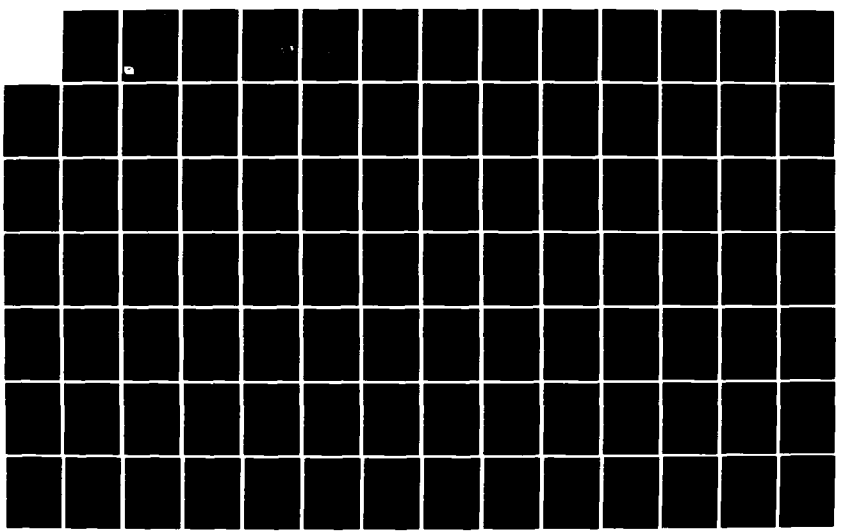

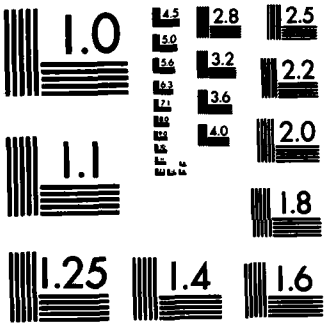

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INDUSTRIAL BASE ACTIONS IN A PERIOD OF RISING TENSIONS

James P. Bell

August 1982

Prepared for
The Joint Chiefs of Staff

INSTITUTE FOR DEFENSE ANALYSES
PROGRAM ANALYSIS DIVISION

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This study analyzes industrial base actions necessary to support a surge in defense procurement under conditions short of full-scale mobilization. Also analyzed are preparatory actions to be taken prior to a surge decision. Appropriate actions are considered for each of 19 likely problem areas. While a successful surge would require a broad range of concurrent actions, such actions could not be expected to compensate for preparedness deficiencies.

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August 1982

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1801 N. Beauregard Street
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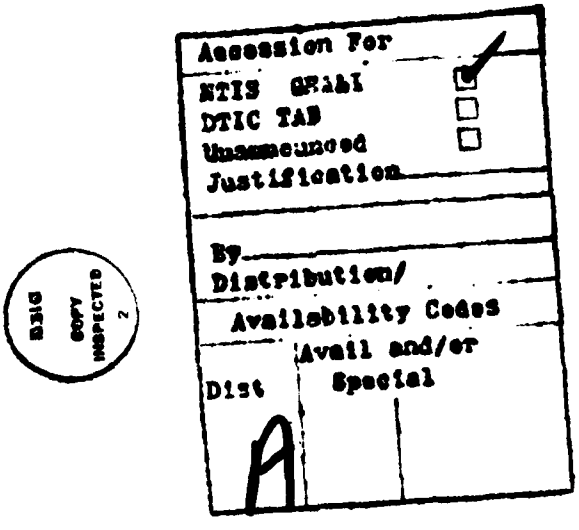
Contract MDA 903 79 C 0018
Task T-1-096

PREFACE

This study was prepared by the Institute for Defense Analyses (IDA) for the Director for Logistics, J-4, Office of the Joint Chiefs of Staff under Contract Number MDA903 79 C 0018, Task T-1-096, dated January 1981 and amended April 1982.

The purpose of this study was to consider actions that could be taken to support a surge in the procurement of defense materiel during a period of rising tensions. We have identified actions that could be taken concurrent with a surge as well as preparatory actions to be initiated earlier.

The task was scheduled for Phase III completion in June of 1982 with the submission of a draft report. This final publication is issued in fulfillment of the contract.



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EXECUTIVE SUMMARY

At the request of the Joint Chiefs of Staff (JCS), Director of Logistics (J-4), this study has assembled and analyzed industrial base measures that could be implemented in support of a procurement surge. Included are measures that could be implemented at the time of a surge as well as preparatory measures to be implemented prior to a decision to surge. The purpose of this effort is to provide information useful to defense planners in formulating crisis response decision packages appropriate to a period of rising tensions. Those decision packages would support the Master Mobilization Plan (MMP) and the crisis alert systems of the JCS and the Services.

In response to a future crisis, the President might choose to implement options that, in turn, required a surge in the procurement of defense materiel. But, executing a procurement surge would be a very difficult task. Indeed, a surge that required a doubling or tripling of delivery rates for many major weapon systems within a period of six to eighteen months might well be impossible. Thus, even though a surge would take place under conditions short of full-scale industrial mobilization, success would necessitate substantial changes in the way in which the Department of Defense (DoD) procured its materiel. These changes would include invocation of certain emergency authorities, changes in internal procurement practices, and provision of additional incentives and support to private industry.

It therefore would be necessary to implement extraordinary measures concurrent with a surge in an attempt

to reduce procurement leadtimes in the face of substantial increases in the demand for materiel. Senior officials in the Services, the Joint Chiefs of Staff (JCS), and the Office of the Secretary of Defense (OSD) would identify the need for particular measures and would recommend or initiate them as appropriate; however, deciding which industrial base measures to implement would be difficult, even if decision makers were aware of all potential options and authorities. Which measures would be needed in a particular surge situation would depend on the resource and leadtime problems likely to develop--those problems would be difficult to predict even if the surge requirements had already been well-defined.

Delaying implementation of supportive measures until the problems were obvious would severely compromise the response time objectives of the surge itself; further, even if the needed measures could be identified, there is no assurance that they would be feasible under the given circumstances. Some measures would be expensive and might not be approved if the defense budget were particularly constraining. Others would be seriously disruptive of civilian sectors and interests, and might be infeasible unless the President had strong popular support for his defense posture. Similarly, a crisis would have to pose a serious national threat before it would be politically feasible to invoke or enhance certain emergency authorities. Accordingly, which extraordinary measures should be implemented to support a surge would be both unclear and controversial. Careful analysis of the problems to be solved as well as the measures to be recommended would be necessary.

It would be a serious mistake to assume that actions initiated concurrent with a surge would work miracles. Even the production wonders achieved during World War II required

two to four years of build-up as well as full-scale mobilization. Thus a successful surge would depend unavoidably on substantial preparatory efforts prior to the surge decision. Those efforts would necessarily include full implementation of surge planning at individual producers under the Industrial Preparedness Planning (IPP) program as well as adequate funding of industrial preparedness measures (IPMs) to reduce production leadtimes at those producers. In addition, it would be necessary to plan those actions that would be implemented at the time of a surge and to establish in advance the necessary procedures and authorities. Fundamentally, surge capabilities must be inherent in the peacetime procurement process, since it would take too long to develop the requisite productive and administrative capabilities after a surge decision was made.

In order to support the formulation of crisis response decision packages, this study has compiled and analyzed nineteen Industrial Base Action (IBA) categories. Each IBA category addresses an industrial base problem likely to be encountered in the event of a surge and identifies specific supportive measures that could be taken at the time of the surge as well as preparatory measures to be taken prior to the surge decision. For the most part, these measures are known within DoD.[1] Under this study, the measures have been analyzed with respect to certain characteristics bearing upon their utility and feasibility during a period of rising tensions, including effectiveness in reducing leadtimes,

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[1]For example, in DoD Task Force to Improve Industrial Responsiveness, "Summary Report" (March, 1982), a broad series of policy changes is proposed in order to implement key recommendations of recent industrial base studies. Further, a major effort is currently underway to revitalize IPP, including increased funding and improved guidance.

visibility for deterrent purposes, budget cost, civilian impact, and political feasibility.

The IBA categories are listed on Table S-1, together with a comparison of the overall suitability of the measures in each category in the event of a particular, demanding surge situation. While this comparison cannot adequately reflect the characteristics of individual measures within each IBA category, it does illustrate the variety of impacts to be expected.

Implementation of the supportive measures selected would usually require policy guidance from OSD, JCS, the Services or DLA. Also, quick-reaction information systems would be necessary in order to identify and predict procurement problems and the need for supportive measures. In some cases, measures would require Presidential or other-agency approval of the use of existing standby authorities. Such authorities available without declaration of a national emergency include:

- broadening the existing use of the priorities and allocations authority of Title 1 of the Defense Production Act, even to the point of allocating the output of particular industries;
- waiving compliance with certain regulations designed to protect the environment and occupational safety and health;
- imposing export controls on commodities in short supply;
- seeking injunctions to halt labor strikes under the Taft-Hartley Act of 1947; and
- releasing materials from the National Defense Stockpile.

In other cases, measures would require enactment of new legislation, including:

Table S-1. COMPARISON OF INDUSTRIAL BASE ACTIONS (IBAs)[1]

		CHARACTERISTICS OF SURGE SITUATION						
		Large Magnitude	Great Urgency	Visibility Important	Preparedness Deficient	Budget Tight	Full Employ-ment	Political Support weak
1.	Obtain Priority Access to Current Production	*	*	*	*	*		*
2.	Initiate Surge by Quick-Reaction Contracting		*					*
3.	Surge by Accelerating Deliveries Under Existing Contracts		*					
4.	Surge by Adding Suppliers	*			*			*
5.	Access In-House Resources at Commercial Firms	*		*	*	*		
6.	Support Hiring and Retention of Workers	*	*		*		*	
7.	Support Emergency Construction	*			*		*	
8.	Support Expansion of Resource Production	*			*		*	*
9.	Realign Dependence on Foreign Suppliers	*		*	*		*	*
10.	Restrict Exports of Production Resources	*		*	*	*	*	
11.	Release Materials from the National Defense Stockpile			*		*	*	
12.	Support Productive Labor Relations	*	*	*	*			
13.	Support Labor Training Programs	*			*		*	*
14.	Obtain Waivers to Socioeconomic Regulations	*	*		*	*		
15.	Utilize Inactive Production Equipment		*			*		*
16.	Change Production Methods to Reduce Leadtimes	*			*			*
17.	Institute Product Changes to Reduce Leadtimes	*	*		*	*		*
18.	Reorient Foreign-Military-Sales Resources		*	*			*	*
19.	Use Spares and Repair Parts for New Production		*					*

[1]The symbol * indicates that an IBA is more suitable than others in a surge situation with the corresponding characteristics.

- authorization to obligate funds prior to Congressional appropriations;
- tax incentives to promote investment in defense-related industrial equipment and to support recruitment of defense workers;
- authorization to waive certain local construction regulations;
- authorization of occupational deferments in any selective service legislation;
- authorization to exempt selected industries from any wage control programs;
- additional authority to terminate detrimental labor strikes; and
- additional authority to waive socioeconomic regulations.

Finally, many of the measures would require the assistance of other Federal agencies, including especially the Commerce and Labor Departments and the Federal Emergency Management Agency (FEMA). Accurate information would be particularly important since these agencies would need to know what assistance was required.

In addition to the IBA analyses, this study has developed two examples to explore the decision processes leading to initiation of industrial base measures. These examples illustrate the peculiar difficulties that would be presented by a period of rising tensions that fell short of full-scale mobilization. In one example, it is assumed that attempts would be made to reduce the risks associated with importing defense-related manufactured items in anticipation of a potential cutoff of certain foreign sources. While a number of measures could be taken, their impacts would be felt only gradually, some would be costly at a time when funding was scarce, and some would cause serious complications for the U.S. in dealing with its allies. In addition, it would be very difficult to anticipate a cutoff until it was truly

imminent. Thus, hazardous foreign dependencies should not be allowed to develop in the first place.

In the other example, it is assumed that certain defense producers would request waivers from environmental regulations, since complying with those regulations would delay production increases needed to support DoD's decision to surge procurement. Due to political constraints, however, Congress would approve only some of the additional authorities and the President would approve only some of the particular waivers that would be requested. Thus, while projects should be implemented during peacetime to reduce compliance leadtimes for those cases where necessary waivers would be refused, it would be very difficult to anticipate which waivers would be refused in an unknown future crisis.

In conclusion, this study indicates that there are useful and feasible actions to be implemented at the time of a surge, although such actions could not replace detailed prior planning and industrial preparedness measures to reduce leadtimes. The measures analyzed here would be useful and feasible under some plausible circumstances, but the particular surge situation would dictate which should be implemented. Areas for future study should especially include the adequacy of existing quick-reaction information systems, i.e., systems that provide current, on-call information on industrial base and resource problems.

ACKNOWLEDGMENTS

This study was made possible only through the generosity of the many government officials who provided information to the author (see Appendix I for a listing of these individuals). In addition, this work was influenced by colleagues at IDA including Dr. Herman O. Stekler (project leader), and Dr. Douglas C. Dacy, Dr. Paul McCoy, and Dr. R. William Thomas. And I am grateful for the efforts of Shirley Osborne, Donna Gray, Geneva Campbell and Bernie Aylor in preparing this manuscript.

CONTENTS

Chapter I

INTRODUCTION

This report presents an analysis of actions that could be taken to enhance the responsiveness of the industrial base during a period of rising tensions. These actions would support a surge in procurement under conditions short of full-scale mobilization and would thereby enhance the speed of mobilization if it became necessary. This report was completed under a study being performed for the Joint Chiefs of Staff (JCS), Director of Logistics (J-4), under task order number MDA903-79-C-0018: T-1-096.

During a period of increasing international tensions, it might become necessary to accelerate rapidly the procurement of defense materiel. Such a surge in procurement could be used to support actions taken in response to the crisis at hand as well as to prepare for or deter future hostilities. If a decision to surge procurement were made, defense officials would need to initiate various extraordinary actions in order to support defense producers in increasing output within the required time frame. In addition, substantial preparatory actions would be required in advance of a decision to surge.

This study reviews problems that defense producers would face in the event of a surge in order to identify supportive actions that the Department of Defense (DoD) could initiate. These actions are then analysed in order to determine what preparatory actions would be necessary as well as to consider their usefulness and feasibility. The primary purpose of this study is to assist defense planners in formulating crisis

response decision packages, in support of the DoD Master Mobilization Plan (MMP).

