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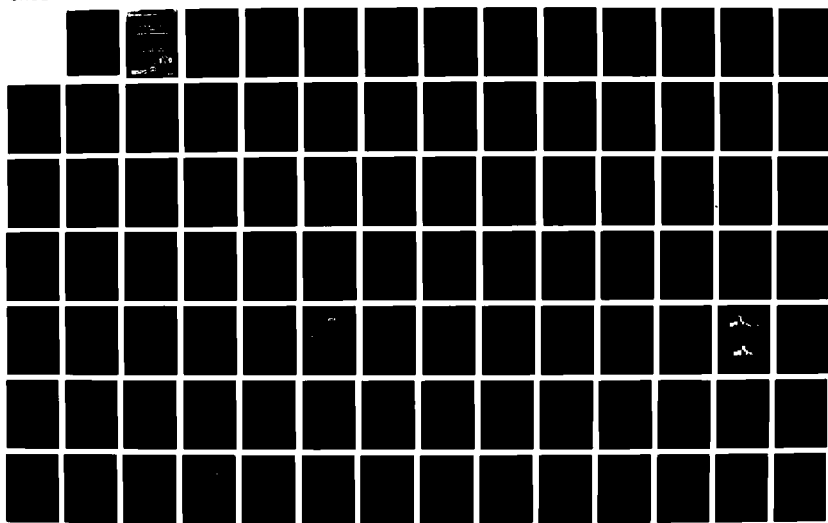
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**AFFORDABLE STRATEGIES
TO IMPROVE
INDUSTRIAL RESPONSIVENESS**

**Volume 1: Past and Present
Uses of Standby Agreements**

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OPTIONS AND COST OF
IMPROVING INDUSTRIAL RESPONSIVENESS

VOLUME I: APPROVED STANDBY
AGREEMENT REPORT AND SYSTEMS MODEL

17 May 1985

Prepared under:

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TABLE OF CONTENTS

	<u>Page No.</u>
List of Figures	v
List of Tables	vi
EXECUTIVE SUMMARY	ES-1
1. INTRODUCTION	1-1
1.1 What Is a Standby Agreement?	1-2
1.2 What Is the Purpose of a Standby Agreement?	1-4
1.3 How Can Standby Agreements Be Used?	1-6
1.4 How Are Standby Agreements Created?	1-8
1.5 How Are Standby Agreements Funded?	1-11
1.6 How Are Standby Agreements Triggered?	1-12
1.7 How Effective Is the Standby Agreement Mechanism?	1-13
1.8 Study Methodology	1-14
1.9 Report Organization	1-15
2. EDUCATIONAL ORDERS	2-1
2.1 Introduction	2-1
2.2 History of Educational Orders	2-2
2.3 Responsibilities for the Educational Order Program	2-7
2.4 Program Effectiveness	2-9
2.4.1 Increased Defense Production Capabilities	2-10
2.4.2 Reduced Requirements for Munitions Stockpiles	2-14
2.4.3 Trained Government Procurement Personnel	2-15
2.4.4 Improved Munitions Design	2-16
2.4.5 Educational Order for the M-1 Rifle -- A Case Study	2-17
2.4.6 An Educational Order Program in Today's World	2-19
2.5 Problems	2-21
2.5.1 Authorization, Funding, and Implementation	2-22
2.5.2 Suitable Items for Educational Orders	2-22
2.5.3 Government Regulation	2-23
2.5.4 Selection of Contractors	2-25
2.5.5 Proprietary Rights	2-26

TABLE OF CONTENTS (Continued)

	<u>Page No.</u>
3. PLAN BULLDOZER	3-1
3.1 Introduction	3-1
3.2 History	3-1
3.3 Responsibilities for Plan Bulldozer	3-2
3.4 Program Effectiveness	3-5
3.5 Problems	3-7
4. MACHINE TOOL POOL ORDER PROGRAM	4-1
4.1 Introduction	4-1
4.2 The Machine Tool Pool Order Program of WW II	4-2
4.3 Responsibilities for the WW II Pool Order Program	4-8
4.4 Program Effectiveness	4-10
5. THE MACHINE TOOL TRIGGER ORDER PROGRAM	5-1
5.1 Introduction	5-1
5.2 History	5-3
5.3 Responsibilities for the MTTOP	5-5
5.4 Program Effectiveness	5-10
5.5 Problems	5-13
6. CIVIL RESERVE AIR FLEET	6-1
6.1 Introduction	6-1
6.1.1 CRAF	6-2
6.1.2 CRAF Enhancement	6-3
6.1.3 Annual Airlift Services	6-3
6.1.4 Senior Lodger	6-4
6.2 History of CRAF	6-4
6.3 Responsibilities for the CRAF	6-8
6.4 Program Effectiveness	6-13
6.5 Problems	6-19
6.5.1 The Limited Applicability of Civil Assets to Defense Purposes	6-20
6.5.2 The Changing Nature of Commercial Assets Caused by Economic Conditions	6-21
6.5.3 The Availability of Non-Military Personnel for Military Situations	6-23
6.5.4 Conclusions	6-24
7. SURGE OPTION CLAUSE	7-1
7.1 Introduction	7-1
7.2 History	7-2
7.3 Responsibilities for the Surge Option Clause	7-2
7.4 Effectiveness of the Surge Option Clause	7-4
7.5 Problems	7-5

TABLE OF CONTENTS (Continued)

	<u>Page No.</u>
8. STANDBY AGREEMENT SYSTEMS MODEL	8-1
8.1 Introduction	8-1
8.2 Establishment of a Standby Agreement	8-1
8.3 Activation of a Standby Agreement	8-7
9. FINDINGS	9-1
9.1 Introduction	9-1
9.2 Educational Orders	9-2
9.3 Plan Bulldozer	9-3
9.4 Machine Tool Pool Order Program	9-4
9.5 Machine Tool Trigger Order Program (MTTOP)	9-4
9.6 Civil Reserve Air Fleet (CRAF)	9-5
9.7 Surge Option Clauses	9-6
9.8 Standby Agreements Systems Model	9-6
APPENDIX A 1938 LAW CREATING THE EDUCATIONAL ORDER PROGRAM AND 1939 LANGUAGE AMENDING THIS LAW	A-1
APPENDIX B EDUCATIONAL ORDER PROGRAM OBJECTIVES AND PROCEDURES AS STATED BY THE WAR DEPARTMENT BOARD ON EDUCATIONAL ORDERS	B-1
APPENDIX C MACHINE TOOL POOL ORDERS, NEW ORDERS, AND SHIPMENTS, 1941-1945	C-1
APPENDIX D STANDBY AGREEMENT LANGUAGE CONCERNING THE CRAF IN THE CONTRACT BETWEEN THE MILITARY AIRLIFT COMMAND AND EACH CRAF CARRIER	D-1
APPENDIX E MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF DEFENSE AND THE DEPARTMENT OF TRANSPORTATION CONCERNING THE CIVIL RESERVE AIR FLEET PROGRAM	E-1
APPENDIX F SURGE OPTION CLAUSES	F-1

LIST OF FIGURES

<u>Figure No.</u>		<u>Page No.</u>
1.4-1	Establishment of a Standby Agreement	1-9
2.3-1	Responsibilities for the Educational Order Program	2-9
3.3-1	Establishment of the Plan Bulldozer Program	3-4
3.3-2	Activation of Plan Bulldozer	3-5
4.2-1	Machine Tool Orders and Pool Orders (\$Mil)	4-5
4.2-2	Machine Tool Orders and Pool Orders (Units)	4-5
4.3-1	Responsibilities for the Pool Order Program	4-7
4.4-1	New Orders, Pool Orders, New Orders Less Pools, and Shipments (Units)	4-11
4.4-2	Pool Orders as Percent of Machine Tool Orders, by Value and Units	4-11
5.3-1	Establishment of Machine Tool Trigger Orders	5-6
5.3-2	Activation of Machine Tool Trigger Orders	5-10
6.3-1	Establishment of the CRAF Program	6-12
6.3-2	Activation of the CRAF	6-12
7.3-1	Establishment of a Surge Option Clause	7-3
7.3-2	Activation of a Surge Option Clause	7-3
8.2-1	Establishment of a Standby Agreement Program	8-3
8.3-1	Activation of a Standby Agreement	8-8

LIST OF TABLES

Table
No.

Page
No.

2.2-1

Educational Orders, FY39

2-5

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This report describes six programs that encompass standby agreements or elements of standby agreements, discusses their histories and the organizational responsibilities for their creation and implementation, and analyzes their effectiveness with respect to mobilization responsiveness and problems associated with their use. The purpose of this report is to create a better understanding of how standby agreements might best be used to improve responsiveness in manufacturing and service sectors critical to a mobilization effort.

This document also presents a systems model of the processes for developing, updating, and activating standby agreements. It describes various authorities and responsibilities that may come into play during these processes and specifies the appropriate roles of government agencies and private firms with respect to a standby agreement program.

Keywords: Industrial production, management information systems. (S.O.)

ES.2 PAST AND CURRENT STANDBY AGREEMENT PROGRAMS

Standby agreements have been used in a variety of circumstances to provide a means of mobilizing private industry resources more quickly to meet emergency needs. With the recent renewed interest in industrial responsiveness, it is only natural that possibilities for improvements through standby agreements be examined closely. This report examines

the following six programs: Educational Orders; Plan Bulldozer; Machine Tool Pool Orders; Machine Tool Trigger Orders; Civil Reserve Air Fleet; and Surge Option Clause. Each of these programs has unique qualities but they are all intended to serve the same basic purpose -- to improve industrial responsiveness to substantially expanded need, particularly need resulting from an emergency.

Our analysis of these different programs leads us to conclude that the standby agreement mechanism offers an effective and efficient means to augment existing government resources with those of the private sector during an emergency. However, the mere existence of a standby agreement does not ensure its effectiveness in improving mobilization capabilities. An effective standby agreement program requires preparedness planning (by both government and industry) and a process that ensures timely activation in anticipation of, or response to, emergency requirements.

Educational orders were employed between 1939 and 1941 as a means to prepare manufacturing companies engaged in commercial work for conversion to production of essential military items in the event of war. Under an educational order contract, a commercial company acquired standby equipment and tooling needed to augment its existing capabilities to produce a given military item, created a plan to convert its capabilities to production of that item, and produced several of the items to gain actual experience in its manufacture. Educational orders were implicit standby agreements.

The effectiveness of the educational order program was limited by its establishment during a period of rapidly increasing demand for defense production. As a result of this rapid increase, most companies whose preparedness might have

been improved through an educational order wound up receiving large production contracts rather than educational orders, and those companies which received the initial educational orders subsequently received production contracts before the educational contract was completed and, therefore, before they were fully "educated." Nevertheless, in cases where a company did receive some education prior to full-scale production, it is estimated that the lead time for achieving full-scale production was reduced by 4 to 12 months.

Elements of the educational order approach are evident in today's industrial preparedness process in the forms of industrial preparedness planning, industrial preparedness measures, standby equipment programs, surge option clauses, and so on. With these elements, an educational order program could be established today without new legislation or substantial changes to current modes of operation.

Plan Bulldozer is a program established by The Associated General Contractors of America (AGC) to organize the construction industry's response to disaster. It involves a standby agreement between state and local government units and participating AGC chapters concerning disaster relief work by construction contractors. Because performance by these contractors is voluntary if the agreement is activated, Plan Bulldozer does not fit the strict definition of "standby agreement" presented in Section 1.1.

This program has seen little use during its 26 years of existence and will soon be replaced by a new AGC-sponsored disaster relief program. Although such a private sector initiative could be effective for some emergency uses (e.g., response to natural disaster), it is doubtful that it would contribute significantly to mobilization responsiveness. It

does not provide the means to marshal the resources of the construction industry or to apply these resources in a national mobilization situation.

Machine Tool Pool Orders were used during both World War II and the Korean War to encourage a more rapid increase in machine tool production in anticipation of increased industrial need for such tools and to coordinate the production effort by the machine tool industry. Pool orders were not standby agreements per se but did involve the manufacture of "standby" tools in anticipation of need. More importantly, these orders served as the basis for creating the Machine Tool Trigger Order Program. Pool orders are commonly believed to have been an important factor in stimulating earlier production of needed machine tools..

Machine Tool Trigger Orders are current standby agreements intended for use in the event of a defense production surge to increase production of needed machine tools. The potential effectiveness of this program is undermined by a lack of preparedness planning and by a cumbersome and time-consuming process of requirements identification leading to a triggering decision. It appears that the triggering process could also be delayed by a lack of program funding and the need for prior congressional funding action.

The Civil Reserve Air Fleet (CRAF) program encompasses four different standby agreement mechanisms. These include: the CRAF agreement; the CRAF Enhancement agreement; the Senior Lodger agreement; and the expansion of airlift services option in the annual Military Airlift Command airlift services contract. Each of these agreements contributes considerably to mobilization capabilities.

Of the six programs examined in this report, the CRAF is the best example of the various authorities potentially involved in creation and activation of a standby agreement and of the interrelationships among the Federal agencies that exercise these various authorities. It is a model of effective preparedness planning and cooperation, both among the different agencies and between government and industry. The CRAF program receives necessary attention and preparedness planning resources because its potential for augmenting strategic military airlift capabilities immediately and substantially is recognized as an important and cost-effective national security asset.

The surge option clause is a relatively new contract provision which can be exercised by the Government to increase production quantities on order from a current contractor and to accelerate the contract delivery schedule. The surge option clause contributes to industrial responsiveness by encouraging and enabling improved production surge planning and by eliminating the administrative delay that would normally be associated with increasing the current level of procurement for a given item.

ES.3 STANDBY AGREEMENT SYSTEMS MODEL

Because the standby agreement mechanism is not clearly defined by statute, the systems model which we present in Chapter 8 has been developed through our analysis of the six past and current programs examined in this report. Establishment of each of these programs involved some or all of the following elements: program/funding authority; contracting authority; delegation of authority; requirements identification; priorities and allocation authority; and

program review. Activation of the agreements would involve: determination of need; triggering authority; priorities and allocation authority; regulatory authority; and funding. The establishment and activation processes are depicted in Figures 8.2-1 and 8.3-1.

1.

INTRODUCTION

This document is one in a series of reports in fulfillment of Contract No. EMW-84-C-1780 for the Federal Emergency Management Agency (FEMA). The purpose of this contract effort (as stated in the contract) is:

- To review and analyze past and current uses of standby and voluntary agreements
- To identify and analyze likely possibilities for use of these concepts in additional manufacturing and service sectors
- To serve as a basis for developing recommendations for policy, statutory, or administrative changes necessary to permit greater use of standby and voluntary agreements and thereby strengthen the Federal partnership with the private sector to improve our national defense preparedness posture.

This report provides the review and analysis of past and current standby agreements. It describes six programs that encompass standby agreements or elements of standby agreements, discusses their histories and the organizational responsibilities for their creation and implementation, and analyzes their effectiveness with respect to mobilization responsiveness and problems associated with their use. The purpose of all of this is to create a better understanding of how standby agreements might best be used to improve responsiveness in manufacturing and service sectors critical to a mobilization effort. This better understanding will be applied in a later report (under this same contract) to

identify and analyze the use of standby agreements in eleven industrial sectors.

This document also presents a systems model of the process for developing, updating, and activating standby agreements. It describes various authorities and responsibilities which may come into play during these processes and specifies the appropriate roles of government agencies and private firms with respect to a standby agreement program.

1.1 WHAT IS A STANDBY AGREEMENT?

For the purposes of this study, we define "standby agreement" to be a contractual commitment by a private firm to provide specific goods or services or to change normal operating practices at the sole option of the government to help satisfy increased requirements for those goods and services resulting from substantially expanded peacetime military needs or an emergency. In addition, a standby agreement program involves preparedness planning upon which the agreement is based and may also involve expenditures to enhance standby capabilities.

Under a strict interpretation of this definition, very few past or current industrial preparedness programs involve "standby agreements." In fact, only three of the six programs examined in this document fit this category. These three programs are:

- The Machine Tool Trigger Order Program (MTTOP), which involves standby agreements between machine tool manufacturers and the Federal Government to produce machine tools

- The Civil Reserve Air Fleet (CRAF), which involves four types of standby agreements between air carriers and the Department of Defense to provide airlift services and related support services
- Surge Option Clauses, which are standby agreements in current production contracts between defense contractors and the Department of Defense to accelerate and/or increase production.

While the other three programs examined in this report do not involve standby agreements, they involve characteristics akin to standby agreements and offer insights into uses and the potential effectiveness of such agreements. The first program -- educational orders -- involved implicit standby agreements. Educational order contracts did not include an option to increase production. Nevertheless, these contracts were explicitly intended to create a standby capability which could be activated to meet increased production requirements.

The second program -- Plan Bulldozer -- involves a standby agreement between a government unit and a chapter of the Associated General Contractors concerning contractual arrangements for disaster relief work by construction firms. It does not fit our strict definition of standby agreement because private firms are not contractually committed to provide goods or services at the sole option of the government. Firms participate voluntarily if the program is activated.

The third program -- machine tool pool orders -- did not even involve implicit standby agreements, but it did involve producing standby tools in anticipation of industrial requirements for these tools. More importantly, the pool order mechanism was the forebear of the Machine Tool Trigger Order Program.

1.2 WHAT IS THE PURPOSE OF A STANDBY AGREEMENT?

The primary purpose of a standby agreement is to provide a more rapid and effective response to a civil or military emergency by bringing to bear commercial and industrial resources to satisfy substantially increased requirements for goods and services. The more rapid and effective response can be achieved through several means:

- Activation of a standby agreement can eliminate the administrative lead time associated with government contracting. This lead time involves identifying potential contractors, soliciting proposals for the desired goods or services, preparing the proposals, judging the proposals, and negotiating a contract. This process generally takes several months and can take even longer. While emergency conditions could cause this process to be expedited, government and contractor administrative resources could be overburdened by the need to contract for increases in many goods and services at the same time. This could cause delays even if procedures were streamlined. A standby agreement can be activated in the matter of hours by a simple oral, electronic, or written communication from the government authority to the contractor. (Surge option clauses, described in Chapter 7, are geared primarily to reducing administrative lead times.)
- Planning associated with a standby agreement can reduce or eliminate the time needed to identify emergency requirements for goods and services. However, adequate planning is not inherent in a standby agreement program, so this potential saving of time may not be realized. Nevertheless, establishment of a standby agreement might encourage a greater preparedness planning effort and might also provide more structure and discipline

to the planning process. (The apparent inadequacy of planning in the MTTOP and the resulting reduction in potential effectiveness of this program are discussed in Chapter 5.)

- Enhanced (standby) capabilities created in conjunction with a standby agreement can reduce or eliminate the time which would generally be associated with a firm's providing greater or different goods and services than normal. These enhanced capabilities might be in the form of experience (reducing learning curve delays), planning (permitting more rapid action and elimination of potential bottlenecks), and standby equipment (permitting an immediate increase in operations). (Educational orders, described in Chapter 2, were specifically designed to create enhanced (standby) capabilities.)
- Finally, the planning generally found in a standby agreement program can serve as a means to orchestrate an emergency response and, thereby, reduce the inefficiencies that might otherwise result from ad hoc emergency actions. (The Machine Tool Pool Order Program, discussed in Chapter 4, served this purpose.)

Beyond providing a more rapid and effective response, a standby agreement can also provide a cost-effective alternative to some defense and preparedness expenditures. In essence, commercial and industrial resources available through a standby agreement can obviate the emergency need for comparable government-owned resources. Therefore, the government need not purchase and maintain some of the resources it would otherwise require to ensure a desired level of emergency preparedness. Because these resources would be needed only during emergency situations, their purchase and maintenance by the government would represent a very expensive form of insurance.

By relying on commercial and industrial resources to meet part of this insurance need, the government can reduce its cost greatly. Except in cases where the government pays to enhance the private resources, the cost of a standby agreement is nominal, and even when enhancement expenditures are involved, the cost is only a small fraction of that associated with outright purchase and maintenance of comparable resources by the government.

Because they entail relatively little cost, standby agreements can also provide greater flexibility of response. Rather than being locked into inventories of items which are likely to become obsolete, the government can access the changing resources available in the private sector. Commercial and industrial firms who offer their resources through standby agreements generally upgrade their capabilities periodically to retain their economic and technological competitiveness. (It should be noted that changing private capabilities can reduce their potential utility in military applications. For example, domestic airlines have cut back on their long-range cargo capabilities in recent years for economic reasons. This is discussed in Chapter 6.)

1.3 HOW CAN STANDBY AGREEMENTS BE USED?

The programs examined in this report demonstrate a variety of uses served by standby agreements:

- Accelerate delivery of items currently in procurement (e.g., surge option clauses)
- Increase the number of items currently in procurement (e.g., surge option clauses)

- Convert capacity to production of essential items (e.g., educational orders)
- Modify existing civilian items for military uses (e.g., CRAF Enhancement)
- Use commercial resources for military or other emergency purposes (e.g., CRAF and Plan Bulldozer)
- Commit to purchase items to encourage increased production in anticipation of increased industrial need for these items (e.g., machine tool trigger and pool orders).

In addition to these uses, standby agreements might be used to:

- Expand capacity for essential items (e.g., standby agreements with a manufacturer, a construction company, a real estate holder, and other appropriate parties to build or expand a factory)
- Modify product designs to facilitate production (e.g., a standby agreement to modify a civilian helicopter design for military applications)
- Modify production processes to reduce bottlenecks (e.g., a standby agreement to relax testing procedures to reduce required testing time)
- Refurbish items for military or industrial uses (e.g., a standby agreement with a shipyard)
- Share tooling for essential items (e.g., a standby agreement with forging companies).

This list can undoubtedly be expanded and may well be in the follow-on report to this one which will examine the

potential use of standby agreements in eleven different industrial and service sectors.

1.4 HOW ARE STANDBY AGREEMENTS CREATED?

There is no fixed system for creating a standby agreement. However, there are common elements to the standby agreement programs described in this report, and these elements can be combined into a standby agreement systems model. (Such a model is presented in Chapter 8.) These elements include:

- Program/funding authority
- Contracting authority
- Delegation of authority
- Requirements identification/planning
- Priorities and allocation authority
- Creation and maintenance of standby capabilities
- Program review.

The relationships among these elements are depicted in Figure 1.4-1.

Program/funding and contracting authorities are delegated to an office within an agency with procurement responsibilities. This office completes standby contracts with private firms which can provide desired goods or services.

While requirements identification and other planning are critical to an effective standby agreement program, these

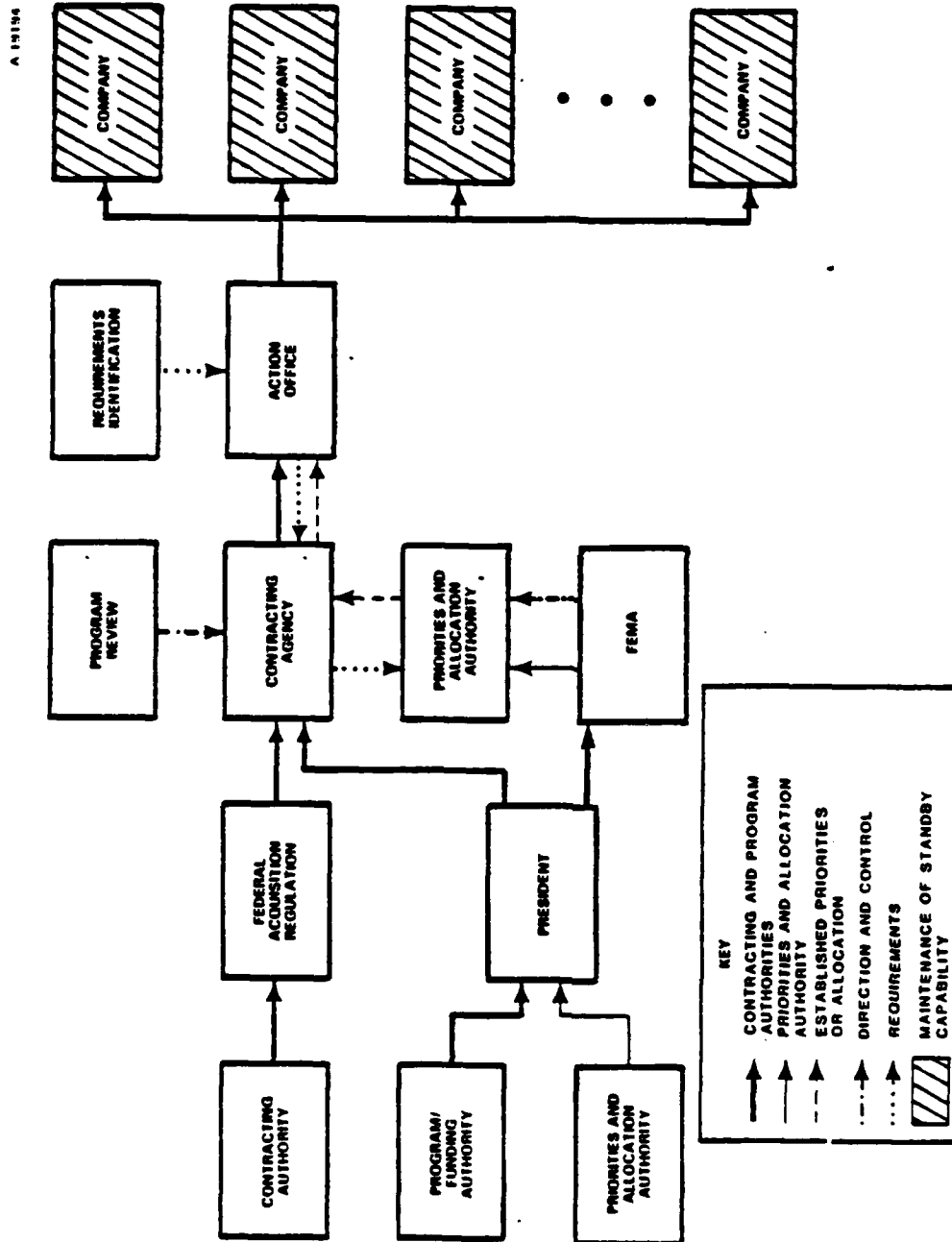


Figure 1.4-1 Establishment of a Standby Agreement Program

responsibilities have frequently received short shrift in creation and maintenance of such a program. Sometimes these functions are the responsibility of the contracting agency, but not always. In Figure 1.4-1, we have not tried to depict the innumerable options for allocating responsibility for these functions. The cell labeled "requirements identification" should be viewed as representing a wide variety of possibilities, ranging from a simple process where requirements are identified by the "action office" and are not reviewed outside of the parent agency to a complex process where requirements identification and other planning involve a number of agencies and also involve considerable input from industry.

Priorities and allocation authorities are another important element of a standby agreement program. The agency with these authorities (redelegated from FEMA) would generally review the emergency requirements identified by the contracting agency and provide appropriate priorities or an allocation of civilian resources.

Creation and maintenance of a standby industrial capability can be an extension of the standby agreement process. Responsibility for these activities is generally shared by the Government, which funds standby equipment and production studies, and by private firms, which do some production planning and maintain some level of emergency production capabilities.

Finally, periodic program review by an existing or an ad hoc group is desirable to ensure effective use of the standby agreement mechanism. The review might be viewed as part of the ongoing planning process needed to keep a standby program current.

1.5 HOW ARE STANDBY AGREEMENTS FUNDED?

Lack of funding can be a major impediment to activation of standby agreements. Simply stated, funding is generally not available on a standby basis. In cases where appropriated funds for given goods and services have not been fully obligated, the unobligated amount can be used to provide stopgap funding. For example, a CRAF activation can be funded initially in this manner. However, additional funds will eventually have to be reprogrammed or appropriated in such cases to sustain the increased effort triggered by the standby agreement.

In cases where given goods and services are not currently being purchased by the government, a special appropriation (and perhaps even an authorization) may be required before the agreement can be activated. For example, activation of MTTOP contracts could require prior authorization (or review) and funding by Congress.

The delay in activating a standby agreement resulting from the need for congressional funding action can reduce or even eliminate the effectiveness of the standby agreement mechanism. It should be noted, however, that this delay is not inherent in the concept of a standby agreement. It is possible for Congress to provide a (standby) contingent authorization and appropriation to permit activation of a standby agreement without further congressional action.

Funding for enhanced standby capabilities within a standby agreement program has also been a problem historically. As discussed in Chapters 2 and 6, Congress proved reluctant to fund educational orders and enhanced CRAF aircraft. These programs were plagued by negative perceptions of

industrial preparedness expenditures and concerns about government subsidies to industries.

1.6 HOW ARE STANDBY AGREEMENTS TRIGGERED?

The saving of time in acquiring needed goods and services is the foundation underlying the standby agreement concept. Therefore, timely activation of a standby agreement is key to its effectiveness in an emergency situation. Ironically, programs which encompass standby agreements frequently involve inadequate planning about the conditions under which these agreements should be triggered. This failure reduces the potential value of these agreements substantially.

In cases where a standby agreement concerns manufactured goods, the desired increase in output would generally take weeks or even months from the time of triggering. In such cases, standby agreements would be far more effective if they were triggered earlier in anticipation of increased requirements rather than later in response to actual need. Early triggering in anticipation of need might be likened to training people to fight fires before a fire occurs rather than waiting for a fire to start and training them at the fire site.

In cases where the standby agreement concerns a service industry, this may be less of a problem because triggering the agreement can often achieve a more rapid result. For example, CRAF aircraft can be fulfilling military airlift requirements within hours of activation. Extending the fireman analogy described above, we might characterize the potential responsiveness of a service industry to military needs as being comparable to that of a city fireman to a forest

fire. The city fireman has basic fire-fighting skills and can, therefore, provide immediate assistance. On the other hand, emergency requirements may well exceed the immediate capabilities of the affected service industry. In such cases, early triggering would expand the time available to satisfy these requirements in a timely fashion. (If the forest fire is raging out of control before the city firemen are activated, they may be inadequate to the task of putting the fire out quickly.)

The added benefit from early triggering is not without cost, since greater risk is associated with expenditures in anticipation of requirements rather than in response to actual requirements. If some or all of the anticipated requirements do not come to fruition, the government may wind up with unneeded items. (This is discussed further in Chapter 5.)

1.7 HOW EFFECTIVE IS THE STANDBY AGREEMENT MECHANISM?

Our examination of six programs that involve standby agreements or elements of standby agreements leads us to the following conclusions:

- The standby agreement mechanism offers an effective and efficient means to augment existing government resources with those of the private sector during an emergency
- The mere existence of a standby agreement does not ensure its effectiveness in improving mobilization capabilities
- An effective standby agreement program requires preparedness planning (by government and industry) and a process which ensures timely activation in anticipation of or response to emergency requirements

- Standby agreement programs have received little attention and planning resources, unless they have been clearly perceived as being important and cost-effective elements of our national security structure. In the past, this perception has been a function of how immediately and substantially private resources governed by a standby agreement could be applied to defense purposes
- The effective future use of standby agreements to improve responsiveness in manufacturing sectors will be largely contingent on an increased awareness that such responsiveness is important to our national security and that industrial preparedness expenditures are cost-effective.

1.8 STUDY METHODOLOGY

Examination of the six programs analyzed in this report involved an extensive review of documents available in the National Archives (educational orders, pool orders, and MTTOP), the Buffalo Bill Historical Center (educational orders), FEMA files (pool orders and MTTOP), the Library of Congress (all but Plan Bulldozer and surge option clauses), and the TASC library of industrial preparedness documents, including documents obtained from various government, industry, and library sources (all six programs). We also interviewed individuals responsible for the current programs and knowledgeable about the past programs at the Associated General Contractors, the National Machine Tool Builders Association, FEMA, DoD, DoT, and DoC.

1.9 REPORT ORGANIZATION

The six programs covered by this report are addressed individually in Chapters 2 through 7. Chapter 8 compares the different programs and presents a systems model for a standby agreement program based on elements found in the six studied programs. Chapter 9 summarizes our findings.

The discussion of each program (Chapters 2 through 7) is organized to include the following:

- Introduction -- a brief description of the program and its standby agreement characteristics
- History -- a chronological summary of the program, beginning with events leading to its creation, highlighting program milestones, and explaining current status
- Responsibilities -- a summary of program roles, including program authorization, authority delegations, policy guidance, requirements identification, implementation, activation, regulation, and review
- Effectiveness -- an analysis of the program's impact on industrial responsiveness
- Problems -- an analysis of the problems which encumber the program.

The appendices include a variety of documents related to the different programs and referenced in the discussion of each of these programs.

2.

