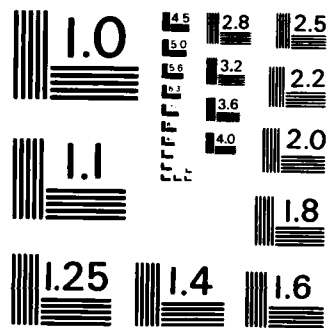
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Appendix A: Part II
Clauses Concerning Rights in Technical Data and Computer Software

Clause Citation	Title (Date)	Source Citation	Comment
FAR 52.215-12 (DAR 3-507.1)	Restriction on Disclosure and Use of Data (April 1984)	FAR 15.407(c)(8) (DAR 3-501(b), Sec. L (xxiv))	Used in all solicitations
DoD FAR Supp 52.227-7013 (DAR 7-104.9 (a))	Rights in Technical Data and Computer Software (May 1981)	DoD FAR Supp 27.412(a)(1) (DAR 9-203; 9-603)	Basic data clause; see source citation for exceptions
DOD FAR Supp 52.227-7013 (DAR 7-104.9 (b))	Alternate I, May 1981 Notice of Certain Limited Rights	DoD FAR Supp 27.412(a) (2); 27.403-2(g); DAR 9-202.2	Used if continuing inform- ation is desired about contractor's intention to use an item the tech- nical data for which is limited rights data
DOD FAR Supp 52.227-7013 (6)(b)(5)	60 Month time limit on limited rights)	USAF/RDC Policy letter dated 18 April 1985	Used in accordance with instructions contained in AFAC 85-16. Not normally included in solicitations and contracts prior to Full Scale Development (FSD). Programs in FSD and Produc- tion shall include the pro- vision in their solicitations and contracts, where the program anticipates life cycle spare requirements of \$200,000 or more; see source citation for excep- tions.

Clause Citation	Title (Date)	Source Citation	Comment
DoD FAR Supp 52.227-7014 (DAR 7-2003.61)	Predetermination of Rights in Technical Data (July 1976)	DoD FAR Supp 27.412(b) 27.403-2(d) (DAR 9-202.2(d) (3))	In paragraph (a) the offeror is requested to identify which data which data, when delivered (including data to be fur- nished wholly or par- tially by a subcontractor) he intends to identify as limited rights data; see source citation for list of procedures and exceptions.
DoD FAR Supp 52.227-7017 (DAR 7-104.9 (k))	Rights in Technical Data - Major Systems and Subsystem Contracts (Nov 1971)	DoD FAR Supp 27.412(e); 27.403-2(f) (4)(i) thru (iii)	Used in contracts and solicitations for major and subsystems involving estimated program expendi- tures in excess of \$50M of RDT&E funds or \$200M in production funds.
DoD FAR Supp 52.227-7018 (DAR 7-104.9 (p))	Restrictive Markings on Technical Data (Mar 1975)	DoD FAR Supp 27.412(f); 27.403-3(c)(2) (DAR 9-202.3 (c)(2))	In practice, always used where the basic data clause is used.
DoD FAR Supp 52.227-7019 (DAR 7-2003.76)	Identification of Restricted Rights Computer Software (April 1977)	DoD FAR Supp 27.412(g); 27.404-2(b)(2) (DAR 9-603(b))	In practice, used in all solicitations. Used in solicitations for negoti- ated contracts where the basic data clause is re- quired.