For the most part, the actions considered are known or under study within DoD. These actions were identified based on a review of the preparedness literature, interviews with defense and other government officials in Washington, DC and at procurement sub-commands, and meetings with industry officials sponsored by the American Defense Preparedness Association, the Brookings Institution, and the Industrial College of the Armed Forces.[1]

In Chapter II, the concept of surging procurement during a period of rising tensions is discussed. Chapter III presents analyses of nineteen industrial base actions (IBAs). Actually, each IBA includes a collection of related actions that could be taken. Chapter IV summarizes several categories of actions from among those identified in Chapter III. Chapter V compares the utility and feasibility of the IBAs. And Chapter VI presents concluding remarks.

In addition to the IBA analyses, this study has developed two examples to explore the decision processes leading to the initiation of particular measures. Appendix II discusses waivers from environmental regulations, and Appendix III considers reducing the risks associated with dependence on foreign manufactured items.

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[1]See the bibliography for preparedness references and see Appendix I for a listing of officials contacted.

Chapter II

BACKGROUND DISCUSSION

This chapter discusses the problems encountered when attempting to utilize a period of rising tensions, especially by surging the procurement of defense materiel. The discussion covers reasons for surging procurement, the meaning of surge, and some of the difficulties an effort to surge production would encounter.

A. RISING TENSIONS AND THE NEED TO SURGE

In retrospect, wars are frequently seen to have been preceded by lesser crises and extended periods of international tension. Thus the emergence of such conditions again might well indicate that the probability of war had increased. If the signs were recognized, a period of rising tensions could serve as an industrial warning period, during which time defense production would be increased and the industrial base would be prepared for a further increase in defense procurement in the event of war.[1] These actions would prepare the U.S. for waging war and possibly might deter adversaries from starting the war.[2]

A period of rising tensions could be precipitated by a number of different events, including:

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[1]In Defense Science Board, "Executive Summary on Industrial Readiness Plans and Programs" (1977), DoD was urged to improve its ability to respond to such industrial warning signals.

[2]These actions might also provoke an adversary into hostilities.

- hostile actions by potential adversaries that force the U.S. to reevaluate their intentions (e.g., the Soviet invasion of Afghanistan or Poland, or violation of international agreements);
- events that alter the geopolitical balance of power (e.g., the Iranian revolution or the withdrawal of a major country from NATO);
- a force build-up by a potential adversary that alters the military balance;
- a technological breakthrough by a potential adversary that threatens to neutralize U.S. deterrent forces (e.g., an effective anti-missile system);
- a threat of war in a specific region involving U.S. interests (e.g., an embargo against the U.S. by suppliers of critical resources); and
- an outbreak of war involving U.S. interests, including wars with a potential for direct U.S. involvement.

Events such as these could lead to an extended period of increasing international tension or could produce an immediate emergency demanding a major U.S. response.

1. Planning and Preparedness

A period of rising tensions might begin with international events that somewhat increase the perceived probability of war, but not so much as to constitute an emergency.[1] The period would be characterized by increases in defense expenditures on an orderly, programmed basis. Some portion of the budget increases would be available for increasing the readiness of U.S. forces and of the industrial base, but there would not be a major shift in spending priorities. This would be the time to initiate planning and administrative actions to prepare for an emergency increase in

[1]The two years since the Soviets invaded Afghanistan provides an example of such a period.

defense procurement.[1] This would also be the time to implement hard measures to improve the responsiveness of the industrial base, especially those measures with long implementation leadtimes.[2] The moderate increases assumed for the DoD budget, however, would limit the extent of such hard Industrial Preparedness Measures (IPMs).[3]

2. Surge Stage

Crisis events could also touch off emergency conditions. Events might indicate that the probability of war had increased to the point where the U.S. had to take extraordinary preparatory actions on an urgent basis. In order to support current or potential future U.S. responses, a sharp increase might be required in the procurement of defense materiel; additional weapon systems and consumables (e.g., ammunition) might be required in order to supply allies, build up war reserves, or expand U.S. forces--in short, a surge in procurement might be required. For purposes of the present

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[1]For example, recent efforts have been made to revise the Industrial Preparedness Planning (IPP) program and to increase the size of planning staffs. Other current examples include the Mobilization Planning Study by the National Security Council (NSC), the development of the Master Mobilization Plan, and the Nifty Nugget and Proud Spirit mobilization exercises.

[2]For example, in ARRCOM, "Industrial Base Responsiveness Study for Howitzer, Medium, Self-Propelled: 155 mm, M109A2" (1978), p. 2-5, it is reported that the production rate for the howitzer could reach 30 per month within 12 months of surging if components were stockpiled and additional tools and equipment were acquired, beginning at least 12 months before the surge. Additional construction would be required in order to reach a rate of 90 per month within 6 months of surging, and that construction would have to begin at least 25 months prior to the surge.

[3]For example, in ARRCOM, idem., p. 4, the cost of IPMs to reach a rate of 90 per day by S + 6 was estimated at $118 million.

discussion, a surge is a sharp increase in both the level and the urgency of previously programmed procurement requirements.[1]

The concept of a peacetime surge in order to deter or prepare for war has been discussed by a number of authors. In a recent article, Lawrence J. Korb suggested that a confluence of world events could quickly and radically change the U.S. view of what constituted an adequate peacetime defense posture and could lead to an emergency expansion in the force structure and a supporting surge in defense procurement.[2] As an example, he suggested that the U.S. might wish to expand from 16 to 24 active Army divisions within a period of two years. Fred Charles Ikle also discussed a possible "sea change in the foreign and defense policies, a broad revision in the scope and objectives of the national security effort."[3] Herman Kahn has discussed the related concept of mobilization warfare, under which international events or technological breakthroughs could set off urgent arms races between the U.S. and potential adversaries.[4] Such arms races would be motivated by real fears that war might occur and could involve strategic or conventional forces. Conceivably, the winner of such an arms race would be in such a commanding position that his objectives would be achieved without a shot being fired. But, as observed in a study by Arthur D. Little,

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[1]The definition of surge is discussed further below.

[2]See Lawrence J. Korb, "A New Look at United States Defense Industrial Preparedness" (1981), p. 6.

[3]See Fred Charles Ikle, "Defense Expansion Capability" (1979), p. 6.

[4]See Herman Kahn and William Schneider, Jr., "The Technological Requirements of Mobilization Warfare" (1975).

Inc., initiation of such an arms race by one side could provoke the other side into a preemptive strike: "Historically, overt defense/industrial mobilization appears to have conveyed an unambiguous signal of preparation for war and has normally been followed by--or itself followed--hostilities."[1] Thus, that study considered industrial mobilization to be destabilizing in response to a U.S./Soviet crisis, but a plausible response to a U.S./Chinese or a Soviet/Chinese crisis.

Yet another related concept is that of mobilization readiness, discussed by Roderick L. Vawter, among others.[2] Mobilization readiness is a condition under which the U.S. is ready to wage full-scale war on short notice. The concept encompasses readiness of standing forces and war reserves as well as the dedicated defense industrial base and basic industries. An international crisis could precipitate a decision by the U.S. to achieve a state of mobilization readiness on an urgent basis. The Korean War period exemplifies such a decision.[3] Prior to the North Korean attack, a National Security Council study (NSC-68 dated April 14, 1950) had concluded that the U.S. was unprepared to deter a decisive initial attack by the Soviets as early as 1954. The North Korean attack served as a catalyst and a national goal was established to achieve mobilization readiness by

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[1]See Arthur D. Little, Inc., "Industrial Preparedness in an Arms Control Environment" (1974), p. 277.

[2]See Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), as well as OSD, "An Evaluation of Mobilization and Deployment Capability Based on Exercises Nifty Nugget-78 and REX-78" (1980).

[3]See the thorough discussion of the Korean experience in Roderick L. Vawter, op. cit.

1954. "As President Truman's submission to Congress for Supplemental Appropriations (July 24, 1950) explained, the purpose of the proposed increase was twofold: 'first, to meet the immediate situation in Korea, and, second, to provide for an early, but orderly, build-up of our military forces to a state of readiness designed to deter further acts of aggression'."[1] The resulting build-up included the initiation of strategic programs such as the B-47, B-52, Atlas, and Polaris.[2] Further, $5.7 billion was spent to expand dedicated defense production facilities and tax incentives were provided to motivate a $23.1 billion expansion of basic industry.[3] Thus, the Korean War triggered an expansion of standing forces and strategic programs beyond the needs of the Korean War itself, as well as an expansion of production capacity beyond the needs of the immediate surge in procurement.

The discussion above has considered the possibility of surging procurement in preparation for a potential future war. In addition, a surge might be required in order to support actions taken in direct response to the crisis at hand. Typically, immediate crisis responses would utilize materiel in-being, due to the procurement leadtimes for obtaining additional materiel. Nevertheless, there might be an urgent need to surge procurement in order to replace a depletion of on-hand materiel. Indeed, replacement leadtimes, in principle, would affect the extent to which initial inventories should be depleted, that is, a draw-down of inventories would leave U.S. forces unprepared for other

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[1]See Fred Charles Ikle, loc. cit., p. 7.

[2]See Herman Kahn and William Schneider, Jr., loc. cit., p. 3.

[3]See Roderick L. Vawter, loc. cit., p. 11-30.

contingencies. For example, materiel needs of the Vietnam War were initially met by drawing down inventories in other theaters, including Europe.[1] Further, the U.S. supplied Israel with over 1000 M-60 tanks in connection with the 1973 Arab-Israeli war, primarily by drawing down inventories of active forces and war reserves in Europe. The Army then attempted to surge tank production from 30 to 100 per month.[2] Similarly, inventories lost during a short European war involving U.S. forces would have to be replaced in order to deter further aggression.[3]

Finally, a surge in procurement might be necessary in order to support U.S. or allied forces engaged in an extended regional war, such as Korea or Vietnam. Similarly, a surge in procurement (at existing producers) might support U.S. forces during an extended major conflict until the civilian sector could be converted to support the war effort.

B. DEFINITION OF SURGE

The concept of surge is elusive. The term has been used to describe a wide variety of situations that fall somewhere between programmed, peacetime growth in procurement and total mobilization of the economy. A recent OSD definition is that surge is the--

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[1]See Joint Committee on Defense Production, "Civil Preparedness Review" (1977), p. 57.

[2]See Association of the United States Army, "A Primer on What It Takes to Stay until the War Is Over" (1979), p. 4.

[3]Such a situation might be so serious as to require full-scale mobilization of the industrial base.

> accelerated production/maintenance/repair of selected items to meet contingencies short of a declared national emergency. Only existing peacetime program priorities will be available to obtain materials, components, and other industrial resources necessary to support accelerated program requirements; however increased emphasis may be placed on the use of these existing authorities and priorities.[1]

However, as indicated in Section A above, surge has also been used to describe a sharp increase in procurement requirements for a broad spectrum of items under conditions approaching a national emergency. While this latter concept might more properly be termed partial mobilization, it does fall within the scope of responses during a period of rising tensions considered in this study. These difficulties in defining surge are exemplified in the following sections.

1. Magnitude and Timing of the Procurement Increase

Surge is usually viewed as a doubling or tripling of procurement within a period of from six months to two years. The Defense Science Board recommended surge planning to reach maximum production rates for selected weapon systems within a period of six or twelve months.[2] Dr. William J. Perry defined surge as doubling production rates for weapon systems such as the F-16 within three or six months.[3] Lawrence J. Korb spoke of a potential need to surge procurement from the present five to six percent of Gross National Product (GNP) to 12 to 15

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[1]See, for example, DoD Task Force, loc. cit., Tab 10.

[2]See Defense Science Board, "Executive Summary on Industrial Readiness Plans and Programs" (1977).

[3]See Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 1390.

percent of GNP within a period of two to three years.[1] General Alton D. Slay discussed surge as a doubling of production rates for F-15 or F-16 aircraft within a period of 18 months.[2] Surge studies at the Rand Corporation have considered surges that doubled procurement rates within a one year period.[3] Of course, a doubling of overall procurement rates might include much greater acceleration for certain items. For example, the Vietnam War increased ammunition procurement from $1.1 billion in 1965 to $3.6 billion in 1966.[4]

These definitions suggest at least two types of surge:

- a doubling of procurement rates for a limited number of items within a few months; and
- a doubling or tripling of the overall procurement program within a period of one to three years.

2. Facilities Utilized

Some definitions have limited surge production to existing facilities.[5] This constraint would surely apply to a doubling of production within three or six months, due to the

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[1]See Lawrence J. Korb, loc. cit., p. 6. In comparison, military expenditures reached as high as 46 percent of GNP during World War II and 14 percent during the Korean War. See Richard B. Foster and Francis P. Hoeber, "Limited Mobilization" (1980).

[2]See Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 473.

[3]See Geneese G. Baumbusch, "Defense Expansion Capability" (1980), p. 4.

[4]See Theodore J. Panayotoff, "The DoD Industrial Mobilization Production Planning Program in the U.S." (1972), p. 37.

[5]See, for example, OSD, "Industrial Preparedness Planning Manual" (Draft, 1980), p. ix.

leadtimes for increasing plant capacity. But over a period of one to three years considerable expansion of capacity could take place, including the acquisition of additional production equipment, tooling, test equipment, and in some cases even construction of additional floor space. Indeed, leadtimes for obtaining materials and components could be as long as those for obtaining production equipment in some cases.[1]

3. Emergency Authorities

Surge was defined above as occurring under existing peacetime authorities and without a declaration of a national emergency.[2] But, in fact, existing legislation would permit a considerable expansion in the authorities available to support a surge even without a declaration of national emergency.[3] If necessary for the national defense, the President could:

- broaden the existing use of the priorities and allocations authority of Title 1 of the Defense Production Act, even to the point of allocating the output of particular industries;
- in some cases, waive compliance with regulations designed to protect the environment and occupational safety and health;
- impose export controls on commodities in short supply;
- seek injunctions to halt labor strikes; and
- release materials from the National Defense Stockpile.

Further, DoD itself has the authority to waive certain internal procedures and procurement regulations. While use of

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[1]For example, see David W. Grissmer and Kwan H. Kim, "Study of the Turbine Engine Industry" (1978), p. 65.

[2]See also ODCSRDA, "Review of Army Mobilization Planning" (1975), p. 3-2.

[3]These authorities are discussed further in Chapters III and IV below.

the above authorities would require serious need and political support, such use would not require a formal declaration of national emergency.