EDUCATIONAL ORDERS

2.1 INTRODUCTION

Educational orders were authorized by a 1938 law as a means "to familiarize commercial and manufacturing establishments with the manufacture of...munitions and...accessories and parts."¹ (It should be noted that "munitions" in this case and throughout this chapter means both weapons and ammunition.) The primary purpose of these orders was to impart production experience for "munitions of war of special or technical design, or both, noncommercial in character, and essential accessories and parts thereof needed in the military service." The goal was to maximize such experience while minimizing actual output associated with each educational order contract.²

The orders also involved acquisition of additional equipment -- "gages, dies, jigs, tools, fixtures, and other special aids and appliances, including drawings thereof" -- needed to manufacture these items "in quantity in event of an emergency." In fact, 60 to 75 percent of the funds for each educational order was spent in acquiring special equipment.³ This equipment was owned by the Government and maintained on a standby basis at the production establishments where each educational order was carried out.

Other important purposes accomplished through educational orders were: production studies to determine the capabilities of commercial facilities to produce defense items and to plan conversion of these facilities for that purpose;

and review of defense items' designs for the purpose of improving those designs from the standpoint of the ability to mass produce them.

Educational order contracts were implicit, rather than explicit, standby agreements. These contracts did not contain option language governing increased production (activation) beyond the educational order quantity. However, the purpose of educational orders was to create a standby capability to produce defense items, and virtually all of the orders were followed by production orders for those items in the early stages of World War II. The triggering of this standby capability simply involved the award of a production contract through the regular procurement process, i.e., through a competitive bidding process.⁴

2.2 HISTORY OF EDUCATIONAL ORDERS

Interest in the educational order concept is evident as early as 1916. Use of educational orders was recommended by the Naval Consulting Board to improve industrial preparedness,⁵ and the National Defense Act of 1916 authorized funds for procurement of special equipment for manufacture of munitions and waiver of competitive bidding requirements in such cases. Corresponding funding was provided by the Army Appropriation Act, but full-scale production was necessitated by World War I before this educational order program was able to get off the ground.⁶

Progress towards an educational order program took a step backwards with passage of the National Defense Act of 1920. While this act created the position of Assistant Secretary of War to oversee procurement of all Army supplies and to

plan for the mobilization of material and industrial organizations essential to wartime needs, it also eliminated, for all intents and purposes, the possibility of an educational order program. It provided that the Assistant Secretary of War "shall cause to be manufactured or produced at the Government arsenals or Government-owned factories of the United States all such supplies or articles needed by the War Department as said arsenals or Government-owned factories are capable of producing on an economical basis."⁷

Nevertheless, as the U.S. industrial base returned to a peacetime footing, interest in educational orders was reborn. Both Secretary of War Weeks (in 1922) and his successor, Dwight Davis, (in 1925) recommended the use of educational orders for defense production.⁸ However, when legislation authorizing such orders was introduced in 1927, it was never reported out of committee and when the same bill was reintroduced during the next Congress, it was "overwhelmingly defeated."⁹ Repeated efforts to pass this legislation in subsequent Congresses met with failure as well.¹⁰

...the War Department's requests were regularly turned down, partly through apathy, partly for reasons of economy, and partly because of vocal opposition by pacifist groups who objected to any kind of preparation for war.

Despite these repeated failures, educational order legislation was again introduced in 1937. Not surprisingly, this legislation received the support of Acting Secretary of War Malin Craig who, in a letter to Chairman Lister Hill of the House Committee on Military Affairs, wrote:

We find that our program of industrial preparedness now enables us to acquaint the

While the question arose as to whether and when [educational orders] should be converted to production orders, the decision in September [after the outbreak of war in Europe] was to continue the program as it was "on the premise of educating more firms and in some instances providing complete rather than partial tooling."²¹

However, the majority of these educational orders were eventually supplanted by production contracts,²² and the educational order program faded away.²³

The importance of educational orders for mobilization preparedness was a "lesson learned" in the immediate postwar years. When Congress approved the Armed Services Procurement Act in 1947, it expressly authorized such a program and commented on its importance as a continuing tool for maintaining preparedness:

The experience gained during World War II makes it essential that the War and Navy Departments have the powers inherent in this provision. We cannot depend upon the hope that in future emergencies there will be time for the reorganization of our industrial strength for the needs of war... Also, through the use of educational orders the services can constantly develop the industrial facilities and production know-how necessary to keep abreast of the industrial requirements arising out of the discovery and application of new weapons. Without such powers, the plants, facilities, skills, and personnel needed during an emergency may atrophy through disuse or may not be constructed and ready for use.²⁴

As late as 1950, the Department of Defense continued to recognize the role of educational orders in its preparedness program. In a 1950 description of the industrial mobilization program, the Munitions Board placed educational orders

as the final step in the process of developing industrial preparedness measures: "If time and funds permit, the next step is the actual manufacture of a limited number of the product for educational purposes."²⁵

However, although TASC could discover no specific decision terminating use of educational orders, awareness of this preparedness tool appears to have dissipated over time. It was undoubtedly a victim of the "short-war" planning decisions of the mid-1950s which affected industrial preparedness programs generally. At present, although the process is still permitted under procurement law, no current planning documents mention the technique.

2.3 RESPONSIBILITIES FOR THE EDUCATIONAL ORDER PROGRAM

As already suggested in the previous section, the War Department and Congress were the key players in the effort to inaugurate an educational order program. The former actively promoted such a program during the 1920s and 1930s, but the latter "showed little enthusiasm to provide funds for 'if and when' purposes."²⁶

The 1938 act gave program authority to the Secretary of War but also provided that the Secretary "shall enter into no [educational order] contract...without the approval of the President."²⁷ Program coordination and oversight were delegated by the Secretary to the Assistant Secretary of War who was responsible for supervising War Department procurement and mobilization planning activities.²⁸ The Assistant Secretary created a special board of officers to define program objectives and principles.²⁹ The board also identified 56 items suitable for educational orders from lists submitted by the

chiefs of the supply arms and services and recommended six items to be funded under the first-year appropriation of \$2,000,000.³⁰ A second special board of officers was created the following year after these first contracts had been awarded to reexamine and revise the program designed by the first board.³¹

The actual procurement activities were conducted by the supply arms and services. The Ordnance Department, which was to receive the lion's share of this program's funding, created a new division "to expedite execution of educational orders placed with commercial producers and to prepare the path for greater cooperation with private industry."³² The supply arms and services created a list of select bidders for each item planned for an educational order and submitted this list for the Assistant Secretary's approval.³³ They then requested bids for each item, selected winners, and submitted their selections to the President (through the chain of command) for contract approval.³⁴

In July of 1939 after the six FY39 contracts had been awarded, the Assistant Secretary appointed the Committee on Review of the Program of Educational Orders. This committee was chaired by Brigadier General Benedict Crowell, former Assistant Secretary of War, and included ten other prominent industrialists and businessmen.³⁵ The purpose of the committee was to review the proceedings of the board of officers and to obtain businessmen's views on the proposed program. In a move which presaged the short life of the educational order program, this committee was disbanded in August 1939 after creation of the War Resources Board.³⁶

The relationships of the various Federal entities with responsibilities for the educational order program are depicted in Figure 2.3-1.³⁷

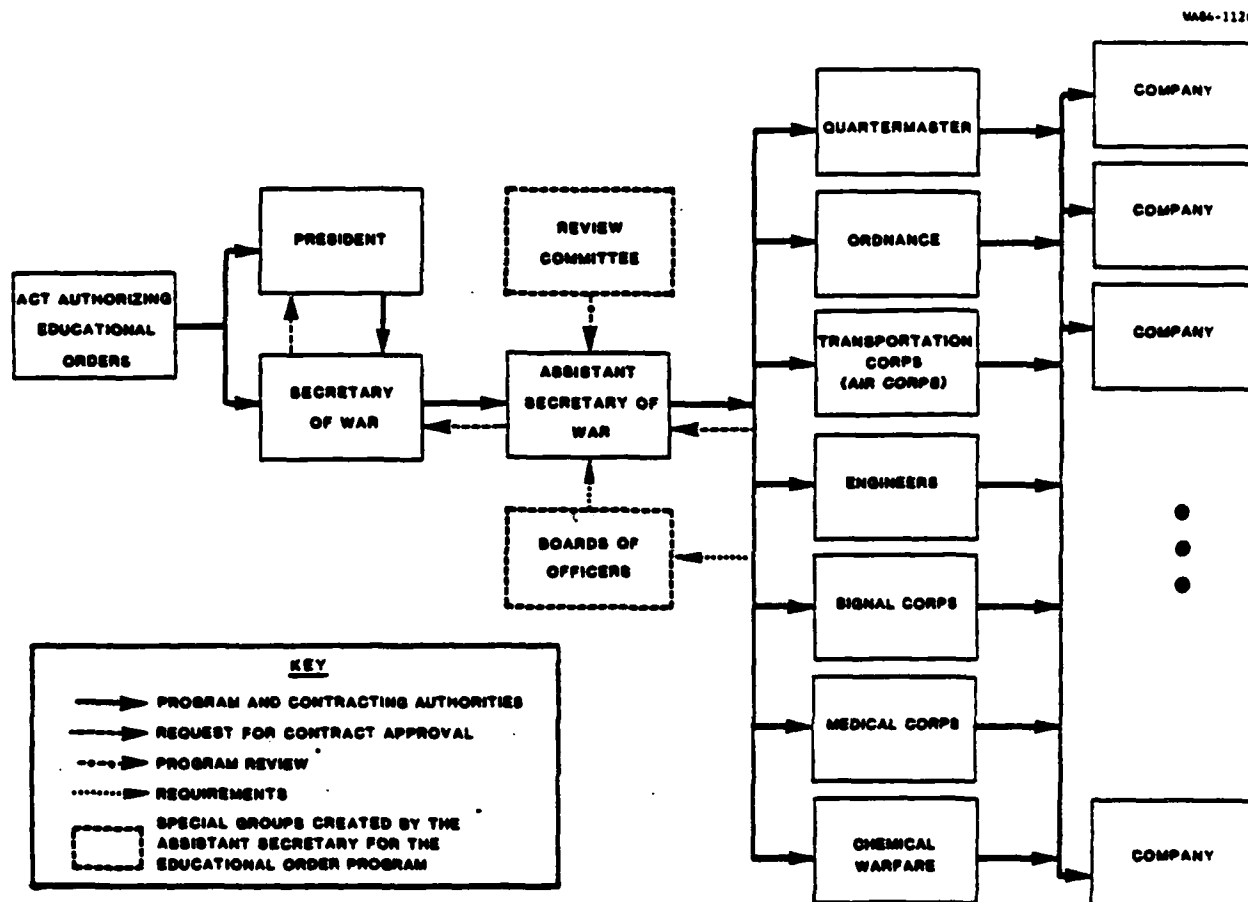


Figure 2.3-1 Responsibilities for the Educational Order Program

2.4. PROGRAM EFFECTIVENESS

While the educational order program was both small and short-lived, all evidence indicates that it provided a cost-effective means to achieve a number of industrial responsiveness goals. These goals include:

- Increased defense production capabilities
- Reduced requirements for munitions stockpiles

- Trained government procurement personnel
- Improved munitions design.

The effectiveness of educational orders as a means to achieve these goals, both historically and today, is analyzed in this section.

2.4.1 Increased Defense Production Capabilities

With huge stocks of munitions remaining in the aftermath of World War I and the severe reduction of standing U.S. armed forces, munitions production during the 1920s and 1930s shrank to a very low level. The little that was produced during these decades was acquired primarily from Government arsenals. Commercial company participation in defense production was minimal.³⁸

With the passage of time and the changing of technology, defense production experience garnered by non-government manufacturing companies during World War I was lost or became outdated. Recognition of this situation, combined with the knowledge that Government arsenals would be able to meet only a small portion of munitions requirements in the event of war, impelled a succession of Secretaries of War to promote the idea of educational orders. These orders were seen as a means of speeding production from the commercial sector in the event of substantially increased defense production needs.

Congress' repeated failure to enact an educational order program during the 1920s and 1930s greatly reduced the potential benefit of this program at the outset of World War II. Relatively few order contracts were awarded prior to the need for substantially increased production -- production beyond the capabilities of government arsenals -- and most of

these contracts were displaced by production contracts prior to their completion. In other words, many companies received production contracts before they were fully "educated."

Nevertheless, these were firms that at the time they received an educational order had not yet been drawn into the expanding production program driven by rising European and U.S. demand. Most of the initial rising demand was for aircraft, whereas most of the educational orders contracts were for other munitions. In testimony on the Military Establishment Appropriation Bill for 1941, Colonel Harry Rutherford, Director of the Planning Branch of the Office of the Assistant Secretary of War, stated that:

Current War Department orders for ordnance material reach only 30 out of a total of several hundred plants scheduled for training in the production of ordnance... In no case would an educational order be placed with a plant which is already³⁹ trained in the art of munitions manufacture.

In all, 1,200 of the 10,000 plants earmarked for possible war production in 1940 were scheduled to produce items which were distinctly noncommercial in character. These plants were targeted by the educational order program.⁴⁰ However, less than 300 of these plants gained production experience through this program⁴¹ because of the program's late beginning.

This late beginning, combined with the relatively low level of program funding, also limited the number of items covered by educational orders. Of the 1,200 "problem" munitions (i.e., noncommercial in nature and technical in design) originally identified by the War Department, only 56 of the most important were scheduled for educational orders.⁴²

It is commonly believed that this experience and the equipment acquired under educational order contracts resulted in earlier delivery of production quantities when production contracts were let with "educated" commercial producers. In a speech presented in October 1940, Major General Charles M. Wesson, Chief of Ordnance, stated:

The "educational order" program of 1939 and 1940 and the "production study" program of 1940 have been of great assistance. The net results of these programs will be a saving of funds from the 1940 appropriations, and, more important, a reduced time of delivery for a great many items.⁴³

In testimony before Congress, Colonel Rutherford estimated production schedule savings of 4 to 12 months resulting from educational orders. He went on to say:

As a matter of fact, the training of industry for munitions production is the keystone of industrial preparedness, and funds made available for educational orders strike directly at the principal cause of delay in munitions production. It is hoped that eventually all plants scheduled to produce critical noncommercial items in war can be so trained and that the entire war program of production can be advanced accordingly.⁴⁴

Accepting the fact that the educational order program did increase defense production capabilities and noting that the program involved several different elements, we should also examine the relative contribution of each of these elements. These elements include:

- Production experience
- Standby equipment and tooling
- Production study.

Unfortunately, written records concerning educational orders provide little basis for measuring the relative importance of each of these elements. Judging from our knowledge of a number of industries, we assume that the relative importance and cost-effectiveness of each of these elements varied by industry and application.

The gain in production experience was probably greatest in cases where the item being produced was substantially different from a company's commercial product lines or where production techniques for the item were substantially more rigorous than the company's commercial manufacturing activities. In cases such as production of military specification wire by wire and cable producers and production of military specification airframes by aircraft manufacturers, educational orders probably contributed somewhat less to existing production experience. Educational orders were effective in all cases to the extent they resulted in early acquisition of specific equipment and tooling needed for production of defense items and improved planning for quantity production of these items.

The cost-effectiveness of acquiring standby equipment and tooling probably varied with the multiplicative effect on production potential. The idea behind the educational order program was to educate manufacturers who already owned most of the necessary equipment and tooling and required only minimal additions to be capable of producing a military product. In such cases, the multiplicative effect (and the cost-effectiveness) of acquiring standby equipment and tooling was probably quite high. By contrast, if the Government had chosen to acquire an entire standby package of equipment and tooling needed to produce an item, this would have had virtually no multiplicative effect.

The cost-effectiveness of a production study would have depended on its accurate reflection of production conditions and on remedial actions resulting from the study. If the study was inaccurate and if remedial actions were not undertaken in a timely fashion, it would obviously have contributed little to increased production capabilities.

An educational order program would probably be a cost-effective means to improve industrial responsiveness in today's world, even though the defense production environment has changed radically since the 1930s. Our standing armed forces are now much larger and thousands of commercial firms are now involved in peacetime production of munitions. Nevertheless, like the Government arsenals during the 1930s, current defense producers retain relatively limited capabilities to increase weapons output from existing facilities. These facilities alone would be able to meet only a portion of war-time weapons requirements.

2.4.2 Reduced Requirements for Munitions Stockpiles

In addition to speeding delivery of munitions from commercial sources in the event of war, it was believed that an educational order program would "lessen the quantities of supplies that would otherwise have to be maintained in reserve. Up to a certain point, therefore, it is safe, and certainly economical, to invest in production capacity for the item, rather than in the item itself."⁴⁵ Because the educational order program was initiated just prior to World War II, the potential value of such a program in reducing peacetime requirements for munitions stockpiles was never tested.

Given the minimal level of production for munitions stockpiles during the 1930s, one suspects that an educational

order program would have had little impact in reducing actual funding for munitions during this period even if it had been authorized earlier. However, if budget priorities and perceptions of national security had been different during this period and funding for the munitions stockpile higher, an educational order program might well have provided a cost-effective substitute for part of a larger weapons stockpile. At the margin, dollars invested in educational orders might have provided a greater level of national security than equal dollars invested in an incremental increase in munitions stockpiles.

The same is true today. Dollars invested in increased standby production capabilities might pay greater national security dividends (in some cases) than dollars invested in increased war reserve materiel (WRM). Educational order expenditures could result in increased near-term production capabilities and could provide more flexibility to meet various conflict scenarios. In a D-to-P-curve sense, educational order expenditures could shorten the time between D-day and P-day and could also reduce the intervening production shortfall substantially, perhaps permitting a lower level of WRM expenditures.

2.4.3 Trained Government Procurement Personnel

Today, the community of government procurement personnel is large and trained. Their dealing with substantially increased procurement requirements might strain the system but could be managed in reasonable order. During the 1930s, this community was much smaller, particularly in the areas of weapons and ammunition, because purchases in these areas were relatively small and largely limited to Government arsenals. Educational order activity gave Army procurement personnel

experience in dealing with commercial companies and, thus, helped prepare them for the increased demands associated with the World War II procurement buildup.⁴⁶

2.4.4 Improved Munitions Design

Another area where the impact of an educational order program may have been greater prior to World War II than now is weapons design. Specifically, considerable potential existed prior to World War II to alter design and production methods so as to permit mass production or, in cases where mass production was already in use, more efficient production. The involvement of the auto industry in the production of aircraft is an ideal example of the potential of mass production at that time. Partially as a result of an educational order for one B-24 aircraft (but more as a result of their own initiative), Ford planned mass production of this aircraft well before receiving a production contract.⁴⁷ Suggestions by Winchester Repeating Arms Company about design changes to the M-1 Rifle to make the rifle more producible may have resulted in increased production not only by a commercial company, but by a Government arsenal as well.

The potential for an educational order resulting in significant design improvements is probably less today because defense production technologies are currently more integrated with those of the commercial sector. However, the potential production quantities associated with a mobilization could create different economies of production, so items that are not mass produced now for economic and technical reasons could possibly be produced this way if larger multiples were required. This possibility could be examined through an educational order contract.

2.4.5 Educational Order for the M-1 Rifle -- a Case Study

In discussing the educational order legislation on the Senate floor in May 1938, Senator Johnson of Colorado estimated "conservatively" that such orders "will permit quantity production of critical munitions to begin at least 2 months earlier than if the educational order system is not authorized."⁴⁸ Actual experience proved a much greater savings of time. The case of the M-1 Rifle, which was the largest educational order contract, bears this out.

This order was placed with the Winchester Repeating Arms Company in March or April 1939.⁴⁹ This same company received a production contract for 65,000 M-1 Rifles 5 or 6 months later.⁵⁰ Using the M-1 Rifle example as a measure of the educational order program's effectiveness, Lt. Gen. Levin H. Campbell, Jr., former Chief of Army Ordnance, writes:

When a production order was later placed with the [Winchester] company, the cost of the Educational Order was saved in the first thirty or forty thousand rifles produced, and the time it took to get into production was reduced by 9 to 12 months.⁵¹

Given the fact that six months, at most, elapsed between award of the educational order contract and the production contract, we have endeavored to examine the "9 to 12 months" finding more carefully. Simple arithmetic would suggest it is an exaggeration. Nevertheless, when Winchester bid for the 65,000-rifle contract in August 1939, its projected costs and production schedules differed considerably between an effort that would permit utilization of tools obtained through the educational order contract and one that would not. Projected tool costs in the former case were nearly \$700,000 less and the delivery schedule was 9 to 12 months earlier.⁵²

The cost differential is easily explained by the fact that a large number of tools were acquired under the educational order contract. This list includes: 1294 gages; 743 jigs and fixtures; 96 punches and dies; and 189 machine tools.⁵³ This equipment was in place or on order when the production contract was awarded. The schedule differential is more difficult to explain. It could have been caused by lengthening lead times for equipment and materials resulting from increased demand throughout the economy.⁵⁴ However, such demand had not changed so drastically between May and August 1939 as to explain this difference.⁵⁵ Moreover, if lead times for additional equipment were the reason for the differential, these lead times would have affected both of Winchester's bids. Only one quarter of the additional machine tools needed to fulfill the production contract were available under the educational order contract. The remaining three quarters were to be acquired whether or not the educational order equipment was used.

Several other possible explanations of the substantial difference between the two schedules are:

- The inability of the company to commit adequate equipment and personnel resources to the production contract while still being required to complete the educational order
- A desire on the part of the company (for whatever reason) to impel selection of its bid involving educational order equipment
- A desire on the part of the company to improve justification for awarding the production contract to Winchester versus a competitor by demonstrating a substantial savings in time and money associated with the educational order.

Each of these explanations is pure speculation.

In any event, the M-1 rifle educational order undoubtedly resulted in earlier delivery of production rifles from a commercial supplier. The time saved was probably less than 9 to 12 months and may even have been less than the 5 to 6 months between award of the two contracts. However, had this educational order been implemented earlier, the time saved once the subsequent production contract was awarded may well have been even greater.

2.4.6 An Educational Order Program in Today's World

The essential elements of an educational order program exist today in ongoing industrial preparedness efforts, such as multiple sourcing of items in procurement, production surge planning, purchase and maintenance of standby equipment and tooling, surge option clauses in procurement contracts, and so on. These elements could be brought together to form a new educational order program. While the defense industrial base is now much broader and far more capable than that of the 1920s and 1930s, its mobilization responsiveness could be enhanced through educational orders designed to expedite the conversion of civilian production capacity to military production purposes.

One important difference between the educational order program of the 1930s and a present-day system is the fact that many items that would today be covered by such a program would already have a private sector producer. (Most of the items covered by pre-World War II orders were previously produced only in Government arsenals or other Government-owned facilities.) Nevertheless, because most private contractors have limited capability to increase production in existing

facilities, additional production sources would still be needed if military requirements were to increase suddenly and substantially. Educational orders would facilitate creation of these additional sources.

In pursuing such a program, the Government might wish to obtain the benefits of a direct exchange of information between the current producer of a military item and the recipient of the educational order. This exchange would speed the education process while reducing costs. Such an exchange of information was envisioned as an important element in the original pre-World War II program.⁵⁶ Today, such an exchange might raise antitrust issues. In order to deal with these issues, the Government might combine an educational order with establishment of a voluntary agreement. (Voluntary agreements are described in another report under this contract.)

A list of principles governing a new educational program would include principles common to most industrial preparedness efforts and would be designed to focus the program where it might be of greatest benefit. The list might include the following principles, for example:

- The educational order must involve production of an essential military item or component
- The design of the item or component must be expected to remain standard well into the future
- Production of the item or component should involve knowledge, skills, or equipment which are currently unique to one or a very small number of firms
- Potential emergency production requirements for the item or component should be significantly greater than the potential production capabilities of firms

that currently maintain the requisite knowledge, skills, and equipment needed for the item's or component's production

- Recipients of educational orders should have most of the requisite knowledge, skills, and equipment needed to produce the item or component, so as to minimize cost
- Priority should be given to parts and components production, particularly parts and components which are most likely to create production bottlenecks and delay delivery of finished weapons
- Priority should be given to firms which are not currently defense producers in order to promote expansion of the defense industrial base.

A similar list of principles for the original program was created by the War Department Board on Educational Orders.⁵⁷

2.5 PROBLEMS

The original educational order program was characterized by a number of problems that could afflict a similar program today. These problems fall in the following areas:

- Timely program authorization, funding, and implementation
- Identification of suitable items for educational orders
- Application of government regulations
- Selection of contractors
- Proprietary rights.

Each of these is discussed below.

2.5.1 Authorization, Funding, and Implementation

As suggested in the previous section, the potential effectiveness of the educational order program was severely undermined by the fact that it was not authorized and funded until the production buildup preceding World War II. As a result, few firms were "educated" prior to the need for substantial production increases. Relatively few firms received educational order contracts and those that did found these contracts quickly supplanted by production orders.

The failure to enact the educational order program earlier resulted in large part from congressional reluctance to fund industrial preparedness expenditures. This type of national security insurance had little "sex appeal," particularly in light of competing budget needs resulting from the Great Depression and a generally negative public attitude towards munitions production.⁵⁸ Similarly, today industrial preparedness funding frequently receives short shrift in the defense budget process, and despite interest in the concept of improved industrial responsiveness, acquisition decisions are still driven primarily by economic considerations. To the extent economy and responsiveness coincide, the latter benefits from this emphasis, but funding geared strictly to industrial preparedness measures is extremely limited.

2.5.2 Suitable Items for Educational Orders

Of the 56 items originally identified for educational orders, only one retained the same design throughout World War II -- the M-1 Rifle. "...[M]any other items ceased to be articles of issue in a comparatively short time."⁵⁹ This suggests that educational orders had limited value because of changing technology or because suitable items for "education" were difficult to identify. Changing technology is a problem.

Why educate a company to produce an item which is likely to become obsolete in a short time? Prior to World War II when few commercial firms were involved in munitions production, such education served two purposes: it taught these firms basic production techniques associated with different types of munitions; and it permitted firms to contribute their production expertise to improvement of these munitions. Educational orders in today's world would serve the same purposes, particularly the former.

Presumably, the potential of educational orders would be more readily realized if program administrators recognized potential production bottlenecks and the remedial qualities of educational orders. History indicates that the Air Corps recognized neither these bottlenecks nor these qualities:

...instead of educating a large number of inexperienced producers, the Air Corps devoted its share of [educational order funds] to the purchase of a training aircraft from two aircraft manufacturers. The industrial planners of the air arm felt that airframes rather than accessories would constitute the most serious chokepoints.⁶⁰

They were wrong and, as a result, their educational order funds were used ineffectively. Without clearly defined program principles and adequate oversight, educational orders could be used equally ineffectively today.

2.5.3 Government Regulation

By virtue of their accepting an educational order, companies became subject to various government regulations -- for example, those resulting from the Davis-Bacon Act and the Walsh-Healy Act. Even though an educational order generally

constituted a very small portion of a company's business, acceptance of such an order required conformance with these regulations throughout the company's operations.

This narrowed the field of possible Educational Orders contractors to firms already engaged in manufacture for government account. Had this situation been permitted to remain, it would have constituted a serious limitation and many firms, whose participation in wartime production would be essential, would feel themselves fully justified in not accepting peacetime Educational Orders. After a lengthy series of conferences [among a number of government departments], specific rulings were obtained which nullified the administration of these acts in so far as the Educational Order Program was affected.⁶¹

This same problem could impede an educational order program today. Companies not currently involved in defense work would have a strong disincentive to acceptance of an educational order, if acceptance of such an order subjected all of their operations to a plethora of burdensome regulations. Many companies that would be quick to lend a hand in the event of a national emergency currently shun defense contracts in order to avoid the extra element of government interference and cost associated with administering such contracts.

On the other hand, an educational order program can also reduce administrative lead times in a national security emergency by allowing prospective producers to complete administrative qualification requirements in advance, under the order. To the extent "front end" bookkeeping, surveillance, and inspection requirements (e.g., first article approval, cost accounting standards) were retained, use of the educational order period to comply with these requirements could result in significantly earlier production.

2.5.4 Selection of Contractors

Because selection criteria established by the Educational Orders Board stressed adequate size, as well as financial and managerial responsibility, to avoid the need for facility expansion in the event of a production order, most educational orders were placed with the stronger firms within a given industry. Colonel Rutherford testified before Congress that:

[The War Department] selected the best firms in the country, with the best equipment, the best plants, the best engineering forces, and the best all-round ability to accomplish what we wanted to have done. We tried⁸² to interest those firms and get them to bid.

J.W.. Swaren describes the effect of this approach:

This in turn resulted in the use of dominating producers in each industry when the final impact of war came with its curtailment of normal production. The policy thus established resulted in the awarding of enormous contracts to the larger organizations, while many smaller outfits fully competent from a technical point of view to make a contribution to the war effort were unutilized.⁸³

Poor program design and implementation could reduce the potential benefits of educational orders today, if they resulted in failure to tap the latent defense production capabilities of companies not currently involved in defense work, particularly smaller companies which frequently harbor most of the resources needed for such work but may lack the financial wherewithal to risk ventures into new production areas on their own initiative.

2.5.5 Proprietary Rights

The Army Air Corps initially "rejected the whole concept of educational orders for air arm items" because so many appropriate items for such orders involved proprietary rights.⁶⁴ As it turned out, few, if any, items covered in the original educational order program involved proprietary considerations. In response to a Congressman's question, Colonel Rutherford noted that none of the original 56 items chosen for the program involved patent rights held by a private firm.⁶⁵ Proprietary rights (or the perception of proprietary rights) would probably pose a greater problem today for educational orders; however, this problem is currently being dealt with in the numerous ongoing efforts at dual sourcing and spare parts breakout.

ENDNOTES

- ¹Public Law 75-639. (See Appendix A for the text of this law.)
- ²Rutherford, Col. Harry K., "Educational Orders: Peace Time Training for Industry in Arms Manufacture," Army Ordnance, Washington, D.C., Nov.-Dec. 1939, p. 167.
- ³Subcommittee of the Committee on Appropriations, "Military Establishment Appropriation Bill for 1941," hearings, U. S. House, Washington, D.C., February 27, 1940, p. 92. (It should be noted that while most of the program funds were expended on new equipment no educational order program funds went to new construction.)
- ⁴Ibid., p. 93.
- ⁵Smith, R. Elberton, The Army and Economic Mobilization, Department of the Army, Washington, D.C., 1959, p. 63.
- ⁶Schwartz, Daniel H., "A History of Educational Orders in the United States, 1916-1940," Legislative Reference Service, The Library of Congress, Washington, D.C., September 27, 1940, pp. 3-4.
- ⁷Ibid., p. 4.
- ⁸Green, Constance McLaughlin, Harry C. Thomson and Peter C. Roots, The Ordnance Department: Planning Munitions for War, Department of the Army, Washington, D.C., 1955, p. 57.
- ⁹Schwartz, pp. 6-9. (The vote was 105 to 25.)
- ¹⁰Rutherford, p. 162.
- ¹¹Smith, p. 63.
- ¹²Congressional Record, U. S. Government Printing Office, Washington, D.C., May 3, 1938, p. 6124.
- ¹³The educational order legislation applied only to the War Department.

A similar bill S-3902 (for the Navy Department) had been introduced in the Senate by Mr. Shepperd on 25 April 1938. During the debate on the Naval Authorization Bill, the

weeks" after February 1, 1939. "Military Establishment Appropriation Bill for 1940," hearings, U. S. House, Washington, D.C., January 25, 1939, p. 76.)

50 Winchester Company was notified by a letter dated September 20, 1939, that it had been awarded a production contract for 65,000 rifles. Source: Buffalo Bill Historical Center, Cody, Wyoming, Winchester Company records.

51 Campbell, p. 21.

52 Winchester Repeating Arms Company, memos August 15 and 18, 1939. Source: Buffalo Bill Historical Center, Cody, Wyoming.

53 Winchester Repeating Arms Company correspondence. Source: National Archives, Washington, D.C.

54 This was one of the arguments used to support the educational order program. A War Department press release on April 22, 1939, stated:

Months will be saved by (standby equipment) availability at a time when the economic dislocation of the country at the outset of war will make it difficult to obtain such equipment.

55 Foreign orders for machine tools jumped significantly during the final quarter of 1939 after war was declared in Europe, but this jump alone would not explain the different schedules, even if Winchester Arms officials were anticipating the war and increased competition for machine tools. Even with the substantial increase in orders, lead times for new equipment increased only marginally at this time.