Clause Citation	Title (Date)	Source Citation	Comment
DoD FAR Supp 52.227-7026 (DAR 7-104.9 (d))	Deferred Delivery of Technical Data or Computer Software (Nov 1974)	DoD FAR Supp 27.412(n); 27.410-1(b) (DAR 9-502(b))	In practice, include in all solicitations, but use only in the contract when a technical data or soft- ware requirement can be determined at the time of contracting but the time of delivery is not firm.
DoD FAR Supp 52.227-7027 (DAR 7-104.9 (m))	Deferred Ordering of Technical Data or Computer Software (Nov 1974)	DoD FAR Supp 27.412(o); 27.410-1(c) (DAR 9-502(c))	In practice, include in all solicitations, but use only in the contract when the ordering of technical data generated in the per- formance of the contract is to be delayed until such time as a need can be established and the re- quirements specifically identified for delivery.
DoD FAR Supp 52.227-7028 (DAR 7-2003.66)	Requirement for Technical Data Certification (Apr 1974)	DoD FAR Supp 27.412(p); 27.410-2 (DAR 3-501(b) (3) Sec K (xii))	In practice, include in all solicitations that may result in a negotiated contract (when information is needed to establish whether an offeror has de- livered or is obligated to deliver to the Government under any contract or sub- contract the same or sub- stantially the same tech- nical data included in the offer).

Clause		Source		Comment
Citation	Title (Date)		Citation	
DoD FAR Supp 52.227-7029 (DAR 7-104.9 (1))	Identification of Technical Data (Mar 1975)		DoD FAR Supp 27.412(q); 27.410-3 (DAR 9-503)	Used in all solicitations and contracts under which technical data is to be delivered.
DoD FAR Supp 52.227-7030 (DAR 7-104.9 (h))	Technical Data Withholding of Payment (Jul 1976)		DoD FAR Supp 27.412(r); 27.410-4 (DAR 9-504)	Used in all solicitations and contracts, in prac- tice.
DoD FAR Supp 52.227-7031 (DAR 7-104.9 (n))	Data Requirements (April 1972)		DoD FAR Supp 27.412(s); 27.410-6 (DAR 7-104.9 (n))	Included in all solici- tations and contracts, ex- cept it need not be in- cluded in the cases speci- fied in DoD FAR Supp 27.410-6(a)(1) thru (7).
DoD FAR Supp 52.246-7001 (DAR 7-104.9 (o)(1), (2), and (3))	Warranty of Data (Nov 1974)		DoD FAR Supp 27.410-5; 46.708; 46.770 (DAR 1-324.6)	Assuming that a decision to provide for a warranty of technical data has been made in accordance with DoD FAR Supp 46.708, the contracting officer may insert a clause substan- tially the same as the clause at DoD FAR Supp 52.246-7001, in solici- tations and fixed-price or cost-reimbursement con- tract is contemplated that will require data to be furnished.

Appendix A: Part III

Definition and Explanation of Engineering Drawings and Associated Lists According to DoD-D-1000B

1.3.1 Levels. "Levels 1, 2, and 3 provide for a natural progression of a design from its inception to production. Levels may be ordered to define a conceptual or developmental design, a production prototype or limited production design, or the highest type of engineering drawings required for quantity production of the item or system by the developer and other than the original developer. Combination of levels may be specified in the contract or order (see also 6.2.1 of this citation)".

3.3.1 Level 1, Conceptual and developmental design.

"Engineering drawings and associated lists prepared to the level shall, as a minimum, disclose engineering design information sufficient to evaluate an engineering concept and may provide information sufficient to fabricate developmental hardware (see also 6.4.1, same citation)".

3.3.2 Level 2, Production prototype and limited production.

"Engineering drawings and associated lists prepared to this level shall disclose a design approach suitable to support the manufacture of a production prototype and limited production models (see also 6.4.2, same citation)".

3.3.3 Level 3, Production. "Engineering drawings and associated lists prepared to this level shall provide engineering definition sufficiently complete to enable a competent manufacturer to produce and maintain quality control of item(s) to the degree that physical and performance characteristics interchangeable with those of the original design are obtained without resorting to additional product design effort, additional design data, or recourse to the original design activity. These drawings shall:

(a) reflect the end product,

(b) provide the engineering data for the support of quantity production, and

(c) in conjunction with other related procurement data shall provide the necessary data to permit competitive procurement (see 6.1 of this citation) of items substantially identical to the original item(s) (see also 6.4.3 of this citation)".