Further, the key event for obtaining even greater authorities would be passage of emergency powers legislation by the Congress. For example, the original Defense Production Act (DPA) was enacted on September 8, 1950, while a national emergency was not declared until December 16, 1950 (following the Chinese intervention in November 1950).[1] Certain limited additional industrial authorities could be obtained by declaration of a selective national emergency solely for that purpose.[2] Finally, requests for additional authorities from the Congress could be made on an incremental basis as the crisis worsened.[3]

The extent to which existing peacetime authorities would be supplemented during a surge would depend on the gravity of the crisis and the degree of political support for the President's position. It seems plausible that at least some additional authorities would be utilized in the event of a broadly based procurement surge.

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[1]See Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), p. 13.

[2]The National Emergencies Act (50 USC 1601-1651) of 1976 permits the President to declare a national emergency in order to obtain only selected authorities from among those potentially available to him. Such a declaration was made during the recent hostage crisis involving Iran. See OSD, "DoD Master Mobilization Plan" (1981), p. 4.

[3]For example, in Richard B. Foster and Francis P. Hoeber, op. cit., a series of mobilization stages or MOBCONs is proposed. Successive MOBCONs would intensify the mobilization and increase the level of authorities available.

C. PRODUCING FOR A SURGE

1. End Item Leadtimes

Could the U.S. surge procurement of defense materiel? A number of recent studies have questioned the surge capabilities of the industrial base. The 1978 mobilization exercises indicated that additional military equipment could not be provided during the early months of a short-warning conflict: "We concluded that industry response to DoD needs was slow, and that sizable expenditures would have to be obligated in peacetime if it were to be speeded up."[1] The Committee on Armed Services concluded that "the industrial base is not capable of surging production rates in a timely fashion to meet the increased demands that could be brought on by a national emergency".[2] And the Defense Science Board found that the "defense industry has little or no capability to surge production in the short term."[3]

Of course, surge capability varies among end items. Surging the production of aircraft would be particularly difficult. General Alton D. Slay reported that an all-out effort could produce a cumulative total of 22 additional A-10 aircraft and no additional F-15s or F-16s within a period of 18 months.[4] While deliveries under existing orders could be advanced somewhat within that period, no new F-15s or F-16s

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[1]See OSD, "An Evaluation Report of Mobilization and Deployment Capability" (1980), p. 19.

[2]See Committee on Armed Services, "The Ailing Industrial Base: Unready for Crisis" (1980), p. 11.

[3]See Defense Science Board, "Industrial Responsiveness" (1981), p. xvii.

[4]See Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 443 and 473.

could be delivered within three years. Leadtimes lengthened considerably between 1977 and 1980 (e.g., from 36 to 44 months for the F-15, from 28 to 42 months for the F-16, from 29 to 39 months for the A-10, from 19 to 36 months for the F-100 engine, and from 20 to 39 months for the TF34 engine). The lengthening in leadtimes was due primarily to a lengthening in the leadtimes for certain forgings which, in turn, resulted from a surge in orders related to commercial aircraft as well as from shortages of certain materials. While peacetime leadtimes might revert to the 1977 levels, they would lengthen again in the event of a substantial surge in defense demand.[1] Even the 1977 leadtimes were dominated by order leadtimes for materials and components. For example, in-house fabrication and assembly for the F-16 could be accomplished in as little as eight months in a surge, assuming that materials, components, and subassemblies were available when needed.[2] Similarly, in-house production time for turbine engines accounts for approximately 20 percent of total engine leadtimes, which are determined primarily by the time required to obtain components such as forgings, controls, and bearings.[3] Thus, prior preparation by stockpiling long-leadtime materials and components could greatly reduce surge leadtimes within the limits of existing prime contractor

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[1]That is, a surge in defense demand would again reveal capacity bottlenecks, especially at lower-tier suppliers.

[2]See Robert L. McDaniel et al., "Analysis of Capacity and Demand Data for the Aircraft Industry" (1979), p. 45.

[3]See David W. Grissmer and Kwan H. Kim, "Study of the Turbine Engine Industry" (1978), p. 52.

capacity.[1] For example, one study estimated that as many as 72 F-16s per month could be produced within 12 months of a decision to surge, assuming adequate preparations had been made (the existing rate is closer to 15 per month).[2]

Procurement leadtimes for tanks are not so great as those for aircraft, but are still dominated by leadtimes for components. For example, the leadtime for the M60A3 tank was 18 months, including only two months for in-plant production.[3] Leadtimes for subassemblies were as long as 15 months for the hull and turret and 14 months for the engine. Leadtimes for the new M-1 tank are somewhat longer. The current objective is to size capacity (including capacity at lower-tier suppliers) for a maximum production rate of 150 per month. It would take an estimated 30 months to reach that rate from the recent rate of 10 per month, and 18-24 months if production were initially at the planned rate of 60 per month.[4] Assuming that adequate tooling and equipment were already in place, the leadtime to surge from 60 to 150 M-1s per month could be reduced to 12-15 months by spending $150 million to stockpile components.[5]

Surge leadtimes would be even shorter for most ammunition items. Out of 28 government-owned ammunition plants, 12 are inactive; utilization rates for the active plants range from

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[1]This concept is being studied currently at OSD by the Industrial Task Force.

[2]See Robert L. McDaniel et al., loc. cit., p. 45.

[3]See "Defense Industry Analysis Summaries" (1981), p. 7-14.

[4]See LTC Douglas H. Barclay, "Strategic Mobilization a Deterrent for the Eighties" (1981), p. 32.

[5]See LTC Douglas H. Barclay, idem., p. 35.

10 to 25 percent of capacity.[1] Reactivation leadtimes for ammunition plants averaged ten months during the Korean War, seven months during the Vietnam War, and are estimated to be six to twelve months at the present time.[2] The Defense Science Board estimated leadtimes of 7 to 18 months to obtain delivery of items from the inactive ammunition base.[3] Another study determined that out of 28 ammunition production lines studied, twelve could reach mobilization production rates within four months, eight more lines could do so if certain advance measures were implemented, and eight lines could reach mobilization rates in an average of six months with advance measures.[4]

The above examples suggest considerable variation in the leadtimes required to surge procurement of different items.[5] Without prior preparation, increased production would contribute a minimal amount of additional items within the first six months and in some cases within the first two years. But prior preparation, including stockpiling

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[1]See "Defense Industry Analysis Summaries" (1981), p. 6-12.

[2]See Association of the United States Army, loc. cit., p. 11 and 22.

[3]See Defense Science Board, "Industrial Responsiveness" (1981), p. 13.

[4]See Kaiser-Stetter Associates, "Ammunition Production Base Leadtime Study" (1978).

[5]In a 1982 study of 10 procurement items, the American Defense Preparedness Association (ADPA) also found considerable variation in the ability to surge. Surging production in a short period of time appeared to be feasible for the conventional-ammunition and chemical warfare items; would require prestocking of long-leadtime items for more complex items such as tactical radios, missiles, and armored personnel carriers; and would not be feasible at all for the helicopters studied. These conclusions were reported in a March 1, 1982 letter from General Henry A. Miley, Jr. (Retired).

components and eliminating equipment and tooling bottlenecks, could substantially reduce surge leadtimes.

2. Supporting a Surge

The discussion above suggests that a successful procurement surge would depend unavoidably on prior planning and on advance implementation of preparatory measures. To some extent such planning is done under the Industrial Preparedness Planning (IPP) program, although that effort has been understaffed and few industrial preparedness measures (IPMs) have been funded in recent years.[1] In addition to preparatory measures, which themselves have long implementation leadtimes, there are a number of emergency actions that could be taken at the time of a surge. Such concurrent actions would react to the situation as it existed, whereas preparatory actions would seek to improve that initial situation.

In order to expand production at an existing, active plant with unused capacity, the producer would take a number of steps. In the first place, while unused capacity might exist as regards floor space or basic production equipment, increasing production rates would probably require acquisition of additional equipment such as specialized test equipment, tooling, or expensive fabrication equipment. Otherwise, such equipment bottlenecks could limit production increases on a

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[1]For an explanation of the program, see OSD, "Industrial Preparedness Planning Manual" (Draft, 1980). For critiques, see Defense Science Board, "Industrial Responsiveness" (1981); U.S. Army Audit Agency, "Industrial Preparedness Program" (1980); LTC Howard E. Bethel, "Vertical Slice Real-Time Planning" (1979); Association of the U.S. Army, op. cit., and ODCSRDA, "Review of Army Mobilization Planning" (1975). At the present time, efforts are underway to increase planning staffs, improve policy guidance, and revitalize the IPP program.

given work shift or prevent the addition of work shifts (since some equipment would already be in operation full-time). If such equipment bottlenecks had not been eliminated in advance, the surge could be delayed by long acquisition leadtimes (6-24 months).

Further, the producer would acquire materials and components from suppliers. Under the best of circumstances, leadtimes for such items can be long (e.g., from one to two years for certain forgings, bearings, etc.); however, a substantial surge would increase those leadtimes since it would take time for suppliers to expand production even if their capacities were underutilized. In some cases, additional lower-tier suppliers would have to be recruited because existing suppliers could not expand production or because certain foreign suppliers were no longer accessible. Thus, unless long-leadtime materials and components were stockpiled in advance, the surge would be delayed until material and component deliveries could be increased.

Additionally, the producer would have to hire and train additional workers. Recruitment and training leadtimes could constrain production increases, particularly in cases where advance preparation had reduced equipment and materials leadtimes. Training leadtimes for certain scarce skills (e.g., journeyman machinist skills) could exceed the duration of the surge itself.

Thus, prior preparation would be mandatory to keep these leadtimes within acceptable bounds. But even if substantial preparatory efforts had been made, DoD could further reduce procurement and start-up leadtimes by initiating certain actions at the time of a surge. Such actions would aid defense producers in obtaining access to existing production of industrial equipment, materials, and components; would

increase the available supply of resources needed for production; and would change the way DoD procures materiel. In Chapter III, a number of such actions are analyzed, together with related preparatory actions that could be taken prior to a decision to surge procurement.

Chapter III

ANALYSES OF INDUSTRIAL BASE ACTIONS (IBAs)

A. INTRODUCTION

This chapter presents analyses of 19 industrial base actions (IBAs). Each IBA is a collection of actions that could be taken to alleviate a particular problem that would be encountered in surging procurement. These actions would be initiated by high officials in the Services and DLA, the Joint Chiefs of Staff (JCS), and the Office of the Secretary of Defense (OSD). An attempt has been made to identify actions that would be useful and feasible under conditions short of full-scale mobilization; most of these actions are compatible with one another and could be implemented jointly. Nevertheless, this report does not make a net assessment of particular IBAs or recommend which actions should be implemented. Those choices would depend importantly on military, political, and economic conditions during the period of rising tensions. In addition, further study would be required in order to assess properly the potential benefits and costs associated with these actions.

Each IBA analysis is structured as follows:

- definition, which defines the particular surge problem that the IBA addresses;
- concurrent actions, which identifies specific actions that could be taken or initiated by senior officials

in the Department of Defense (DoD) if the decision to surge had already been made;[1]

- previous actions, which identifies preparatory actions that could be taken during peacetime or early in a period of rising tensions, prior to a decision to surge procurement;
- effectiveness, which considers the ability of the IBA to reduce procurement leadtimes and increase defense-related production in the event of a surge;
- deterrent impact, which considers the visibility of the IBA and its usefulness in signalling the credibility of U.S. policy to adversaries and allies;
- budget cost, which considers the relative cost of the IBA and its impact on the DoD and Federal budgets;
- civilian disruption/economic impact, which considers the adverse effects the IBA could have on civilian interests and the national economy; and
- political feasibility, which considers the opposition the IBA could generate from the private sector or within the government itself.[2]

The IBA analyses are presented below in a sequence determined by the general types of problems addressed.[3] The first group of IBAs addresses the problem of gaining access to production resources already in existence:

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[1]In many cases, measures are listed as concurrent actions even though it would be preferable that they be implemented prior to a surge crisis. This reflects the philosophy that concurrent actions must react to the situation as it exists and compensate for any deficiencies in preparedness. But this is not an assertion that necessary preparedness measures can or should be delayed.

[2]While political support would be necessary, the existence of opposition should not stop DoD from attempting to initiate those actions considered essential to the success of the surge effort.

[3]These IBAs address the problem of procuring new defense materiel under conditions short of full-scale mobilization. A related and important problem not considered here is that of surging the repair and maintenance of existing defense equipment.

1. Obtain Priority Access to Current Production,
2. Initiate Surge by Quick-Reaction Contracting,
3. Surge by Accelerating Deliveries Under Existing Contracts,
4. Surge by Adding Suppliers,
5. Access In-House Resources at Commercial Firms,
6. Support Hiring and Retention of Workers,
7. Support Emergency Construction.

The second group of IBAs addresses the problem of increasing the domestic supply of production resources:

8. Support Expansion of Resource Production,
9. Realign Dependence on Foreign Suppliers,
10. Restrict Exports of Production Resources,
11. Release Materials from the National Defense Stockpile,
12. Support Productive Labor Relations,
13. Support Labor Training Programs,
14. Obtain Waivers to Socioeconomic Regulations.

Finally, the third group of IBAs addresses activities more directly subject to DoD control:

15. Utilize Inactive Production Equipment,
16. Change Production Methods to Reduce Leadtimes,
17. Institute Product Changes to Reduce Leadtimes,
18. Reorient Foreign Military Sales Resources,
19. Use Spares and Repair Parts for New Production.

B. ANALYSES OF INDUSTRIAL BASE ACTIONS (IBAs)

1. Obtain Priority Access to Current Production

a. Definition

In the event of a surge in overall procurement, resource requirements for defense-related production would increase substantially.[1] There would be a great need for materials and for existing processing and fabricating capacity. In addition, even though surge is usually defined as a production expansion constrained by existing facilities, the defense-related demand for industrial equipment would necessarily increase as equipment bottlenecks were discovered and as capacity to produce critical items proved to be inadequate. The procurement surge would be delayed if normal commercial leadtimes were accepted in ordering these resources. Further, order leadtimes would increase dramatically as defense producers increased the size of their orders for supplies. This would especially be true in resource industries where the share of defense-related demand was already large or where the surge-related increase was particularly great. Even though certain resource industries would have unused capacity when a procurement surge began, it would take time (and leadtimes would lengthen) before they could hire workers and expand their production. For all of these reasons, it would be critically important that defense-related orders receive priority treatment, particularly orders for materials and components on the critical path of surge production.[2]

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[1]Even if only a limited number of weapon systems were surged, supply bottlenecks would develop in selected areas.

[2]An item would be on the critical path if a delay in receiving it would delay completion of the corresponding end item.