56 Col. Rutherford wrote:

It is hoped that the various manufacturers receiving educational orders for the same item will confer freely with each other in carrying out their contracts. It is not the intention, of course, to ask any plant to disclose in its production plans any confidential manufacturing processes or other information in the nature of trade secrets. However, in the interest of a sound and comprehensive mobilization plan for industry, much is to be gained by exchange of information. During the World War [I], committees were formed of manufacturers engaged in the production of similar items

and the pooling of information had no small influence in speeding up the entire program. (Army Ordnance, p. 166.)

⁵⁷ See Appendix B for the list of principles.

⁵⁸ Swaren, pp. 5-6.

⁵⁹ Swaren, p. 12.

⁶⁰ Holley, p. 183.

⁶¹ Swaren, p. 17.

⁶² House Appropriations Subcommittee, January 25, 1939, p. 76.

⁶³ Swaren, p. 13.

⁶⁴ Holley, p. 160.

⁶⁵ House Appropriations Subcommittee, January 25, 1939, p. 77.

3.

PLAN BULLDOZER

3.1 INTRODUCTION

Plan Bulldozer is a program established by The Associated General Contractors of America (AGC) to organize the construction industry's immediate response to disasters. It involves a standby "arrangement" between state and local government units and participating AGC chapters concerning disaster relief work by construction contractors. For reasons discussed in this chapter, this program has seen little use during its 26 years of existence and will soon be replaced by a new disaster relief program being planned by the Associated General Contractors.

Plan Bulldozer is designed to be implemented by local AGC chapters on a voluntary basis. Interested chapters identify local contractors willing to participate in a disaster relief program and contact state or local governments to create a standby "arrangement" between the AGC chapter and the government authority concerning disaster relief activities. Plan Bulldozer does not fit our strict definition of standby agreement because no firm is contractually committed to provide goods or services at the sole option of the government. Firms participate voluntarily if the program is activated.

3.2 HISTORY¹

Plan Bulldozer was created in 1958 by the AGC Disaster Relief Committee in response to the requests of several AGC

chapters that had been involved in disaster relief operations. The plan was a set of guidelines for industry assistance to and cooperation with governmental authorities. It was designed "as a blueprint for establishment of a local disaster relief plan...[but] has evolved over time in response to the greater role assumed by governments as emergency managers and the recognition on the part of contractors of liability problems associated with disaster work."²

During the 1960s, approximately 35 of the over 100 AGC chapters adopted some form of Plan Bulldozer program, but interest in this program waned as few disasters occurred. The program now exists in a state of limbo, with few AGC chapters currently maintaining an active program.

In fact, efforts have been underway to redesign the program since 1979, when the Disaster Assistance Committee³ of the AGC directed: (1) a reorientation towards a closer working relationship with disaster planning officials in government and away from Plan Bulldozer; and (2) revitalization of AGC chapter interest in disaster assistance through a new workable program. The new AGC program should be ready within a year.

3.3 RESPONSIBILITIES FOR PLAN BULLDOZER⁴

Unlike other programs examined in this study, Plan Bulldozer was created and implemented by the private sector rather than the Federal Government. The program was designed by the AGC, but program responsibilities rest with local AGC chapters. The following steps for creating a program are laid out by the AGC program guide:

- The AGC chapter creates an Emergency Planning Committee to plan and oversee the program's development
- Administrative responsibilities for the program are assigned to a chapter representative, who directs the chapter disaster relief staff
- Local contractors are solicited to participate in the program and those choosing to participate complete forms listing their equipment and identifying how key contractor personnel can be contacted outside working hours
- The chapter contacts the state or local government to discuss the program's operation and possible adoption of the program by the government. Adoption of the program involves: creating a standby agreement concerning disaster relief contractor costs; agreeing as to when and how the program is activated; agreeing to a method of cost reimbursement; and clarifying the degree to which the government unit will indemnify contractors doing disaster work
- Finally, the plan calls for an agreement with local labor organizations regarding the waiver of overtime on disaster relief work performed under Plan Bulldozer.

The program is triggered by the participating state or local government authority. An underlying principle of the program is that:

Neither men nor equipment will move into a disaster area without a specific request by a public authority engaged in a disaster fight.

After this request is received, the AGC chapter/disaster relief staff identifies suitable contractors for the requested relief effort and refers these contractors to the appropriate sites.

The individual contractors maintain operational control over their equipment and personnel.

Plan Bulldozer program responsibilities are summarized in Figures 3.3-1 and 3.3-2. The former depicts how the program is established and the latter shows responsibilities during program activation.

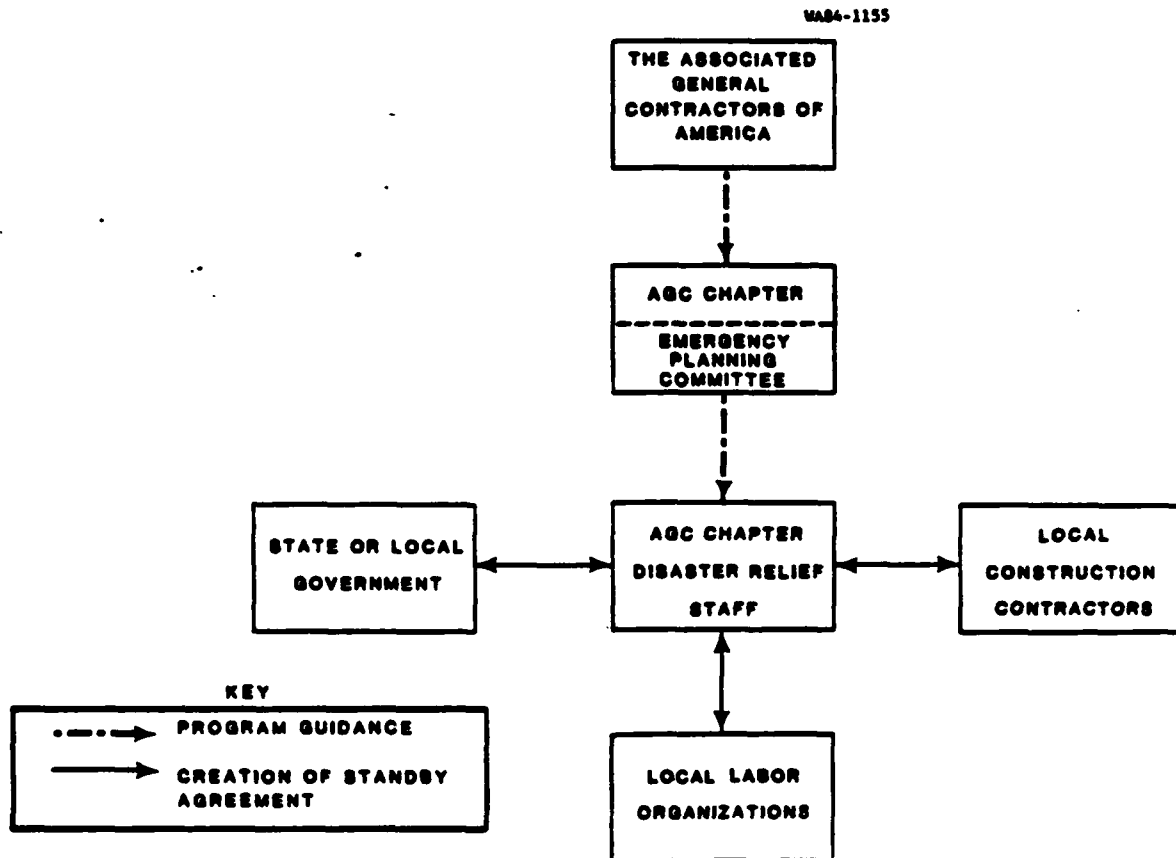


Figure 3.3-1 Establishment of the Plan Bulldozer Program

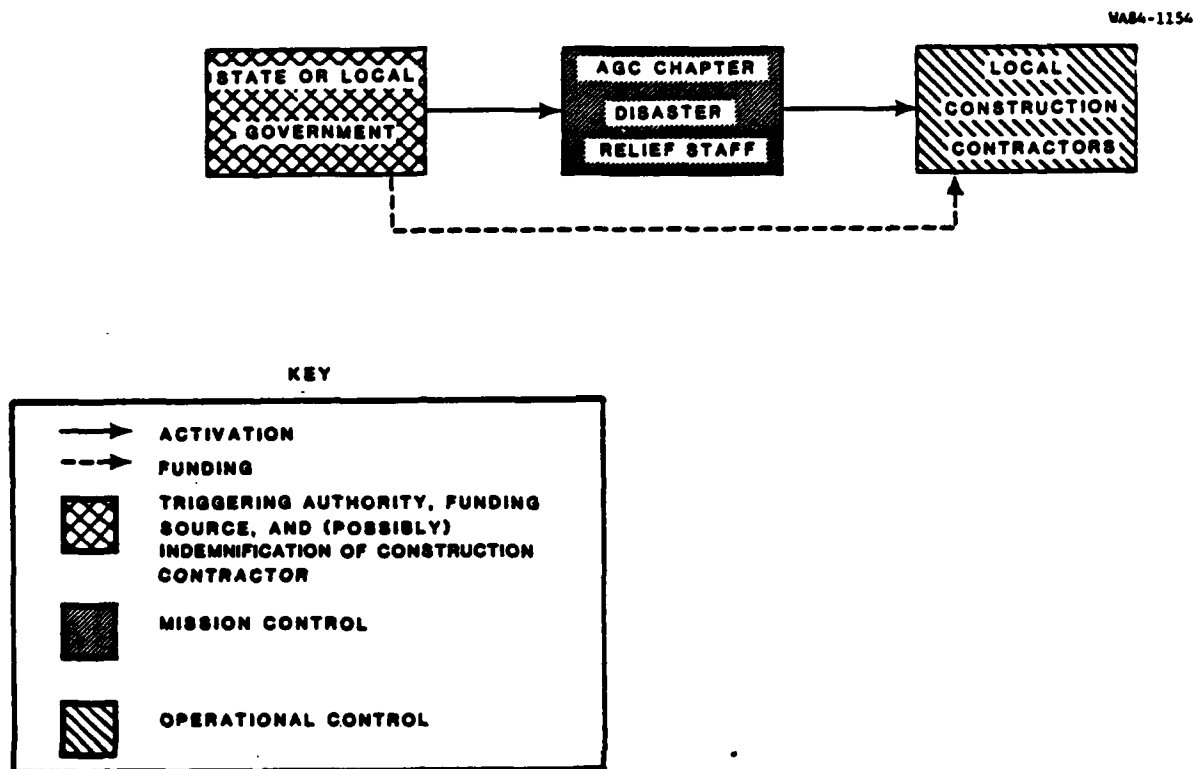


Figure 3.3-2 Activation of Plan Bulldozer

3.4 PROGRAM EFFECTIVENESS

Plan Bulldozer has proven to be an ineffective disaster relief program for several reasons:

- During the Plan's early years, few disasters occurred so AGC chapters which had established disaster relief programs gradually lost interest and allowed the programs to lapse
- More recently, the organizing roles of FEMA and the Corps of Engineers during disasters have reduced or eliminated the

need for a separate organizational effort sponsored by the AGC chapters

- The Plan has proven to be too cumbersome to activate during a disaster. Ad hoc measures to activate construction industry resources have been used instead.

However, even if Plan Bulldozer were an effective disaster relief program, it is doubtful that it would make a significant contribution to mobilization responsiveness. Plan Bulldozer was designed to provide a quick response (i.e., within hours of identified need) to disasters. This quick response, if the program were effective, could help provide earlier relief from a disaster's effects and could even help reduce damage caused by a disaster (e.g., through construction of dikes before or during a flood). This, in turn, could facilitate a community's and its local industries' return to normalcy and could, thereby, result in marginal increases in needed industrial output, but the overall contribution to mobilization requirements would be minimal. During a mobilization, minutes or hours in the initial response of the construction industry would gradually be less important than initial prioritization of effort to avoid waste of scarce construction resources on less important tasks.

More significantly, the construction industry has proven itself capable of responding to disasters on an ad hoc, yet timely, basis. This fact reduces the need for and the advantages of a standby agreement program in this area. Simply stated, a standby agreement would save little time in mobilizing this industry's resources to meet a localized disaster and would contribute little to improved disaster relief organization, in light of existing Federal Government disaster relief capabilities.

This is not to say that standby programs concerning the construction industry's role in a national mobilization effort might not contribute significantly to this effort. In fact, the private initiative, emergency planning, resource assessment, and coordinating elements of Plan Bulldozer all contribute to an increased level of construction industry response capabilities to mobilization needs. In combination with standby agreements to construct needed factories, military establishments, and transportation centers, these characteristics of Plan Bulldozer could hold considerable potential for improving the mobilization responsiveness of this industry. (We will examine this potential in our next report on standby agreements which will address use of these agreements in the construction and ten other industries.)

3.5 PROBLEMS

The Plan Bulldozer model would appear to hold limited potential for other applications. Private sector initiatives to improve mobilization potential are an attractive addition to government-sponsored industrial preparedness efforts, but by definition, the Government has little control over the direction such a program might take. To the extent the Government were to interject itself into a private sector effort of this type, the effort would begin to take on characteristics of other standby agreement programs described in this report. Under what authority might a government entity try to stimulate such private initiatives? What government incentives might be offered and oversight required? Once questions of this type come into play, the private initiative aspect is diluted or lost.

4.

MACHINE TOOL POOL ORDER PROGRAM

4.1 INTRODUCTION

During World War II (WW II) acute machine tool bottlenecks were experienced in the initial stages of industrial mobilization and periodically thereafter. The Government established a machine tool pool order program to help break these bottlenecks. In this program, the Government ordered machine tools in anticipation of defense contractor requirements for these tools to meet increased defense production needs. Government agencies responsible for the procurement and production of war materiel worked closely with machine tool industry representatives to identify the types and quantities of machine tools that would be required for wartime production. Once these determinations were made, pool order contracts were written with machine tool builders.

Pool order contracts were commitments by the Government to pay for ordered machine tools, if these tools were not otherwise purchased by a private firm. To enable the tool builders to increase production more readily to fulfill the pool order contracts, the contract also provided an advance payment of 30 percent of the value of the contract to be used as working capital. As actual requirements for new machine tools were identified by defense contractors, their orders (referred to as "firm orders") displaced the pool orders and the pool orders were cancelled.

The pool order device sought to hasten delivery of needed machine tools to defense contractors. Optimally, pool

ordered tools were ready to be shipped when firm orders materialized. According to machine tool industry historian Harless Wagoner, pool orders were not intended to increase the ultimate output of machine tools but rather to speed their time of delivery by guaranteeing producers against losses on inventories or partially completed work.¹

While the pool orders of WW II were not "standby agreements" in the strict sense of the term, they served a closely related function. Output initiated through pool orders was available on a "standby" basis in anticipation of actual requirements. Furthermore, the apparent success of the pool order device provided the impetus for today's Machine Tool Trigger Order Program. It was not until 1955 that the pool order device was transformed into a bonafide standby agreement -- the M-day Pool Order. In 1966 the name of the program was changed to the Machine Tool Trigger Order Program.

4.2 THE MACHINE TOOL POOL ORDER PROGRAM OF WW II

"Since increased production of machine tools must precede expansion of munitions production," writes War Production Board historian George Auxier, "that industry was the first to receive attention when the war clouds gathered over Europe in the late 1930's and caused the U.S. Government to turn its attention to war mobilization."² The agency responsible for such considerations at the time was the Army and Navy Munitions Board (ANMB). The ANMB had been created by the Secretaries of War and Navy in 1920 as an authoritative source for mobilization plans.³ ANMB worked closely with the machine tool industry through the National Machine Tool Builders Association to anticipate machine tool requirements. In 1939 the NMTBA suggested the pool ordering device to the Army.⁴

As U.S. involvement in the war approached and defense requirements skyrocketed, machine tools were identified as a major obstacle to more rapid acceleration of aircraft production, ordnance production, and cargo and naval ship production.⁵ Industry's response to the approach of war was not promising. According to one historian, "machine tool producers, like others called upon to aid the defense program in 1940 and 1941, were loath to expand their plants further or to stretch their production much beyond the rate already attained. This reluctance arose from a fear that orders might be suddenly cancelled if the emergency should blow over."⁶ Attempting to address this reluctance, Mason Britton, Tools Division Chief of the Office of Production Management (OPM), "did his best to educate machine tool builders to the need of producing tools in greater volume...but more positive measures were needed to obtain the desired result."⁷ Among these "more positive measures" was the pool order program.

To understand the machine tool industry's reluctance to expand production in 1940 to 1941, we need to bear in mind businessmen's general suspicion of President Roosevelt and his New Deal policies. Some elements of the business community even believed that U.S. involvement in rearmament was intended to revive the New Deal's waning popularity and to pursue increased centralization through "national defense" means.⁸

The machine tool industry press was rife with pleas for the kinds of assurances that the pool orders and other measures were introduced to provide. In January 1940, industry spokesman Burnham Finney, editor of The American Machinist, expressed tool builders' skepticism of Government policy when he wrote:

War orders in themselves have been no great shakes. Yet the declaration of war [by France and England against Germany in 1939] was the spark which ignited a substantial demand for durable goods... How long will it last, no one knows... it may be a "phoney war" with peace likely to be patched up soon.

Thus, it was in this atmosphere of uncertainty about the market for machine tools that the first pool order contracts were let in February 1941. Historians of the period stress the confidence-bolstering facets of the pool order device:

- R.E. Smith writes, "The purpose of the pool orders was to guarantee the machine tool industry a steady volume of orders, enabling it to operate at capacity, at a time when private industry was not in a position to provide a steady market."¹⁰
- Bradley Staughton writes, "Pool orders were established for assuring manufacturers that they could produce to maximum capacity to meet anticipated demand before Contractors' orders were placed."¹¹

Assurances were a crucial part of the pool order program.

The progress of the WW II pool order program is depicted in Figures 4.2-1 and 4.2-2. The same data are presented in tabular form in Appendix C:

- Figure 4.2-1 shows the progress of the pool order program in absolute terms and relative to total new orders for machine tools, as measured in current ("then-year") dollars

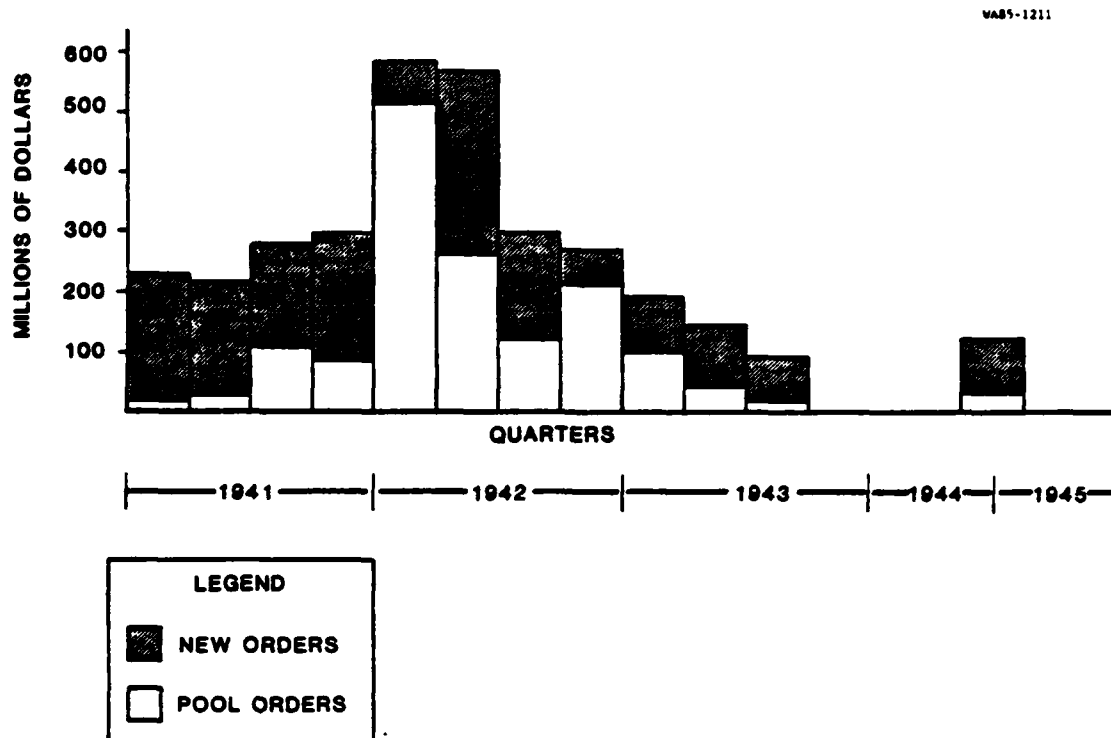


Figure 4.2-1 Machine Tool Orders and Pool Orders (\$Mil)

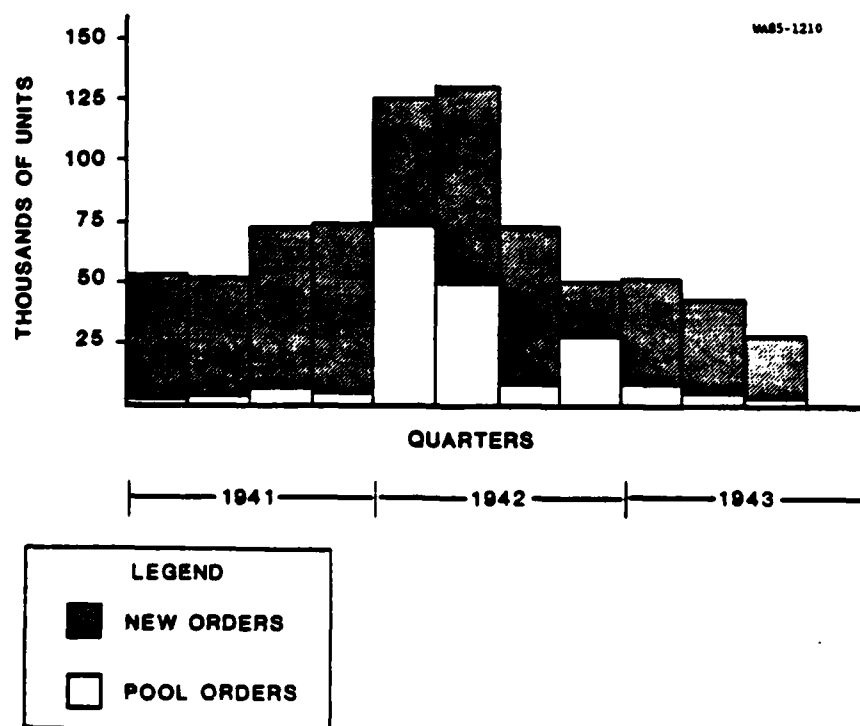


Figure 4.2-2 Machine Tool Orders and Pool Orders (Units)

- Figure 4.2-2 shows, in absolute and relative terms, the progress of the pool order program as measured in units of machine tools ordered.

As can be seen in these figures, the initial pool orders were quite modest. They constituted only 3 percent of all new orders for the first quarter of 1941 (measured in units). The program began to expand significantly in the third and fourth quarters of 1941. By either measure (value or units) the program exploded in the first quarter of 1942. Pool orders remained substantial for all of 1942, although at significantly lower levels than the first quarter. In the first two quarters of 1943 the relative significance of the program returned to the levels of the second half of 1941. In May 1943 (2nd quarter) the WPB Tools Division announced that in the future, pool orders would only be issued for machines covered by firm customer orders and that the 30 percent advance payment would no longer be needed.¹² In June of 1943 WPB decided that further use of pool orders was not necessary.¹³ No further tool orders were placed after July of that year.

As depicted in Figure 4.2-1, pool orders were revived in December 1944 as a result of expanded ammunition requirements following the Battle of the Bulge and the resulting uncertainty about the length of the war in Europe.¹⁴

4.3 RESPONSIBILITIES FOR THE WW II POOL ORDER PROGRAM

Program authority for the Machine Tool Pool Order Program was founded in the President's broad grant of authority to the Office of Production Management (OPM) to coordinate production of articles, facilities, and services required for national defense and to coordinate the activities

of Federal agencies concerned therewith. Contracting authority and funding for pool orders was derived from an amendment to the Reconstruction Finance Corporation which created the Defense Plant Corporation (DPC). The DPC was responsible for administering the pool order contracts.

Two agencies -- one military, one civilian -- were responsible for determining the need for pool orders. On the military side, the ANMB created a list of machine tools for which pool orders should be let. The ANMB derived its authority from the Departments of War and Navy which created ANMB in 1920.¹⁵ On the civilian side the OPM, and later the WPB, was responsible for all policies and procedures bearing on war procurement and production. A civilian agency brought an economy-wide perspective to the determination of machine tool pool orders.¹⁶ All pool orders were sent to the Under Secretary of War or Navy, after the concurrence of OPM/WPB and the ANMB, and ultimately to the Defense Plant Corporation (DPC), for release to machine tool builders.¹⁷ (See Figure 4.3-1.)

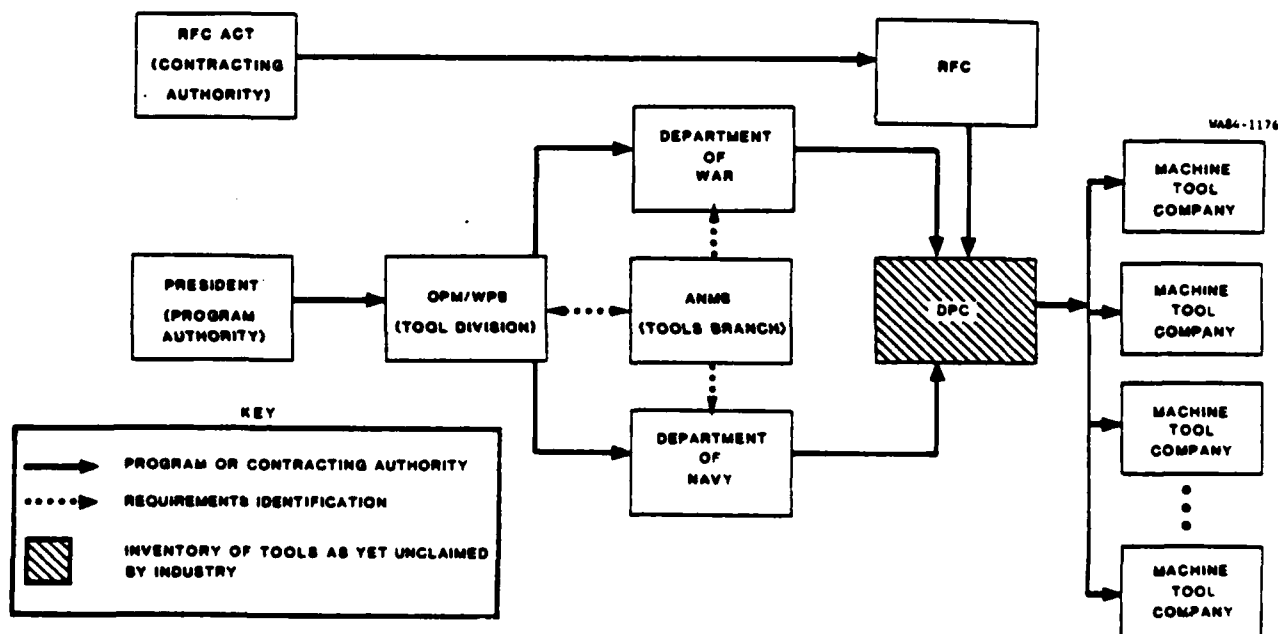


Figure 4.3-1 Responsibilities for the Pool Order Program

Both ANMB's Machine Tool Commission and WPB's Tool Division had the capacity to determine machine tool requirements. Both interacted with industry to identify key machine tools for pool orders.¹⁸ Selected manufacturers were consulted about their maximum capacity to produce certain items. Once the need for such a tool was established through the concurrence of WPB and ANMB and authorized by the Secretary of War or Navy, the requirements for new tools were passed to the DPC, which let the contracts with tool builders. Generally, completed machine tools were shipped directly to customers and the 30 percent advance payment was refunded to DPC. When a customer was yet to be found, a tool was shipped to storage, and the DPC was billed for the remaining 70 percent of the purchase price.¹⁹

In addition to its coordinating role, the DPC absorbed some of the financial burdens of the services. The DPC derived its authority from amendments to the Reconstruction Finance Corporation Act.²⁰ The RFC, created in 1932 to provide financial support for failing banks and railroads, had independent borrowing authority and was not dependent upon Congress for its funds.²¹ According to historian I.B. Holley, "the DPC stretched funds. Although Congress appropriated seemingly astronomical sums for defense after May 1940, the War Department was trying to overcome a generation of disarmament all at once... Thus insofar as it was able to transfer the burden...to DPC, the War Department could stretch its defense dollars just so much further."²²

4.4 PROGRAM EFFECTIVENESS

The magnitude of the WW II pool order program was impressive. In 1942, the peak of WW II machine tool production,

pool orders accounted for nearly 50 percent of all new demand for machine tools. Pool orders accounted for 58 percent of new machine tool orders in the first quarter of 1942 and 63 percent of all new orders in the fourth quarter of the same year.

This record has led observers to claim the following successes for the program:

- Auxier writes, "Pool orders were a major factor in the seven-fold increase in machine₃ tool production by the end of 1942."²³
- Staughton writes, "Not only was the pool order program one of the chief factors in stimulating and expanding production of machine tools and accessories, but it was also one of the outstanding achievements of the Tools Division."²⁴
- The Chief of WPB Tool Division writes, "The pool order mechanism made possible the adequate supply of machine tools for the war effort. It is one of the important and successful steps in the war which should not be₂ overlooked in another war emergency."²⁵

We attempted to verify these subjective assessments of the WW II pool order program with our own quantitative analysis, but we discovered meaningful quantitative analysis of this program's effectiveness was impossible for the following reasons:

- The lack of data on how machine tool production might have increased in the absence of a pool order program
- The lack of data on the time between a pool order being placed and that order being replaced by a firm order

- The inability to segregate the effect of pool orders from those of an array of programs intended to encourage greater machine tool production.

As Figure 4.4-1 shows, the rate of machine tool shipments jumped dramatically between the fourth quarter of 1941 and the first quarter of 1942 as did new orders and pool orders, the latter at a slightly more rapid rate. It is impossible to demonstrate the specific effect of pool orders during this period due to the wide range of other factors affecting industry expansion. These included:

- U.S. entry into WW II (which eliminated the uncertainty described in Section 4.2 and led to an enormous increase in military orders)
- Financing under the Assignment of Claims Act of 1940
- Financing through advance and progress payments made by contracting agencies
- Financing through loans made by the RFC
- Financing through guaranteed loans under Executive Order 9112
- Revisions of the amortization provisions of the Internal Revenue Act
- Emergency Plant Facilities contracts.²⁶

Nonetheless, pool orders undoubtedly encouraged some increased production at an earlier date. These orders provided a guaranteed market for increased machine tool production, and generous contract terms provided interest-free working capital for this purpose.