3.3.3.1 "Engineering drawings (see 3.4 of this citation) shall include details of unique processes, i.e., not published or generally available to industry, when essential to design and manufacture"

(Source 13:1-4)

Appendix A: Part IV

Definition of Acquisition Method Codes
Used by the OSD Data Rights Study Group
in their Report Dated 22 June 1984

- A - "The government's rights to use data in its possession are questionable".
- H - "The government physically does not have in its possession sufficient, accurate, or legible data to purchase the part from other than current source(s)".
- L - "The annual buy value of this part falls below the screening threshold of \$10,000 but it has been screened for known source(s)".
- P - "The rights to use the data needed to purchase this part from additional sources are not owned by the government and cannot be purchased".
- R - "The data or the rights to use the data needed to purchase this part from additional sources are not owned by the government and it has been determined that it is uneconomical to purchase them".
- U - "The cost to the government to break out this part and acquire it competitively has been determined to exceed the projected savings over the life span of the part".

(Source 6:4-6).

Appendix A: Part V

List of Basic Premises Underlying
the Conclusions Reached by the
Office of the Secretary of Defense
Data Rights Study Group in Their
Report Dated 22 June 1984

- 1) "Technical data developed at private expense is valuable private property".
- 2) "DoD has a legitimate need for unlimited access to much of that technical data to achieve economies and efficiencies".
- 3) "The United States defense is based, in part, on technological superiority, which means that DoD needs to encourage private investment to obtain the most advanced technology available. Such a goal can best be supported by scrupulously protecting legitimate private property interests".
- 4) "The interests of the private sector and DoD must be balanced. The DoD approach to the acquisition to technical data rights represents a bargaining position. In return for the use of private property (data), DoD agrees to protect a company's economic interest in that property. A reasonable compromise must be developed between the complex interests of DoD and industry when it comes to acquiring data for spare parts procurement purposes. This compromise should be sought by exercising the DoD's strong bargaining power in a fair and reasonable manner".
- 5) "DoD should not attempt to obtain unlimited rights to commercial items developed at private expense".
- 6) "DoD may not always need limited rights data. Form, fit, and function data should first be examined before there is a concern that rights have to be acquired or licensed".
- 7) "Policy must be based on thorough analysis of the facts. Major policy changes in an area of great economic importance should not be made on the basis of unproved assumptions about the existence, nature, and extent of the problem".

(Source 6:44-45).

Appendix A: Part VI
Glossary of Terms

BREAKOUT - (1) "A program that provides for the systematic analysis of high value equipment or systems to determine whether direct procurement of major components by the government (or prime contractor) is feasible". (2) "The process of removing an item from the category of being procurable only from one source and making it possible to procure the item from additional sources" (4:101).

COMPETITION - "Spare parts obtained by means of solicitation of two or more qualified sources presumed to be acting independently to secure the order, by offering or negotiating the most favorable terms; or by means of formally advertising the requirement to all known qualified sources" (4:142).

DEFENSE INDUSTRY - "one which is important to the national defense for the production of material or equipment, and which normally is largely or wholly owned or leased by the U.S. Government; or which has considerable Government-owned buildings or equipment on the site; or which, in some circumstances and particularly under full mobilization, has total production capacity under contract over an extended period for Defense production or for items essential to the national defense" (4:203).

DEVIATION - "A specific written authorization, granted prior to the manufacture of an item, to depart from a particular performance of design requirement of a contract, specification, or referenced document, for a specific number of units or specific period of time" (4:225).

FULL SCALE DEVELOPMENT PHASE - "The phase during which the weapon system, including all of the items necessary for its logistic and operational support (training equipment, support equipment, handbooks for operations and maintenance, etc. is designed, fabricated, and tested. The intended output is a hardware model, a defined logistic support system, and the documentation needed to produce for inventory use" (4:309).