Title 1 of the Defense Production Act (95 Stat. 954) authorizes the President:

- to require priority performance of contracts which promote the national defense;
- to require acceptance of such contracts by any person he finds capable;
- to allocate materials and facilities as necessary for the same purpose.

This authorization is in effect today, and is not contingent on a declaration of national emergency. Title 1 authority has been delegated to the Federal Emergency Management Agency (FEMA) and in turn to the Transportation Department, the Energy Department, the Agriculture Department and the Commerce Department. The Commerce Department has established the Defense Materials System/Defense Priorities System (DMS/DPS) to provide defense-related programs with priority in obtaining most industrial products.[1] The DMS/DPS is mandatory for 37 defense-related program categories (accounting for 75 percent of DoD procurement in FY81).[2] The DMS/DPS provides that defense-related orders (i.e., orders from one of these program categories) must be given priority over non-rated and civilian orders as necessary for deliveries by the dates needed (with certain limitations). With certain exceptions, firms are obligated to accept rated orders for items they have produced within the previous two years.[3] A few defense programs of the

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[1]See U.S. Department of Commerce, "Defense Materials System and Defense Priorities System" (1977).

[2]See Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1981), p. 1018.

[3]A firm may refuse orders for items not normally produced or not produced within the previous two years, unless otherwise directed by the Commerce Department.

highest national urgency are rated DX and take precedence over programs with the standard DO rating. Producers of steel, aluminum, copper, and nickel alloy products are required to accept DX orders and to satisfy DO orders up to given set-aside limits established by FEMA and the Commerce Department based on DoD estimates of requirements. For most items covered by the DMS/DPS, DoD has the authority and obligation to place rated orders directly with prime contractors; in turn, contractors must extend the ratings throughout the lower tiers by including the ratings on their orders for materials and other supplies. If an order is not accorded the proper priority treatment or if other problems arise in obtaining items on time, contractors and DoD may request Special Priorities Assistance (SPA) from the Commerce Department. Under SPA, the Commerce Department can direct firms to comply with the DMS/DPS and can reschedule production. Usually the Commerce Department will work out an agreement with industry in an attempt to meet DoD needs under SPA. But Title 1, including the SPA directives and the DMS/DPS ratings, has the force of law behind it with provisions for criminal penalties and injunctive relief in the event of non-compliance.

Even though the DMS/DPS is in effect during peacetime, it is not uniformly effective. In many cases, the system is poorly understood by DoD procurement officers and contractors alike. Procurement officers frequently just accept commercial leadtimes rather than insist on deliveries by the times orders are needed.[1] Further, there is a widespread misconception by industry that only DX-rated orders must be given priority

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[1]See, for example, Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), p. 59.

treatment during peacetime.[1] The DMS/DPS is particularly ineffective at lower-tier defense suppliers, in part because defense contractors do not want to alienate suppliers by insisting on priority treatment for their military orders.[2] Nevertheless, the DMS/DPS is at least partially effective for DO-rated orders, and is highly effective for DX-rated orders.[3] In the event of a procurement surge, special efforts would be needed to broaden and increase the effectiveness of

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[1]In LTC Howard E. Bethel et al., loc. cit., p. E-8, it is reported that only 18 out of 30 contractors surveyed had given priority treatment to DO-rated orders, while 19 out of the 21 who had received DX-rated orders had given those orders priority. Further, in Otto Hintz et al., "Machine Tool Industry Study" (1978), p. 28, it is reported that some of the DO-rated orders sampled had not been accorded priority treatment and doubts were expressed over whether even DX-rated orders would be accorded priority treatment. The machine tool builders interviewed had the impression that ratings were effective only during mobilization.

[2]In Defense Science Board, "Industrial Responsiveness" (1981), p. 63, a vendor survey is reported to indicate good compliance with the DMS/DPS at the first tier, 50 percent compliance at the second tier, and 25 percent at the the third tier. Also, in LTC Howard E. Bethel et al., loc. cit., p. 54, it is observed that prime contractors hesitate to insist on priority for DO-rated orders from suppliers who also provide materials for their commercial business.

[3]Interviews by the author at the PMO for the MX missile system indicate that leadtimes for DX-rated orders were approximately half as long as those for DO-rated orders. Directives from the Commerce Department were not needed to obtain preferential treatment, but some follow-up by the procurement office was frequently needed. For example, one contractor for the MX had difficulty obtaining electronic components due to competition from the toy industry. The contractor was not aware of the power of its DX rating and had not attempted to invoke it. Similar interviews at the PMO for the M-1 tank also indicated that the DX rating had been implemented through the M-1 subcontractors and vendors and was quite helpful in reducing order leadtimes. While Commerce directives had not been necessary, follow-up by the PMO had been. At the ADPA Conference on Critical and Strategic Materials (May 5, 1981), a representative of General Dynamics reported that the DX rating had been used in support of the Trident program without the need for Commerce Department directives.

the DMS/DPS and otherwise to make greater use of the authorities available under Title 1 of the Defense Production Act.

b. Concurrent Actions

There are a number of actions which DoD could take at the time of a surge to enhance the utility of Title 1 authority.[1]

- Together with the Commerce Department, increase current efforts to educate procurement officers and contractors as to how the DMS/DPS is supposed to work. This would include monitoring compliance and prosecution of violators in order to establish the credibility of the system.[2]
- Quickly identify requirements for materials and industrial resources so that the Commerce Department and the Federal Emergency Management Agency (FEMA) could initiate steps to support those requirements with Title 1 authority. These steps might include:
    - increasing the set-aside limits for controlled materials;
    - extending the set-aside provisions of the DMS for additional materials;
    - instituting formal allocation of certain materials and industrial products; and

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[1] In the following discussion, Title 1 authority means the authority implemented in the DMS/DPS as well as authorities delegated to agencies other than the Commerce Department.

[2] While education and enforcement should be accomplished before a surge crisis, concurrent action would probably be required as well. Present efforts include establishment of the DoD Priorities and Allocations Council as well as steps by the Commerce Department and DoD to educate procurement and contractor personnel on the DMS/DPS, including development of a slide presentation. But the number of actual training sessions has been limited, in part due to a lack of travel money. The Commerce Department also conducts compliance audits of selected industries and contractors. See the testimony of Wallace E. Brown in Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 1014.

- planning with industry and rescheduling production in certain cases.

In the extreme, these actions would amount to mobilization of the affected industries. The steps taken would be determined by FEMA and the Commerce Department, while it would be up to DoD to identify and insist on receiving the required resources.

- Identify requirements for food, fuel, and transportation and request Title 1 priority in obtaining these resources. The requests would be made through FEMA to the Agriculture, Energy, and Transportation Departments. Similarly, request that the Commerce Department extend the DMS/DPS to include additional user programs critical to national defense.
- Review initial priorities among defense programs and revise the Master Urgency List (MUL).[1] Request Presidential authorization for additional DX-rated programs and activate additional categories to distinguish (externally) priorities among DO-rated items.
- Review any existing ratings for Foreign Military Sales (FMS) items and for parts exported pursuant to co-production agreements, and ask the Commerce Department to make necessary adjustments.
- Establish policy regarding the use of Title 1 authority to place mandatory orders with suppliers.[2]

c. Previous Actions

Following are some of the actions that could be taken prior to a decision to surge in order to increase the effectiveness of Title 1 in aiding a surge.

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[1]The MUL establishes internal priorities among DO-rated programs and is defined in DoDI 4410.3.

[2]Actions to force suppliers to accept rated contracts are rare during peacetime due, in part, to the controversy such actions could generate. Thus, concurrent educational efforts should convey DoD's attitude toward mandatory orders to its procurement officers.

- Perform good Industrial Preparedness Planning (IPP) through pacing subcontractor tiers in order to identify industries likely to be impacted seriously by a surge. The results could be used with the Commerce Department to prepare for any required allocations or other Title 1 actions.
- Review arrangements for obtaining Title 1 priority for food, fuel and transportation in circumstances short of full-scale mobilization.[1]
- Increase efforts to educate procurement and contractor personnel and to enforce the DMS/DPS, including support for adequate staffing at the Office of Industrial Resource Administration (which is responsible for DMS/DPS at the Commerce Department).

d. Effectiveness

Title 1 authority would be effective in reducing order leadtimes for defense-related programs (below what those leadtimes would be without preferential treatment). Title 1, however, is not a panacea for all resource shortages. Process times can be lengthy and usually cannot be affected by means of Title 1.[2] Further, Title 1 authority cannot reduce order leadtimes further once all available capacity (for a particular item or resource) has been allocated to defense-related orders. In fact, allocation of capacity to defense would usually stop far short of total industry capacity. Even during full-scale mobilization, much of industrial capacity

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[1]For example, in "Defense Industry Analysis Summaries" (1981), p. 14-12, it is reported that existing regulations (which are being revised) at the Department of Energy for issuing priority ratings for petroleum products are "limited to DoD needs, the data required for decision-making is extensive, and the leadtime to results is lenghty."

[2]Nevertheless, the difference between process times and order leadtimes can be substantial. In LTC Howard E. Bethel, et al., loc. cit., p. 64, contractors estimated that "hands-on production time is only 10-30 percent of the leadtimes quoted."

would be reserved to meet essential civilian needs. And during a more limited peacetime surge, a large proportion of industrial capacity would in effect be reserved to prevent undue disruption of the civilian economy. This reservation would become apparent both under formal allocation schemes and in particular SPA directives from the Commerce Department. Thus, even with Title 1 authority, order leadtimes could increase if the procurement surge occurred in a fully employed economy.

e. Deterrent Impact

Extension of Title 1 authority and imposition of formal allocation in selected industries would be controversial and hence visible. This could signal U.S. resolve. On the other hand, being forced to back down from obtaining preferential treatment or losing an attempt to enforce manadatory acceptance could signal political weakness for the defense effort at home.

f. Budget Cost

Budget costs would be administrative in nature and hence not particularly great. Programs to educate personnel, to monitor and enforce compliance, and to provide expediting assistance, however, would require additional funding.

g. Civilian Disruption/Economic Impact

The use of Title 1 authority to obtain preferential treatment for defense-related orders would exacerbate the civilian disruption inherent in a surge program. This would particularly be true at the beginning as expected delivery schedules for civilian needs slipped so that defense needs could be satisfied. Lengthening of leadtimes for new civilian

orders would be less disruptive since firms could plan based on the longer leadtimes. The extent of civilian disruption would vary among industries depending, in part, on the amount of surge-related demand for particular resources.[1] The Commerce Department would also act to moderate the use of the DMS/DPS in order to keep disruption within acceptable bounds.[2]

h. Political Feasibility

Ultimately, the extent to which Title 1 authority could be employed would depend on the degree of popular support for the President's defense policies. It seems plausible that a Presidential decision to surge procurement together with the

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[1]For example, the use of priority ratings during a surge would be much more disruptive for commercial users of titanium (where defense-related demand approaches 40 percent of the total supply) than for users of steel, aluminum, or many chemicals (where defense-related demand is closer to five percent). See Arthur D. Little, Inc., op. cit. While defense-related demand for machine tools is approximately five percent of industry output during peacetime (see Otto E. Hintz et al., loc. cit., p. iv), industry capacity is small relative to what defense-related demand would be in the event of a substantial and comprehensive procurement surge. For example, during the Korean War, defense-related demand caused machine tool orders to increase six-fold in one year. Machine tool shipments to non-defense users were virtually banned from the end of 1950 until July 1952. See Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), p. 23. Current peacetime regulations limit the obligation to accept DO-rated orders to 60 percent of scheduled monthly production for any size machine tool.

[2]The Commerce Department would consider the viability of civilian industries in allocating materials or in responding to requests for special priorities assistance (SPA). For example, interviews at the PMO for the M-1 tank indicated that after a labor strike was settled, a supplier's backlog of rated machine tool orders would have taken two years to satisfy. In the meantime, the firm's commercial market would have eroded. The Commerce Department took this into account and while substantial priority was accorded to M-1 related orders, the firm's commercial market was also protected.

requisite Congressional appropriations would imply sufficient popular support to implement those decisions. Nevertheless, political limitations would be discovered as DoD attempted to use Title 1 to solve particular shortages.[1]

2. Initiate Surge by Quick-Reaction Contracting

a. Definition

Implementation of a decision to surge procurement could easily be delayed for several months by administrative matters. Time could slip away as--

- the overall surge program was planned and requirements for individual end items were identified;
- additional funding was obtained for the end items whose procurement was to be surged; and
- procurement contracts were negotiated or renegotiated for surge items.

Such administrative matters could delay the initiation of efforts by producers to increase production. While contractors would begin to plan for production increases, they could not be expected to order supplies and obligate resources until the government agreed to reimburse them. At the same time, the need for increased procurement of certain items would be both obvious and urgent. In such cases, DoD could circumvent these administrative leadtimes and contract immediately for the procurement increases. Methods for quick-reaction contracting include:

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[1]For example, in response to the recent shortage of titanium, the Commerce Department attempted to make titanium a controlled material under the DMS, but the proposal was withdrawn in the face of opposition from both industry and government. See Committee on Armed Services, loc. cit., p. 1016.

- letter contracts, under which producers would agree to begin meeting surge requirements and to negotiate definitive contracts later, while DoD would agree to reimburse them for costs incurred even if definitive contracts were not established later; and
- basic ordering agreements (BOAs) and options, whereby contractual provisions would be negotiated in advance of a decision to surge procurement.[1]

b. Concurrent Actions

Implementing this approach would require a number of actions, such as:

- policy guidance would be needed by procurement officers regarding the extent to which quick-reaction approaches should be used in the particular surge situation.
- Defense Acquisition Regulation (DAR) 3-216 would permit contracts to be awarded without the delay of competitive bidding. Waiver of additional procurement regulations might be necessary.[2]
- funding for quick-reaction contracts could be obtained by reprogramming unobligated appropriations to some extent. Time could be saved by asking Congress to increase DoD's reprogramming authority, or to grant

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[1]These approaches were recommended for surge situations in Defense Science Board, "Report of the Defense Science Board 1980 Summer Study Panel on Industrial Responsiveness" (January 1981). A sample letter contract for use in event of mobilization is included in the proposed revision of DoD 4005.3M, "Industrial Preparedness Planning Manual" (draft, 1981).