Moreover, it would appear that pool orders were let for more expensive tools (on average). As Figure 4.4-2 shows,

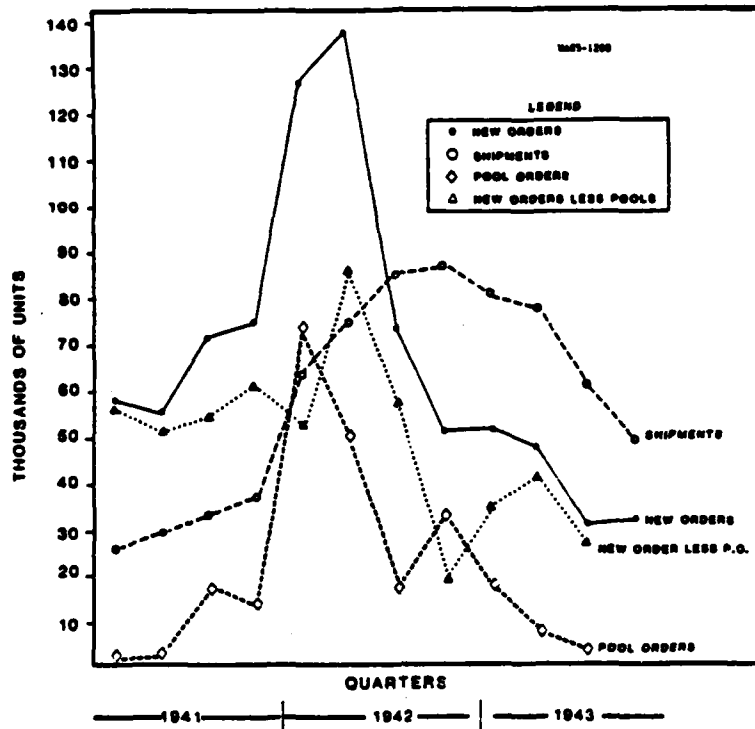


Figure 4.4-1 New Orders, Pool Orders, New Orders Less Pools, and Shipments (Units)

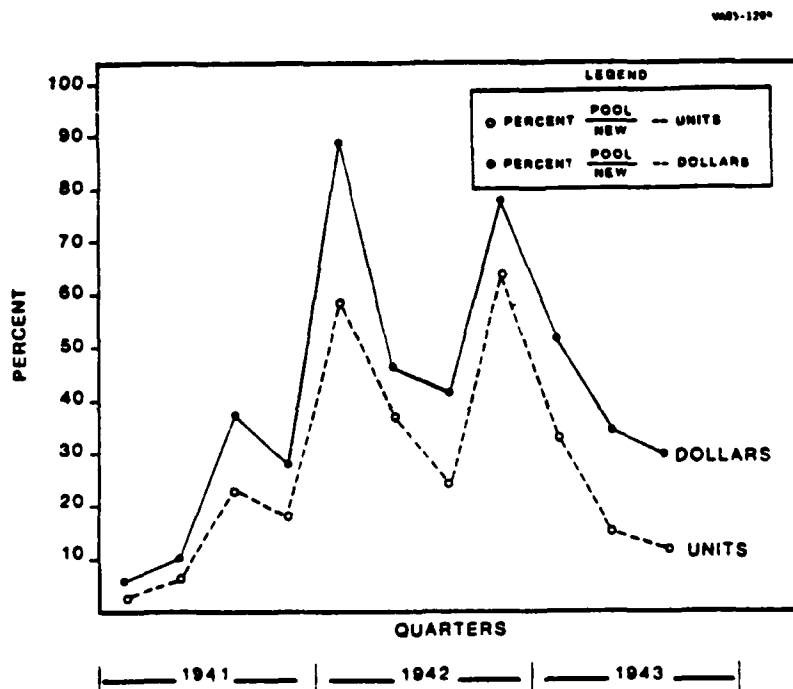


Figure 4.4-2 Pool Orders as Percent of Machine Tool Orders, by Value and Units

pool orders comprised a larger percentage of the value than of the number of units involved in new tool orders. More expensive tools would probably have been more difficult to acquire on a timely basis in the absence of a pool order program because they would have generally taken longer to produce and potential customers would have been slower to commit themselves to purchase such equipment to avoid acquiring unneeded expensive equipment.

In the literature surveyed, the conventional method for assessing the program's worth, was to compare the value of unwanted tools acquired through pool order contracts with the total value of the program. Of the \$1.945 billion advanced under the WW II program, only \$23,000,000 worth of machine tools ended up in storage. Of that amount \$21,000,000 was eventually sold to contractors. The remaining \$2,000,000 represents less than 1 percent of the total cost of the program.²⁷ Thus, even if the pool order program achieved only a modest acceleration of machine tool deliveries, its benefits outweighed this even more modest ultimate cost.

ENDNOTES

- ¹Wagoner, Harless The U.S. Machine Tool Industry from 1900-1950, Cambridge, Mass., 1966, p. 262.
- ²Auxier, G.W., Industrial Tools 1940-1945 (First Draft), Historical Reports on War Administration: War Production Board, May 1946, Reproduced by the Defense Production Administration, February 1951, U.S. Library of Congress, p. 2.
- ³Holley, I.B. Buying Aircraft: Materiel Procurement for the Army Air Forces, Department of the Army, Washington, D.C., 1954.
- ⁴Lovely, J.E., President, NMTBA, "The U.S. Machine Tool Industry," November 27, 1939, Army and Navy Munitions Board Central File 1922-1946, Box 135, Folder 470.1, U.S. National Archives.
- ⁵Wagoner, pp. 240-246.
- ⁶Auxier, G. W., Machine Tool Policies of the War Production Board and Predecessor Agencies (Rough Draft), Historical Reports on War Administration: War Production Board, Special Study No. 35, June 1947, U.S. Library of Congress, p. 237.
- ⁷Ibid.
- ⁸Stromberg, R., "American Business and the Approach of the War, 1935-1941", Journal of Economic History, No. 1, 1953.
- ⁹"Editorial," The American Machinist, January 24, 1940, p. 51.
- ¹⁰Smith, R.E., The Army and Economic Mobilization, Department of the Army, Washington, D.C., 1959, p. 491.
- ¹¹Staughton, B., History of the Tool Division, War Production Board, New York, N.Y., 1949, p. 64.
- ¹²Wagoner, p. 266.
- ¹³Ibid.
- ¹⁴Auxier, Machine Tool Policies, p. 35-237.

¹⁵Holley.

¹⁶Somers, H.M., Presidential Agency -- OWMR, Cambridge, Mass., 1950. See also Mobilization Planning and the National Security (1950-1960), esp. pp. 41-46, "Civilian vs. Military Control of Mobilization Planning," U.S. Library of Congress, Document No. 204, Washington, D.C., 1950.

¹⁷This allocation of responsibilities is described in: "Memorandum from Rear Admiral A.C. Pickens and Brigadier General Charles Hines to All Supply Arms and Services of the Army and Bureaus and Offices of the Navy," Washington, D.C., Dec. 5, 1941, R.G. 225, ANMB Central File, Box 135, U.S. National Archives; and in Staughton, p. 67.

¹⁸According to Wagoner, (Ibid., pp. 251-58), The two agencies deferred in their assessment of machine tool industry capabilities. ANMB felt that OPM/WPB had "babied the industry, esp. over the issue of facilities expansion vs. fuller use of existing facilities.

¹⁹Auxier, Industrial Tools, p. 6.

²⁰The DPC was established under subsection (3) of Section 5d of the Reconstruction Finance Corporation Act, as amended, June 25, 1940; see Ketchum, M.D., "Working Capital Financing in a War Economy," Journal of Business, Oct. 1942, pp. 332-33.

²¹G.T. White "Financing Industrial Expansion for War: The Origin of the Defense Plant Corporation Leases," Journal of Economic History, November 1949, p. 160.

²²Holley, p. 300.

²³Auxier, Industrial Tools, p. 6.

²⁴Staughton, pp. 64-65.

²⁵Wagoner, p. 264.

²⁶Ketchum, "Working-Capital Financing in a War Economy," Journal of Business, Oct. 1942, pp. 315-342; and Ketchum, M.D., "Plant Financing in a War Economy," Journal of Business, January, 1943.

²⁷Wagoner, pp. 234-236.

5. THE MACHINE TOOL TRIGGER ORDER PROGRAM

5.1 INTRODUCTION

The Machine Tool Trigger Order Program (MTTOP) involves standby agreements between the Government and individual machine tool manufacturers, providing for production of machine tools in anticipation of an emergency need for such tools. The program is intended to ensure the earlier availability of machine tools needed to satisfy substantially increased defense production requirements. In a MTTOP contract, a machine tool builder commits himself to produce certain types and amounts of tools if the contract is activated by the Government. The Government, for its part, commits to purchase any tools ordered under the activated contract. Activation of an agreement simply requires a telegram, letter, or other communication from the Government to a tool builder ordering some or all of the tools covered by the standby contract. This communication is the "trigger."

As in the pool order program described in the previous chapter, the Government's commitment to purchase ordered tools ends if a private purchaser is found. If no private purchaser comes forward by the time a tool ordered by the Government is ready for delivery, the Government pays most of the market price for the tool, and the tool is stored until used by the Government or sold to a private firm.

The current program began in August 1982. By July 1984, 97 machine tool builders had signed agreements for nearly 9,000 machine tool items worth \$1.2 billion.¹ The

coverage of these standby contracts is reviewed and updated on an annual basis. The goal of the program is to establish standby contracts for \$1.5 billion worth of equipment.

Some of the more notable provisions of the standby agreement between the Government and a machine tool builder are:

- A contract may be "triggered" in whole or in part
- Contracts may be "triggered" repeatedly
- Machine tools and their delivery periods are specified
- Tools specified in the contract which are in the process of production or in inventory at the time triggering occurs are assigned to the contract
- The contractor agrees to sell trigger-ordered tools through its existing sales organization
- Financing for tool production is available through²GSA's guaranteed loan (V-loan) program² and through advance payments of up to 30 percent of the total price
- Upon sale of a tool to a private firm, the contractor refunds all amounts paid by the Government for that tool
- If no firm order is placed by the time the trigger-ordered machine tool is completed, the Government pays the contractor list price minus 10 percent and contractor stores the tool
- Upon removal of trigger-ordered tools from storage for Government use, the remaining 10 percent is paid to the contractor
- Specialized tools or tooling are not covered by standby contracts.

5.2 HISTORY

The MTTOP has its roots in the pool order programs of World War II (WW II) and the Korean War (K-War). However, neither of these past programs involved standby agreements. Both wartime programs were initiated after defense orders had begun to increase and were intended mainly to orchestrate the flow of tool orders. (See Chapter 4 for a discussion of the WW II program.)

The first bonafide standby machine tool program -- the M-Day Pool Order Program (MDPOP) -- was established on March 20, 1956. "Based on past experience," the Department of Commerce (DoC) pointed out at the time, "the placing of such contracts in the hands of builders in the advance of an emergency for which tools might be needed could save more than a year in starting a machine tool program."³

However, by 1958 the need for the MDPOP, indeed for industrial mobilization preparedness in general, was being called into question by changes in military policy. The Joint Committee on Defense Production (JCDP) observed that:

The possibility of a massive thermo-nuclear attack on this nation has raised questions as to the effectiveness of these programs which were established under earlier mobilization concepts... it is apparent that the present tool programs should be re-evaluated in view of the latest strategic concept.⁴

From 1960 to 1965, little MDPOP activity was evident. The Joint Committee on Defense Production buried mention of the program deep in the appendices of its annual reports. However, in the Fourteenth Annual Report (January 1965), the significance of rapidly changing machine tool technology was

discussed. Around this same time, a complete review of all contracts was made by the DoC. Nevertheless, the program continued to limp along until its cancellation in 1969. The one development of note was the adoption in 1966 of the title by which today's version of the M-Day Pool Order Program is known -- the Machine Tool Trigger Order Program.

In 1969 the MTTOP was terminated by the Director of the Office of Emergency Preparedness with the concurrence of the Secretaries of Defense and Commerce. The Administrator of the General Services Administration was directed to cancel all existing contracts. The decision to end the program was founded on the belief that the greatly increased production capacity of the United States made it unlikely that a future emergency would require industrial expansion on the order of the WW II and K-War experience. The previous programs had been initiated at times when the number of machine tool manufacturers was small (prior to WW II) or the machine tool manufacturers were operating at a low level of productivity (at the beginning of the Korean War).⁵

Another principal reason for abolishing the program was the lack of funding. The original \$2.1 billion borrowing authority established to finance Defense Production Act Title III programs was exhausted.⁶

In 1971 DoD asked DoC and OEP to consider reinstating the program. An interagency committee endorsed these recommendations in 1974, but a major effort by the Federal Preparedness Agency to institute a new program floundered between 1974 and 1976 because machine tool builders balked at the numerous socioeconomic provisions in the proposed tool trigger orders. (These provisions are not included in the current contracts.) In the late 1970s, concern over the

erosion of the defense industrial base began to grow. This concern combined with a recognized decline in the capabilities of the U.S. machine tool industry in the early 1980s created a favorable climate for a renewed MTTOP. FEMA staff took the lead in re-establishing the program, and by 1982 a new MTTOP had the endorsement of the Administration, Congress, and the machine tool industry. The Government began entering into standby agreements with machine tool builders that same year.

5.3 RESPONSIBILITIES FOR THE MTTOP

FEMA initiated the MTTOP under its authority derived from two sources -- the Defense Production Act of 1950 and the National Security Act of 1947. The Defense Production Act provides authority for expansion of the Nation's productive capacity to meet national defense needs. Title III of the Act authorizes Government loans and purchase commitments. Both of these instruments are included in the machine tool trigger order contracts. The National Security Act of 1947 assigns authority and responsibility to FEMA to plan for and advise the President on mobilization policy. Executive Order 12148, July 20, 1979, transferred many existing emergency responsibilities to FEMA and in Executive Order 10480, which implements the Defense Production Act, the President specifically charged FEMA with the responsibility for coordination of all mobilization activities of the Executive Branch of Government.⁷

While FEMA initiated the MTTOP and continues to provide guidance for its operations, other agencies are responsible for program implementation:

- Department of Defense and the Department of Energy are responsible for identifying potential machine tool

requirements for defense emergency purposes and atomic energy-related requirements, respectively

- Department of Commerce translates DoD and DoE requirements into specific machine tool products and contractors
- General Services Administration (GSA) provides contract development and administration.

The actual process of creating the trigger orders does not follow the process envisioned in FEMA documentation of the program. The process laid out by FEMA includes the following steps (which are depicted also in Figure 5.3-1):

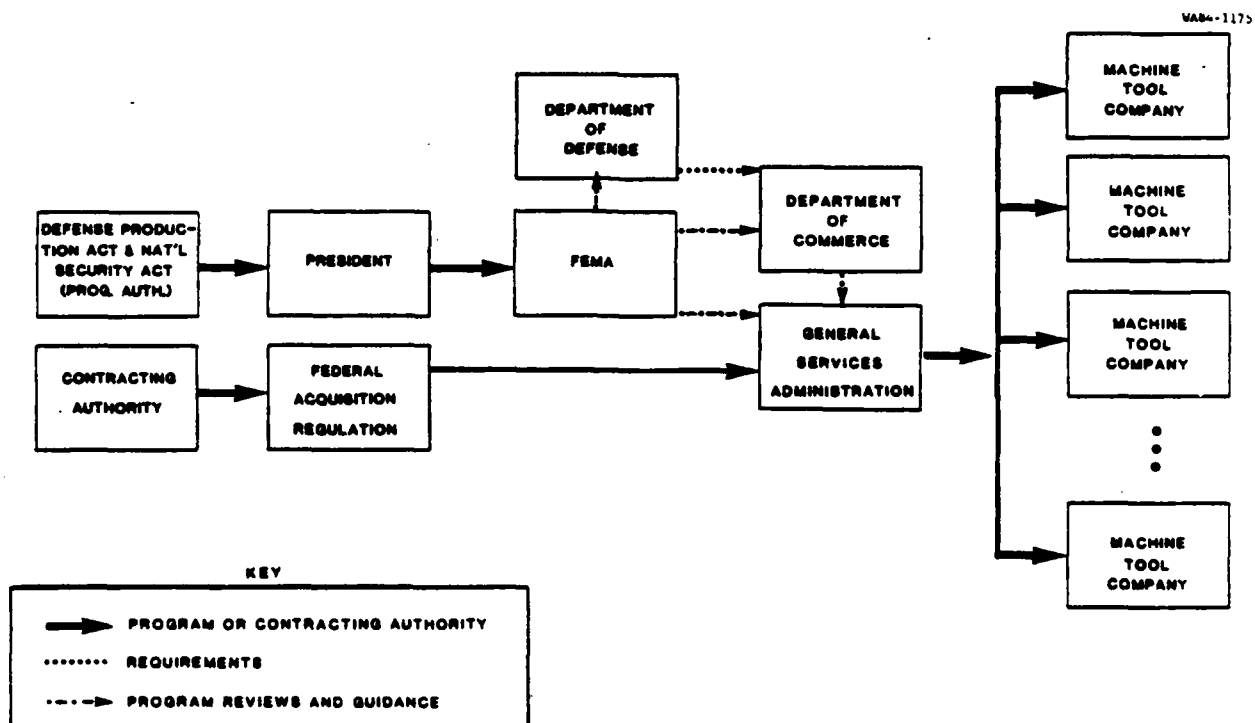


Figure 5.3-1 Establishment of Machine Tool Trigger Orders

- Through the Industrial Preparedness Planning (IPP) process, the individual Military Services are tasked by the Under Secretary of Defense for Research and Engineering to identify potential emergency requirements to defense contractors for specific components and end items. These requirements are defined in terms of a required monthly rate of surge or mobilization production of these components and end items
- Contractors identify their machine tool requirements based on the emergency production requirements and provide this information to the Services
- The Department of Defense (DoD) receives the IPP data gathered by the Services and presented in the annual Production Base Analyses. The machine tool requirements are then compiled and transmitted to the Department of Commerce (DoC)
- The DoC matches these requirements to potential producers of the machine tools and decides who should be asked to produce which tools
- These decisions are entered into a computer data base and published as Schedule A. This schedule is a compilation of machine tools, specified by model number, that will be required from machine tool producers in case of substantially increased defense production. This Schedule A is then transmitted to the General Services Administration (GSA)
- The GSA formulates standby contracts for the machine tool industry, based on Schedule A. It then transmits these standby contracts to the Federal Emergency Management Agency (FEMA)
- FEMA reviews the proposed standby contracts and issues formal invitations to the individual machine tool producers to enter into standby contracts with the Government

- If these producers decide not to participate, DoC nominates a new potential producer and the process described above is repeated
- If the producer decides to participate, he signs a standby contract and returns it to GSA. Copies of the completed standby contract are sent to FEMA, DoD, and DoC
- GSA signs the contract and returns it to the machine tool producer
- Contracts are updated annually to reflect current prices and machine tool product lines.

In actual practice, the process begins to break down with DoD's efforts to identify emergency tool requirements. While the various service IPP efforts are still maturing and improving, they have generated (to date) only partial and somewhat haphazard listings of potential tool requirements. The uncompiled data have then been turned over to DoC, which apparently has found this information to be unusable.⁹ So, the process has been short circuited. In the absence of requirements considered usable by DoC, this agency has contacted machine tool builders who serve defense contractors to determine how much they could produce in six months in the event of increased need. DoC's preparation of Schedule A is based on this six-month capability.

It has been envisioned by FEMA that these standby orders would be triggered only after:

- The individual Armed Services have ordered defense contractors to surge production of actual end items
- Defense contractors have notified the Services of their machine tool requirements

- Each Service has compiled the requirements of its contractors and has transmitted them to the Office of the Secretary of Defense for Research and Engineering for consolidation.

With these requirements in hand, DoD would request FEMA to activate the MTTOP. It would simultaneously transmit these machine tool requirements to DoC which would match them to standby contracts. DoC would request GSA to prepare triggering orders for DoC's approval. Finally, GSA would transmit triggering authorization to machine tool builders. However, the idea of DoD conducting a data collection effort to identify requirements prior to triggering has been rejected by DoD. DoD simply plans to request activation without any effort to refine requirements.

Contractors would place their "firm orders" for machine tools with tool builders. If a standby tool builder were to receive this "firm order" by the time the triggered machine tool has been completed, he would ship the tool to the consumer and refund any advance payments made to him by GSA.

In the event that no "firm order" is waiting when the triggered order has been completed, the standby contractor would place the tool in inventory (at Government expense) and would receive 90 percent of the prevailing list price from the Government. The machine tool builder would be obliged by the trigger order contract to make every attempt to sell the stored machine tool through the firm's own sales organization. The 10 percent deduction upon shipment to inventory is intended as an incentive to accomplish this goal and would be remanded to the builder upon final sale.¹⁰

The various actors in the activation process are depicted in Figure 5.3-2.

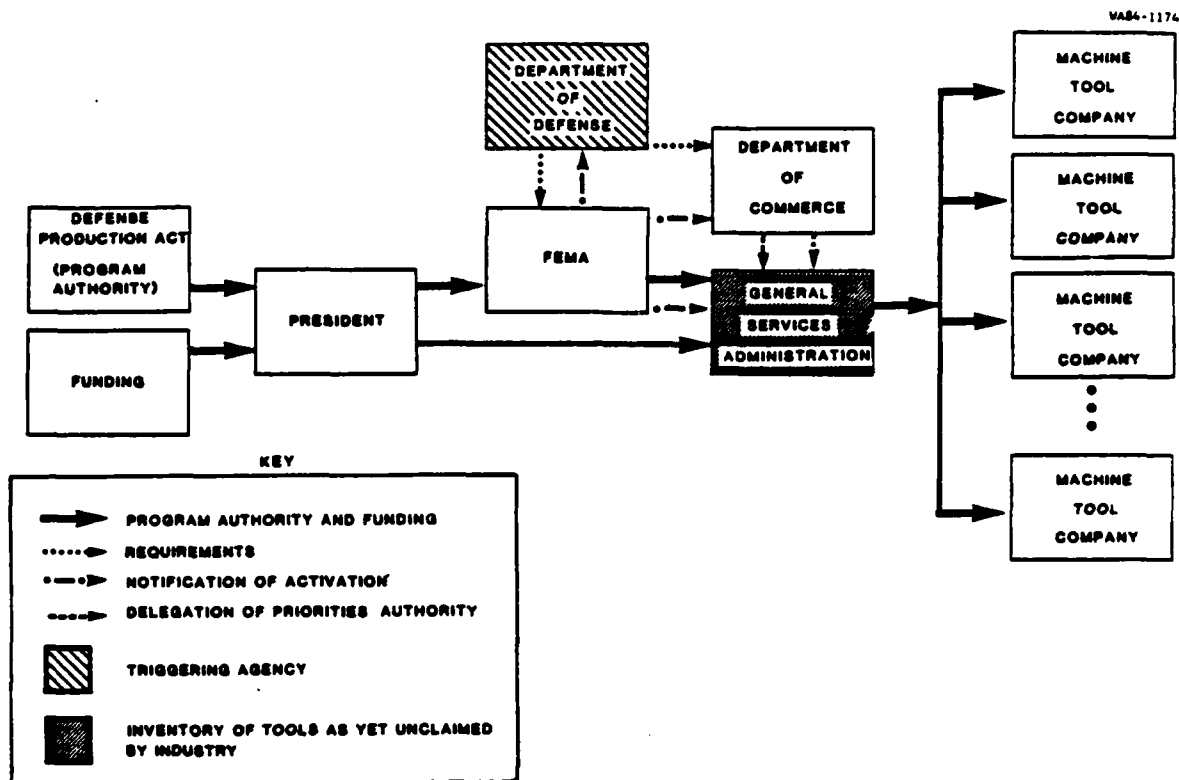


Figure 5.3-2 Activation of Machine Tool Trigger Orders

5.4 PROGRAM EFFECTIVENESS

It has been estimated by FEMA that successful execution of the MTTOP could save 6 to 21 months of administrative and production lead time.¹¹ However, a saving in this range is highly unlikely as the program is currently implemented. The MTTOP is a hollow shell. It exists, but it lacks the core that would give it substance (in the form of increased industrial base responsiveness). That core is planning. Without additional planning, this standby program is likely to have little or no effect on the timing or efficiency of increased machine tool production.

Two forms of planning are needed to make this program worthwhile:

- Planning concerning the types and amounts of new machine tools likely to be needed under various emergency conditions
- Planning concerning the conditions under which standby machine tool contracts should be triggered to enhance preparedness.

Responsibility for the first type of planning has been delegated to DoD. But, there are two problems with this delegation of responsibility. First, DoD entities have traditionally given short shrift to IPP, so efforts to identify machine tool requirements have been inadequate and have resulted in only a partial listing of potential requirements. Second, even if DoD efforts were more successful, they would not identify potential tool requirements in lower-tier industries to meet both military and essential civilian needs. Responsibility for identifying emergency tool requirements for industries that provide parts and components for both military and essential civilian items would be more appropriately handled by a civilian agency.

In the absence of well-defined requirements, FEMA envisions an elaborate and time-consuming system of requirements identification as the first step in the triggering process. The delay involved in this first step would greatly reduce, or eliminate altogether, the time potentially saved by activating standby agreements. Evidence of the delay associated with a requirements identification step was provided by Exercise PROUD SABER. During this exercise, the Services and DLA were requested to report anticipated machine tool requirements. Air Force Systems Command responded that the task

would take 9 to 12 months, and the Navy responded that the information would be forwarded in three months.¹²

As intuitive examination of the triggering process as currently envisioned provides additional evidence that the MTTOP would save little time. It is anticipated that defense contractors, after receiving surge orders, would notify the Services of their machine tool requirements. Presumably, once the contractors knew their tool requirements, they could order these tools themselves. In such a situation, it is not clear that there would be a significant difference between the timing of machine tool production increases stimulated by trigger orders and that of production increases stimulated by orders from defense contractors. This differential is a primary measure of the potential effectiveness of an activated MTTOP.

The second type of planning cited above would involve identifying pre-emergency and emergency conditions under which it would be appropriate and desirable to trigger various industrial preparedness activities. In essence, this type of planning would entail "creation of a set of industrial readiness conditions, or "IndCons" similar to the DefCons, but initiated in the early stages of a crisis before DefCon-prescribed military actions are appropriate."¹³

In the absence of "IndCons", it is highly unlikely that industrial actions would be undertaken before military actions. Delaying activation of the MTTOP to such a point (or even later -- until actual hostilities have broken out) would greatly reduce the potential effectiveness of this program in saving time. Without such planning, it is again not clear that this program would stimulate new machine tool production much earlier than orders from defense contractors would.

With or without improved advanced planning, DoD should be prepared to trigger the MTTOP at the same time it decides to increase defense production substantially. In the absence of adequate advanced planning, early triggering could result in inefficiencies (i.e., buying unneeded tools) but could also save considerable time, when time is a most precious commodity.

Reliance on planning before the fact, rather than identification of actual machine tool requirements caused by a surge or mobilization decision, would entail up-front planning costs. However, planning before the fact would reduce the potential costs of the program in terms of wasted time and production resources in producing unneeded tools. The modest planning costs associated with this approach should be balanced against the benefit in time saved -- the *raison d'etre* of the program -- by early triggering of standby machine tool orders.

5.5 PROBLEMS

The current MTTOP, while potentially a very useful industrial preparedness program, suffers from a number of problems. Foremost among these is the inadequacy of resources for planning. This problem pervades the industrial preparedness program area. While in recent years advocacy for industrial preparedness expenditures has increased, complete acceptance of industrial preparedness as a key component of our national security structure is blocked by residual "short-war" thinking. Such thinking has been endemic to national security planning throughout our recent history. The military's "cult of the offensive" preceding World War I resulted in shallow planning for that war;¹⁴ "Massive Retaliation" and

"Forces-in-Being" buried the M-Day Pool Order Program in the late fifties;¹⁵ and the "short-war" planning of the late sixties eventually killed the MTTOP in 1969 and continues to undermine today's program.

Lingering resistance to greater industrial preparedness expenditures has been a primary cause of DoD's failure to provide a more complete listing of defense industry machine tool requirements. While DoD's industrial base program is gaining increased attention and resources, this will, at best, result in only a partial listing of emergency tool requirements -- those requirements of defense contractors and subcontractors.

In the absence of usable requirements, DoC has determined its standby contract coverage on the basis of machine tool industry estimates of maximum tool production capacity for a six-month period. Unfortunately, the mix of tools covered by these agreements may not jibe well with realized requirements during an emergency. A possible solution to the requirements identification problem is for DoC and FEMA, either together or singly, to take on the responsibility for identifying economy-wide (rather than DoD-only) emergency requirements for new machine tools. This responsibility would involve compiling requirements information provided by DoD and identifying tool requirements of infrastructure industries critical to both military and essential civilian production needs.

Even if such planning were provided, however, there would be problems assuring timely activation. Funding is one problem. Lack of funding was a major factor leading to the demise of the MTTOP in 1969,¹⁶ and the funding situation appears to be even worse today. To begin with, only \$10

million are currently appropriated for DPA Section 303 activities so congressional funding action would be required prior to activation of more than one percent of the machine tool purchases covered by existing MTTOP contracts (which cover over \$1 billion worth of tools). Second, if funds were made available by either of these means, activated contractual commitments could still not exceed the current DPA authorization ceiling of \$100 million during a declared national emergency or \$25 million short of such an emergency without prior congressional action to raise these ceilings. Current MTTOP contracts cover over \$1 billion in machine tools, so less than ten percent of this amount could be activated (under emergency conditions) without prior congressional action. The need for prior congressional action reduces the potential of this program to save time.

The funding problem could be handled in a couple of ways:

- A new general revolving fund, comparable to that used during the Korean War, could be created in DPA Title III (However, recent amendments to Title III have been designed specifically to restrict funding under this title, so this would not appear to be a politically viable option)
- A contingent revolving fund specifically for the MTTOP could be added to DPA Title III or another law.

Beyond the problems associated directly with the MTTOP is the more general problem of the economic health of the machine tool industry. This problem has been a major concern for years. A weakening domestic machine tool industry is less capable of increasing production efficiently and

effectively to meet emergency needs. The MTTOP is impacted by the industry's general condition in two ways:

- Diminishing industry capabilities offer fewer opportunities for standby contracts
- Diminishing industry capabilities also place greater importance on preparedness programs like the MTTOP to ensure sufficient machine tools to meet emergency needs.

Recommendations to improve the health of the domestic machine tool industry are outside the scope of this study but are, nevertheless, an important consideration for FEMA. These recommendations would address such issues as foreign trade, government procurement practices, taxes, and government support for research and development.

ENDNOTES

- ¹ Three considerations drive tool builders' participation in this program. First, the MTTOP draws attention to the problems of the machine tool industry by underscoring the fundamental importance of machine tools to the U.S. defense industrial base. Second, the standby contracts constitute a purchase commitment for a tool builder's products. Third, tool builders recognize the Government's authority to requisition their products and services, if they are not provided in a cooperative fashion.
- ² Authority for the V-loan program is derived from Section 301 of the Defense Production Act. The program provides a Government guarantee so defense contractors and subcontractors can borrow funds (necessary to finance their defense production) from private financial institutions.
- ³ Joint Committee on Defense Production, Fifth Annual Report, U.S. Congress, Washington, D.C., January 1956, p. 50.
- ⁴ JCDP, Seventh Annual Report, U.S. Congress, Washington, D.C., January 1958, p. 103.
- ⁵ JCDP, Nineteenth Annual Report, U.S. Congress, Washington, D.C., January 1969, p. 44.
- ⁶ JCDP, Annual Report for 1975, U.S. Congress, Washington, D.C., January 1976, p. 32.
- ⁷ Giuffrida, Louis, Director, FEMA, testimony before Senate Committee on Banking, Housing, and Urban Affairs, April 20, 1982.
- ⁸ FEMA, "Industrial Production, the Information Flow for the Machine Tool Program," November 30, 1982; and DoD 4005.3M, "Industrial Preparedness Manual," (under revision).
- ⁹ We have not attempted to judge the usability of the data provided by DoD. Clearly, there is a problem here which has prevented DoC from using identified requirements in the process of establishing MTTOP contracts.
- ¹⁰ FEMA, Ibid.
- ¹¹ Briefing slides found in FEMA files, undated. Also, JCDP, Annual Report for 1975, op. cit., p. 33.
- ¹² Reed, Leon S., et al., "Evaluation of Industrial Mobilization Test for Exercise PROUD SABER," TASC, June 30, 1983. p. 4-60.

- ¹³TASC, "Industrial Preparedness: A Factor in Keeping the United States Out of Nuclear War," TASC, November 30, 1984, Chapter 4.
- ¹⁴International Security, Special Issue, "The Great War and the Nuclear Age," Summer 1984.
- ¹⁵Vawter, R., Industrial Mobilization: The Relevant History, National Defense University, 1983, p. 49.
- ¹⁶JCDP, Annual Report for 1975, op cit., p. 32.

6.

CIVIL RESERVE AIR FLEET

6.1 INTRODUCTION

The Civil Reserve Air Fleet (CRAF) is composed of civil aircraft registered in the United States and owned or controlled by U.S. flag carriers. These aircraft have been committed by contractual arrangement between air carriers and the Department of Defense to augment U.S. military airlift capabilities during a period of substantially expanded peacetime military airlift requirements or a defense emergency. When fully activated, the 345 aircraft currently committed to the CRAF program (as of April 1, 1985) would provide 90 to 95 percent of the passenger and 35 to 41 percent of the cargo capability available to the Military Airlift Command (MAC) for intertheater airlift.¹

Broadly defined, four different standby agreement programs are tied together under CRAF auspices. The four programs are:

- CRAF
- CRAF Enhancement
- Annual airlift services (expansion option)
- Senior Lodger.

These are discussed in the following sections.

6.1.1 CRAF

CRAF is divided into three graduated stages of activation. Aircraft are committed to each of these stages through standby agreements between MAC and participating air carriers. The standby agreement language is included in two types of contracts. The first, a fixed-buy contract, governs the annual military procurement of civilian airlift services. Air carriers which have committed aircraft to the first or second stage of CRAF activation receive this type of contract, which entitles them to a proportional share of the annual airlift procurement based on their commitment of aircraft to these two stages. The second type of contract, a call contract, is entered into with those air carriers that commit aircraft solely to the third stage of CRAF. These air carriers are not entitled to a share of the annual military airlift business but are still committed to providing specific aircraft should CRAF Stage III be activated. The CRAF commitment by the air carriers includes both the aircraft and supporting resources required to provide the contract airlift services.