INTEGRATED LOGISTIC SUPPORT - "A composite of the elements necessary to assure the effective and economical support of a system or equipment at all levels of maintenance for its programmed life cycle" (4:356).

INVITATION FOR BID - An Air Force request for sealed bids. It requires exact specifications of the requirements. The winning contractor is the one who submits the lowest bid. Cost is the only criteria for selection.

MAJOR SYSTEM: "means a combination of elements that will function together to produce the capabilities required to fulfill a mission need. The elements may include hardware, equipment, software, or any combination thereof, but excludes construction or other improvements to real property. A system shall be considered a major system if (A) the Department of Defense is responsible for the system and the total expenditures for research, development, test and evaluation for the system are estimated to be more than \$75,000,000 (based on fiscal year 1980 constant dollars) or the eventual total expenditure for procurement of more than \$300,000,000" (25:3).

PROCUREMENT DATA PACKAGES - "A procurement data package provides data necessary to ensure functional and physical adequacy of the item for its intended application"(4:543).

PROGRAM MANAGER - "An individual charged with the responsibility for design development and acquisition of the system/equipment and for the design, development, and acquisition of the integrated logistic support" (4:556).

PROPRIETARY RIGHT - "An exclusive right of ownership in intellectual property arising by virtue of authorship, invention, or discovery which is capable of protection as a matter of law" (4:560).

REPLENISHMENT SPARE PARTS - "Items and equipment, both repairable and consumable, purchased by inventory control points, required to replenish stocks for use in the maintenance, overhaul, and repair of equipment" (4:583).

REQUEST FOR PROPOSAL - An Air Force request for contractors to submit cost, technical, and management proposals to the government. The winning contractor is chosen through a selection process that uses multiple criteria. The final contract and terms are negotiated with the contractor.

WAIVER - "A variance from the requirements, drawings, specifications, or other technical data of a contract or procurement directive made after award of a contract that may, or may not be, reflected in a change to that specific document" (4:737).

Appendix B: Interview Outline

1. Is the five year data rights clause as issued by Secretary of the Air Force Vern Orr being included in new procurement contracts as originally written?

Receptiveness by prime contractors?

Receptiveness by Subcontractors?

"Clear and convincing evidence"

Obtaining prime and subcontractor position:

(1) on unlimited data rights;

(2) willingness to sell rights;

(3) cost of purchase

Freedom of action in negotiating the clause inclusion

2. If the Orr clause is not being included on new solicitations what alternative measures are being attempted to increase competition and reduce sole source procurement?

Component break-out

Leader-follower

Technical assistance agreement

Second source development

Other alternatives?

3. Is the contract clause issued by Secretary Orr focusing on the real problem or is it merely treating one of the symptoms?

Level of guidance to assist contract negotiators in implementing policy

Effect of policy change on workload of contract negotiators

Are there personnel/funding limitations on policy implementation?

"Developed at private expense"

"Cost-effectiveness"

Lifespan of technology

Bibliography

1. Acker, David D. "The Maturing of the DoD Acquisition Process." Defense Systems Management Review, 3: 7-77 (Summer 1980).
2. Air Force Management Analysis Group. Spare Parts Acquisition, Vol. 1, Executive Summary. Final Report. Washington: HQ USAF/IG, October 1983 (AD 134 840).
3. Department of Defense. Military Specification Drawings, Engineering and Associated Lists. DoD Directive 1000B. Washington: Government Printing Office, 28 October 1977.
4. Department of the Air Force. Compendium of Authenticated Systems and Logistics Terms, Definitions, and Acronyms. AU-AFIT-LS-3-81. Wright-Patterson AFB OH: School of Systems and Logistics, Air Force Institute of Technology (AU), 1 April 1981.
5. Directorate of Lessons Learned. Workshop Outline and Handouts. Air Force Acquisition Logistics Center, Wright Patterson AFB OH, January 1985.
6. Druyun, Darleen A. et al, "Who Should Own Data Rights: Government or Industry." A Report Prepared for the Under Secretary of Defense for Research and Engineering. Andrews AFB MD. 22 June 1984.
7. Emory, C. William. Business Research Methods. Homewood IL: Richard D. Irwin, Inc., 1980.
8. Epstein, Samuel, Lecture materials distributed for PPM 370 Defense Data Management Course. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright Patterson AFB OH, September 1984.
9. Forster, Capt John R., Maj Roland A. Hassebrock, and Sqn Ldr Mahboob A. Khan. A Study to Determine the Role of Competition in Contracting for the Movement of Air Freight Within the Domestic Market. MS Thesis LSSR 9-80. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, June 1980 (AD-A087 223).