[2]While DAR 3-216 is used during peacetime to protect industrial capabilities to surge or mobilize, it could be used in an emergency to save time.

emergency authority to enter contracts prior to Congressional appropriation of the requisite funds.[1]

c. Previous Actions

A number of actions could be taken prior to a decision to surge in order to reduce these initial administrative leadtimes. These actions include:

- identification of items and quantities likely to be needed and good Industrial Preparedness Planning (IPP) with surge producers;
- development of draft policy guidance and providing for the required standby authorities;
- preparation of standby programming and budgeting for the overall surge program; and
- negotiation of standby letter contracts and BOAs as well as surge options in current procurement contracts.[2]

The feasibility of quick-reaction contracting would depend greatly on preparatory actions such as these.

d. Effectiveness

This measure could advance the beginning of surge production by several months compared to waiting for Congressional approval of a detailed surge program and negotiation of definitive contracts. Directed contract awards

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[1]Preferably, emergency obligating and reprogramming authorities would be obtained prior to the decision to surge. At the present time, the Army is developing a legislative proposal to provide the President with unfunded contract authority for emergency procurement. For example, the President might be granted authority to obligate funds prior to Congressional appropriation of those funds, in certain emergency situations and subject to certain time and dollar constraints.

[2]Recommended surge option clauses are included in DoD Task Force to Improve Industrial Responsiveness, loc. cit., Tab 8.

and letter contracts would save valuable time even where funding and planning delays prevented their use as soon as the surge decision was made.[1] Further, developing surge budget requests (and perhaps obtaining Congressional review of those requests) prior to a decision to surge would reduce the planning and funding leadtimes. Those leadtimes could be circumvented altogether in cases where prior planning had identified items suitable for surging immediately, and where reprogramming or emergency contracting authority prevented funding delays. It should be noted, however, that administrative delays are not necessarily unproductive. That is, if prior planning had not been adequate, too much haste could result in the wrong items being surged at the wrong producers and could create chaos among sub-tier contractors.

e. Deterrent Impact

This measure would provide an early indication of concrete activity. Further, adversaries would have some difficulty in evaluating the scope of that activity, particularly in the period prior to a supplemental budget request to Congress.

f. Budget Cost

The potential for waste and mismanagement inherent in a hastily implemented program could be controlled through good surge planning beforehand and by judicious selection of items and firms for this quick-reaction approach. However, in some

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[1]For example, it usually takes 90 days for solicitation, bidding, and contract award to procure tracks for the M113A1 Armored Personnel Carrier. It takes the contractor 120 days to deliver the first shipment. See LTC Howard E. Bethel, et al., "Vertical Slice Real-Time Planning" (June, 1979).

cases excessive use of this approach could result in the wrong items being surged in the wrong amounts or in the best producers and methods not being chosen.

g. Civilian Disruption/Economic Impact

The civilian impact of surging procurement would depend on the size of the program. But this quick-reaction approach would exacerbate any disruption in three ways:

- the surge program would begin to impact much sooner, so that firms would have less time to prepare for adjusting to supply and other disruptions;
- the government would have less time in which to devise a program which minimized civilian disruption; and
- immediate orders would be changed in amount and priority as the overall surge program was worked out, causing confusion in the lower tiers.

These disruptions would be particularly costly if the economy were fully employed at the time of the surge. Of course, the potential for disruption could be reduced through good prior planning. For example, stockpiling materials and components at selected defense contractors as part of IPP would reduce the immediate impact at their suppliers.

h. Political Feasibility

This measure would weaken control over procurement by Congress, the Office of Management and Budget (OMB) and officials within DoD. In addition, it could lead to apparent waste in defense procurement. As a result, it can be expected to generate political opposition and might not be feasible except during very serious emergencies. For lesser emergencies, it might be feasible to use the quick-reaction approach for selected standby programs that had already been reviewed by OMB and Congress. Since Congress would hesitate

to increase DoD's authority to reprogram appropriations or to let contracts without appropriate funds, the scope for immediate contracting would be limited except in the most serious of crises.

3. Surge by Accelerating Deliveries under Existing Contracts

a. Definition

In some cases it would be possible to initiate a surge in procurement by compressing delivery schedules for end items that had already been ordered. Such compression would utilize stocks of materials, components, and goods-in-process that were acquired under the existing contract. End item production would be accelerated using existing production equipment and labor transferred from other plant operations and/or newly hired workers.[1]

b. Concurrent Actions

For the most part, compression of delivery schedules for existing contracts would occur automatically as procurement officers sought to increase end item deliveries. However, some actions by higher officials might be necessary.

- Compressing delivery schedules could result in idle facilities to some extent, if initial stocks of materials and components were depleted before newly ordered materials were received. Procurement officers would need policy guidance regarding the extent to which such idleness should be permitted.
- Compressing delivery schedules might require renegotiation of procurement contracts. Thus, emergency regulations might be needed to facilitate quick renegotiations.

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[1]Even within a plant, transferring workers could create union, morale, and safety problems that should be addressed in advance.

c. Previous Actions

The ability to compress existing delivery schedules would depend greatly on what actions had been taken prior to the decision to surge. Important actions would include:

- development of standby policy guidance and emergency contracting procedures;
- good surge planning as part of IPP, including industrial preparedness measure (IPMs) to eliminate bottlenecks to accelerating deliveries;
- use of multi-year contracting to increase the size of material and component inventories; and
- providing for optional acceleration of deliveries in original procurement contracts and stockpiling materials and components in a balanced way for that purpose.[1]

d. Effectiveness

This measure would increase delivery rates for certain items during the early months of a production surge (in

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[1] In "Executive Summary on Industrial Readiness Plans and Programs" (1977), the Defense Science Board suggested that planning and preparedness measures be implemented to provide a capability to reach maximum production rates at existing facilities for selected items within six months or one year. In their 1977 report ("Civil Preparedness Review"), p. 74, the Joint Committee on Defense Production recognized the need to pre-stock aircraft parts and subassemblies in preparation for a surge. Current studies or experiments with surge contracting techniques are being performed by ARRCOM, DoD's Industrial Task Force, the Air Force Logistics Command, and the American Defense Preparedness Association (ADPA). In his letter of March 1, 1982, General Henry A. Miley, Jr. (Retired), President of the ADPA, recommended that surge contracts obligate contractors to be able to meet specified production rates within specified times. He further recommended that surge contracts include adequate funding for pre-stocking long-leadtime components and financial incentives for meeting surge production schedules, and that they be extended to selected subcontractors. See also the recommended surge option clauses in DoD Task Force to Improve Industrial Responsiveness, loc. cit., Tab 8.

comparison with delivery rates under new orders). Such improvements would occur in cases where long leadtimes for new orders of materials and components could be avoided by using inventories (at prime and sub-tier contractors) acquired to support existing contracts (assuming that necessary additions to work forces and facilities could be completed sooner than new orders for materials and components could be filled). But, without prior measures to build up balanced inventories and eliminate other bottlenecks in preparation for a surge, the scope for compressing deliveries would be limited.[1] Once initial inventories were depleted, production lines would be disrupted and facilities might be underutilized until additional materials and components could be acquired. This would be a particular problem for aerospace items.[2]

e. Deterrent Impact

By quickly increasing the output of procurement items, this measure might remind adversaries (and allies) of the strength of the U.S. industrial base. Outsiders would have difficulty recognizing that the initial increase might only last a few months, and thus might overestimate U.S. capabilities.

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[1]Contractor inventories of parts and materials depend on economic factors as well as production schedules. There is no reason to assume that those inventories would normally be purposely balanced in such a way as to permit an unanticipated acceleration of output.

[2]In testimony before the House Armed Services Committee, Harry J. Gray of United Technologies Corporation estimated that a surge in production of jet engines would deplete initial inventories of materials within six to nine months. See House Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 64. See also Robert L. McDaniel et al., "Analysis of Capacity and Demand Data for the Aircraft Industry" (1979), p. 45.

f. Budget Cost

Important budgetary impacts of this measure include:

- advancing the dates by which existing appropriations would be spent (affecting fiscal planning);
- increasing unit variable costs (as producers expanded production in haste) but decreasing unit fixed costs (as overhead was spread over more units);
- idling production facilities and labor once existing inventories of materials, components, and goods-in-process were depleted (until new orders were filled).

This last point is the most serious one. Producers would be asked to hire and train additional workers and incur other expenses in order to accelerate production. A few months later materials pipelines could be dry and production would stop until new materials orders could be produced. Surely firms would agree to accelerate deliveries only if the government agreed to pay the cost of these idle resources under follow-on contracts. These costs could be reduced by retarding the rate of acceleration of deliveries, thus reducing the effectiveness of this measure. Costs could also be reduced by employing this measure only when the risk of idling resources was relatively low. The cost of stockpiling materials and components prior to a procurement surge would be substantial, but would be small in comparison with the total cost of the end items involved in some cases.[1]

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[1]In the Army Materiel Command study referenced above, the estimated cost of stockpiling ranged from 20 to 35 percent of the total cost of the end items whose delivery would thereby be advanced (depending on the item studied). Similar estimates by defense officials interviewed by the author ranged from 10 to 30 percent. In "Defense Industry Analysis Summaries" (1981), p. 8-11, students at the Industrial College of the Armed Forces (ICAF) report a contractor's estimate that stockpiling parts would cost less than five percent of the purchase price of the aircraft involved.

g. Civilian Disruption/Economic Impact

By accelerating procurement suddenly, this measure would exacerbate the disruption inherent in a surge by reducing even further the time available for firms to adjust to the disruption. The primary impact would be felt by defense contractors and their commercial customers. For example, defense contractors might obtain manpower and/or facilities by delaying deliveries to commercial customers. Special efforts to stockpile materials and components ahead of time, however, would tend to reduce disruption for commercial customers of the suppliers of materials and components.

h. Political Feasibility

Since the prospect of idle resources (after inventories were depleted) would have the appearance of waste, compressing delivery schedules to that point could generate opposition in Congress. While lower-tier contractors would support efforts to build up stockpiles before the surge, end item contractors might not be enthusiastic if stockpiling components reduced the number of end items purchased.

4. Surge by Adding Suppliers

a. Definition

An overall surge in procurement would rely first and foremost on increasing production at existing defense suppliers.[1] However, in many cases it would also be necessary to procure from new sources (at both prime and lower-tier

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[1]For example, see the priorities for source selection in DoD 4005.3M, "Industrial Preparedness Planning Manual" (draft, 1981), p. 10.

levels). Reasons why existing suppliers would not always be adequate include:

- resource constraints (e.g., equipment bottlenecks, inadequate plant capacity, local labor shortages, overextended management) might prevent them from increasing production soon enough;[1]
- they might not be interested in additional defense business;
- they might be sole sources of critical items or foreign producers no longer accessible to the U.S.;
- they might have capacity inadequate to meet the needs of a likely future surge in procurement requirements; and
- they might leave the defense business for normal, peacetime reasons.[2]

Thus, a number of firms would have to be recruited as defense suppliers in order to support a broad procurement surge. Additional suppliers would be particularly needed for lower-tier items. While many firms would gladly respond to new opportunities for defense orders, recent studies have identified a number of reasons why defense business would be

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[1]Capacity constraints during a surge would be particularly severe for lower-tier contractors. See, for example, Committee on Armed Services, "The Ailing Defense Industrial Base: Unready for Crisis" (1980), p. 12, and LTC. Howard E. Bethel et al., "Vertical Slice Real-Time Planning" (1979), p. 108. Further, prime contractors would tend to subcontract a greater share of their fabrication work during a surge. For example, the make/buy ratio for the turbine engine industry is estimated to have shifted from 50/50 during non-peak production to 30/70 during peak production. See David W. Grissmer and Kwan H. Kim, "Study of the Turbine Engine Industry" (1978), p. iii.

[2]The Defense Science Board, in its "Report on Industrial Responsiveness" (1981), p. 49, observed that one company with 6000 suppliers experienced a 25 percent turnover in suppliers every year. The Committee on Armed Services, in the report cited above, indicated that of 3500 aerospace contractors, there had been a turnover of 1500 within two years.

unattractive to many other firms.[1] Some of these reasons have to do with the red tape involved in doing business with the government:

- burdensome contracting requirements and procedures;
- arbitrary restrictions on profit rates and reimburseable costs;
- slow payments;
- stringent reporting requirements for cost/pricing data;
- unique cost accounting stnadards; and
- obligations to comply with regulations to promote social objectives (e.g., affirmative action programs).

These administrative burdens fall particularly hard on small firms. Other unattractive features of defense business have to do with the nature of the orders themselves:

- demand is unstable (and future prospects would be particularly uncertain at the time of a surge);
- defense orders are frequently small in comparison with the quantities ordered for commercial products;
- defense-related products frequently have specialized designs and non-standard specifications;
- high quality standards and state-of-the-art specifications make certain defense products very difficult to produce; and
- qualification, inspection, and testing requirements are extensive.

These characteristics of defense orders tend to reduce the number of potential suppliers that are interested and/or

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[1]See, for example, Committee on Armed Services, op. cit., and Defense Science Board, ibid.

qualified to do defense-related work.[1] In addition, the number of potential suppliers has been reduced in certain instances by foreign competition and/or environmental and safety regulations. The difficulty of recruiting additional suppliers would be particularly great if the economy were fully employed at the time a surge began. Accordingly, DoD would need to take extraordinary actions at the time of a surge in order to support quick and extensive recruiting of additional suppliers.

b. Concurrent Actions

Below are listed a number of actions that could be included in an emergency program to support the addition of suppliers.

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[1] In Defense Science Board, loc. cit., p. 16, it is reported that most machine tool producers are not interested in defense business and often will actively avoid it due to the red tape involved. Roderick L. Vawter, in "Industrial Mobilization, An Historical Analysis" (1981), p. 58, reports that the Caterpillar Tractor Company has withdrawn from defense business (except for off-the-shelf equipment) rather than meet new cost accounting standards. Interviews by the author at the program management office (PMO) for the UH60A helicopter indicate that there are only three or four companies willing to produce aircraft-quality bearings due to the demanding specifications and testing requirements. In another interview, the PMO for the Advanced Attack Helicopter (AAH) described the reluctance of small steel forging firms to qualify to produce aircraft quality parts. These firms would have to hire metallurgists, acquire test equipment, and pay much more attention to quality control. The volume of defense business would not justify these changes. The AAH PMO also described a 1/4 inch aluminum extrusion for the airframe. Its thinness resulted in an 80 percent scrappage rate so that the supplier's equipment was tied up for long and unpredictable lengths of time in order to produce a relatively small quantity. They were forced to substitute another material. Finally, Arthur D. Little, Inc., in "Industrial Preparedness in an Arms Control Environment, Volume III", (1974), p. 151, describes the reluctance of automotive suppliers to bid on defense-related contracts due to the small volume in comparison with orders from the automobile manufacturers.