The Stage I and II agreements require aircraft availability within 24 hours of activation. Stage I can be activated on the authority of the MAC Commander to meet substantially expanded peacetime military airlift requirements and is intended to create minimal disruption in commercial service. Historically, roughly 10 to 15 percent (40 to 50) of the CRAF planes, most of them freighter or convertible aircraft, have been committed (on a standby basis) to this stage. Stage II activation authority rests with the Secretary of Defense or his designated representative during a period of airlift emergency. It includes roughly twice as many planes as Stage I -- the Stage I cargo aircraft plus long-range passenger and domestic aircraft. Stage III activation authority

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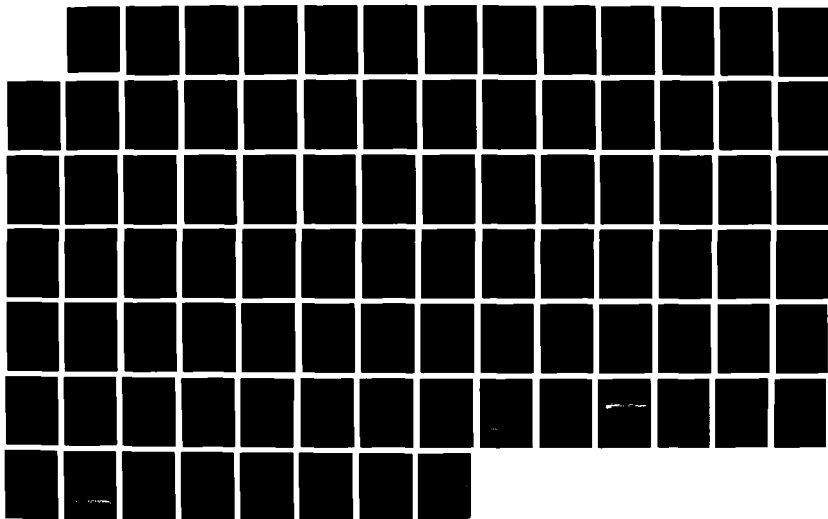
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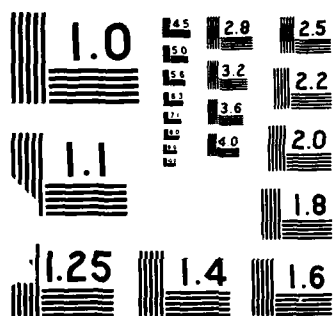
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also rests with the Secretary of Defense. This stage may be activated in time of war or during a declared defense-oriented national emergency or in a national security situation short of such an emergency. The standby agreement requires Stage III aircraft to be available within 48 hours of activation.

Specific contract language concerning the CRAF standby agreement is included in Appendix D.

6.1.2 CRAF Enhancement

The CRAF Enhancement Program involves the Government paying for modification of wide-body commercial aircraft so they can be converted from passenger to cargo purposes in the event of a Stage III activation. The availability of such aircraft for activation is guaranteed by a standby agreement in the modification contract between MAC and each airline that owns aircraft "enhanced" under this program.

6.1.3 Annual Airlift Services

MAC contracts with U.S. air carriers for a portion of annual military airlift services. In addition to the basic annual airlift services, the contract between MAC and each air carrier contains an option for the Government to order expanded services to "meet the Government's need." This option constitutes a standby agreement. In fact, this option is exercised with great regularity and has served in lieu of CRAF activation to meet sudden substantial increases in military airlift requirements (e.g., during the 1973 Middle East War). Air carriers provided over \$400 million in services last year under this program. As mentioned above, shares of the annual airlift services are allocated among the air carriers roughly

in proportion to each air carrier's commitment of planes to Stages I and II of the CRAF.

6.1.4 Senior Lodger

"Senior Lodger" refers to the senior or most active CRAF carrier at major airports in the United States and abroad. Under an agreement with MAC, each of the Senior Lodgers is committed to coordinate and support CRAF activities at designated airports. Their responsibilities include administration, flight operations, aircraft servicing, communications, supply, maintenance, and safety.

6.2 HISTORY OF CRAF

The roots of CRAF can be traced to World War II when most of the initial war-related air transportation was provided by civil aircraft -- approximately 85 percent of these needs during 1942. However, this figure had dropped to under 20 percent by war's end.² (Similarly, today's CRAF program would provide initial, rather than long-term, augmentation during a crisis. It is assumed by DoT that the need for continued CRAF activation would decrease once the initial emergency airlift requirements were satisfied.)

The growth of the CRAF concept was given impetus in 1948 by the report of the Air Policy Commission which recommended creation of contracts to provide for civilian augmentation of military capabilities,³ in 1949 by Secretary of Defense Louis Johnson who "approved a Military Air Transport Service (MATS) augmentation plan calling for extensive control of the air carrier industry during a period of national emergency,"⁴ and in 1950 by the National Security Resources Board which

recommended "both primary and secondary civil air reserve components."⁵

After enactment of the Defense Production Act of 1950, the President delegated Title I allocation authority for civil aircraft to the Secretary of Commerce under Executive Order 10219. "The Executive Order directed the Secretary of Commerce to formulate plans and programs for assignment of civil air carrier assets to the Department of Defense (DoD) to meet armed forces needs."⁶ This resulted in creation of the CRAF in 1952.⁷ Upon creation of the Department of Transportation in 1967, DPA Title I authority governing civil air transportation was transferred from Commerce to Transportation.

Also during the 1960s, the CRAF program underwent an evolution. Where it had been purely a program to be implemented during a time of national emergency,⁸ it was redesigned to offer three incremental levels of responsiveness to varying degrees of increased military airlift need. Along with this change, a plan to integrate CRAF participation with the commercial carrier share of day-to-day military airlift services was developed. Carriers that committed aircraft to the CRAF were allocated a weighted share of the Military Airlift Command's annual airlift procurement in accordance with the mobilization value of each committed aircraft.⁹

Between 1967 and 1972, the size of the airlift procurement (which was inflated by the requirements of the Vietnam War) was a substantial incentive to airlines to commit aircraft to the CRAF and to expand their cargo fleets. This incentive was greatly diminished following the end of this conflict when the average annual airlift procurement was reduced by more than half. It fell from a high of \$691.4 million in 1968 to a low of \$219.6 million in 1974. Nevertheless, airlines have

continued their high rate of participation in the CRAF. However, as discussed further in the following section, they have stopped buying new wide-body cargo planes in response to changed market conditions in the cargo airlift market.

In light of a substantial shortfall in emergency cargo airlift capabilities, a program to enhance CRAF aircraft was proposed in the President's FY 1974 budget. The original objective of the CRAF enhancement program was to modify the 110 B-747 passenger aircraft existing at the time so they could be converted to cargo carriers during an emergency. U.S. air carriers offered nearly 90 existing and new B-747s for modification in response to MAC's first Request for Proposal.

The Congress rejected the CRAF modification program because of inadequate justification by the Air Force, legal questions regarding civilian pilots flying into hostile areas, and the responsibility for loss or damages if a commercial airline crash were determined to be the result of the modification.¹⁰

Some Congressmen also felt that the modification program would constitute a subsidy to the airlines.¹¹

Following the initial rejection, each year's budget included a funding request for this program. Seven and a half million dollars was finally appropriated for FY 1978, but this sum "proved insufficient to cover the cost of modifying even one existing aircraft so the program continued in limbo until an additional \$7.5M was appropriated in FY 1979."¹² This funding was restricted to modification of new passenger aircraft. In addition, commercial carriers with aircraft modified with Government funds were prohibited from using these aircraft in the cargo configurations during peacetime.

Payment for the modification and additional life-cycle costs resulting from the modification was to be made in one lump sum.¹³

In anticipation of appropriations, MAC had issued an aircraft modification solicitation in March 1978. American Airlines offered up to eight existing B-747s in response, "but in June 1978 MAC canceled the Request for Proposal because the Senate Armed Services Committee denied the requested 1979 modification funds."¹⁴ The Committee continued to insist on modification of new aircraft (during construction) rather than existing aircraft.

MAC used the \$15 million which had been appropriated in FY78 and FY79 to contract with United Airlines to modify a new DC-10. This was the first and last aircraft to be modified during original manufacture because the market for new large wide-bodies evaporated at this same time. No new B-747s or DC-10s were ordered by U.S. air carriers between 1979 and 1983.

Given this reality, Congress finally relented and appropriated funds for modification of existing aircraft. With these funds, MAC has contracted with Pan American to modify 19 existing B-747s at an average cost of approximately \$32 million per plane. To date, funding has been provided for 14 of these aircraft. The first modification began in February 1985. (The Congressionally Mandated Mobility Study recommended in 1981 that at least 5 million ton miles per day of additional airlift capability be obtained through CRAF enhancement efforts.)

6.3 RESPONSIBILITIES FOR THE CRAF

Primary responsibility for the CRAF program rests with the Department of Defense, which has contracted with U.S. air carriers on a standby basis for use of civil aircraft in the event of CRAF activation. DoD derives its contracting authority for this purpose from Federal Acquisition Regulation 6.302-3 (10 U.S.C. 2304(c)(3)). This FAR provision, which is commonly referred to as "Exception 3," permits contracting without full and open competition "when it is necessary to award the contract to a particular source or sources in order (i) to maintain a facility, producer, manufacturer, or other supplier available for furnishing supplies or services in case of a national emergency or to achieve industrial mobilization..."¹⁵ ("Exception 3" could provide authority for virtually any standby contract relating to the furnishing of supplies and services in case of a national emergency or to achieve industrial mobilization.)

Because activation of the CRAF could involve conflicts between military and civilian requirements for CRAF aircraft, this program also involves the priorities and allocations authorities encompassed by Title I of the Defense Production Act.¹⁶ These authorities are conferred upon the President who has delegated them to the FEMA Director in Executive Order 10480. The FEMA Director has, in turn, redelegated the priorities and allocations authorities with respect to civil transportation services to the DoT Secretary in Defense Mobilization Order 3 (44 CFR 322).

Under the redelegated authority, the Secretary of Transportation allocates designated civil aircraft to CRAF Stage III for Department of Defense use during a national

security situation. DoT also reviews the lists of aircraft included in CRAF Stages I and II and has authority to request DoD to adjust or to justify these lists, if the sizing of these stages would have a significant adverse impact on civil air carrier capability to provide essential service in the event of CRAF activation. The responsibilities of and the relationship between the Departments of Transportation and Defense with respect to the CRAF program are spelled out in the Memorandum of Understanding (MOU) and Supplemental Agreement between the two departments. (See Appendix E for the texts of these documents.)

As described at the beginning of this chapter, CRAF activation authority varies with the three stages of CRAF. The first stage may be activated by the Commander of MAC solely on his own authority, but activation of the second and third stages requires use of the Secretary of Defense's authority. (However, this authority may be exercised by the Secretary's designee.) Stage III can only be activated: (1) in time of war or during a defense-oriented national emergency declared by the President, or in time of national emergency declared by the Congress; or (2) in a national security situation short of a declared defense-oriented national emergency.

Prior to activation, DoD must notify DoT. Normally, allocation authority under Title I of the Defense Production Act would not come into play during a Stage I or II activation. However, if DoT had previously found (during its annual review of aircraft proposed for Stages I and II) that DoD's proposed use of aircraft under these stages could have a significant adverse impact on civil air capability to provide essential services, then some of these aircraft could be withheld from CRAF activation, until DoT exercised its Title I authority.

(In actual practice, this situation is unlikely to occur, because DoT would instruct DoD, during the annual review process, to reduce the number of aircraft proposed for use in these two stages to a point where civil air capability would not be seriously undermined.)

Within the Department of Transportation, the Office of Emergency Transportation is responsible for CRAF-related activities. This office reviews DoD's annual requirement for the CRAF program and recommends aircraft for allocation by the Secretary. It also conducts continuing analysis of airlift requirements and is responsible for initiating programs to stimulate Government and industry improvement of transportation systems for emergency use. The Federal Aviation Administration (FAA) would play an important role during CRAF activation, through its regulatory responsibilities.

FAA is authorized to grant waiver and exemptions as emergency conditions warrant. Chapter 10 of MAC Regulation 55-8, lists blanket waivers and exemptions¹ for use only upon Stage III activation.

The FAA is also responsible for providing aircraft hull and liability insurance coverage for the CRAF program.

Within the Department of Defense, the CRAF program is run by the Military Airlift Command of the U.S. Air Force. MAC identifies aircraft needs to satisfy emergency airlift requirements based on plans approved by the Joint Chiefs of Staff; it contracts for suitable civil aircraft to help fulfill these requirements; it plans for emergency use of these aircraft; and it provides mission control of the CRAF (through the MAC Crisis Action Team) in the event of activation. The Assistant Secretary of Defense for Manpower, Installations,

and Logistics is responsible for coordinating DoD airlift policy.

FEMA is responsible for adjudicating any issues concerning CRAF allocation or DoD requirements for CRAF aircraft which cannot be settled between DoT and DoD. FEMA also plays a more indirect role with respect to this program in carrying out its DPA responsibilities to coordinate all mobilization activities of the Executive Branch and to provide direction and control for Federal agency functions under the Defense Production Act.

The CRAF carriers retain operational control of their own resources (i.e., personnel and equipment) at all times, including the period of activation. They are also required by their contracts with MAC to "furnish to the Government technical advice and information designed to provide maximum coordination, expedition, efficiency, and effectiveness in the utilization of CRAF."¹⁸

Establishment and activation of the CRAF program are summarized in Figures 6.3-1 and 6.3-2. The responsibilities for the CRAF Enhancement, Senior Lodger, and annual airlift services programs are subsets of the CRAF program responsibilities described above and represented in this figure.

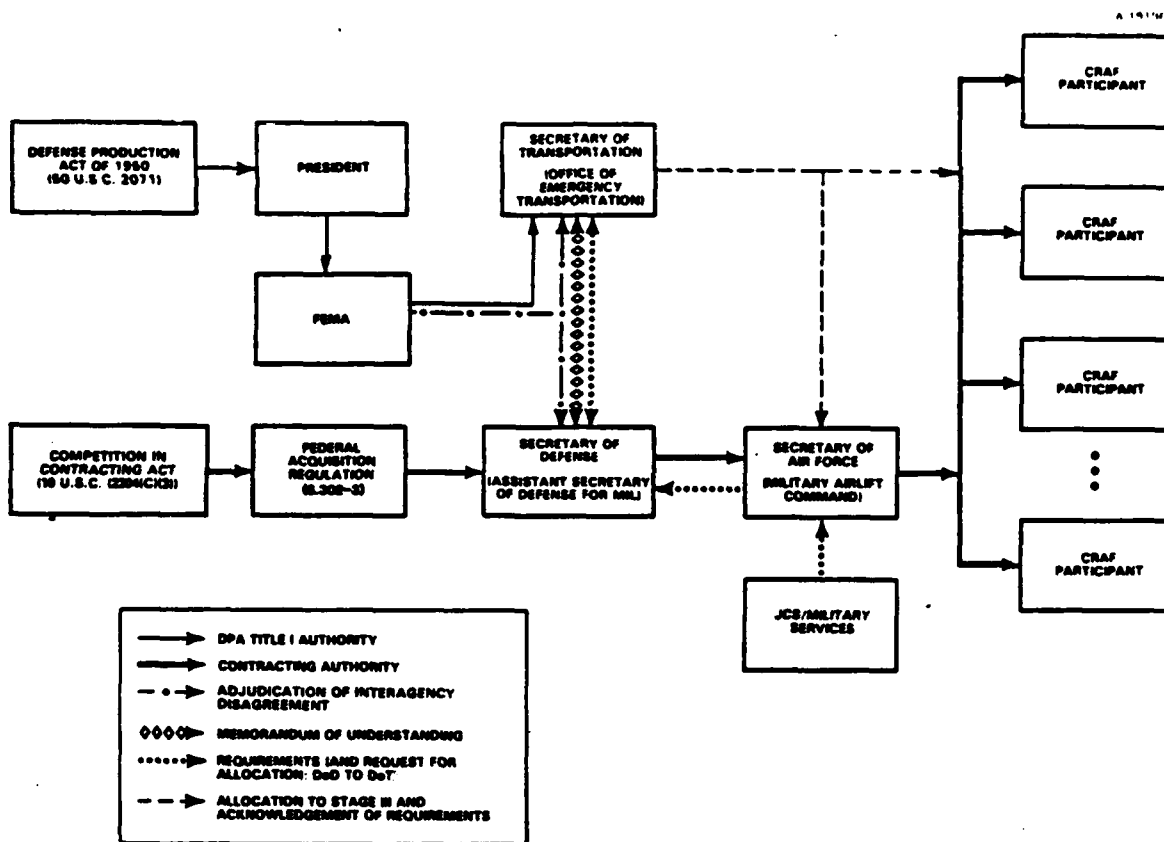


Figure 6.3-1 Establishment of the CRAF Program

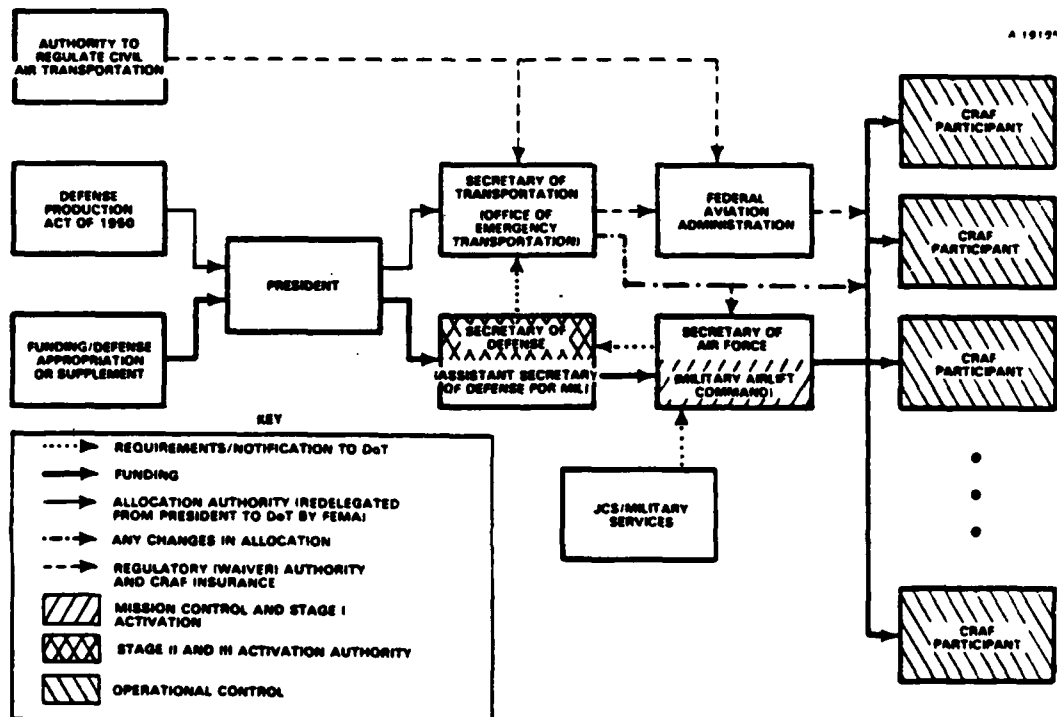


Figure 6.3-2 Activation of the CRAF

6.4 PROGRAM EFFECTIVENESS

Civil aircraft and other civil aviation resources are an extremely cost-effective means to augment our strategic airlift capabilities. The CRAF program is designed to make effective use of these resources. Through standby agreements (between MAC and individual U.S. air carriers), aircraft, aircrews, and the necessary support infrastructure have been committed voluntarily to the CRAF to support emergency airlift needs. While these air carriers could be required to provide airlift services under Title I of the Defense Production Act regardless of a standby agreement, the existence of such agreements better ensures airline industry responsiveness to emergency requirements.

Through the CRAF agreements, the air carriers are better prepared to provide emergency services and are contractually committed to do so within 24 hours (Stages I and II) or 48 hours (Stage III) of CRAF activation. In the absence of such agreements, they would have no defined emergency responsibilities, and their responsiveness to a Title I order for their resources could be sluggish. Since an immediate response is the key to emergency airlift capabilities, the greater level of preparedness associated with standby contractual commitments ensures a more effective response.

However, the standby agreements could be less effective when activated if Defense Production Act Title I authority requiring priority treatment is not invoked. It is quite possible that activation of either Stage 1 or 2 could lead to conflicts between an air carrier's civil and military contractual obligations. Priorities or allocation treatment could help resolve such conflicts, but the existing agreements are silent on this issue. Title I allocation authority only

applies to Stage III activation and to exceptional cases where Stage I or II activation might have a significant adverse impact on civil air capability to provide essential services.

While the CRAF has never been activated during its 32-year existence, all evidence suggests that this program could be implemented as planned. This evidence includes:

- Periodic exercises to test the responsiveness of the CRAF
- Past responsiveness of U.S. flag carriers during periods of substantially increased military airlift needs (e.g., during the Vietnam War and the 1973 Middle East War)¹⁹
- Efficient and effective day-to-day conduct of military airlift services by civil carriers
- Voluntary air carrier participation in the CRAF and CRAF preparedness activities.

Both MAC and the airlines are confident that CRAF aircraft along with the necessary personnel and support infrastructure would be made available in a timely fashion. The immediate response capability, along with the substantial increase to existing military airlift capabilities, make the CRAF an effective insurance policy against emergency airlift requirements.

The cost of the CRAF program is nominal. Some peacetime administrative, planning, and exercise costs could be attributed to CRAF, but in the absence of an explicit CRAF program, most of these costs would be incurred anyway in preparedness planning associated with emergency use of civil air carrier resources.

Plans to use the CRAF undoubtedly reduce requirements for military aircraft and, to the extent we acquire fewer military aircraft as a result, considerable savings are realized. It appears that civil aircraft also provide a less expensive means of meeting some day-to-day military airlift requirements.

SABER CHALLENGE--LIFT determined that it is more cost-effective to satisfy some of the oversize/bulk requirements using CRAF aircraft than (the military) owning and operating a force of commercially available aircraft.²⁰

Much of the peacetime military airlift services are procured from civil air carriers.

In contrast to the basic CRAF program, the CRAF Enhancement Program involves considerable cost -- approximately \$26.7 million per plane (in constant 1983 dollars for the 19-plane contract with Pan American). This is approximately one-sixth the cost to DoD of buying, crewing, and maintaining equivalent aircraft assets over the 12- to 16-year period covered by an enhancement commitment. Thus, it is commonly recognized as the most cost-effective means of acquiring additional emergency airlift capability.²¹

The cost-effectiveness of this program might also be examined in terms of its actual implementation. Implementation of the CRAF program currently involves three costs: aircraft modification; reimbursement to an air carrier for revenues lost during the modification period; and reimbursement to an air carrier for the additional life-cycle costs resulting from the modification. Obviously, all of these costs could be avoided if an air carrier were going to modify an aircraft on its own. In this case, the Government-sponsored modification program would constitute an expensive subsidy. The current

enhancement program guards against this possibility by limiting an air carrier to passenger use of a plane modified at Government expense. Should an air carrier wish to use such an aircraft (in its modified form) to carry cargo, the air carrier is required to reimburse the Government for all or part of the modification costs. (Similarly, should an air carrier lose control over a modified aircraft through sale, lease, or loss, it is required to reimburse the Government for some or all of the modification costs.)

The cost of holding an aircraft out of service during modification could be eliminated if the enhancement were limited to new aircraft in production. (This cost, combined with the ferrying cost to the modification site, ranges from slightly under \$5 million to over \$10 million per plane in the Pan American contract.) As noted earlier, Congress originally limited the program to new aircraft to improve program cost-effectiveness. This was intended to eliminate the need for an "out-of-service" reimbursement to the airlines and to obtain the full useful life expectancy of modified new aircraft rather than the shorter life of used aircraft. The collapse of the new wide-body aircraft market several years ago eliminated new aircraft as practical candidates for modification. However, the advent of new smaller wide-bodies (e.g., the B-767) may offer future opportunities to enhance new rather than existing aircraft.²²

Even greater cost savings would be possible with the CRAF Enhancement Program if the program were maintained on a standby basis. In other words, rather than modifying aircraft now, we would improve the capability to modify aircraft during an emergency. An inventory of parts and equipment needed for a modification would cost much less than the entire modification effort. Given the fact that current modifications are

scheduled to take four months for the first plane and two to three months each thereafter, one might calculate that these modifications could be done even more rapidly under emergency conditions. Unfortunately, even the delay of several weeks would virtually eliminate the benefit of increased emergency airlift capabilities. So, a standby modification program would not appear to be a reliable alternative. However, such a program could help augment strategic airlift capabilities, if it were activated during a pre-conflict warning period.

As a third measure of the CRAF Enhancement Program's cost-effectiveness, we might also consider alternatives to increased emergency airlift capabilities. Two such alternatives are increased sealift capabilities and increased prepositioning of material. CRAF Enhancement provides an incremental increase in the ability to transport needed materiel to virtually any place in the world quickly.²³ By comparison, sealift could carry many times more materiel at a fraction of the airlift cost but would take several weeks longer and could not reach inland destinations. Pre-positioned equipment would be available immediately at a given location but might be required at a different location. Thus, the tradeoff is among the increased flexibility and shorter reaction time of emergency airlift versus the somewhat reduced flexibility, longer reaction time, and increased cargo capability of emergency sealift versus the reduced flexibility, immediate availability, and increased amounts of pre-positioned materiel.

It is apparent that DoD and Congress have considered these tradeoffs. In testimony before a congressional committee in 1979, then-Deputy Secretary of Defense Graham Claytor stated:

We are often asked why we advocate efforts both to increase airlift capability and to reduce demand, rather than simply reducing demand. This latter option is attractive to many because programs that reduce demand often seem less expensive than those that increase airlift. There are four reasons for advocating both types of programs:

First and most important, we need some flexibility to adjust to the way a war actually develops. We plan according to our best estimate of where our forces will be engaged, but experience suggests that inevitably our plans will change either in initial deployment or during the course of the war.

Second, there are practical limits to the extent that demand can be reduced. There is a limit both to the amount of Host Nation Support the Allies can provide and to the land and Infrastructure funding we can expect to acquire for prepositioning. In addition, certain items are not suited to long-term storage, and we may not want to preposition in certain locations for political reasons.

Third, airlift provides a hedge against greater than expected destruction of prepositioned equipment and supplies which would necessitate additional early deployment.

Finally, we advocate expanding our airlift capability because we believe it is also needed for deployment to locations outside Europe, either in conjunction with a world-wide war or for lesser contingencies.²⁴

The previous discussion suggests that the cost-effectiveness of standby agreements involving enhancement costs should be analyzed in three ways:

- Is the enhancement measure more cost-effective than other measures to achieve the same result? (e.g., CRAF Enhancement versus more military cargo aircraft)

- Is the enhancement measure being implemented in the most cost-effective fashion? (e.g., modification of new versus existing aircraft)
- Is the result sought by the enhancement measure the most cost-effective result (e.g., emergency airlift versus emergency sealift or pre-positioning)?

Like the basic CRAF program, the Senior Lodger program entails nominal cost. While we have not focused on the latter program during this study, we can make several observations about this program's cost-effectiveness. The in-place resources of CRAF carriers at key airports around the world are readily adaptable to the needs of an emergency military airlift with minimal effort and lost time. Use of these resources would appear to be the best means of assuring smooth operations of an emergency airlift both at commercial airports and military fields, particularly in light of the latter's lack of adequate facilities and personnel to handle the CRAF without use of commercial resources. Equipping and manning the military to support CRAF operations would be expensive and less effective than relying on the experience and proven capabilities of the civil air carriers.

6.5 PROBLEMS

Use of civil air carrier assets for military purposes poses several problems (or potential problems). These include:

- The limited applicability of civil assets to defense purposes
- The changing nature of civil assets caused by economic conditions

- The availability of non-military personnel for military situations.

Similar problems could undermine the effectiveness of other standby programs involving the use of civil assets for emergency military purposes.

6.5.1 The Limited Applicability of Civil Assets to Defense Purposes

Civil air carrier cargo aircraft cannot carry outsize cargo, such as tanks and self-propelled guns. Nor can they land and unload at austere fields. Nor can they airdrop materiel. Therefore, their capabilities to fulfill military missions are more limited than those of the military airlift fleet.

Moreover, military cargo loaders have historically been unable to reach the upper decks of wide-body civil aircraft. The military is endeavoring to correct this problem through acquisition of civil cargo loaders and possibly through modification of new military cargo loaders.²⁵

Finally, the fact that CRAF aircraft carrying military supplies cannot be readily distinguished from aircraft conducting commercial operations may raise legal and practical problems for non-military aircraft operating in or near a war zone. However, such potential problems have been overcome in the past. For example, commercial carriers resisted DoD efforts to have them participate in the resupply of Israel during the 1973 war. They feared Arab governments would retaliate against them by prohibiting U.S. carrier flights into their countries. This problem was overcome by allocating MAC aircraft to fly into Israel and substituting civil

aircraft to fulfill MAC aircraft missions in other regions of the world. Similarly, civil air carriers played an important role during the Vietnam War by carrying the vast majority of military personnel and a sizable portion of the cargo into Indochina.

6.5.2 The Changing Nature of Commercial Assets Caused by Economic Conditions

Commercial airline fleets are continually evolving to adapt to changing economic conditions. During the late 1960s and early 1970s, this evolution worked to the advantage of strategic mobility as airlines expanded their cargo fleets (in part, to satisfy the increased demands of the Vietnam War) and as large wide-body aircraft (i.e., B-747, DC-10, and L-1011) came into being. However, the more recent conditions of the 1970s and 1980s have led to further changes which have undermined the military airlift capabilities of domestic carriers.

The four conditions which have influenced airline economics the most are:

- Rising fuel costs
- Noise abatement regulations
- Deregulation
- Recession.

These events have resulted in the following:

- Less-efficient, noisy, narrow-body aircraft (i.e., B-707 and DC-8) which once comprised the bulk of CRAF cargo-carrying capability have been largely phased

out of domestic airline inventories. For example, B-707s and DC-8s in the CRAF declined by 76 percent and 18 percent respectively between 1977 and 1983,²⁶ and when the noise abatement regulation takes effect in January 1985, more than half of the narrow-bodies still in the CRAF may be grounded, as well

- The domestic market for new wide-body cargo aircraft has dried up,²⁷ because deregulation and slow growth in the air cargo market has resulted in excess air cargo capability.²⁸ Thus, prospects for expanding CRAF cargo-carrying capabilities through new cargo aircraft acquired by CRAF participants are extremely poor.
- The commercial fleet of long-range cargo aircraft is shrinking, because "most of the major carriers have abandoned the all-cargo sector to the more efficient freight operators and have sold or leased their cargo aircraft...Much of the cargo traffic still carried by the major airlines has been shifted from freighter decks to the belly compartments of regularly scheduled passenger flights."²⁹
- Domestic airlines are beginning to acquire smaller, more efficient wide-body aircraft (i.e., B-767s and A300s) in order to reduce fuel costs. Because of current FAA regulations governing two-engine aircraft, these aircraft are currently prohibited from trans-Atlantic travel and are, therefore, of little use to the CRAF program
- Economic "hard times" have threatened the financial viability of a number of CRAF participants and have actually caused bankruptcies. Airline bankruptcies can cause temporary or permanent loss of aircraft to the CRAF, if planes and crews are grounded for a protracted period or if planes are sold abroad or

to non-CRAF U.S. airlines. For example, "[all of Braniff's] wide-body aircraft that had been assigned to the CRAF except for one were sold to foreign sources -- some to communist countries." In addition, "the foreign infrastructure consisting of ground handling equipment, maintenance and terminal facilities and personnel will be lost."³⁰

Despite these negatives, CRAF capabilities to carry passengers and cargo have generally increased over the years. While narrow-body aircraft were being phased out of airline fleets in recent years, they were being replaced by B-747s and DC-10s. These larger aircraft give the CRAF considerably greater capacity even though the number of planes in the CRAF has declined.³¹ Moreover, despite their limitations, smaller wide-body aircraft would appear to offer considerable potential to augment the CRAF, if regulatory restrictions on their trans-Atlantic use can be waived.