10. Gray, Capt David L., and 1st Lt Larry W. Sanders, Multiyear Subcontractor Selection Criteria Analysis. MS Thesis LSSR 106-83, School of Systems and Logistics, Air Force Institute of Technology (AU), Wright Patterson AFB OH, September 1983 (AD-A135 638).
11. Haughey, Charles S. "Government Data Policy: Is it a Threat to U.S. Technology?" Defense Systems Management Review, 3: 96-103 (Summer 1980).
12. Hubert, Michael J. and Linda K. Allen, GS-12. The Relationship of Source Selection Sensitive Data to Competition and Negotiations. MS Thesis LSSR 3-80. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, June 1980 (AD-A087 220).
13. Humphrey, William B., and Milford, M. Alexander. Analysis of Current Policies and Practices Regarding Data Rights in Competitive Weapon System Acquisitions, 1 June 1980--31 December 1980. Contract MDA903-80-G-0299. Doty Associates, Inc. (DAI), Rockville MD, 31 December 1980 (AD-A102 539).
14. Humphrey, Lt Cmdr William B. A History and Analysis of Section 1498 of Title 28 of the United States Code Dealing with Unlicensed Use of Patents by the United States Government and its Effect on Procurement. MS Thesis. Naval Postgraduate School, Monterey CA, March 1974 (AD 777 985).
15. Lamb, Lt Col Amherst R. and Major Dean D. Hause. What Should Reprocurement Data Cost? MS Thesis SLSR 33-74B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, August 1974 (AD-787 196).
16. Lowe, Charles M., Jr. and Charles H. Smith. Sole Source Competition and Competitive Price Trends in Spare Parts Acquisition. Student Research Paper P-5. Defense Logistics Agency, Camron Station, Alexandria VA, September 1983.
17. McCann, Thomas, Increasing Competition for Spares Within AFLC, June 1983--December 1983. Contract F33615-82-C-5095. Analytics, Dayton OH, 30 December 1983.
18. McKie, James W. Proprietary Rights and Competition in Procurement, Contract AF 49(638)-1700. The RAND Corporation, Santa Monica CA, June 1966 (AD-639 732).

19. Orr, Vern, Secretary of the Air Force. "Data Rights." Memorandum for the Joint Chiefs of Staff. USAF, 5 March 1984.
20. Orr, Vern, Secretary of the Air Force. "Rights in Technical Data." Memorandum for the Joint Chiefs of Staff, USAF, 16 September 1983.
21. Quesenberry, William O. "Patents and Technology Transfer," Defense Systems Management Review, 2: 16-21 (Winter 1979).
22. Reid, Colonel Robert D., USAF Deputy Auditor General. "Audit of Air Force Data Management - Requirements and Utilization," Memorandum for the Secretary of the Air Force and the Chief of Staff. Norton AFB CA, 24 January 1983 (LD 539 94A).
23. Shipman Jr., Major Robert H. Establishing a Second Source in Production. Student Research Report. Air Command and Staff College (ATC), Maxwell AFB AL, May 1981 (AD-B057 775).
24. Sparks, George Francis. Direct Licensing in Major Weapon Systems Acquisition. Masters Thesis. Naval Postgraduate School, Monterey CA, September 1980 (LD 481 13A).
25. Wiviott, Melvin R., Lecture materials distributed for PPM 302, Government Contract Law Course. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright Patterson AFB OH, September 1984.
26. Worthington, Tracy. Balancing Army Data Acquisition Policies and Practices, APRO 83-04. U.S. Army Procurement Research Office, Fort Lee VA, May 1984 (AD-A143 365).
27. Wright, Andrea G., (acting) Chief, Applications Branch, Directorate of Lessons Learned. "Engineering Data Lessons Learned." Video tape of an address to AFLC personnel. Obtained from Charlie Youther, Course Director LOG 260, Air Force Provisioning Management Course. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright Patterson AFB OH, June 1984.
28. Youther, Charlie, Lecture materials distributed in LOG 260, Air Force Provisioning Management Course. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright Patterson AFB OH, September 1984.