- Collect information on which products (including sub-tier items) would require new suppliers, especially those products for which recruiting new suppliers would be difficult. Enlist the aid of the Commerce Department in identifying potential suppliers.
- Provide for the waiver of selected socioeconomic regulations that would otherwise prevent or delay a new supplier from initiating defense production.[1]
- Provide policy guidance to procurement offices regarding the use of authority to waive selected procurement regulations. Implement a package of emergency regulations designed to reduce red tape (e.g., accounting methods, reporting requirements, contracting delays), especially for suppliers viewed as temporary.
- Provide policy guidance to procurement offices for offering long-term commitments as incentives to new suppliers. These commitments could include multi-year contracts and other extensions of termination liability including those available under Title 3 of the Defense Production Act (DPA).
- Encourage the use of experienced contractor or military personnel to assist new contractors in qualifying and starting up production. Where appropriate, utilize leader-follower contracts (under which existing producers would be responsible for bringing additional firms into production).
- Implement emergency procedures to consolidate orders among weapon programs in order to increase the size of defense-related orders.
- Where necessary, use the authority to place mandatory orders with suppliers under Title 1 of the Defense Production Act (DPA).[2]

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[1]See the discussion of waivers under IBA number fourteen.

[2]In addition, the allocation of materials under Title 1 authority can indirectly force suppliers to accept rated defense-related orders in order to obtain materials allocations and thereby keep their plants in operation. This effect, however, would apply only when defense-related demand for particular materials was sufficiently great.

c. Previous Actions

Considerable effort is being expended within DoD to address the problem of making defense-related contracting more attractive during peacetime.[1] In addition, there are a number of preparedness actions that could be taken:

- perform good surge IPP to identify and plan the required new suppliers, especially for pacing sub-tier items;
- implement industrial preparedness measures (IPMs) to reduce bottlenecks to expanding production at existing producers and thereby reduce the need for new suppliers;
- increase current efforts to reduce risky foreign and sole-source dependencies (such as the Diminishing Manufacturing and Material Shortages (DMSMS) program);[2]
- warm up potential emergency suppliers by offering educational orders (i.e., small procurement orders to familiarize contractors with defense products), minimum-sustaining-rate orders (which would permit on-going production), or by initiating a major program to stockpile long-leadtime items at a time of crisis;
- qualify the processes of potential producers in advance;
- prepare standby policies and emergency regulations to support the actions listed in section b above.

d. Effectiveness

Existing warm producers usually have a number of advantages over new suppliers as sources for increased defense procurement. These include:

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[1]See, for example, DoD Task Force to Improve Industrial Responsiveness op. cit., and also Frank C. Carlucci, "Memorandum on Improving the Acquisition Process" (April 30, 1981).

[2]See DoD Directive 4005.16.

- experience at producing the items;
- up-to-date technical data packages;
- existing qualification as suppliers;
- most of the equipment required to expand production by adding work shifts;
- trained work forces from which to draw key personnel for additional work shifts;
- established working relationships with necessary suppliers; and
- tolerance for the unique difficulties of doing business with the government.

For all of these reasons, production could usually be expanded (from peacetime levels) more quickly at existing producers than by adding suppliers. Nevertheless, as discussed in Section a above, there would be certain situations in which adding suppliers would be necessary to surge procurement. Indeed, when existing producers became constrained by inadequate production resources, DoD might save time by adding suppliers rather than directly addressing these resource bottlenecks. For example, labor shortages could be circumvented by opening second sources or subcontracting fabrication work in labor surplus areas; or, new suppliers might already possess production facilities that would otherwise have to be added at existing producers. In some cases, new suppliers might be multi-product firms that also produced or had preferential access to scarce materials. However, starting up production at new suppliers would be time-consuming, particularly in cases where additional tooling

or production and test equipment were required.[1] Warming up additional producers (i.e., qualifying them and providing at least small procurement orders) in anticipation of a surge would thus be very useful.[2]

While all of the actions listed in Section b would be helpful in reducing the time required to recruit and start up new suppliers, offering long-term commitments and assuming liability for start-up costs would probably be most effective. Also, the general condition of the economy would have an important bearing on DoD's success in recruiting new suppliers. If the decision to surge were made when the economy was fully employed and when full-scale war seemed unlikely, DoD would have difficulty attracting new suppliers for temporary business. The actions listed in Section b would

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[1]In "Defense Expansion Capability: Testimony before the U.S. Senate Committee on the Budget" (1980), p. 6, Geneese G. Baumbusch reported that potential suppliers in certain lower-tier industries would usually require at least 180 days before substantial production would be possible. Interviews by the author at the PMO for the M-1 tank indicated that to produce aluminum castings for the transmission housing, a new firm would require 18 to 24 months assuming that the basic facilities were already in place. The time would be required to obtain special tooling and to train personnel and would include four to six months for qualifying. Interviews at the PMO for the UH60A indicated that qualification of new parts suppliers would be time-consuming. A standard 200-hour bench test would be required and in some cases flight testing. Testing could not occur until the first parts had been produced and production would not resume until the first articles had been approved.

[2]Warming up additional producers would be most useful in the case of lower-tier firms whose products would be required to support the efforts of upper-tier assemblers. As pointed out by Robert L. McDaniel et al., in "Analysis of Capacity and Demand Data for the Aircraft Industry" (1979), p. 42, keeping an aircraft in production would do little to improve early surge capability unless special efforts were made to stockpile long-leadtime components. In Arthur D. Little, Inc., loc. cit., p. 129, it is reported that 50 additional F4E aircraft would have been produced in 37 months from a cold start but in 23 months if the initial production rate were ten per month.

take on added importance in such a sellers' market. The use of mandatory acceptance authority in certain cases could make potential suppliers in general more responsive.

e. Deterrent Impact

Adding suppliers would be an early indication of DoD activity to expand procurement. A successful court enforcement of the mandatory acceptance authority could signal (to allies and adversaries) that the surge program had political support. On the other hand, the credibility of the program would be damaged if DoD were visibly unable to recruit the needed suppliers.

f. Budget Cost

Most of the actions listed in Section b are administrative in nature and would not incur high costs. Providing long-term commitments and fully reimbursing start-up costs, however, could amount to substantial sums. This would particularly be true in cases where extensive facilitization was needed. Leader-follower contracts would also require financial incentives for the leaders. Most of the preparatory actions listed in Section c would be expensive and might not be feasible without a major increase in the DoD budget.

g. Civilian Disruption/Economic Impact

Civilian production would be disrupted if capacity used for civilian production (at prime and sub-tier levels) were instead used for defense production. Such disruption could occur at existing producers as well as at suppliers who previously had produced only civilian products. While it is not clear how much adding suppliers would exacerbate the disruption already inherent in a surge program, there is

probably more potential for disruption when suppliers are added than when production is increased at existing suppliers. The actions listed in Section b would not be disruptive in themselves (except for mandatory acceptance of contracts).

h. Political Feasibility

Political controversy would likely arise in connection with waiving the various socioeconomic and procurement regulations and with any long-term commitments made. Perhaps the most acute opposition to opening new suppliers would come from existing producers who would prefer to expand further their own production.[1] Finally, mandatory acceptance of contracts would generate strong political opposition unless applied very judiciously.

5. Access in-House Resources at Commercial Firms

a. Definition

As the Department of Defense (DOD) implemented a decision to surge overall procurement, bottlenecks would arise due to particular shortages of skilled workers, scarce materials, and production equipment. At the same time, civilian-oriented commercial firms would possess those very resources for use in producing their own products. This measure proposes a high-level campaign to make some of those resources available to DoD. Key officials from DoD, the Commerce Department, and the White House would apprise chief executives of major corporations of DoD's resource needs and solicit information

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[1]For example, a sole-source supplier recently went to court in an (unsuccessful) attempt to prevent DoD from opening a second source.

on available sources.[1] The appeal would be based on patriotism as well as the needs corporations might have to begin planning for conversion to defense production in the event of full-scale mobilization.[2] Thus, this measure would help the immediate surge by obtaining production resources from unusual sources and would also serve as a precursor to conversion of civilian industry in the event of total mobilization.

DoD (or its contractors) would access these resources in such a way as to avoid or minimize interference with commercial production. There are a number of resource types potentially available.

- Some portion of private inventories of materials is held for precautionary reasons. DoD might be able to purchase that portion in exchange for extending Title 1 (of the Defense Production Act (DPA)) authority to firms for purposes of replacing those inventories or meeting certain future needs.
- DoD might be able to contract for the use of some portion of a firm's production equipment and/or skilled labor, even though the firm normally did not

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[1]As part of MOBEX-80, the Army hosted meetings for 32 chief executives to discuss industrial mobilization. Also, in Arthur D. Little, Inc., loc. cit., p. 126, it is suggested that in a crisis, top industry executives be "convinced of the reality and urgency of the situation through contact by peer government executives appealing not only to their financial interests but also to public service and patriotic motives."

[2]Maxwell Alston, in "Industrial Preparedness of the Non-Defense Sector" (1981), p. 9, described the efforts of Robertshaw Controls Company to prepare itself for mobilization by becoming a planned or active defense producer. As Alston said: "Let me reemphasize our basic self interest in this effort. We simply believe that some level of national mobilization is a real possibility, and we recognize that most of our peacetime product lines would not be priority needs for consumption of essential raw materials in conditions of national emergency."

market such services. The equipment or labor might otherwise have been underutilized.[1]

- DoD might be able to contract with a firm for the production of components and subassemblies similar to items produced for the firm's own commercial products. Again, the relevant capability might currently be underutilized.

This measure would thus support other actions taken to add suppliers.

b. Concurrent Actions

Implementing this measure includes actions to:[2]

- organize the solicitation effort with the Commerce Department and the White House;
- establish an information clearinghouse function to exchange information on critical DoD resource needs and on available (in-house) commercial supplies;
- prepare an emergency package of procurement and contracting regulations designed to make contracting for these resources easy;[3] and
- arrange with the Commerce Department for the extension of rating authority under the Defense Priorities System (DPS) in certain cases.

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[1]For example, industrial firms might have captive foundries or machine shops that were underutilized for the production of their own end items.

[2]While this IBA is concerned with privately owned firms, in-house resources at government-owned facilities should also be accessed to support other programs where feasible.

[3]See the discussion under IBA number four above regarding disincentives to defense contracting.

c. Previous Actions

Prior to the decision to surge, it would be useful:

- to plan this measure including preparation of the emergency package of regulations;
- to identify potential bottlenecks and critical resource needs through good surge IPP, and implement IPMs to eliminate the need to access in-house resources of commercial firms;
- to do some planning for the conversion of civilian firms in the event of mobilization.[1]

d. Effectiveness

This measure could provide critical help in alleviating particular bottlenecks and avoiding damaging delays. Greater corporate participation could be expected the more excess capacity existed in the economy and the more serious the international situation seemed to be. Success would depend greatly on DoD's ability to identify specific and critical resource needs. While good Industrial Preparedness Planning (IPP) and measures (IPMs) could eliminate the need to access in-house commercial resources, this measure could be an effective reaction mechanism to address whatever deficiencies still existed at the time of a surge.

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[1]Roderick L. Vawter, in "Industrial Base Mobilization" (1981), p. 13, pointed out that mobilization planning does "not actively consider finding the capacity in private industry from some source not now associated with defense production." The failure to plan for a conversion of the whole economy is due, in part, to the fact that planning is based on the procurement needed to support the planned peacetime force levels rather than an expanded force structure. These limitations, however, are being addressed within DoD.

e. Deterrent Impact

This expanded participation of private business in the defense effort could be publicized to indicate the strength of public support for the President's defense posture.

f. Budget Cost

Aside from the cost of acquiring the resources themselves, costs under this measure would be largely administrative in nature. In some cases, this program could reduce budget costs by reducing the need to invest in alleviating bottlenecks at the plants of defense producers themselves.

g. Civilian Disruption/Economic Impact

This program would be designed to minimize any disruption of civilian production at the participating firms. Indeed, by satisfying some critical needs, this program would reduce the impact of the surge program on certain resource markets.

h. Political Feasibility

This measure would reduce demand for the products of certain defense and resource producers, and hence might generate some political opposition from them. It also could be an effective way for the President to appear to be asking for sacrifice from business as well as other sectors.

6. Support Hiring and Retention of Workers

a. Definition

If a decision were made to surge procurement, most defense producers would need to expand their work forces in order to increase production. Locating and hiring additional

workers would be both difficult and time-consuming. Even if the economy were not fully employed, shortages would develop for particular skills and in certain local labor markets. While large contractors might be adept at recruiting beyond their local markets and building up their work forces on a planned, peacetime basis, their methods might be too slow to meet emergency surge requirements. Further, smaller contractors might be completely dependent on local market conditions. Accordingly, DoD could enhance the surge by initiating actions that supported the hiring and retention of workers for defense-related production.

b. Concurrent Actions

DoD could take a number of actions to support the hiring and retention of defense workers, including:

- identify labor and skills shortages and request help from the Labor Department in alleviating those shortages for defense producers through enlisting state and local employment offices in a national job referral program, by asking state and local employment offices to give defense-related jobs preference in referring workers, by helping to locate retired skilled workers, and by other actions;[1]
- together with the Labor Department, obtain necessary waivers to hiring and promotion restrictions resulting from Equal Employment Opportunity Commission (EEOC) or related regulations and programs;
- assure that any new draft legislation includes provisions for exempting workers in critical

[1]The Labor Department, FEMA, and DoD are currently conducting a Civilian Workforce Mobilization Study.

occupations, and determine and publicize those occupations as soon as the decision to surge is made;[1]

- establish procedures to exempt reservists in critical occupations from early call-up;[2]
- negotiate local agreements to limit pirating of workers among defense producers, utilizing the agreements authority of Title 7 of the Defense Production Act (DPA) to protect against antitrust prosecution;[3]
- assure that any wage control legislation or program includes provisions for exempting (or recognizing shortages in) critical occupations; and
- together with the Labor and Treasury Departments, recommend favorable income tax treatment for defense workers in critical occupations (e.g., tax-exempt bonuses).[4]

c. Previous Actions

In order to support the hiring and retention of defense workers, a number of previous actions could be taken, including:

- perform good surge IPP to identify potential labor bottlenecks (in production) and implement measures to alleviate those bottlenecks, such as automating processes, planning production in areas without

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[1]Critical occupations might include machinist, computer programmer, and scientist among others.