6.5.3 The Availability of Non-Military Personnel for Military Situations

The willingness of civilian aircrews to fly into hazardous areas has frequently been questioned by skeptics of the CRAF program. In response to these skeptics, CRAF supporters cite historical examples of the willingness of civilians to accept hazardous wartime duty, such as:

- Merchant marine seaman during the two world wars
- Aircrews who flew into Indochina during the Vietnam conflict.

Skeptics have also argued that civilian aircrews would be depleted by military call-ups during an emergency.

¹⁰United States General Accounting Office, "Information on the Requirement for Strategic Airlift," GAO, Washington, D.C., June 8, 1976, pp. 14-15. In this report GAO states that 90 aircraft were offered. In a subsequent report, GAO states that 65 existing and 22 new aircraft on order were offered in response to the 1974 solicitation. U.S. GAO, "The Civil Reserve Air Fleet -- An Effective Program to Meet Defense Emergency Airlift Requirements," GAO, Washington, D.C., December 7, 1978, p. 15.

¹¹Hughes, Vincent C., "The Airlift Enigma and a Plan for the Future," Armed Forces Journal International, October 1982, p. 28.

¹²Subcommittee on Procurement Policy and Reprogramming, "Civil Reserve Air Fleet (CRAF) Enhancement Program," hearings, U.S. Senate Committee on Armed Services, Washington, D.C., November 30, 1979, p. 8.

¹³Ibid.

¹⁴U.S. GAO, December 7, 1978, pp. 15, 17.

¹⁵The full text of "Exception 3" reads as follows:

3. 10 U.S.C. 2304 (c)(3) - FAR 6.302-3, Industrial Mobilization; or Experimental, Development or Research Work. Full and open competition need not be provided for when it is necessary to award the contract to a particular source or sources in order (i) to maintain a facility, producer, manufacturer, or other supplier available for furnishing supplies or services in case of a national emergency or to achieve industrial mobilization, or (ii) to establish or maintain an essential engineering, research, or development capability to be provided by an educational or other nonprofit institution or a federally funded research and development center.

Application. (1) Use of the authority in (i) above may be appropriate when it is necessary to --

a. Keep vital facilities or suppliers in business or make them available in the event of a national emergency;

b. Train a selected supplier in the furnishing of critical supplies or services, prevent the loss of a supplier's ability and employees' skills, or maintain active engineering, research, or development work;

c. Maintain properly balanced sources of supply for meeting the requirements of acquisition programs in the interest of industrial mobilization (when the quantity required is substantially larger than the quantity that must be awarded in order to meet the objectives of this authority, that portion not required to meet such objectives will be acquired by providing for full and open competition as appropriate under this part);

d. Limit competition for current acquisition of selected supplies or services approved for production planning under the Department of Defense Industrial Preparedness Program to planned producers with whom industrial preparedness agreements for those items exist, or limit award to offerors who agree to enter into industrial preparedness agreements;

e. Create or maintain the required domestic capability for production of critical supplies by limiting competition to items manufactured in the United States or the United States and Canada;

f. Continue in production, contractors that are manufacturing critical items, when there would otherwise be a break in production;

g. Divide current production requirements among two or more contractors to provide for an adequate industrial mobilization base; or

h. Acquire Jewel Bearings and Related Items.

(2) Use of the authority in (ii) above may be appropriate when it is necessary to --

(a) Establish or maintain an essential capability for theoretical analyses, exploratory studies, or experiments in any field of science or technology;

(b) Establish or maintain an essential capability for engineering or developmental work calling for the practical application of investigative findings and theories of a scientific or technical nature; or

(c) Contract for supplies or services as are necessary incident to (a) or (b) above.

¹⁶The relevant DPA Title I authority reads as follows:

Section 101(a). The President is hereby authorized (1) to require the performance under contracts or orders (other than contracts of employment) which he deems necessary or appropriate to promote the national defense shall take priority over performance under any other contract or order, and, for the purpose of assuring such priority, to require acceptance and performance of such contracts or orders in preference to other contracts or orders by any person he finds to be capable of their performance, and (2) to allocate materials and facilities in such manner, upon such conditions, and to such extent as he shall deem necessary or appropriate to promote the national defense. (50 U.S.C. App. 2071) [emphasis added]

It is noteworthy that Section 101(b) of this act will come into play as a result of CRAF Stage III activation. Stage III activation will disrupt the civilian air transportation market and will require allocation of aircraft not committed to the CRAF for essential airlift services. Section 101(b) reads:

The power granted in this section shall not be used to control the general distribution of any material in the civilian market unless the President finds (1) that such material is a scarce and critical material essential to the national defense, and (2) that the requirements of the national defense for such material cannot otherwise be met without creating a significant dislocation of the normal distribution of such material in the civilian market

to such a degree as to create appreciable hardship.

- ¹⁷ U.S. GAO, pp. 9-10. On January 1, 1985, the FAA took over the responsibilities of the Civil Aeronautics Board.
- ¹⁸ Military Airlift Command, RFP No. F11626-84-R-0010, March 12, 1984, p. c-4.
- ¹⁹ It is noteworthy that the service expansion provisions in the annual airlift contracts between the airlines and MAC have proven adequate to ensure supplemental commercial airlift services during past periods of substantially expanded military airlift needs. In other words, use of a simple contract option clause has eliminated the need for CRAF activation. While this might suggest little or no need for the CRAF program, three other points should be considered: (1) CRAF preparedness activities may have improved airline responsiveness even in these cases when CRAF was not activated; (2) CRAF activation would be necessary in cases where military requirements would cause disruption of commercial service; and (3) the "threat" of CRAF activation may have encouraged airline responsiveness to increased military airlift requirements.
- ²⁰ Baker, p. 33.
- ²¹ Both DoD and GAO cite the CRAF Enhancement Program as the most cost-effective means to obtain such airlift capability. See, for example, U.S. GAO, December 7, 1978.
- ²² TASC has not attempted to analyze the cost-effectiveness of a B-747 versus a B-767 enhancement program. Regardless of the cost-effectiveness question, the B-747 program embraces the obvious advantages of momentum and funding. For a discussion of the B-767 option, see Baker, pp. 46-77. Baker et al. write:

Since there is only a small probability of significant numbers of freighter versions of the B-767 entering service with domestic air carriers, if the military wishes to exploit the cargo capabilities of the B-767, it will have to be, in all probability, through some form of enhancement program. (p. 52)

The least costly time to incorporate the convertible features into the airframe is when the aircraft is being built. (p. 64)

- ²³The amount of this incremental increase depends on the size of the enhancement program.

A 65 aircraft CRAF Enhancement Program would account for about a 15-percent reduction in the closure time required to move two (2) divisions, with resupply, to the Middle East. (Subcommittee on Procurement Policy and Reprogramming, November 30, 1979, hearings, p. 13.)

If all our airlift programs come to fruition, CRAF will provide about 40 percent of our total airlift capacity by the mid-1980s and aircraft made available under the CRAF Enhancement Program would provide 35 percent of the CRAF contribution. Although these aircraft cannot carry outsized equipment such as tanks, by the mid-1980s we will have pre-positioned most of the outsized equipment needed in Europe in the early days of a war. In a non-NATO contingency, there would be a significant demand for movement of the oversized and bulk cargo that civil aircraft are ideally suited to carrying. Thus, the CRAF Enhancement Program can make a substantial contribution to meeting our overall objectives, both for a NATO war and for other conflicts. (Subcommittee on Procurement Policy and Reprogramming, November 30, 1979, hearings, p. 24.)

- ²⁴Ibid., p. 5.

- ²⁵For a discussion of the cargo loader situation, see Tuck, Paul D., "A Uniform National Air-Cargo System: Do We Need It?," Air University Review, July-August 1982, pp. 58-67.

- ²⁶Baker, p. 29.

- ²⁷Ibid, p. 26.

- ²⁸Baker et al. write:

...The belly capacity now available exceeds the total commercial bulk cargo space requirement to such an extent that

an estimated 50 to 60 percent of existing cargo hold capacity travels empty. Available belly capacity, combined with the leveling of large item, long-range cargo shipments, resulted in underutilization of freighter deck space and thus contributed to the subsequent reduction in freighter operations by major airlines.

This significant unused bulk capacity will have to be used before industry interest, if any, will turn to acquisition of additional new freighters. (p. 22)

Substantial growth in sectors of the air cargo industry, other than the time-sensitive, small package sector, is not expected. (p. 24)

[This] dictates the purchase primarily of small, efficient aircraft up to and including the B-727 for use in hub and spoke operations. (p. 26)

²⁹Baker, pp. 21, 22. Baker et al. write:

The trend toward reduced major airline presence was started in 1972-73 by Delta and Eastern Airlines when they cancelled their DC-8 and Hercules cargo services. Trans World Airline followed a short time later by grounding their 12 B-707 freighters. By late 1982, only American, Northwest, Pan American and United among the major airlines were operating freighter aircraft. The total number of freighters operated by the major airlines had shrunk to just 35 by 1 January 1983. On February 22, 1983, Pan American further reduced its participation in the all-cargo business to a single airframe when it swapped four of its five remaining B-747 freighters for three of Flying Tigers passenger versions of the same aircraft. The overall effect has been a decline in all cargo airframe mileage flown by the major airlines of some 48 percent in the past ten years. (pp. 19-20)

³⁰DeLawter, pp. 2-3.

³¹Baker, p. 29.

7.

SURGE OPTION CLAUSE

7.1 INTRODUCTION¹

The surge option is a relatively new type of clause now being included in some defense contracts. This clause can be exercised by the government to increase production quantities on order from a current contractor and to accelerate the contract delivery schedule. In other words, the surge option clause is a standby agreement between contractors and the Government to increase production of items currently being produced for the Government.

There are two types of surge option clauses. The first, called a production surge plan option to increase quantities, is included in contracts which provide for a production surge plan. The production surge plan is developed by the contractor and identifies his capability to accelerate rapidly and to sustain production using existing facilities and equipment under peacetime operating conditions. The production surge plan option specifies unit ceiling/target price and a delivery rate selected by the contracting officer in conformance with the capabilities described in the surge plan. The option clause, called simply a surge option to increase quantities, also specifies a unit ceiling/target price and a delivery schedule. This clause is used in cases where a contract does not require a production surge plan. In the absence of such a plan the delivery schedule in this case is specified by the contractor. (See Appendix F for the wording of these two clauses.)

dictate a more widespread and larger increase in production. In any event, the triggering directive would pass to the various item managers and contract officers for implementation.

In the event of a surge beyond current authorized or funded levels of procurement, appropriate congressional action to provide supplemental funds would be required prior to obligation of funds beyond these levels.

Because activation of the surge option clause is currently planned to occur under peacetime regulatory and defense priority conditions, authorities in these areas are not included in Figure 7.3-2 which summarizes responsibilities for surge option clauses.

7.4 EFFECTIVENESS OF THE SURGE OPTION CLAUSE

The surge option clause is an expedient to achieve earlier increases in surge production from current and planned producers. If funding is available to support increased production, use of this option would eliminate the normal delay a number of weeks (or months if a procurement is competitive) associated with establishment of a new contract.

Because companies are contractually obligated to meet the goals specified in the option clause, existence of the clause may also impel improved production surge planning. Improved planning would mean more accurate identification of potential production bottlenecks and would permit better informed decisions about needed remedial actions. Improved planning and foreknowledge of potential production requirements might also lead to improved preparations by companies to meet production surge demands.

The relative contribution of the surge option clause to mobilization responsiveness depends in large part on how contracting procedures are handled during a surge situation. If these procedures were expedited, the surge option clause might provide little time advantage over normal methods. More likely, cumbersome contracting procedures, combined with an increased surge contracting administrative load, would cause delays of several weeks between a surge decision and contract awards. The surge option clause would then expedite increased production orders and would reduce the administrative burden to both industry and the government during the initial stages of a surge. If accompanied by the previously-mentioned planning bottleneck identification and bottleneck correction, time savings could be considerable. Without the planning, the savings from the clause itself would be modest.

7.5 PROBLEMS

The availability of adequate authorization and funding are the biggest problems associated with use of the surge option clause. If an ongoing procurement is already at or near its current authorized level, the option clause cannot be invoked without congressional action to raise this authorization. Whether or not the authorization is a problem, funding is likely to be one, particularly towards the end of the fiscal year when most funds have already been obligated. If a surge occurs early in the fiscal year, existing program funding would generally support an accelerated delivery schedule, but congressional supplementary funding action would be needed to sustain this accelerated schedule.

Triggering an option might also be delayed or prevented by the GAO ruling which prohibits exercise of a contract option, if the government is aware of another contractor who

can provide the item to be procured at a lower cost than that involved under the option. However, exigency associated with surge or mobilization conditions might provide adequate justification for ignoring this rule.

Another GAO ruling limits the amount of increased procurement allowed under a surge option clause to 400 percent of the current production rate. In cases where a 400 percent increase is not possible, this limit is not an issue, and in cases where a greater production increase would be possible, activation of the option clause would "put the wheels in motion" to accelerate production and could be followed by separate contracting for increases beyond 400 percent. Since a 400 percent acceleration would not be instantaneous, the administrative delay in letting a contract for production beyond this point with the same company would probably cause little or no delay in actual production increases.

Another limit to the surge option clause does pose a problem from the standpoint of mobilization responsiveness. The surge option clause applies only to existing production contracts and, therefore, is not being used to increase the responsiveness of other potential producers. Thus, while the clause may increase responsiveness of existing producers, it will not help convert new producers. Basic Ordering Agreements have been suggested as a standby vehicle for turning on production from cold base planned producers.³

ENDNOTES

- ¹The discussion in this subsection is based on material available in: Nicholas, George T., "Surge Initiatives: A Real World Program for Near Term Readiness," U.S. Army Armament Materiel Readiness Command, Rock Island, Illinois, undated.
- ²This is the same authority described in Chapter 6 for creating standby agreements governing the CRAF. See endnote 15 in Chapter 6.
- ³Nicholas, pp. 16-18.

8.

STANDBY AGREEMENT SYSTEMS MODEL

8.1 INTRODUCTION

The systems models for the six programs examined in this report are all different. The differences can be explained by the facts that: (1) two of these programs do not involve an explicit standby agreement (i.e., educational orders and machine tool pool orders); (2) one program was initiated by the private sector rather than the Federal Government (i.e., Plan Bulldozer); and (3) all of the programs vary in their degree of complexity. Despite these differences, common elements relating to the establishment and activation of a standby agreement program are evident. These common elements are combined in this chapter into a generic standby agreement systems model.

8.2 ESTABLISHMENT OF A STANDBY AGREEMENT

Establishment of a standby agreement involves some or all of the following elements:

- Program/funding authority
- Contracting authority
- Delegation of authority
- Requirements identification
- Priorities and allocation authority

- Creation and maintenance of standby capability
- Program review.

These elements are discussed below, and their interrelationships are depicted in Figure 8.2-1.

Either program or contracting authority can serve as the basis for creating a standby agreement. Program authority might be either specific or general. Specific program authority was used to create both the educational order and the CRAF Enhancement programs, and specific funds for these programs were appropriated to create enhanced standby capabilities. By contrast, general program authority was used to create the Machine Tool Trigger Order Program. This program is based on the President's authority under the Defense Production Act to enter into purchase commitments for national defense purposes. (It is noteworthy that authorized funding levels in the DPA would permit activation of only a small fraction of the existing MTTOP contracts and that activation of more contracts would require prior congressional action to raise the funding ceilings.)

Contracting authority for creating a standby agreement exists in a Federal Acquisition Regulation clause which permits non-competitive purchases and contracts "in the interest of national defense to have a plant, mine, or other facility, or a producer, manufacturer, or other supplier available for furnishing property or services in case of a national emergency." (FAR 6.302-3) (See endnote 15 in Chapter 6.) This contracting authority serves as the basis for surge option clauses and the contract option clauses concerning the CRAF.

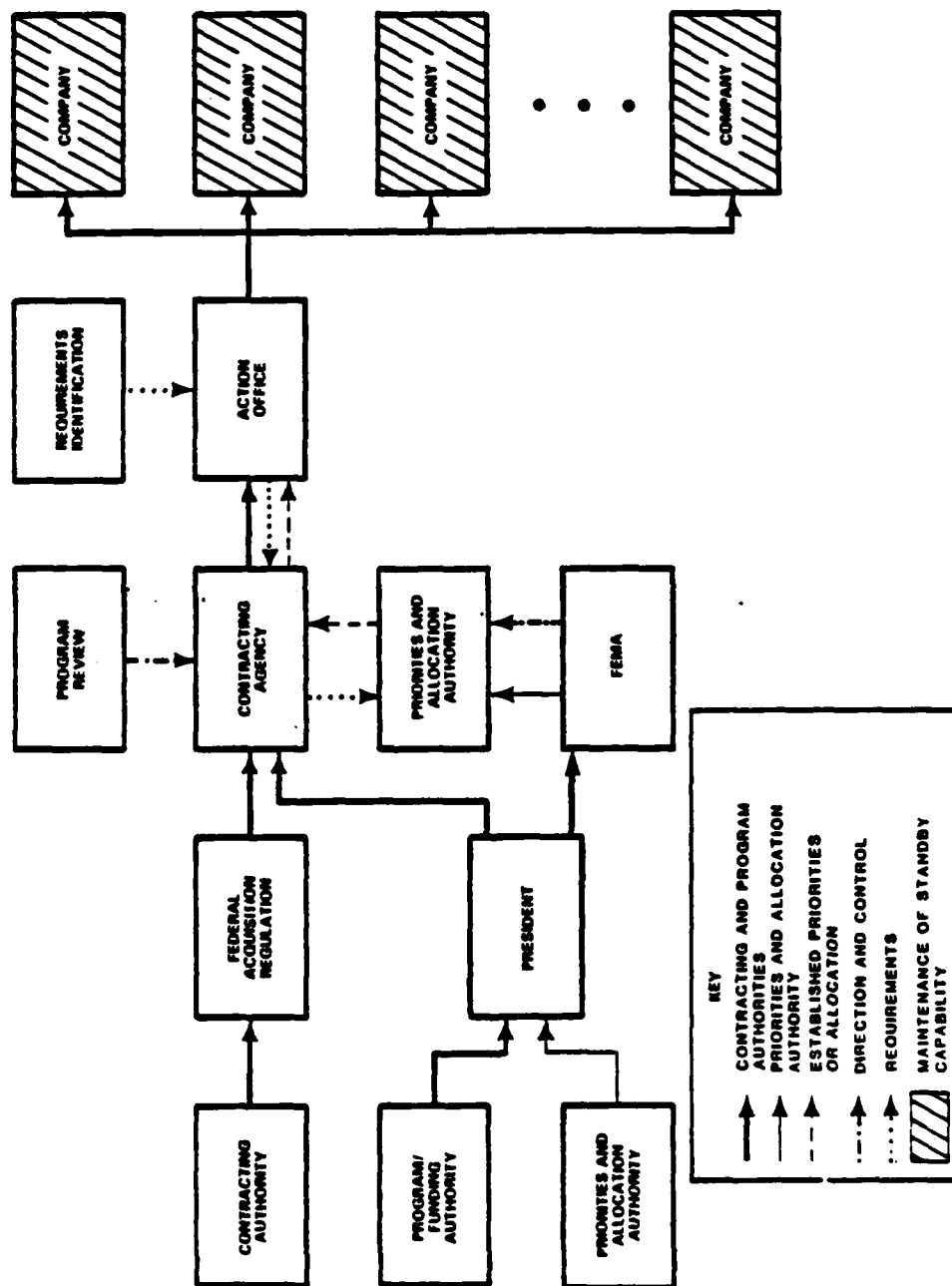


Figure 8.2-1 Establishment of a Standby Agreement Program

Program/funding and contracting authorities are delegated to an office within an agency with procurement responsibilities. This office completes standby contracts with private firms which can provide the desired goods or services. In theory, they are created in response to anticipated emergency requirements, but in practice, determination of these requirements can be haphazard. For example, while considerable planning goes into determining requirements for the Civil Reserve Air Fleet, very little planning goes into determining the requirements of the Machine Tool Trigger Order Program.

It stands to reason that standby agreements based on a careful assessment of emergency requirements hold more potential for effective use in the event of an emergency. As noted in several places in this report, preparedness planning, including identification of potential requirements, is key to an effective standby agreement program. Without this planning, the standby agreement mechanism serves (at best) only to reduce or eliminate the administrative lead time associated with creating a contract. It would not serve to enhance industrial expansion capabilities. Nor would it facilitate the conversion of productive resources from less essential to more essential purposes.

Judging by the different programs examined in this report, we cannot identify a consistent pattern of interrelationships between the contracting agency and the agency or agencies involved in identifying requirements. Both the contracting and requirements identification functions may be carried out by the same agency, as they are (by DoD) in the case of the surge option clause, educational orders, and the CRAF program. However, in the case of the CRAF program, the requirements generated by DoD are also reviewed by DoT, because the latter agency has priorities and allocation authority for

the impacted industry (i.e., air transportation). By contrast, the contracting agency for the MTTOP -- GSA -- has virtually no responsibilities in the area of requirements identification. These responsibilities are shared by FEMA, DoD, and Commerce, with the first responsible for program direction and control, the second responsible for identification of actual requirements, and the third responsible for matching these requirements with industry capabilities.

In Figure 8.2-1, we have not tried to depict these and other possible relationships related to requirements identification. The cell labeled "requirements identification" should be viewed as representing a wide variety of possibilities, ranging from a simple process where requirements are identified by the "action office" and are not reviewed outside of the parent agency to a complex process where requirements identification involves a number of agencies and also involves considerable input from industry.

Application of priorities and allocation authority in the context of a standby agreement program is another means of ensuring a more effective tool to enhance industrial responsiveness. The simple fact that this authority exists and can be used to relieve private firms of conflicting contractual obligations as well as require performance in the interest of national defense frequently serves as an incentive to private firms to enter into standby agreements with the Government "voluntarily." More importantly, this authority can be used to help ensure the availability (on a standby basis) of the private resources required to fulfill the requirements of an agreement.

Use of priorities and allocation authority in connection with a standby agreement program brings additional

agencies into the standby agreement systems model. It involves FEMA and the agency to which FEMA has redelegated the relevant priorities and allocation authority. The latter agency would generally review the emergency requirements identified by the contracting agency and provide appropriate priorities or an allocation of commercial resources. FEMA would provide direction and control regarding use of the priorities and allocation authority and would review and resolve any disagreements regarding use of this authority between the agencies involved. The CRAF program provides an excellent example of this process.

Creation and maintenance of a standby capability is another critical component of a standby agreement program. This is a joint government-industry responsibility with the former providing funding for such items as standby equipment and tooling and production studies and with the latter planning and maintaining the capabilities to perform the tasks required by the standby agreement. Creation and maintenance of a standby capability is an extension of the industrial preparedness planning process. The planning process serves to identify emergency requirements and industrial capabilities to meet these requirements, and the standby capability expands the existing industrial capabilities.

Finally, periodic program review by an existing or an ad hoc group is desirable to ensure effective use of the standby agreement mechanism. An ad hoc group of industrialists was created to review the educational order program, for example. Whether or not the review is conducted by an independent group or by the agency(ies) with responsibilities for the standby agreement program, review can be part of the ongoing planning process needed to keep the program up to date. Because both national security requirements and

industrial capabilities change over time, this ongoing effort is essential to an effective program.

8.3 ACTIVATION OF A STANDBY AGREEMENT

Activation of a standby agreement involves some or all of the following elements:

- Determination of need
- Triggering authority
- Priorities and allocation authority
- Regulatory authority
- Funding (and funding authority).

These elements are discussed below and their interrelationships are depicted in Figure 8.3-1.

The timely determination of need is key to effective use of a standby agreement. The later in an emerging emergency situation that this determination is made, the less effective the standby agreement is likely to be. As discussed in Chapter 1, timely determination of need would appear somewhat more important with respect to goods than services, because production of goods covered by a standby agreement is a lengthy process while delivery of services covered by a standby agreement can generally be much more rapid. Therefore, it is important that need is anticipated and that a standby agreement for goods is triggered before an actual need is realized. This is not to say that anticipating need for services and triggering appropriate standby agreements would not increase the effectiveness of these agreements, as well. In fact, in cases such as construction and transportation, the realized

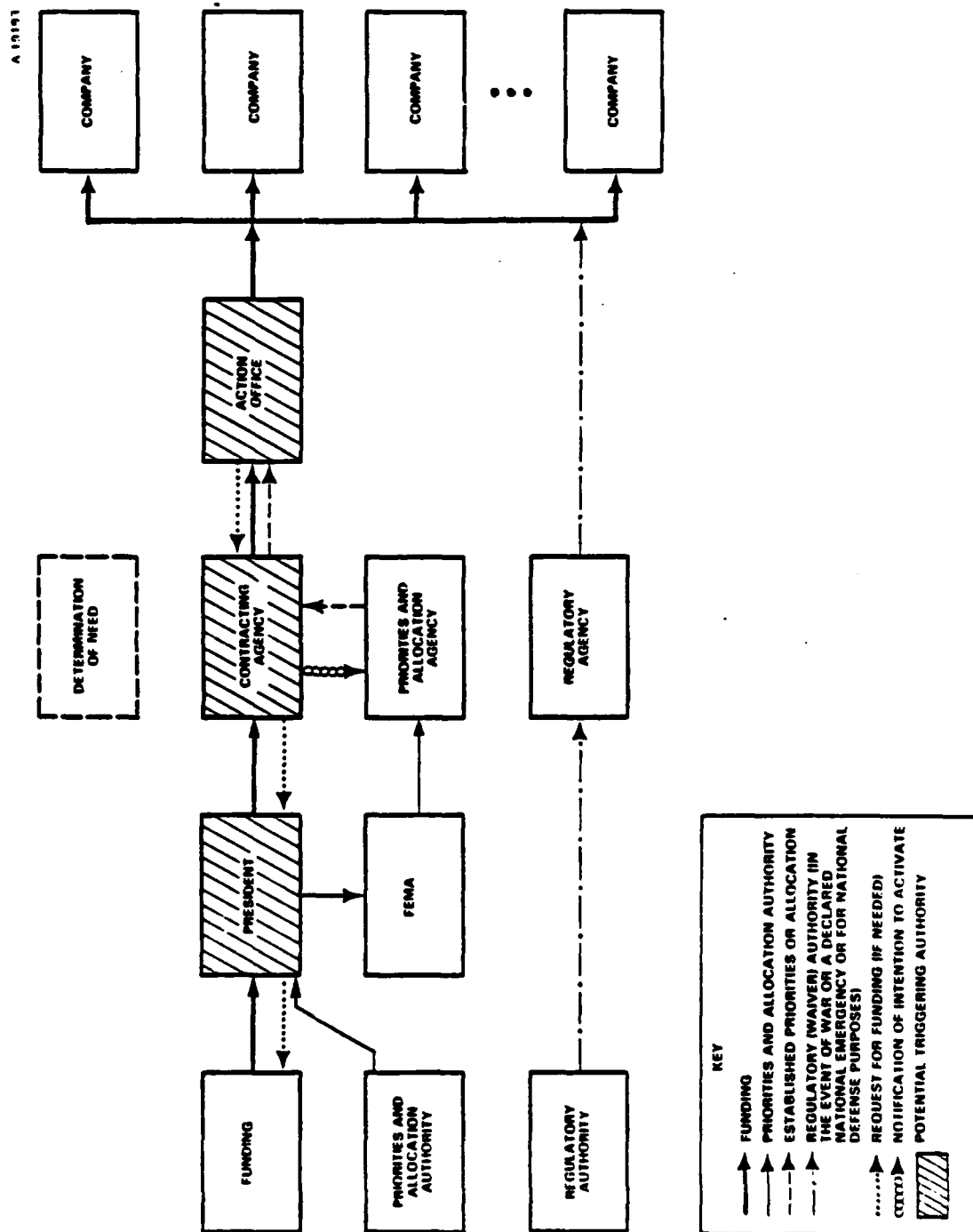


Figure 8.3-1 Establishment of a Standard Agreement Activation

emergency requirement may well exceed the capabilities of available resources, so earlier activation of these resources in anticipation of the actual need can offer more time in which to satisfy this need.

This discussion suggests the need for a well-defined process for assessing when a standby agreement should be triggered. Currently, such a process appears better developed with respect to agreements governing direct use of commercial assets in support of military functions than with respect to agreements governing use of standby commercial manufacturing resources for defense production purposes. For example, commercial airlift and sealift capabilities are currently more likely to be activated during a national security emergency, because they can be applied immediately to the emergency need. In other words, the emergency response process tends to incorporate these capabilities, because they provide immediate and direct support. This same process tends to overlook standby manufacturing capabilities, because they offer less immediate and visible support. Nevertheless, these capabilities could provide an effective emergency response, if the potential need for triggering these capabilities were determined in a timely manner.

The determination of need may or may not be made by the triggering authority. Triggering authority tends to vary with the relative impact of a triggering decision on the economy and individual industries. Triggering actions which would disrupt the civilian economy are generally reserved for times of war or a national emergency declared by the President or Congress. Under these conditions, agency heads may invoke emergency powers delegated by the President, including powers that might otherwise be restricted related to activation or the smoother functioning of a standby agreement program.

Standby agreements might also be activated by an agency head or his designee in situations short of war or a national emergency, but in such situations the functioning of the activated program would generally be subject to normal regulatory limitations governing procurement and industrial operations.

A triggering decision by one agency head (or his designee) might require the approval or concurrence of another agency in the event that program activation involves use of priorities and allocation authority, requires waiver of regulations, requires Government indemnification of private firms, or requires supplemental funding. Each of these is discussed below.

As suggested in several places in this study, the exercise of priorities and allocation authority may be essential to the effective activation of a standby agreement. Without priority treatment or allocation to the desired purpose, the commercial capabilities covered by a standby agreement might not be made available in a timely fashion. In particular, problems would occur in cases where these resources are committed contractually to another purpose and are, therefore, not immediately available for the standby use. While the standby agreement may contain financial penalties for failure to provide the covered capabilities within the allotted time, this alone may not ensure a company's compliance with the national defense purpose.

In a case where activation of a standby agreement relies on application of priorities and allocation authority, the agency with administrative responsibilities over the standby agreement would generally be required to notify the priorities and allocation agency of its intention to activate the program. If priorities have been delegated for use by the

administering agency or a standby allocation has been made, activation may not require action by the priorities and allocation agency. However, if such a standby provision has not been made or if a national defense finding is required prior to use of this authority, appropriate action by this second agency would be required prior to use of the priorities and allocation authority.

Similarly, if the effective operation of an activated agreement is contingent in part on relaxation of regulations or Government indemnification of a contractor operating under the agreement, one or more agencies with authorities in these areas might come into play prior to or after program activation. For example, the Federal Aviation Administration is responsible for waiving regulations which might otherwise impede CRAF operations and is also responsible for providing insurance covering these operations.

Finally, funding is required before a standby agreement may be activated. In a case where a program has been explicitly authorized, funding will have been authorized and possibly appropriated, as well. Such would be the case with respect to goods and services currently in procurement. Funding in this case might be dealt with in several different ways:

- Accelerated delivery of goods or services currently under contract. (This requires no additional obligation of funds)
- Use of funds appropriated for the desired purpose, but as yet unobligated
- Reprogramming of funds
- A supplemental appropriation.

All but the last approach involve allocation or reallocation of available funds. In the event of a widespread surge or mobilization effort, these funds could provide the means for an immediate activation but would be depleted rapidly and would require early augmentation through a supplementary appropriation.

If funds have not been authorized or appropriated for procurement of goods or services covered under a standby agreement a special authorization and/or appropriation might be required before the agreement is activated. Or, funds for a standby agreement program could be authorized and appropriated on a contingent basis. They would become available only in the event that the standby agreement program is activated. Such funds might become available, for example, in the event of war or a declared national emergency. None of the programs examined are supported by such a source of funding.

9.

FINDINGS

This chapter highlights our findings. The number following each finding indicates the section in the report where the finding was discussed. Recommendations will be included in our final report on standby agreements.