Interviews

29. Bowling, Carolyn Ann, Contract Manager, Deputy for the F-16. Personal interview. AFSC, Wright-Patterson AFB OH, 28 June 1985.
30. Bushagen, Richard G., Chief, Special Actions Branch, Deputy for the F-16. Personal interview. AFSC, Wright-Patterson AFB OH, 12 July 1985.
31. Horine, Daniel D., Chief, F-15 Contracts, Advanced Avionics/Communications Group, Deputy for Tactical Systems. Personal interview. ASD/TAFK, Wright-Patterson AFB OH, 8 July 1985.
32. Kauflin, Thomas N., Division Chief, Advance Tactical Fighter Program. Personal interview. ASD/TAFK, Wright-Patterson AFB OH, 16 July 1985.
33. Jones, Douglas G., Contract Negotiator, B-1 SPO, Airframe Division. Personal interview. B-1KB, Wright-Patterson AFB OH, 1 July 1985.
34. Lachey, Robert E., (acting) Division Chief, Development Branch, Avionics Division. Personal interview. ASD/PM, Wright-Patterson AFB OH, 12 July 1985.
35. Mullin, Michael J., Chief, Patents and Data Division, Directorate of Procurement Law. Personal interview. ALFC/JANP, Wright-Patterson AFB OH, 28 June 1985.
36. Powell, John C., Procurement Analyst, Contract Review Committee. Personal interview. ASD/PMC, Wright-Patterson AFB OH, 28 June 1985.
37. Ross, Milt, Division Chief, Contracting Directorate, Deputy for Simulators. Personal interview. ASD/YWK, 1 July 1985.
38. Siegrist, John J., Procurement Analyst, Directorate of Policy and Source Selection. Personal interview. ASD/PMP, Wright-Patterson AFB OH, 28 June 1985.
39. Whitty, Richard F., Chief, F-15 Systems Group, Deputy for Tactical Systems. Personal interview. ASD/TAFK, Wright-Patterson AFB OH, 8 July 1985.
40. Wright, Andrea G., (acting) Chief, Applications Branch, Directorate of Lessons Learned. Personal interview. AFALC/PTL, Wright-Patterson AFB OH, 11 July 1985.

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The research objective was to investigate the effect of Secretary of the Air Force Vern Orr's direction to use a contract clause limiting a manufacturer's rights in proprietary data to five years or less from the date of manufacture of the first production unit of a weapon system.

The Orr clause represented an abrupt shift in policy relating to a contractor's ability to restrict the government's releasing of proprietary information to a third party and how long the restrictions would last. The clause was written in broad terms and is viewed by private industry as an attempt by the government to siphon off the contractor's rights to data developed at private expense - including trade secrets.

There is no guarantee that sole-source spare parts contracts will be replaced by contracts obtained through competition, even if the government has unlimited rights to all the data the original contractor used to make the item. Even with relatively simple items, there still remain possible aspects of blueprints and assembly instructions that are open to interpretation. As a result, there remains the possibility that the end product will not work as intended, or, even worse, not work at all.

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