[2]In Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), p. 23, it is observed that during the Korean War, DoD avoided calling up reservists from the machine tool industry. Currently, up to 10 percent of personnel at Naval Aircraft Rework Facilities are reservists.

[3]In Defense Science Board, "Industrial Responsiveness" (1981), p. 151, competition between prime contractors and their suppliers is reported as a problem.

[4]Currently, military personnel are given favorable tax treatment since clothing and housing allowances are not subject to Federal income tax.

chronic labor shortages, and encouraging planned producers to establish standby hiring plans;[1]

- identify potential surge labor requirements and encourage the Labor Department to develop standby programs to support recruiting in the event of a surge;
- prepare waiver authority and procedures in advance for EEOC regulations and delaying the call-up of reservists, and assure that the requisite provisions are included in any standby legislation for a draft or for wage controls;[2]
- begin hiring workers in advance of a decision to surge, especially those that would be needed first or that would be difficult to recruit;[3]
- keep track of the whereabouts of retired skilled workers;[4]
- establish an industrial reserve labor force, trained in advance for defense-related production in an emergency.[5]

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[1]For example, in Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 781, General John R. Guthrie observes that manpower requirements have been reduced by 42 percent in modernized ammunition plants.

[2]See DAR 12-808 (e, f) regarding EEOC regulations.

[3]Workers needed early would include tool and die makers, manufacturing engineers, materials purchasers, and supervisors. Hiring such workers would be funded under contracts such as surge option contracts, educational-order contracts, or advance-buy contracts.

[4]DoD or the Labor Department could establish access in advance to existing information sources such as company, union, and government pension records, and might also maintain a register of names.

[5]Workers would agree to report for defense-related production in an emergency in exchange for prior participation in skills training programs, paid reserve organizations, or other inducements.

d. Effectiveness

If the economy were fully employed at the time a surge decision was made and no policy steps were taken to reduce civilian demand, recruiting labor for defense-related production would be difficult and time-consuming. While in some cases existing workers could be reassigned from civilian to defense-related products (e.g., by using Title 1 authority to obtain priority for defense-related products), most of the expansion in defense production would require expanded work forces. Indeed, in some cases leadtimes for hiring and training workers could exceed those for acquiring materials and industrial equipment. This would be particularly true in cases where surge production had been planned and long-leadtime materials had been acquired in advance. But, in other cases, leadtimes for obtaining components or production equipment would leave more than ample time to hire additional workers.[1]

Since skilled workers tend to be over 21, occupational deferments for the draft would not be very helpful unless military manpower requirements were large enough so that older individuals were called.[2] Exemption from wage controls for defense producers would be particularly important since increasing wages would be an effective method for defense

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[1]For example, in Robert L. McDaniel et al., loc. cit., p. 43, it is reported that when production of the A-37 aircraft was restarted, "fabrication and assembly lines were manned without difficulty by the time that materials, vendor-supplied components" and government-furnished equipment were received.

[2]In Clarence E. Dalpra and William W. Saunders, "An Analysis of Industrial and Defense Planning for Undeclared Limited War" (1967), p. 47, 14.3 percent of the contractors surveyed felt that the Vietnam draft had had a significant impact on their skilled labor force or training program.

producers to recruit additional (and retain existing) workers. Anti-pirating agreements would probably not be very effective but they might mitigate this inflationary practice.

e. Deterrent Impact

Draft deferments, exemptions from wage controls, and favorable tax treatment for defense workers would be controversial and hence visible. Failure of such proposals to win Congressional approval would send a signal of political weakness to allies and potential adversaries.

f. Budget Cost

Surging procurement in a fully employed economy (without offsetting macroeconomic policy actions) would inherently increase defense wages and hence defense acquisition costs. Such increases would be facilitated by exemptions from any wage controls. Favorable tax treatment for defense workers would reduce Federal revenues as well as pressures for higher defense wages.

g. Civilian Disruption/Economic Impact

Surging procurement in a fully employed economy would be inherently disruptive and inflationary since workers would be bid away from civilian to defense production. Those actions listed in Section b above would exacerbate this inherent civilian disruption by increasing the effectiveness of efforts to expand defense-related employment. Exemption of certain defense industries from wage controls would worsen the distorting effects of such controls.

h. Political Feasibility

A number of the actions listed in Section b above would generate political opposition, including waiver of EEOC requirements, local anti-pirating agreements, exemption from wage controls, favorable tax treatment, and occupational deferments from the draft.[1] Stronger measures to mobilize the civilian work force would meet prohibitive political opposition and have not been described here.[2]

7. Support Emergency Construction

a. Definition

If a decision were made to surge production, producers would rely primarily on existing plant facilities in expanding output. If additional floor space were needed, producers could lease or purchase buildings already in existence. New construction would be avoided due to the time and cost

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[1]Occupational deferments might be opposed because they would tend to discriminate against minorities and the poor.

[2]In Roderick L. Vawter, "Industrial Mobilization An Historical Analysis" (1981), p. 7, it is reported that even during World War II there was no central registration of workers or compulsory labor assignment. In William Yandell Elliot, "Mobilization Planning and the National Security" (1950), the World War II manpower program is described. Stabilization controls attempted to limit pirating by requiring workers to obtain releases from war production employers before they could be hired elsewhere, but this was not very effective. The U.S. Employment Service referred applicants to high priority jobs but acceptance of such jobs was not mandatory. Employment ceilings were established to limit particular employers in hiring additional workers. Occupational deferments from the draft were used effectively.

involved.[1] In some cases, however, surge requirements could not be met without some new construction.[2] This might involve modification or expansion of existing facilities as well as construction of new buildings.[3] DoD could thus enhance the surge program by taking actions to reduce leadtimes for necessary construction projects.

b. Concurrent Actions

Timely completion of required new construction would include actions to:

- establish policy guidance permitting simplification of construction requirements and waiver of applicable military standards;[4]

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[1]In Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 43, Harry J. Gray of United Technologies Corporation estimated that it takes three and one half to five years to bring a new plant of any size to full production and a year to initiate production by converting an existing facility.

[2]For example, in LTC. Howard E. Bethel et al., loc. cit., p. F-6, 11 out of 27 contractors surveyed said they would need additional plant space and facilities in order to double military production within 12 months. Also, in his letter of March 1, 1982, General Henry A. Miley, Jr. (Retired) noted that increasing production of UH-1 and CH-47 helicopters during the Vietnam conflict required the construction of additional plants and facilities.

[3]Construction might involve setting up simple quonset huts for storage or for the repair of inactive production equipment. Additional floor space would frequently be required in order to set up PEP production lines since the space previously used would be in use for other products. Other construction projects might be designed to eliminate materials-handling bottlenecks within plants.

[4]In Roderick L. Vawter, "Industrial Base Mobilization" (1981), p. 12, it is suggested that construction leadtimes could be reduced by relaxing peacetime standards of efficiency and durability and instead building simple structures.

- arrange for waivers of (and quick decisions on) socioeconomic regulations as well as state and local construction and zoning regulations (which could require emergency legislation) in order to simplify requirements and speed construction;[1]
- seek the support of labor unions in easing jurisdictional and work rules that could otherwise delay construction;
- together with the Commerce Department, extend and apply the authority of Title 1 of the Defense Production Act (DPA) to obtain building supplies in a timely manner;[2]
- redirect construction resources of the U.S. Army Corps of Engineers (COE) from civil works projects to essential plant construction projects (as well as other essential military construction projects); and
- implement financial incentives to motivate private contractors to simplify and expedite related construction requirements.

c. Previous Actions

Previous actions that would reduce surge construction leadtimes include:

- perform good surge IPP to identify potential construction requirements, seek alternatives to new construction, and construct facilities where necessary;
- obtain standby, simple designs for emergency construction together with standby authority for the

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[1] In "Defense Industry Summary Analyses" (1981), p. 6-13, the impact of environmental and occupational safety and health regulations on construction leadtimes is noted.

[2] For example, while cement is currently ratable under the DMS/DPS, sand and gravel are not. If ratings were extended to additional materials during a surge, special efforts would be required to educate suppliers on the DMS/DPS.

required waivers of Federal, state and local regulations;[1]

- plan potential construction requirements with the Corps of Engineers (COE); and
- together with the Commerce Department, identify potential problems in obtaining construction materials not now covered by the DMS/DPS.

d. Effectiveness

While the need for increased output under surge conditions would be immediate, it might also continue over a period of time (say, one to three years). And, while construction of completely new factories might take longer than the entire surge, projects that could be completed within the first six to eighteen months of a surge could make important contributions toward meeting surge requirements. Such projects could be designed to alleviate plant bottlenecks by rearranging equipment, upgrading materials-handling or transportation facilities, or adding bare-bones floor space for assembly or storage. Indeed, construction leadtimes could be lower in certain cases than leadtimes for obtaining materials, components, subassemblies, production equipment, and skilled labor.

The actions listed in Section b above could substantially reduce leadtimes for construction projects. Obtaining waivers and regulatory decisions quickly could be particularly effective at reducing project leadtimes.

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[1]The COE has identified the need for such preparatory efforts.

e. Deterrent Impact

Construction projects might be more visible early signs of activity than initiating production itself. Such projects would thus demonstrate U.S. determination.

f. Budget Cost

Construction projects would be costly, although most of the actions listed in Section b are administrative in nature and hence would not add greatly to budget costs. Simplifying construction designs would actually reduce the costs of the projects that were undertaken, while pressing for maximum speed would increase project costs.

g. Civilian Disruption/Economic Impact

Construction projects would compete for resources with civilian construction and hence would be disruptive. This would be particularly true as regards the use of Title 1 authority to obtain supplies and as regards removing COE resources from certain civil works projects. But, new construction would also reduce the need to disrupt civilian production in order to accommodate defense-related needs (e.g., floor space could be added rather than using space previously occupied for civilian production).

h. Political Feasibility

Construction projects might be viewed as wasteful, especially if they would not be beneficial after the surge. Delaying civil works projects would be opposed by their beneficiaries, and there might be political limits to how far Title 1 could be used to obtain construction supplies. Waiving socioeconomic regulations would also generate

political opposition. Obtaining authority to force quick regulatory decisions and waive restrictive regulations at the state and local level would be extremely difficult in conditions short of full-scale mobilization.

8. Support Expansion of Resource Production

a. Definition

A surge in defense procurement would increase defense-related demand for the output of basic industries and lower-tier firms. To some extent the increased demand would be met by using the DMS/DPS to divert resources from civilian to military applications. However, much of the increased demand would be met by increases in the production rates of lower-tier firms. This would be particularly important during a peacetime surge in order to reduce the disruptive impact of the surge on the civilian economy.

In many cases, firms could expand production without major plant expansions. Production on a given work shift could be increased by adding workers, activating standby equipment, and acquiring industrial equipment to eliminate bottlenecks on production lines (e.g., inadequate furnaces or materials-handling equipment could create excessive idle time on forge presses). Production could also be expanded by adding work shifts, which would require adding workers and adding industrial equipment in cases where some of a plant's equipment (e.g., expensive fabricating equipment) was already

operated on a three-shift basis.[1] Long leadtimes would prevent major plant expansions unless the surge was in preparation for a distant contingency.

Lower-tier suppliers would naturally tend to expand output in response to an increase in demand for their products. Indeed, an effective DMS/DPS might force those with commercial business to expand in order to protect their commercial markets. However, expansion would take time and prudent business behavior would restrict the amount of expansion severely. In the face of a temporary and uncertain increase in demand, firms would hesitate to incur the costs of expanding production.[2] Much of the increase in orders would instead be absorbed by increasing order leadtimes.[3] Large order backlogs would provide firms with hedges against future

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[1]For example, in LTC Howard E. Bethel et al., loc. cit., p. 35, it is reported that Ratheon Bristol's radome grinding equipment and certain of FMC's machine tools were operated on three full work shifts while most equipment at the two plants was operated at less than three shifts. The "Defense Analysis Summaries" identify computer-controlled machine tools (p. 4-13), milling equipment (p. 8-10), and selected test equipment (p. 21-13) as being so expensive that firms plan to operate them on a three-shift basis.

[2]For example, in Committee on Armed Services, "The Ailing Defense Industrial Base: Unready for Crisis" (1980), p. 13, Dr. William J. Perry observed that the aerospace industry had not expanded to accommodate the 1978-1980 boom in demand because it believed the peak would go away in a year or two.

[3]For example, in Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 472, Gen. Alton D. Slay reported increases in order leadtimes between 1978 and 1980 from 33 to 117 weeks for small and medium titanium forgings, from 32 to 81 weeks for small and medium aluminum forgings, from 25 to 92 weeks for titanium plate, and from 36 to 82 weeks for steel forgings.

declines in demand.[1] Accordingly, extraordinary government actions would be required in order to encourage and support the expansion of production by lower-tier industries in support of a surge.

b. Concurrent Actions

There are a number of actions that DoD could take to support the expansion of needed resource production:

- identify resource needs and work with FEMA and the Commerce Department to pinpoint industries where production increases would be needed and to develop appropriate programs;[2]
- support the use of Title 3 of the Defense Production Act (DPA) to subsidize start-up costs and to guarantee demand for the resulting output;[3]
- establish blanket purchase orders whereby DoD would place large orders for standard items needed and would allow defense contractors to draw from those orders (similar to the Machine Tool Trigger Order Program which would be activated in the event of full-scale mobilization);

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[1]After the surge, the machine tool industry would be in a doubly precarious position. For example, after World War II, not only did defense-related demand for machine tools drop precipitously, but also the government dumped machine tools on the market at 15 cents on the dollar. See Roderick L. Vawter, "Industrial Mobilization, An Historical Analysis" (1981), p. 7.

[2]Responsibilities for industrial expansion overlap somewhat and FEMA, the Commerce Department, and DoD would work together. See Executive Order 11490 (October 28, 1969 (as amended)). An example of a potentially useful program is the Defense Economic Impact Modelling System developed by OSD. This program translates DoD procurement levels into the implied demand for materials and supplies at the 4-digit industry level.

[3]Title 3 could be used to support the expansion of production even where an expansion of plant capacity was not required. Also, see DoD Task Force to Improve Industrial Responsiveness, loc. cit., Tab 13, for recommended Congressional changes to the DPA to make Title 3 more usable.