9.1 INTRODUCTION

- A "standby agreement" is defined in this study to be a contractual commitment by a private firm to provide specific goods or services or to change normal operating practices at the sole option of the government to help satisfy increased requirements for those goods and services resulting from substantially expanded peacetime military needs or an emergency (1.1)
- Very few past or current industrial preparedness programs involve "standby agreements" in the strictest sense of the term (1.1)
- The primary purpose of a standby agreement is to provide a more rapid and effective response to a civil or military emergency by bringing to bear commercial and industrial resources to satisfy substantially increased requirements for goods and services (1.2)
- A standby agreement can provide a cost-effective alternative to some defense and preparedness expenditures (1.2)
- Standby agreements can provide greater flexibility of response to various national security situations (1.2)

- Standby agreements can be used to achieve a wide variety of ends (1.3)
- Lack of funding can be a major impediment to activation of standby agreements (1.4)
- Programs which encompass standby agreements frequently involve inadequate planning about the conditions under which these agreements should be triggered. This failure reduces the potential value of these agreements substantially (1.5)
- The standby agreement mechanism offers an effective and efficient means to augment existing government resources with those of the private sector during an emergency (1.6)
- The mere existence of a standby agreement does not ensure its effectiveness in improving mobilization capabilities. An effective standby agreement program requires preparedness planning (by government and industry) and a process which ensures timely activation in anticipation of or response to emergency requirements (1.6).

9.2 EDUCATIONAL ORDERS

- Educational orders were a means to prepare manufacturing companies engaged in commercial work for conversion to production of essential military items in the event of war (2.1)
- Educational order contracts did not include an option clause providing for increased production. These contracts involved an implicit rather than an explicit standby agreement (2.1)
- While no specific decision was ever made to terminate use of the educational order approach, awareness of this preparedness tool appears to have dissipated over time (2.2)

- Educational orders were a means to achieve a number of industrial responsiveness goals, including: increased defense production capabilities; reduced requirements for munitions stockpiles; trained government procurement personnel; and improved munitions design (2.4)
- The essential elements of an educational order program exist today in ongoing industrial preparedness efforts (2.4.6)
- A number of problems characterized the educational order program. These problems fell into the following areas: timely program authorization, funding, and implementation; identification of suitable items for educational orders; application of government regulation; selection of contractors; and proprietary rights (2.5).

9.3 PLAN BULLDOZER

- Plan Bulldozer involves a standby agreement between state and local government units and participating AGC chapters concerning disaster relief work by construction contractors. Because contractors are not contractually committed by this agreement to provide services, this type of agreement does not fit our strict definition of "standby agreement" (3.1)
- Plan Bulldozer is currently dormant and will be replaced shortly by a new AGC disaster relief program (3.2)
- Program responsibilities reside in AGC chapters rather than a Federal agency (3.3)
- Plan Bulldozer has proven to be an ineffective disaster response program (3.4)
- Elements of Plan Bulldozer hold potential for improving the mobilization

responsiveness of the construction industry, if combined with a standby agreement mechanism geared to mobilization rather than disaster relief purposes. These positive elements of the existing program include private initiative, emergency planning, resource assessment, and coordination (3.4)

- Private sector initiatives to improve mobilization potential are an attractive addition to government-sponsored efforts, but by definition, the Government has little control over these initiatives (3.5).

9.4 MACHINE TOOL POOL ORDER PROGRAM

- Pool orders were not "standby agreements" in the strict sense of the term, but they were intended to provide needed machine tools on a standby basis in anticipation of actual requirements (4.1).
- Pool orders comprised a large portion of the new machine tool orders during World War II and are commonly believed to have been instrumental in increasing machine tool production, but a variety of other programs also served to stimulate increased tool production and it is impossible to separate the impact of pool orders from that of the other programs (4.4).
- The ultimate cost of pool orders to the Government was extremely small relative to the size and duration of this program (4.4)

9.5 MACHINE TOOL TRIGGER ORDER PROGRAM (MTTOP)

- The MTTOP involves standby agreements between the Government and machine tool builders whereby the Government commits to purchase ordered tools if these tools are not otherwise purchased by private firms (5.1)

- The potential effectiveness of the MTTOP is reduced substantially by the failure to identify emergency requirements for machine tools (5.4)
- The potential effectiveness of the MTTOP could be enhanced by improved preparedness planning which permitted machine tool orders to be triggered at the same time or even before defense production increases were ordered (5.4)
- The MTTOP suffers from a number of problems, including: the chronic inadequacy of industrial preparedness planning resources; the inability of DoD to identify potential tool requirements; the lack of standby funding; and the poor economic health of the machine tool industry (5.5).

9.6 CIVIL RESERVE AIR FLEET (CRAF)

- The CRAF is composed of civil aircraft committed by contractual arrangement to augment U.S. military airlift capabilities during a period of substantially expanded peacetime military airlift requirements or a defense emergency (6.1)
- Four different standby agreements are tied together under CRAF auspices. These include: CRAF; CRAF Enhancement; the expansion option tied to annual airlift services; and Senior Lodger (6.1)
- The CRAF program is a cost-effective means to augment military airlift capabilities during an emergency (6.4)
- Use of civil air carrier assets for military purposes poses several problems. These include: the limited applicability of commercial assets to defense purposes; the changing nature of civil assets caused by economic conditions; and the availability of non-military personnel for military situations (6.5).

9.7 SURGE OPTION CLAUSES

- The surge option clause is a standby agreement between contractors and the Government to increase production of items currently being produced for the Government (7.1)
- Use of this option would eliminate the normal administrative delay of a number of weeks associated with establishment of a new contract (7.4)
- The availability of adequate authorization and funding are the biggest problems associated with use of the surge option clause (7.5)
- The surge option clause applies only to existing production contracts and, therefore, is not being used to increase the responsiveness of other potential producers (7.5).

9.8 STANDBY AGREEMENTS SYSTEMS MODEL

- Despite considerable differences among the six programs examined in this report, common elements relating to the establishment and activation of a standby agreement program are evident (8.1)
- Establishing a standby agreement involves some or all of the following elements: program authority; contracting authority; delegation of authority; requirements identification; priorities and allocation authority; creation and maintenance of a standby capability; and program review (8.2)
- Preparedness planning, including identification of potential requirements, is key to an effective standby agreement program (8.2)
- Application of priorities and allocation authority in the context of a standby agreement program is a means of ensuring

a more effective tool to enhance industrial responsiveness (8.2)

- Creation and maintenance of a standby capability is another critical component of a standby agreement program (8.2)
- Activating a standby agreement involves some or all of the following elements: determination of need; triggering authority; priorities and allocation authority; regulatory authority; and funding (8.3)
- The later in an emerging emergency situation that the need to activate a standby agreement program is recognized, the less effective the program is likely to be (8.3)
- A source of funding is needed before a standby agreement can be activated (8.3).

APPENDIX A

1938 LAW CREATING THE EDUCATIONAL ORDER PROGRAM
AND 1939 LANGUAGE AMENDING THIS LAW

A.1 1938 LAW

AN ACT to provide for placing educational orders to familiarize private manufacturing establishments with the production of munitions of war of special or technical design, noncommercial in character.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of War is hereby authorized to place educational orders for munitions of war of special or technical design, or both, noncommercial in character (hereinafter called "special munitions"), and essential accessories and parts thereof needed in the military service, with commercial concerns to familiarize commercial and manufacturing establishments with the manufacture of such munitions and such accessories and parts. In arranging for placing such educational orders, bids shall be solicited only from such establishments as, in the Secretary's judgment, will be competent in time of war to manufacture the particular class of special munitions with respect to which the bid is solicited. In the determination of which classes of special munitions are to be manufactured under this Act, and in the determination of which of the solicited bidders is to be awarded any contract, the Secretary shall have regard solely to the selection of such classes of special munitions and of such bidders as will, in his judgment, under all the circumstances, best serve the interest of the United States and best promote the cause of national defense. The Secretary of War shall enter into no contract under this section without the approval of the President.

SEC. 2. That the first of any such educational orders placed with any person, firm, or corporation for supplying any such munitions, accessories, or parts, may include a complete set of such gages, dies, jigs, tools, fixtures, and other special aids and appliances, including drawings thereof, as may be required for the production of such munitions, accessories, and parts in quantity in the event of an emergency. The title to all such facilities shall remain in the Government of the United States.

SEC. 3. That not more than one such educational order for the manufacture of the same, or substantially the same, article of special munitions shall be given to the same person, firm, or corporation within any period of three successive years. This section shall not prohibit the awarding of any contract during any war in which the United States is engaged.

SEC. 4. That, to carry out the provisions of this Act, there is authorized to be appropriated the sum of \$2,000,000 during each of the five fiscal years beginning with the fiscal year during which this Act is enacted.

A.2 1939 AMENDMENT

SEC. 13. That section 4 of the Act approved June 16, 1938, entitled "An Act to provide for placing educational orders to familiarize private manufacturing establishments with the production of munitions of war of special or technical design, noncommercial in character," be amended to read as follows:

"SEC. 4. That funds appropriated to accomplish the purposes of this Act shall be available for expenditures incidental to the accomplishment of the procurements made thereunder, including production studies, factory plans, and other production data and the storage and maintenance of gages, dies, jigs, tools, fixtures, and other special aids and appliances procured thereunder. To carry out the provisions of this Act there is authorized to be appropriated the sum of \$34,500,000, which amount shall be available during the fiscal years 1939, 1940, and 1941, and there is further authorized to be appropriated the sum of \$2,000,000 during each of the four fiscal years succeeding the fiscal year 1941."

APPENDIX B

EDUCATIONAL ORDER PROGRAM OBJECTIVES AND PROCEDURES
AS STATED BY THE WAR DEPARTMENT BOARD ON
EDUCATIONAL ORDERS

The general objective of the educational-orders' program is to prepare industry for the war production scheduled to it by procurement plans. In some cases it may be possible under the educational order to prepare a plant quite completely for its war mission. In others, the expense of complete equipment for war schedules will be so large that only a sample of each of the dies, fixtures, special tools, and other aids to manufacture can be secured with available funds. The minimum that is expected is one set of special equipment, with drawings, specifications, patterns, etc., permitting duplication, and such production and engineering data as is possible of development in time of peace to reduce to a minimum the time to get into quantity production in war. Available funds will be used to secure at least this minimum preparation of a smaller number of selected plants in preference to less preparation of a larger number.

The detailed objectives to be attained are summarized below. In general, it is not expected that all these objectives can be obtained or are even necessary with every order. Each case must be considered separately and the contracts so worded that the results obtained will be of the maximum benefit as regards preparation for the war production of the item. The detailed objectives are as follows: (1) Review of the design of the item with recommendations for adapting it to quantity-production methods where desirable.

(2) Suggestions as to revision of the drawings and specifications to agree with the above review.

(3) A production study to show the procedure to be followed in accomplishing the production schedules desired at

the plant and the methods of meeting the anticipated difficulties. These studies should be in the form of permanent records and among other items might include the following:

- (a) Plan for conversion of plant to get into production;
- (b) Itemized list of new machine tools required, both standard and special, together with other necessary important equipment, showing preferred and alternate sources of supply;
- (c) Itemized list of manufacturing aids such as dies, jigs, fixtures, and manufacturing gages. Where inspection gages are required, the Government will furnish a supply for its own use.
- (d) Schedules of components or accessories to be supplied from outside sources and work to be performed by subcontract, together with preferred sources of such material or services, where important;
- (e) Lists of materials required, together with the preferred sources of supply for those presenting difficulties;
- (f) Classification and number of skilled personnel necessary to produce the item at the rate desired;
- (g) A plan for securing in an emergency the key technical personnel, engineers, designers, mechanics and other skilled workmen necessary for accomplishing the war schedules of production allocated to the plant. The applicability of apprentice training, vocational schools, vestibule schools, dilution of labor, and other similar resources should be considered in preparing this plan;
- (h) Estimated cost to manufacture the item in quantity under the method proposed.

(4) Preparation of drawings and specifications for the special aids to manufacture required for the contemplated production schedule.

(5) Manufacture or procurement of at least so much of the special machinery, dies, jigs, fixtures, and manufacturing gages as are necessary to prove the acceptability of the proposed method of production. This equipment will become the

property of the Government upon completion of the order. The contract should provide for its storage and maintenance for a definite period after the order has been completed or for delivery f.o.b. plant for transportation to Government storage.

(6) Manufacture of only a sufficient number of the item by the method and with the equipment above provided to assure that the purposes of the educational order have been accomplished.

In formulating the program for educational orders, the following principles will govern the selection of an item:

1. It should be an essential military article or an essential accessory or part thereof.
2. It should be standard for war procurement.
3. It should have the probability of remaining standard a sufficient period of time to justify extensive procurement planning.
4. It should be noncommercial in character and of a type so exclusively military in characteristics that familiarity with its manufacture can be obtained only by its actual production.
5. It should be required in such quantities as justify the development of mass-production methods for manufacture.
6. Priority will be given those items which offer the greatest industrial problems in meeting the mobilization program of the War Department. In general, the list will include only items requiring longer than six months to get into quantity production.
7. Educational orders cannot be given for items to be produced at Government establishments. Construction of new plants, plant surveys, or other field work not involving actual production of material cannot qualify for educational orders.
8. While the act prohibits more than one order to the same firm for the same or substantially the same item in any 3-year period, there is nothing prohibiting several different items in the same plant even in the same year.

In the selection of a facility, bids for an educational order will be solicited from a list of bidders competent to manufacture the item in an emergency. Before issuing proposals, the list of bidders it is intended to circularize will be submitted to the Assistant Secretary of War for approval.

The list of bidders for educational orders normally will be selected from the facilities allocated for war-time production of the item concerned. In exceptional cases, and for sufficient reasons, unallocated facilities may be included. In the event that an unallocated facility is selected to receive an educational order, steps will immediately be taken to secure allocation of that facility.

A concern, to qualify as competent to manufacture in time of war the item proposed for an educational order, should meet at least the following requirements: 1. It should have demonstrated such financial and managerial stability as to warrant the conclusion that it will remain a real asset in national defense after completing an educational order. 2. It must be of such size that the proposed war order for which it is being educated will not require material expansion of plant. 3. It should be a manufacturing concern as distinguished from a mere assembling plant for components fabricated elsewhere. This will not preclude a bona fide manufacturing concern from subcontracting certain components to its usual suppliers, as this commercial practice spreads educational orders down through secondary sources and broadens the scope of the program.

The principles covering advertising for bids are set forth below: Before advertising for bids, the chiefs of the responsible supply arms or services will assure themselves

that reproduction rights for the educational orders program are arranged for. The preparation of specifications and other technical data, advertising, preparation of contracts, as well as the inspection, acceptance, and payment for the products will be the responsibility of the chiefs of supply arms and services, under the supervision of the Assistant Secretary of War. All invitations for bids will be reviewed by the Assistant Secretary of War before issuance by the supply arms or services concerned. All invitations for bids will include the following clauses:

"The supplies included in this invitation for bids are special munitions within the meaning of the act of Congress, approved June 16, 1938 (Public No. 639, Seventy-fifth Congress) as amended by section 13 of the act approved April 3, 1939 (Public No. 18, Seventy-sixth Congress, 1st Session), to provide for placing educational orders. Bids will be received only from those who have been selected by the Secretary of War and who have been specifically invited to bid. If a purchase is made, the award will be made to such bidder as will, in the judgment of the Secretary of War, under all the circumstances, best serve the interest of the United States and best promote the cause of national defense. Any contract entered into as a result of this invitation will be subject to the approval of the President. Conditions usually applicable to purchases by the Government which are in conflict with these special conditions are modified to the extent necessary to remove such conflict."

"With reference to Article 101 (a) of the Secretary of Labor's Regulations No. 504, issued under authority of the Public Contracts Act approved June 30, 1936 (Walsh-Healey: 49 Stat. 2036), which defines a manufacturer, it has been held by the Department of Labor in a ruling dated December 3, 1938,

Division of Public Contracts, that the Public Contracts Act and the regulations of the Secretary of Labor prescribed thereunder do not prevent the award of contracts for educational orders even though such contracts be awarded to private manufacturing establishments that have not therefore produced such materials, supplies, articles, or equipment."

"It has been determined by the Department of Labor in decision of the Division of Public Contracts dated February 13, 1939, that there is no obligation on the contractor in an industry which has not been made the subject of a wage determination under the provisions of the Public Contracts Act approved June 30, 1936 (Walsh-Healey: 40 Stat. 2036), to refrain from making such deductions as his employees may want in so far as the provisions of the Public Contracts Act are concerned. The deduction prohibition does not apply except in industries where there has been a minimum wage determination by the Secretary of Labor."

"It has been jointly determined by the Acting Secretaries of Interior and of the Treasury under date of February 15, 1939 that an educational order as authorized by the Act of June 16, 1938 is not a 'public work' as contemplated by the Act of June 13, 1934 (Nonrebate Act: 48 Stat. 948) and, accordingly, neither the Act of June 13, 1934, nor joint regulations promulgated by the Secretary of Interior and the Secretary of the Treasury, are applicable to such orders."

"In view of the fact that the site of the work to be performed under the terms of any contract resulting from this invitation for bids is unknown, the provisions of the Act of August 30, 1935 (Bacon-Davis 49 Stat. 1011) would not be applicable to any such contract."

The purposes of the Educational Orders Act may be accomplished in certain cases either through the act or in connection with current procurement orders. In this connection, attention is invited to the provision in the Military Appropriation Act for 1940 reading as follows:

"The appropriations contained in this act which are available for the procurement or manufacture of munitions of war of special or technical design may be used for the development and procurement of gages, dies, jigs, and other special aids and appliances, production studies, factory plants, and other production data, including specifications and detailed drawings, in accordance with the provisions of sections 120 and 123 of the National Defense Act, as amended."

Consideration should be given, therefore, in the case of each important item, whether the "education" can be obtained through current production contracts or if an educational order is necessary.

APPENDIX C

MACHINE TOOL POOL ORDERS, NEW ORDERS,
AND SHIPMENTS, 1941-1945

APPENDIX C

MACHINE TOOL POOL ORDERS, NEW ORDERS, AND SHIPMENTS, 1941-1945

Year Month	New Orders ¹ (\$ mil)	Pool Orders ² (\$ mil)	% Pool New (\$)	New Orders ³ (Units)	Pool Orders ⁴ (Units)	% Pool New (Units)	Ship- ments ⁵ (\$ mil)	Ship- ments ⁶ (Units)
<u>1941</u>								
Jan		0			0		52.5	
Feb		3.2			500		55.0	
March	227.8	9.1	5.0	57,964	1,440	3.0	56.25	26,000
		12.3			1,940		163.8	
Apr		7.3			1,153		57.5	
May		2.5			390		62.5	
June	215.1	11.8	10.0	54,733	1,870	6.0	65.0	29,400
		21.6			3,413		185.0	
July		51.5			8,174		66.25	
Aug		39.5			6,263		68.75	
Sept	278.7	13.4	37.0	70,916	2,123	23.0	72.5	32,900
		104.4			16,560		207.5	
Oct		2.2			356		75.0	
Nov		40.3			6,390		75.0	
Dec	291.4	40.4	28.0	74,148	6,400	18.0	85.0	37,000
		82.9			13,146		235.0	
Total		221.8						
<u>1942</u>								
Jan	107.5	94.4	88.0	29,200	12,500	43.0		19,800
Feb	127.4	242.9	190.0	27,300	32,600	119.0		20,200
March	338.3	170.2	50.0	69,200	28,300	41.0		23,200
	573.2	507.5	88.0	125,700	73,400	58.0		63,200
Apr	254.3	72.0	28.0	58,700	14,800	25.0		24,200
May	167.0	107.5	64.0	44,200	23,100	52.0		24,600
June	139.4	76.6	55.0	33,600	12,400	37.0		25,400
	560.7	256.1	46.0	136,500	50,300	37.0		74,200
July	121.2	35.0	29.0	29,700	5,400	18.0		27,300
Aug	97.0	20.0	21.0	23,200	3,400	15.0		28,100
Sept	74.3	65.0	87.0	20,000	8,400	42.0		28,400
	292.2	120.0	41.0	72,900	17,200	24.0		83,800
Oct	66.5	46.5	70.0	18,500	8,600	46.0		29,400
Nov	76.1	105.0	138.0	17,300	15,600	90.0		27,100
Dec	56.1	54.7	98.0	15,200	8,200	54.0		29,500
	266.0	206.2	77.0	51,000	32,400	63.0		86,000
<u>1943</u>								
Jan	49.0	20.7	42.0	13,500	4,100	30.0		25,900
Feb	64.1	42.3	66.0	18,500	6,500	62.0		25,400
March	85.0	39.0	46.0	19,200	6,400	33.0		29,100
	198.1	102.0	51.0	51,200	17,000	33.0		80,400
Apr	57.3	27.5	48.0	23,500	3,500	15.0		26,900
May	48.2	18.3	38.0	12,500	3,100	25.0		25,900
June	39.0	3.1	8.0	11,100	300	3.0		24,300
	144.5	48.9	34.0	47,100	6,900	15.0		77,100
July	29.0	27.6	95.0	9,900	3,500	15.0		21,200
Aug	33.5	0		10,200	0			19,800
Sept	32.0	0		9,600	0			19,300
	94.5	27.6	29.0	29,700	3,500	12.0		60,300
<u>1944-1945</u>								
Dec	62.5							
Jan	59.0	34.0	28.0					
	121.5							

FOOTNOTES

- ¹ New orders (\$) for 1941, are estimated from Joint Committee on Defense Production, Progress Report #13, Machine Tools January 23, 1952, chart entitled "Total New Orders and Shipments."; New Orders (\$) 1942-1943, and Dec-Jan 1944-1945 found in U.S. Census. "Facts for Industry - Machinery and Equipment, 1937-1947," October 31, 1945, Department of Commerce Library.
- ² Pool Orders (\$) for 1941 were derived from saved Pool Order (units) data (see FN 4) and Av. Mo. unit costs derived from 1942 shipments data. $\text{Pool Order (\$)} = \text{Pool Order (units)} \times \$6,302$. Pool Order (\$) for 1942 and 1943 found in "Pool orders received, pool orders cancelled, etc." January to December, 1942-1943, War Production Board Records RG 179, Box 152, U.S. National Archives. Pool Orders (\$) for Dec-Jan, 1944-1945 cited in Harless Wagoner, The U.S Machine Tool Industry from 1900-1950, Cambridge, 1966, p. 267.
- ³ New orders (units) for 1941 were derived by dividing New Order (\$) by average monthly unit cost of new orders, 1942. New orders (units) for 1942 and 1943 found in "Facts for Industry." 1937-1947, op. cit.
- ⁴ Pool order (units) for 1941 found in "Memorandum for the Army and Navy Munitions Board," from E.R. Henning, Dec. 4, 1941, ANMB Central File, RG 225, Box 135, U.S. National Archives. Pool orders (units) for 1942 and 1943 found in "Pool orders received, pool orders cancelled, etc," op cit.
- ⁵ Shipments (\$) for 1941 were derived from Industry Report, "Machine Tools," February 1942, chart entitled "U.S. Monthly Production and Exports of Machine Tools," Department of Commerce Library; Shipments (\$) for 1942 and 1943 found in "Facts for Industry," op. cit.
- ⁶ Shipments (units) for 1941 were derived by dividing 1941 shipments (\$) by the Average monthly unit cost for 1942: $\text{Shipment (units)} = \text{Shipment (\$)} \div \$6,302$. Shipments (units) for 1942 and 1943 found in "Facts for Industry," op cit.
- ⁷ February 1942 Pool Orders, in both unit and value forms, are anomalous, in that they are greater than new orders. We assume that pool orders are a subject of new orders. The data supports this assumption with few exceptions. (see FN 8) When data is calculated on a quarterly basis, as in Figures 4.3-2 thru 4.3-5 the problem is assuaged.

⁸The relationship between Pool Orders (\$) and New Orders (\$) for November, 1942 is anomalous in that Pool Orders exceed New Orders. Unlike the instance noted in footnote 7 above, however, the problem is not assuaged by relying on quarterly data. We have, therefore, used a quarterly figure derived from the Joint Committee on Defense Production's "Progress Report #13," op. cit.

APPENDIX D

STANDBY AGREEMENT LANGUAGE CONCERNING THE CRAF
IN THE CONTRACT BETWEEN THE
MILITARY AIRLIFT COMMAND AND EACH CRAF CARRIER

PART I - THE SCHEDULE

SECTION C - DESCRIPTION/SPECIFICATION

1. Additional Services to be Furnished.

a. Expansion - Peacetime Operations. The Government may from time to time during the period of performance of this contract order additional transportation services at prices determined in accordance with paragraph b. (6) below and subject to the contract provisions applicable to the same or similar services described in SECTION B. The right of the Government to order such additional services shall be subject to the Contractor offering capability. The parties agree that the Government is not undertaking any obligation to issue orders for additional services under this paragraph a. and will issue such orders only when it is considered in the best interests of the Government.

b. Expansion - Incremental Activation and Utilization of the CRAF. The Contractor grants the Government the right to increase the Category B type services (transportation of passengers and/or cargo in full plane loads on other than a carrier's regularly scheduled commercial flight) to be performed hereunder to and including the full capability of all aircraft listed in Attachment B, in accordance with the following paragraphs:

(1) Stage I - During the period of this contract, and in time of substantially expanded peacetime military airlift requirements as determined by the Commander in Chief Military Airlift Command (CINCMAC), the Contractor guarantees the availability to the Government of airlift capacity up to the full capability of all aircraft listed in Column I of Attachment B.

(2) Stage II - In time of airlift emergency, as determined by the Secretary of Defense or his designee, the Government may increase the services to be performed up to the full capability of all aircraft listed in Column II of Attachment B.

(3) Stage III - If the CRAF has been activated by order of the Secretary of Defense issued:

(a) In time of war or during an unlimited national emergency or civil defense emergency declared by the President or the Congress of the United States; or

(b) In a situation short of (a) above, if the order activating CRAF is issued with the approval of the Director, Federal Emergency Management Agency (FEMA), or of any official designated by the President to coordinate all civil and defense mobilization activities;

the Government may increase the services to be performed up to the full capability of all aircraft listed in Column III of Attachment B. Performance of services with the Contractor's CRAF aircraft while CRAF is activated, and payment for those services, will be accomplished under the terms of this contract. CRAF is an abbreviation for Civil Reserve Air Fleet. The CRAF Program is a national plan (based on The Defense Production Act of 1950 and Executive Order 11490, as amended, to utilize airlift resources of U.S. air carriers, when needed to support Department of Defense airlift requirements in an airlift emergency or national emergency. The CRAF is composed of U.S. registered aircraft owned or controlled by the U.S. "air carriers" specifically allocated (by FAA registration number) for this purpose by the Department of Transportation. As used in this contract, CRAF aircraft are those allocated aircraft, which the carrier owning or otherwise controlling them has contractually committed to the Department of Defense, under stated conditions, to meet varying emergency needs for civil airlift augmentation of the military airlift capability. The contractual commitment of the aircraft includes the supporting resources required to provide the contract airlift services. Reference is also made to Memorandum of Understanding By and Between the Secretary of Defense and the Secretary of Transportation with Respect to the

Civil Reserve Air Fleet Program, dated 7 May 1981, and MACR 55-8, The Contractor's obligation to perform services hereunder during any period when the CRAF is activated, as described in this subparagraph b. (3), is expressly conditioned on there being in existence a valid determination made pursuant to the provisions of Public Law 85-804 and Executive Order 10789, as amended, that the national defense will be facilitated by obligating the Government to indemnify the Contractor under the terms and conditions stated in paragraph 5 of SECTION H - Indemnification and Insurance. ←

(4) In periods of substantially expanded military airlift requirements, or in a period of airlift emergency, described in subparagraphs (1) and (2) above, the aircraft listed in the applicable column of Attachment B must be available to perform the additional services requested by the Government on 24 hours' notice. Upon activation of CRAF, the aircraft listed in Column III of Attachment B which are requested by the Government, must be positioned where directed by the Government, with maximum fuel aboard, consistent with aircraft performance limitations and mission requirements, as quickly as possible but in no event more than 48 hours after the Contractor receives the request from the Government for the aircraft required. The Government, in ordering services under the provisions of this paragraph b. will, to the extent practicable and to the extent that military requirements permit, order services from all MAC airlift service Contractors on an equitable pro rata basis, giving consideration to each Contractor's aircraft commitment to the stage of requirements which has been activated, and giving consideration to the amount of capacity which each Contractor has already scheduled for fixed and expansion service under the contract.

(5) The Contractor agrees that prior to or during any period described in subparagraphs (1), (2) or (3) above it will provide and maintain a minimum of four crews per aircraft listed on Attachment B of this contract, exclusive of those with Reserve or National Guard commitments, and material to enable at least ten (10) hours per day utilization of each aircraft listed in the applicable column of Attachment B. This includes navigators for all aircraft listed in Columns I, II and III of Attachment B if these aircraft require navigators to be capable of long range, over-ocean operations. If during any period described in subparagraph (3) above, the Contractor for reasons beyond its control is unable to provide either the personnel or the material necessary to operate ten (10) hours per day it will still be obligated to provide the aircraft listed in Column III of Attachment B, and the Government will have the right to operate such aircraft. In such event, the compensation, which would otherwise be paid to the Contractor under the terms of this contract, shall be reduced by the amount which the Contracting Officer finds to represent the services and material not furnished by the Contractor, and related profit. The Contracting Officer's findings shall be considered a finding of fact within the meaning of the Disputes clause of this contract.

(6) The Contractor shall be paid for expanded services provided pursuant to paragraphs a. and b. (1) and (2) above at the then current MAC negotiated uniform rate established in accordance with the MOU as referred to in PART I, SECTION G, or in accordance with the rates set forth in SECTION B, whichever are applicable. For the purposes of computing payments for expanded services, the mileages set forth in the "MAC Mileage Manual," effective 1 October 1981 incorporated herein by reference, will be used. The Government shall also have the right at its sole option, to order any fixed or expansion service under the contract for performance in accordance with and at the rate specified by the contractor for service to the public which will, in the judgment of the Contracting Officer, meet the Governments need. In the event that the CRAF has been activated as described in subparagraph b. (3), and the Government thereafter increases the services to be performed under this contract, the Contractor shall be paid for all services thereafter performed under this contract at prices established by negotiation between the Contractor and the Contracting Officer pursuant to General Provision 2, "Changes." In establishing such prices it shall be presumed, unless the Contractor presents evidence establishing that a different rate of compensation is appropriate, that prices computed in accordance with the then current MAC negotiated uniform rate

applied to the mileage set forth in the MAC Mileage Manual for the shortest route over which the type of aircraft involved operates, constitute equitable prices for such services. In connection with evidence so presented by the Contractor, consideration will be given but not limited to, reasonable starting and winding up costs, including the following: (i) Cost of ferrying and positioning aircraft and other equipment, to include ground support equipment for wide-bodied aircraft (e.g. B747 etc.); (ii) Cost of relocating personnel, including expenses of such personnel during such relocation in accordance with applicable labor agreements or Contractor's established policy; (iii) Cost incurred in connection with the termination and liquidation of commitments; and (iv) Training and replacement training costs.

(7) If, during the period of this contract, including any extension pursuant to this subparagraph (7), the Government gives notice to the Contractor of the declaration of an airlift emergency or national emergency, or of the activation of CRAF, as described in subparagraphs (2) or (3) above, the parties agree that the giving of such notice will operate to extend this contract for the purpose of permitting the Government to order additional airlift services throughout the period of the emergency, or the CRAF activation, and for up to six months thereafter. (See SECTION F, paragraph 1.b. for extension of the contract when no emergency has been declared.)

(8) (a) The Contractor must at all times during the contract period, including any extension as described in subparagraph (7) above, or in paragraph 1.b. of SECTION F, maintain control over the aircraft listed in Columns I, II and III of Attachment B, in accordance with the applicable provisions of SECTION C to the extent necessary to assure the Contractor's ability to meet its guarantee under subparagraph (1) above and its obligations under subparagraphs (2) and (3) above. The Contractor shall, at any time or times during the contract period, furnish to the Contracting Officer upon demand, evidence that demonstrates the required control of said aircraft. The Contractor shall not part with control of any aircraft accepted by MAC and listed in Columns I, II and III of Attachment B unless the loss of control is beyond the control of the Contractor, such as aircraft accident, or the Contracting Officer, at his option, has agreed to the substitution in Columns I, II or III of other acceptable CRAF aircraft, as appropriate, and has accomplished such substitution by Change Order. Examples of failure to maintain control within the intent of this paragraph are as follows: (1) failure to retain U.S. registry, (2) leasing of aircraft to foreign carriers, (3) dry leasing of aircraft to U.S. airlines or aircraft operators not possessing a temporary or permanent certificate issued by the CAB and (4) removal of aircraft from active utilization (in storage, out of service or parked) and not flyable for reasons other than maintenance, repair or overhaul. Aircraft temporarily removed from active utilization that are mission capable within 24 hours as required by paragraph 1.b.(4) above are considered to meet the control requirements of this contract. The parties agree that failure of the Contractor to maintain control of any aircraft listed in Columns I, II and III, unless loss of the control is beyond the control of the Contractor, such as aircraft accident, or approved by the Contracting Officer, will constitute failure "to have a currently existing capability to perform services called for", and will justify termination of this contract under General Provision 9, "Default". In lieu of default, the Government, at its option, may, by Change Order, reduce its purchase of airlift services for passengers or cargo, or both, during the remaining period of the contract by an amount equal to the award share for the remaining period of the contract attributable, under the formula used to determine the original contract award entitlement, to the aircraft removed from the MAC contract creditable mobilization base and deleted from Attachment B. Nothing in this subparagraph (8)(a) shall limit the right of the Contracting Officer to terminate this contract for cause for reasons other than failure to maintain control of the above mentioned aircraft.

(b) Except for those aircraft accepted by MAC and listed in Columns I, II and III of Attachment B, control of which is provided for in subparagraph (8)(a) above, the Contractor is not required to maintain control of the aircraft unilaterally allocated to CRAF and listed in Attachment B, except that upon activation of CRAF the Contractor must obtain the consent of the Contracting Officer to any relinquishment of control of aircraft listed in Column III. At all other times the Contractor will give prompt notice to the

Contracting Officer of any relinquishment of control of aircraft unilaterally allocated to CRAF and listed in Column III of Attachment B. Any such aircraft will be deleted by Change Order from Attachment B if the Contractor relinquishes control. Any aircraft which is in fact controlled by the Contractor may be added to Column III by Change Order.

(9) Administrative Contracting Officer (ACO) Responsibilities Upon Activation of the CRAF. At any time during periods of airlift emergency or national emergency as determined by the Secretary of Defense or when Stage III of the CRAF has been ordered activated, as described in subparagraphs (2) or (3) above, the MAC Crisis Action Team (CAT) through the Contracting Officer may activate any or all of the Senior Lodger Stations for the purpose of monitoring, controlling and servicing missions being performed under this contract. When activated the CAT will assume and carry out mission scheduling responsibilities for operations under this contract. Contractor agrees to comply with the orders and directives of the ACOs which will be, to the extent compatible with the then existing emergency, in accordance with Volume I (U) and Volume II (S), MACR 55-8. Any such order or directive which changes any provision of this contract or which is not provided for by this contract will be a change within the meaning of General Provision 2, "Changes".

(10) During periods of CAT activation, the primary means of communication between the Contractor and the CAT will be through Aeronautical Radio, Inc., (ARINC) Electronic Switching System (ESS) with alternate means of communication as listed in Parts One and Two, Attachment 3, MACR 55-8. The Contractor shall, at its own expense, provide and maintain all facilities required to communicate with the CAT except for such facilities that are required between the CAT and ARINC ESS which will be provided by the Government.

c. Technical Assistance in Support of the CRAF.

(1) Services to be Performed. Upon receipt of a Change Order from the Contracting Officer, the Contractor shall furnish to the Government technical advice and information designed to provide maximum coordination, expedition, efficiency, and effectiveness in the utilization of the CRAF. Such technical advice shall consist of the furnishing of technical personnel to participate in meetings and exercises and preparing or assisting in the preparation of informational material, and including but not limited to manuals, documents, listings, reports, specifications and other data as required. It is expressly understood and agreed that all information, assistance, and services to be provided to the Government by Contractor hereunder shall be solely of an advisory or consulting nature and this agreement does not contemplate, require, or authorize any agreement between the Contractor and other air carriers which may have similar agreements with the Government.

(2) DD Form 489 - Geneva Convention Identity Card. The DD Form 489 - Geneva Convention Identity Card, commonly referred to as the Geneva Convention Card, will be issued to carrier personnel in accordance with MACR 55-8, paragraph 9-8.

(3) Completion of Services. Change Orders issued under the provisions of subparagraph (1) of this paragraph c, involving the preparation of information material such as manuals, documents, listings, reports, specifications and other data, shall contain a date for completion of the services called for thereunder which represents a current estimate of the time reasonably required to provide the services. It is further understood that the stated completion date may be extended at the discretion of the Contracting Officer for good and sufficient reason, including, but not limited to: acts of God or of the public enemy; acts of the Government in either its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes; freight embargoes; unusually severe weather; an underestimation of the complexity or extent of the services ordered; the requirement for use of the Contractor's technical and managerial personnel in the performance of other work under this contract or associated therewith; and when determined to be in the best interests of the Government; but in any such case the need for additional

time for completion of the services must be without the fault or negligence of the Contractor. The parties additionally further understand that this subparagraph (3) shall be applicable to the performance of Change Orders of the type above stated in lieu of the provisions of General Provision 9, "Default". The Contractor will be paid for services performed hereunder at prices established by negotiation between the Contractor and the Contracting Officer pursuant to General Provision 2, "Changes".

d. Special Rate One-Way Category B Services. If the Contractor performs a one-way charter flight carrying nonmilitary traffic for a nonmilitary user, the Government may under the terms of this contract, charter the return flight of that aircraft at a rate that is less than the MAC uniform negotiated rate. It is understood that the contract rate for this purpose shall be in line with a rate in fact available to the general public for equivalent services. If, subject to the above restrictions, the parties hereto agree to contract hereunder for such a return flight, a Service Order shall be issued by the Contracting Officer in accordance with paragraph 3. below. It is also understood that the special rate charter transportation provided under this paragraph is Category B service in all respects except for the rate at which it is provided, and that such transportation is provided pursuant to the terms of this contract.

e. Contractor's Guarantee Under Stage I of CRAF. If the Contractor does not provide additional airlift services in the manner set forth in this contract, to the extent ordered by the Contracting Officer during any period described in subparagraph (1) of paragraph b. above, such default shall constitute a failure "to have a currently existing capability to perform services called for" and will justify termination of this contract under General Provision 9, "Default". In the case of such failure, this contract may, notwithstanding the provisions of General Provision 9, be terminated forthwith without any preceding notice specifying the failure or allowing a ten day period in which to cure such failure. In lieu of termination for cause, as stated above, the Government, at its option, may by Change Order reduce its purchase of airlift services for passengers or cargo, or both, for the remaining period of this contract by an amount equal to three times the amount representing the price of airlift services (computed at the MAC negotiated uniform rate in effect at the time of the default) which the Contractor failed to provide. Further, in lieu of either of the above, the Government, at its option, may reduce the amount of the award to the Contractor of MAC international airlift services contracts during the fiscal year following the period of this contract, by an amount equal to three times the amount representing the price of airlift services (computed at the MAC negotiated uniform rate in effect at the time of default) which the Contractor failed to provide. The guarantee of the Contractor to provide airlift services in the manner set forth in this contract, during any period described in subparagraph (1) of paragraph b. above, is not subject to excuse for failure to perform for any of the reasons set forth in paragraph (c) of General Provision 9.

2. Diversions and Conversions.

a. Diversion The Contractor grants the Government, during the times described in paragraph 1.b.(1), (2) and (3) the right to divert any trip to a route or area of operation other than as specified in the applicable item description. At all other times the Contractor grants the Government the right to divert, subject to notice given not less than 24 hours prior to departure, up to (i) 25 percent of the trips required to meet the initial guaranteed volume of traffic as set forth under SECTION B above plus (ii) any of the expanded services ordered pursuant to paragraph 1.a., to any route within the same area of operation; i.e., the Atlantic area (between the CONUS and points in Europe, Africa and the Near East), or the Pacific area (between the CONUS and points in the Pacific and the Far East).

b. Conversion. Subject to at least 24 hours notice prior to scheduled departure of any trip involving a convertible aircraft, and subject to such

notice and to the Contractor offering capability in the case of a trip involving a passenger or cargo aircraft, whether such trip was scheduled for services purchased under SECTION B or under paragraph 1. or 2.a. of this SECTION C, the Government shall have the option to convert to a passenger or cargo trip (but not to a convertible, i.e., cargo in one direction and passenger in the opposite direction) trip, including a round trip to a one-way, and vice versa. During periods other than declared emergencies as described in paragraph 1.b. the Government will give the Contractor 72 hours' notice prior to scheduled departure time for conversion of a cargo trip to a passenger trip.

c. At the request of the Contracting Officer, the Contractor will furnish in writing such information and data which the Contracting Officer deems necessary to enable the Government to determine whether to exercise its rights under this paragraph 2., and exercise of such rights shall be by issuance of a Service Order as described in paragraph 3. The data and information to be furnished to the Contracting Officer as indicated in the preceding sentence shall be such as to facilitate agreement upon prices pursuant to paragraph 3. below, which prices would be incorporated into the contract should the Government choose to exercise its rights under this paragraph 2.

d. The Contractor shall be paid for changed services of the types contemplated by paragraphs a. and b. of this paragraph at prices established by negotiation between the Contractor and the Contracting Officer pursuant to General Provision 2, "Changes"; provided, however, that in establishing such prices it shall be presumed, unless the Contractor presents evidence establishing that a different rate of compensation is appropriate, that prices computed in accordance with the then current MAC negotiated uniform rates, applied to mileages set forth in the "MAC Mileage Manual," effective 1 October 1981, constitute equitable prices for such services.

9. Equipment Requirements.

a. The Contractor's aircraft allocated to the Civil Reserve Air Fleet (CRAF) shall at all times meet the requirements specified in SECTION E, Chapter 2, of the MACR 55-8, Volume I. In accordance with SECTION F, Chapter 2, MACR 55-8, Volume I, the Contractor shall have on hand sufficient quantities of the specified items for each of its Long Range International CRAF allocated aircraft in the event of any emergency described in paragraph 1 of this Section.

b. Navigation Route Kit. During a Stage III CRAF activation the Contractor is required to have aboard each CRAF allocated aircraft Flight Information Publications (FLIP's) and/or charts, approved by FAA, sufficient to conduct air navigation in the applicable areas as specified in Attachment 4, MACR 55-8, Vol 1. The Government will provide DOD FLIP's and charts to the Contractor when needed to satisfy this requirement. Those Contractors receiving FLIP's and charts from the Government may use them during peacetime commercial and military contract operations; however, they must be maintained in a ready status to support any stage of CRAF activation.

c. HF Radio Communications. The Contractor shall, at all times, keep its long-range international CRAF allocated aircraft capable of high-frequency (HF) radio transmission and reception on worldwide frequencies.

d. Availability of Navigation Route Kit Items. Navigation Route Kit items required by Attachment 4, MACR 55-8, can be obtained by submitting a written request to HQ MAC/XPW, Scott AFB, Illinois 62225.

APPENDIX E

MEMORANDUM OF UNDERSTANDING BETWEEN
THE DEPARTMENT OF DEFENSE AND
THE DEPARTMENT OF TRANSPORTATION
CONCERNING THE CIVIL RESERVE AIR FLEET PROGRAM

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF DEFENSE
AND
THE DEPARTMENT OF TRANSPORTATION
CONCERNING
THE CIVIL RESERVE AIR FLEET PROGRAM

WHEREAS the Secretary of Transportation is responsible under Executive Order 11490, as amended, 3 CFR 820 (1966-1970 Compilation), reprinted in 50 USCA App. 2292 (Supp. 1980), for developing plans to utilize civil air transportation resources to meet civil and military needs during national and defense-oriented emergencies; and

WHEREAS the Secretary of Defense has developed a cooperative plan, entitled the Civil Reserve Air Fleet (CRAF) program, with the civil air carrier industry to augment Department of Defense (DOD) organic airlift capability; and

WHEREAS the CRAF program consists of three stages--Stage III that includes all of the aircraft in the program and Stages II and I that embrace progressively lesser numbers of aircraft--based on plans approved by the Organization of the Joint Chiefs of Staff; and

WHEREAS the CRAF program may be incrementally activated by order of DOD to meet ascending levels of DOD requirements up to and including the most demanding level of military airlift requirements; and

WHEREAS, under the CRAF program, U.S. civil air carriers normally enter into annual contracts with DOD and voluntarily commit their aircraft to the several CRAF stages; and

WHEREAS all the civil air carrier aircraft currently committed to the CRAF Stage III are allocated to DOD by the Department of Transportation (DOT), ~~as amended, or may be allocated to DOD by DOT~~

NOW, THEREFORE, it is agreed between DOT and DOD as follows:

1. The Department of Defense shall:

a. Determine the number and types of civil air carrier aircraft needed in the CRAF program to augment military airlift resources in the most demanding defense-oriented emergencies, such as Stage III, and for less demanding defense-oriented emergencies, Stages II and I.

b. Advise DOT annually of the numbers and types of aircraft needed for allocation to the CRAF Stage III in terms of the most demanding, major case outbound airlift activity that DOD expects to support. The data will be provided in passenger miles and ton-miles for all international long-range passenger and cargo segments, in ton-miles or frequency of service for the international short-range segment, and in numbers and types of aircraft for the Alaskan and domestic segments. In addition, load factors and flying hour utilization rates used in military planning, upon which the requirements for numbers and types of CRAF aircraft were developed, will be provided. The data will indicate the time-phased movement requirement through a 180-day period.

c. Provide timely advice to the Secretary of Transportation of the intention of DOD to activate any stage of the CRAF.

d. On a monthly or more frequent basis, or as otherwise appropriate, advise DOT of:

(1) The number of aircraft committed to each stage of the CRAF by carrier, type, and segment of planned use.

(2) The number of aircraft utilized, identified by their U.S. registration number, carrier, type, and segment of use following activation of any stage of the CRAF.

(3) The availability of any CRAF aircraft, after any stage of the CRAF has been activated, for temporary civil use.

(4) The release of any CRAF aircraft after the CRAF mission or missions for which the aircraft was activated has been accomplished.

(5) Desired adjustments within the existing CRAF allocation, identifying additions or deletions of specific aircraft by type and U.S. registration number, the civil air carrier involved, and segment of use.

e. If advised by DOT that the sizing of Stages I and II will have a significant adverse impact on civil air carrier capability to provide essential service, DOD will adjust the sizing within DOT-determined nonadverse limits, or provide DOT with justification for the adverse impact sizing level.

2. The Department of Transportation shall:

a. Establish priorities and allocate civil air carrier aircraft to CRAF Stage III, in accordance with established national objectives. DOD requirements will be given a high priority in any allocation situation where overall civil and military airlift requirements exceed civil airlift capacity.

b. Use the time-phased movement requirements furnished pursuant to paragraph 1.b. for planning purposes only.

c. Allocate aircraft to CRAF Stage III by manufacturer, model and series, U.S. registration number, the carrier that owns or otherwise controls the aircraft, and the intended CRAF segment of use.

d. Advise DOD in the event that DOT plans to allocate to CRAF Stage III fewer aircraft of any type than the requirement stated by DOD pursuant to paragraph 1.b. and provide the rationale for such reduced allocations.

e. Notify DOD if the size of any CRAF incremental stage, as established by DOD, other than Stage III, will have a significant adverse impact on the civil air carriers' capability to provide essential service. When requested by DOD, provide the maximum number of aircraft by type and/or by individual carrier fleet levels that, if incrementally committed, will not have such an adverse impact.

f. Provide, through the Federal Aviation Administrator, aviation hull and liability insurance coverage for the CRAF program, as appropriate, pursuant to title 13 of the Federal Aviation Act of '1958, as amended, P.L. 85-726, Title XIII, 72 Stat. 800, current version of 49 USCA 1551, et seq. (1976 and Supp 1980).

3. ~~Activation of CRAF Stage III. This portion of the memorandum of understanding (MOU) between the Department of Defense and the Department of Transportation regarding the CRAF allocation of aircraft for the purpose of providing essential services to the United States is hereby agreed to by the Secretary of Defense and the Secretary of Transportation.~~

4. Activation of CRAF Stage III. CRAF Stage III may be activated by order of the Secretary of Defense or the Secretary's designee:

a. In time of war or during a defense-oriented national emergency declared by the President, or in time of national emergency declared by the Congress of the United States.

b. In a national security situation short of a declared defense-oriented national emergency.

c. Activation of CRAF Stage III presumes that the Secretary of Transportation has been authorized to exercise Presidential priorities and allocations authority.

5. Activation of CRAF Stages I and II. CRAF Stages I and II may be activated during a national security situation, short of a declared defense-oriented emergency, when expanded civil augmentation of military airlift activity is required. If the size of CRAF Stages I and II, as established by the DOD and Military Airlift Command (MAC) Airlift Services Contracts, has been determined by the DOT, in accordance with paragraph 2.e., above, to have an adverse impact on the civil air carriers' capability to provide essential service, activation of that portion of Stages I and/or II declared by the DOT to create an adverse impact will require the prior exercise of priorities and allocation authority by the Secretary of Transportation. Activation of that portion of Stages I and II not previously declared as adversely impacting upon essential services will not require prior exercise of priorities and allocation authority by the Secretary of Transportation. For the purpose of this MOU and in accordance with established CRAF policy arrangements both within the DOD and between MAC and the civil air carriers participating in CRAF, the Secretary of Defense or his designee may activate CRAF Stages I and II.

6. Points of Contact

a. Department of Defense

(1) The Deputy Assistant Secretary of Defense (Supply, Maintenance and Transportation), DOD, will serve as the point of contact with DOT and will implement and administer this MOU for DOD.

(2) The Secretary of the Air Force, as the Single Manager of Airlift Services for DOD, through his designee, the Commander in Chief, MAC, is the point of contact and will administer this MOU for the Air Force.

(3) The Commander in Chief, MAC, is the operational point of contact for all CRAF program activities, including mission control, and will implement the policy set forth in this MOU for DOD.

b. Department of Transportation

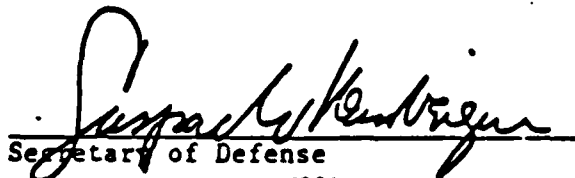
(1) The Research and Special Programs Administrator, DOT, or its successor, will serve as the point of contact with the DOD and will implement and administer this MOU for DOT.

(2) The Director of Emergency Transportation, Research and Special Programs Administration, DOT, or its successor, as the principal departmental staff officer for all civil transportation emergency preparedness matters, is the operational point of contact for all CRAF activities, to include allocations to the CRAF program.

7. Supplemental Agreement. The Deputy Assistant Secretary of Defense (Supply, Maintenance and Transportation), DOD, and the Research and Special Programs Administrator, DOT, or its successor, may enter into a supplemental administrative or operational agreement that will be considered an integral part of, and inseparable from, this MOU.

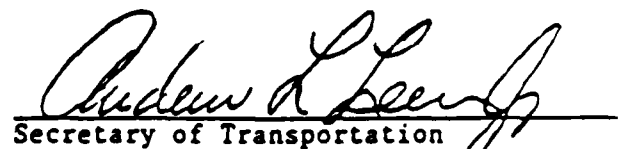
8. Review and Amendment. This agreement may be amended at any time by mutual agreement. It shall be reviewed every 5 years by the DOD and the DOT.

9. Effective Date. This MOU supersedes the MOU between the Secretary of Defense and the Secretary of Commerce dated August 8, 1963. It will be effective as of the date of execution indicated below for a period of 5 years, unless extended or modified by mutual agreement.


Secretary of Defense

MAY 7 1981

Date


Secretary of Transportation

5-7-81

Date

AGREEMENT
BETWEEN

THE DEPUTY ASSISTANT SECRETARY OF DEFENSE
(SUPPLY, MAINTENANCE AND TRANSPORTATION)

AND

THE RESEARCH AND SPECIAL PROGRAMS ADMINISTRATOR
DEPARTMENT OF TRANSPORTATION

CONCERNING

THE CIVIL RESERVE AIR FLEET PROGRAM

WHEREAS the Secretary of Transportation and the Secretary of Defense have signed a Memorandum of Understanding (MOU), dated May 7, 1981, concerning the Civil Reserve Air Fleet (CRAF) program; and

WHEREAS the MOU provided for joint Department of Defense (DOD) and Department of Transportation (DOT) implementation of the MOU and such supplemental administrative and/or operational agreement as is deemed essential to the successful implementation of the MOU; and

WHEREAS this responsibility for developing a supplemental agreement was jointly assigned to the Deputy Assistant Secretary of Defense (Supply, Maintenance, and Transportation), DOD, and the Research and Special Programs Administrator, DOT:

NOW, THEREFORE, it is agreed between DOT and DOD that:

1. The CRAF is a program:

a. In which DOD normally makes provision for utilization of aircraft committed to the CRAF by contractual arrangement with certificated U.S. civil air carriers that own or otherwise control such aircraft.

b. In which DOD uses the contractually committed capability of the air carriers to augment the organic airlift capability of the Military Airlift Command (MAC) in a declared defense-oriented national emergency or in defense-oriented situations short of such a declared national emergency, and to satisfy DOD airlift requirements based on plans approved by the Office of the Joint Chiefs of Staff (JCS).

c. Under which DOD arranges for civil airlift augmentation under the categories described below:

(1) Peacetime Commercial Augmentation. Airlift required to support normal day-to-day peacetime augmentation requirements of the DOD. Commander in Chief, MAC, (CINCMAC), obtains this support from the air carriers voluntarily under annual airlift services contracts.

(2) CRAF Stage I. Long-range airlift that the air carriers will furnish to the DOD to support substantially expanded peacetime military airlift requirements. CINCMAC has the authority to order airlift services committed to CRAF Stage I.

(3) CRAF Stage II. Airlift that the air carriers will furnish to the DOD in a time of defense airlift emergency. The Secretary of Defense, or his designee, has the authority to order airlift services committed to CRAF Stage II.

(4) CRAF Stage III. Civil airlift that the carriers will furnish to the DOD in a time of declared national defense-oriented emergency or war, consistent with paragraph 4 of the MOU, or when otherwise necessary for the national security. The Secretary of Defense has the authority to order airlift services committed to CRAF Stage III consistent with the terms of the MOU.

2. The CRAF normally will be composed of U.S.-registered aircraft under control of certificated U.S. civil air carriers that are needed to satisfy varying levels of defense needs. Under peacetime circumstances, civil air carrier aircraft best suited to meet specific DOD needs will be contractually committed by air carriers to the DOD and will be subsequently allocated to CRAF Stage III by DOT. However, during periods of crises, tension, or war the DOT, at the request of DOD, may allocate from available civil carrier resources, such as the War Air Services Program (WASP), additional air carrier aircraft to CRAF Stage III. The DOT allocation will identify each aircraft by manufacturer, model and series, Federal Aviation Administration registration number, the civil air carrier that owns or otherwise controls the aircraft, and the intended operational segment of use, such as international long-range cargo, international long-range passenger, international short-range, domestic, and Alaska.

3. The DOD will determine the number and types of aircraft needed to augment military airlift resources in the most demanding national emergencies, CRAF Stage III, as well as in less demanding defense-oriented emergencies, CRAF Stages II and I.

a. In determining the number and types of aircraft required for CRAF Stage III, DOD will consider three factors:

(1) Personnel and tons of cargo to be transported within various time frames.

(2) The average loads to be achieved per flight.

(3) The potential operating conditions and their impact on aircraft utilization rates.

b. The DOD will advise DOT each January of the number and types of aircraft needed in CRAF Stage III for the ensuing 1-year period. This request for allocation will include time-phased requirements and specific justification data, in accordance with the provisions of paragraph 1.b. of the MOU. If during the year, DOD determines that adjustments to the annual allocation are

necessary, DOD will advise DOT of the desired adjustments and will include specific justification data.

c. The time-phased requirements and specific justification data will be used by DOT for planning purposes only. Since it will not represent specific daily workloads, it will not be used for the preplanned, automatic-phased release of aircraft allocated to CRAF Stage III.

d. In addition to the annual request, DOD may, on a monthly or more frequent basis, request changes to the number and types of allocated aircraft in order to provide for periodic aircraft gains, losses, and withdrawals within the DOT allocation. CINCMAC, reporting through the Secretary of the Air Force, will request such changes.

e. If advised by DOT that the sizing of CRAF Stages I and/or II will have a significant adverse impact on the civil air carriers' capability to provide essential service, DoD will adjust the sizing within DOT determined nonadverse limits or provide DOT with justification for the adverse impact sizing level.

4. The Secretary of Transportation is responsible for allocating specific types of aircraft to DOD for use during national defense-oriented emergencies, based on stated DOD requirements. All allocation actions requested by DOD and made by DOT will include recognition of the broad civil and military mobilization planning guidance prescribed in Presidential Directives.

5. ~~The DOT is charged with assembling and evaluating civil air transportation requirements to determine whether the available U.S. civil air carrier capacity and services (route service, equipment, and facilities) is sufficient to meet overall essential civil and military (including CRAF) needs during a declared national defense-oriented emergency. If a sufficient number of a given type of civil air carrier aircraft is available to meet the total essential civil and military requirements for that type of aircraft, DOT, at the request of DOD, will allocate to CRAF Stage III the aircraft as required. If the total number of such type of aircraft is less than the requirement, DOT will establish priorities and allocate the aircraft in accordance with established national objectives. CRAF requirements will be given a high priority in any allocation situation where overall requirements and those essential military needs not satisfied by CRAF will be recognized.~~ The DOT is charged with assembling and evaluating civil air transportation requirements to determine whether the available U.S. civil air carrier capacity and services (route service, equipment, and facilities) is sufficient to meet overall essential civil and military (including CRAF) needs during a declared national defense-oriented emergency. If a sufficient number of a given type of civil air carrier aircraft is available to meet the total essential civil and military requirements for that type of aircraft, DOT, at the request of DOD, will allocate to CRAF Stage III the aircraft as required. If the total number of such type of aircraft is less than the requirement, DOT will establish priorities and allocate the aircraft in accordance with established national objectives. CRAF requirements will be given a high priority in any allocation situation where overall requirements and those essential military needs not satisfied by CRAF will be recognized.

6. The DOD will provide timely advice to the Secretary of Transportation of the intention of DOD to activate any stage of CRAF before activation.

7. CINCMAC will provide the following information to DOT, on a monthly or more frequent basis:

a. The number of aircraft committed to each stage of the CRAF by carrier, type, and segment of planned use.

b. Following activation of any stage of the CRAF, the number of aircraft utilized, identified by their U.S. registration number, carrier, type, and segment of use.

c. After any stage of the CRAF has been activated, the availability of any CRAF aircraft for temporary civil use.

d. The release of any CRAF aircraft after the CRAF mission or missions for which the aircraft was activated has been completed.

8. DOT may revise the allocation of aircraft by type to the CRAF Stage III, as the overall essential civil and military airlift requirements submitted to DOT by DOD and other federal agencies change. DOT will advise DOD if DOT allocates less aircraft of any type to DOD than the stated CRAF Stage III requirement for that type of aircraft and if aircraft of that type have been allocated to other users. If DOD determines that the DOT allocation jeopardizes the execution of JCS-approved plans, DOD will request that the original DOD request be honored.

9. DOT will notify DOD if the size of any CRAF incremental stage established by DOD, other than Stage III, will have a significant adverse impact on the civil air carriers' capability to provide essential service. When requested by DOD, DOT will provide information regarding the maximum number of aircraft by type and by carrier distribution levels that, if incrementally committed, will not have such an adverse impact.

10. In the event of activation of CRAF Stage III, DOD may not immediately need all of the aircraft allocated to it. Such aircraft will remain with the air carrier in civil operation and be available to the DOT if the need for them exists elsewhere. In this case, the allocation authority of the DOT will prevail should reallocation of civil aircraft become necessary to meet other agencies' requirements during the emergency. Normally, however, CRAF aircraft will be only temporarily assigned to other emergency roles and will remain allocated to the CRAF. Conversely, the DOD may need more civil aircraft for CRAF Stage III than those previously allocated. In this case, the DOD will specify to the DOT its additional requirements, in accordance with paragraph 1.b. of the MOU. Finally, conditions may arise after the activation of CRAF Stage III when airlift requirements, other than DOD airlift requirements, may have an overriding national priority. In such cases, the DOT will advise DOD that civil aircraft allocated to CRAF Stage III are being withdrawn for reallocation.

11. ~~Neither party to this agreement may present issues regarding allocation or reallocation of aircraft committed or withdrawn from the CRAF to the Director of the Federal Emergency Management Agency (FEMA) for review and resolution.~~

12. The DOD understands and agrees that CRAF aircraft, when activated, are only under the "mission control" of the DOD; further, that CRAF aircraft remain a civil resource and are always under the operational control of the civil air carrier.

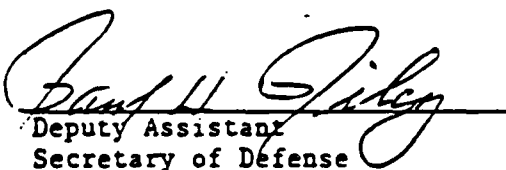
13. In the event of CRAF Stage III activation, all civil air carrier aircraft not allocated to the CRAF have been allocated by DOT to the WASP, currently administered by the Civil Aeronautics Board or any successor program or agency.

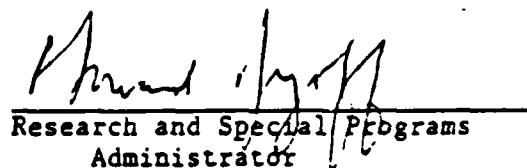
14. Administration

a. The Director of Emergency Transportation, Research and Special Programs Administration, DOT, will implement and administer this agreement for DOT and serve as liaison with DOD.

b. The Deputy Assistant Secretary of Defense (Supply, Maintenance and Transportation), DOD, will implement and administer this agreement for DOD in all matters other than operational and mission control matters, for which CINCMAC will be the point of contact.

15. Effective Date. This agreement is effective as of the date of execution indicated below and may be amended by mutual consent of the parties identified in paragraph 14 of this agreement.


Deputy Assistant
Secretary of Defense


Research and Special Programs
Administrator

MAY 11 1981

Date

MAY 11 1981

Date

APPENDIX F

SURGE OPTION CLAUSES

F.1 PRODUCTION SURGE PLAN OPTION TO INCREASE QUANTITIES
CLAUSE

1. The Government may accelerate the contract delivery rate and/or increase the quantity of the supplies called for herein, not to exceed _____ percent and at a unit price/target cost to be established by negotiations as set forth herein. The Contracting Officer will exercise this option by giving electronic notice to the contractor, calling forth the quantity and/or delivery rate selected, any time prior to acceptance by the Government of the last scheduled item on the contract. The Production Surge Plan, a Contract Data Requirements List item in this contract, will serve as the basis for the contracting officer to establish a delivery rate required by the Government. The electronic notice will be followed by confirmation in writing which will stipulate the maximum limitation of Government financial liability under the contract for exercise of this option until a definitive price/cost can be established.

2. Within 30 days from the exercise of this option, the contractor will have prepared and delivered to the Contracting Officer a proposal with price/cost and a definitive cost breakdown for the added quantities and/or accelerated delivery tax. Failure to agree on a price/cost in the negotiations resulting from the exercising of this option shall constitute a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes." However, nothing in this clause shall excuse the contractor from proceeding with the performance of the contract as changed.

3. The contractor will not be required to deliver at a rate greater than the maximum delivery rate developed in the Production Surge Plan provided under this contract; nor will the exercise of this option extend delivery on this contract more than 24 calendar months beyond the last delivery under the contract.

F.2 SURGE OPTION TO INCREASE QUANTITIES CLAUSE

1. The Government may increase the quantity of the supplies called for herein, not to exceed ____ percent and at a unit price/target cost to be established by negotiation as set forth herein. The Contracting Officer will exercise this option by giving electronic notice to the contractor, calling forth the quantity and delivery rate selected, any time prior to acceptance by the Government of the last scheduled item on the contract. The electronic notice will be followed by confirmation in writing which will stipulate the maximum limitation of Government financial liability under the contract for exercise of this option until a definitive price/cost can be established.

2. Within 30 days from the exercise of this option, the contractor will have prepared and delivered to the Contracting Officer a proposal with a price/cost and a definitive cost breakdown for the added quantities. Failure to agree on a price/cost in the negotiations resulting from the exercising of this option shall constitute a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes." However, nothing in this clause shall excuse the contractor from proceeding with the performance of the contract as changed.

3. Within ____ days from the date of award of this contract, the contractor shall furnish the Contracting Officer delivery schedules representing the maximum accelerated rate of delivery achievable for items under this contract and/or items which may be added by the exercise of this option. The contractor may, anytime during the performance of the contract, revise his option delivery schedule by providing the Contracting Officer 15 days' advance notice of such change.

4. The contractor will not be required to deliver at a rate greater than the maximum delivery rate developed under the requirement of the preceding paragraph; nor will the exercise of this option extend delivery on this contract more than 24 calendar months beyond the last delivery under the contract.

END

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