- expand the use of multi-year contracting and encourage prime contractors to pass on the benefits (i.e., larger orders and termination liability in the event of cancellation) to lower-tier firms;
- support the extension of DMS/DPS ratings by the Commerce Department to aid expanding firms in acquiring needed equipment;
- arrange for waivers of socioeconomic regulations inhibiting production expansion, such as those affecting the activation of standby furnaces and equipment;
- together with the Commerce Department, use the authority of Title 7 of the Defense Production Act (DPA) to provide antitrust exemptions for agreements among private firms where that would promote an expansion of needed production;[1] and
- recommend a further acceleration of depreciation for tax purposes on new investments to meet defense needs.[2]

c. Previous Actions

Actions prior to surge that would support this measure include:

- perform good surge IPP to identify industries where production expansion would be most needed, so that advance efforts could be made to eliminate expansion bottlenecks;

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[1]This authority was used during the Korean War to provide antitrust immunity for some 75 voluntary agreements. At the present time, five such agreements are in effect.

[2]For example, during the Korean War, certified emergency facilities could be amortized for tax purposes within five years. See Roderick L. Vawter, "Industrial Mobilization, An Historical Analysis" (1981), p. 16. Such incentives could be provided during a surge for investment in equipment to relieve bottlenecks.

- establish long-term programs to support demand in selected industries and thereby encourage capacity expansion during peacetime;[1] and
- plan the implementation of the actions listed in Section b.

d. Effectiveness

Expansion of the production of basic and lower-tier industries would directly reduce procurement leadtimes. The actions listed in Section b could be effective at encouraging and aiding that expansion in particular cases, but probably would not greatly affect the production expansion inherent in the surge program working through the usual market processes. If the economy had been fully employed prior to the surge, the actions listed in Section b would be even less effective since lower-tier industries would have less room to expand without major plant expansions. Start-up leadtimes for expanding production would be considerable since additional workers would be hired and trained and long-leadtime materials, tooling and production equipment would be ordered.[2] Thus, expanding production in lower-tier industries might have little impact in the early stages of a surge.

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[1]DoD should encourage and support Administration efforts to strengthen the overall industrial base in this country, and to determine the impact of government policies on that base.

[2]For example, it can take one year to train a worker in the forging industry. One forging company required two years to expand its labor force by 30-35 percent during the 1979-1980 boom period (based on a trip report by Dr. H.O. Stekler of IDA). Expansion of production in the machine tool industry would be limited by the difficulty of recruiting skilled workers and by the leadtimes associated with acquiring necessary components. See Otto E. Hintz et al., loc. cit., p. 48.

e. Deterrent Impact

Expanding production of basic resources would strengthen U.S. capabilities for further escalation of surge requirements as well enhance the prospects for success of the current surge.

f. Budget Cost

Title 3 programs or blanket orders could be costly in the event that the surge in procurement subsided sooner than expected. Tax amortization programs and subsidization of start-up costs would be expensive.

g. Civilian Disruption/Economic Impact

Expansion of basic industrial production would have mixed effects in a fully employed economy. It would mitigate the impact of the surge on civilian customers of the affected industries. But it would also be inflationary as resources for expansion were competed away from other sectors. These effects would be inherent in the surge program itself. Expansion could lead to a condition of excess supply in certain industries if demand forecasts proved to have been overstated.

h. Political Feasibility

Political controversy could develop over the use of subsidies, over rapid amortization recommendations, and over the waiver of socioeconomic regulations. However, the objective of these actions would be politically acceptable in light of prior approval of the surge program itself. Perhaps the greatest opposition would come from industries that felt that expansion would not be in their best interests.

9. Realign Dependence on Foreign Suppliers[1]

a. Definition

Foreign production capabilities would present both problems and opportunities to defense planners in the event of a procurement surge. On the one hand, the crisis could make certain foreign sources inaccessible to the U.S. and they would have to be replaced. The dependence of defense production on foreign sources involves raw and processed materials as well as manufactured parts, components, subassemblies, weapons, and industrial machinery.[2] Reasons for using foreign sources have included lower costs, domestic manpower shortages, environmental regulations, inability to interest domestic suppliers, inadequate technical performance

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[1]See also the discussion of reducing the risks associated with dependence on foreign manufactured items in Appendix III.

[2]Foreign dependence exists at all tiers of the defense supplier structure. Aerospace suppliers are especially dependent on specialty metals and hence on foreign imports of critical materials. Out of 40 critical materials, the U.S. is over 50 percent dependent on foreign sources for 23 of them (see Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 455). Refining of imported materials is increasingly done at the sources. Eighty percent of nuts and bolts and 33 percent of fasteners used for defense work are foreign-made (based on discussions at ADPA Conference on Critical and Strategic Materials (May, 1981)). Optical coatings for target acquisition systems are obtained in Scotland. Castings and forgings for ships and small arms are obtained overseas (see "Defense Industry Analysis Summaries" (1981), p. 1-8 and 10-11). Eighty to ninety percent of military semiconductors are assembled and tested outside the U.S., mainly in the Far East (see Defense Science Board, loc. cit., p. 11). Subassemblies for the F-16 are obtained overseas (see Robert L. McDaniel, loc. cit., p. 45). Further, 3.3 percent of DoD's machine tools are of foreign origin, including 7.3 percent of those acquired between 1973-1977. The proportion of contractor-owned foreign-made machine tools is probably higher since 14.2 percent of all U.S. machine tool acquisitions were imported between 1973-1977. Foreign-made machinery is used in the production of the turret for the M-1 tank and of components for the T-700 engine for the UH60A helicopter.

by domestic suppliers, co-production agreements with NATO allies, as well as lack of economic mineral deposits in the U.S.[1] Thus, depending on the nature and location of the crisis motivating the procurement surge, some foreign suppliers would have to be replaced. On the other hand, production capacity in countries expected to remain accessible to the U.S. could be used to supplement domestic capacity and thereby circumvent bottlenecks and reduce civilian disruption. This could involve surging procurement from existing foreign suppliers as well as recruiting additional sources.[2] Accordingly, a procurement surge would require actions to reduce the hazards associated with foreign dependence, to replace inaccessible foreign sources, and to facilitate additional use of safe foreign capacity.

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[1]Memoranda of Understanding have been reached with several NATO allies whereby the U.S. endeavors to purchase commodities from those allies in order partially to offset sales of U.S. weapon systems to those countries. The agreements typically provide for waiver of various regulations designed to restrict the use of foreign suppliers in U.S. defense production. In some cases, co-production agreements are reached whereby NATO countries participate in the production of U.S. weapon systems as either assemblers or component suppliers. For example, F-16 aircraft are being assembled in the U.S., Belgium, and the Netherlands while components are manufactured in those countries plus Norway and Denmark (see "Defense Industry Analysis Summaries" (1981), pp. 8-15). While the Rolls Royce engine for the A-7 aircraft was assembled in the U.S., it depended on components made in Europe.

[2]The idea of off-loading manufacturing bottlenecks to allies was included in the charter for the Defense Science Board study, "Industrial Responsiveness" (1981), p. xiii, and has also been studied by the Office of the Secretary of Defense (OSD). Foreign suppliers were also used to meet the increased procurement demands of the Vietnam War (see Joint Committee on Defense Production, "Civil Preparedness Review" (1977), p. 58).

b. Concurrent Actions

If a decision to surge were made, a number of actions could be taken to replace unreliable foreign sources and facilitate additional use of reliable foreign sources. These actions include:

- together with the State and Commerce Departments, estimate the likelihood that various foreign countries would remain accessible to the U.S. throughout both the immediate and future crises;[1]
- coordinate actions to replace disrupted or unreliable suppliers by opening additional sources in the U.S. or safe foreign countries;
- establish policy guidance regarding foreign dependence during the surge and establish a means of enforcing that policy, especially at subcontractor levels;
- together with the State and Commerce Departments, assist U.S. producers in obtaining necessary items from foreign sources, including requests to those governments for priority treatment of U.S. defense-related orders;
- request that the State and Commerce Departments negotiate bilateral arrangements with foreign governments to secure or expand resource supplies, as well as multilateral arrangements to stabilize markets and allocate production; and
- arrange for needed waivers of Buy American and other restrictions on acquiring defense-related resources overseas.[2]

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[1]For example, European sources might be considered safe if the crisis occurred in Asia and was not expected to escalate, and if European governments supported U.S. policy.

[2]The Buy American Act regulations put foreign producers at a disadvantage in bidding for defense contracts by providing the government with some leeway to accept higher cost domestic bids. These regulations, however, have already been waived for most NATO countries.

c. Previous Actions

Prior to a procurement surge, actions could be taken to prevent dangerous foreign dependencies from developing as well as to prepare for replacing disrupted foreign sources and accessing additional foreign sources in the event of a surge. These actions include:

- control the incidence of hazardous foreign dependence, especially in the lower tiers;[1]
- identify potentially unreliable foreign sources and stockpile foreign products, including spares and repair parts for foreign-made industrial equipment, in order to protect against a future cutoff of supplies;
- implement IPMs in order to reduce the potential need for foreign sources or to establish standby domestic sources for foreign dependencies that already existed;
- support FEMA's efforts to increase holdings of materials in the National Defense Stockpile;
- identify potential overseas sources to circumvent domestic bottlenecks in the event of a surge, and plan for surge with existing foreign suppliers;[2] and
- establish standby arrangements with foreign governments regarding the extension of priority to defense-related procurement, emergency allocation of resources, and similar matters.

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[1]Existing DoD programs (including IPP) monitor foreign dependence and seek to retain at least one domestic source for critical items procured overseas. Available tools include the Buy American Act, the Trade Expansion Act of 1962 (Section 232) which provides authority for import controls to protect critical defense-related industries if necessary and which is administered by the Commerce Department, and especially DAR 3-216 which provides authority to restrict certain contracts to domestic sources.

[2]Under DoD Directive 4005.1, overseas sources may not be selected as planned producers under IPP. Thus, domestic producers would have to be planned as well.

d. Effectiveness

Replacing disrupted foreign sources for manufactured components and end items would be very difficult in the event of a surge. Prior increases in foreign dependence would have eliminated or reduced domestic capacity in certain cases, and start-up times would be lengthy, particularly where additional tooling and equipment was needed. Thus, prior action would be essential either to prevent hazardous foreign dependencies from developing or to maintain alternative domestic sources in a high state of readiness.

While a surge would increase pressures to use foreign sources to alleviate domestic bottlenecks, the decision to do so would be difficult. Increasing foreign dependence during a surge could weaken the domestic supplier base and put the U.S. in a more precarious position should the crisis escalate further. Other limitations on the effectiveness of utilizing foreign suppliers include:

- U.S. purchases would have to compete for resources with purchases from other countries attempting to surge military procurement;
- scarcities of certain resources might be intensified by speculation and panic buying, especially if the U.S. surge demand were imposed on a fully employed (developed) world economy; and
- start-up times for initiating or expanding production of specialized defense items would be lengthy even if overseas capacity were available.

Nevertheless, quick government-to-government action and informed buying to control risks could enable foreign sources to contribute to the surge and help to circumvent domestic bottlenecks.

e. Deterrent Impact

Attempts to secure foreign government support in procuring resources could provide a highly visible test of international political support for the U.S. position and the outcome could provide a clear signal (for good or ill). But even if the U.S. succeeded in gaining industrial support overseas, any resulting increase in foreign dependence would increase U.S. vulnerability and weaken the credibility of the U.S. deterrent. Supply cutoffs would similarly be visible signs of U.S. weakness.

f. Budget Cost

The U.S. might have to make some expensive commitments (e.g., long-term buying agreements) in order to secure short-term increases in certain foreign supplies. In addition, start-up costs to replace cut-off foreign suppliers, build up precautionary stockpiles, or maintain standby domestic capacity would be very expensive. But in other cases, turning to foreign sources would permit the U.S. to avoid investment in equipment to expand domestic sources. Indeed, budget constraints before and during a surge are among the principal reasons why reliance on foreign sources during a surge might be necessary.

g. Civilian Disruption/Economic Impact

Obtaining production resources overseas would ease the strain on domestic resources and thus reduce disruption of the civilian economy by the surge. At the same time, utilizing foreign sources would weaken the U.S. Balance of Payments. Trying to replace foreign suppliers with domestic sources on an emergency basis would be very disruptive, while utilizing additional foreign sources during the surge might lead to

erosion of markets for domestic firms after the surge was over.

h. Political Feasibility

While moves to secure foreign supplies might appear prudent if there were no domestic alternatives, steps to increase foreign dependence and supplement U.S. sources might be controversial. The increased risks would be obvious and the worsened Balance of Payments would not be welcomed. Further, U.S. firms would object to the loss of business to foreign competitors. Stockpiling foreign items and starting up domestic sources in anticipation of a cutoff might be viewed as duplicative and too expensive. But, at the same time, weak domestic political support would limit the amount of civilian disruption permitted and hence might increase the need to utilize foreign sources.

10. Restrict Exports of Production Resources

a. Definition

Production resources useful to defense production are exported to other countries during peacetime. These include direct exports of materials, components, and production equipment as well as indirect exports of these items and labor embodied in finished civilian products. In the event of a surge in defense procurement, some of these resources would be in short supply. Export controls might be necessary in order to assure their availability for the defense effort and to reduce civilian disruption. Such restrictions could cover scarce materials, products, and processing capacity as well as

finished civilian goods that embodied these scarce resources.[1]

b. Concurrent Actions

Restricting selective exports would require a number of actions at the time of a surge, including the need to:

- together with the Commerce Department, identify exports that directly or indirectly embodied production resources that were in critically short supply for the surge effort and obtain Presidential authorization to impose export controls in selected cases;[2]
- together with the State, Commerce and Treasury Departments, restrict the use of the Export/Import Bank for financing sales involving resources critical to the surge effort;
- together with the State and Commerce Departments, negotiate bilateral agreements with other governments to restrict exports (from the U.S.) of items critically needed for the surge effort; and
- together with the Commerce and other Departments, utilize the priorities and allocations authority of Title 1 of the Defense Production Act (DPA) to make exportable production resources available for the surge effort.

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[1]Export restrictions or reporting requirements currently apply to certain petroleum products and to items containing cobalt. Previously, export controls were applied to iron and steel scrap during 1973 and 1974. See the discussion in U.S. Department of Commerce, "Critical Materials Requirements of the U.S. Aerospace Industry" (October, 1981), p. 263-265. Also, civilian airliners provide an example of finished goods that might be controlled under certain circumstances due both to their material content and their use of scarce processing capacity. In Arthur D. Little, Inc., loc. cit., p. 127, the potential need for export controls in aerospace industries is recognized.

[2]Under the Export Administration Act of 1979, licensing requirements and quota restrictions can be applied to commodities in short supply. See U.S. Department of Commerce, "Export Administration Regulations" (1980).

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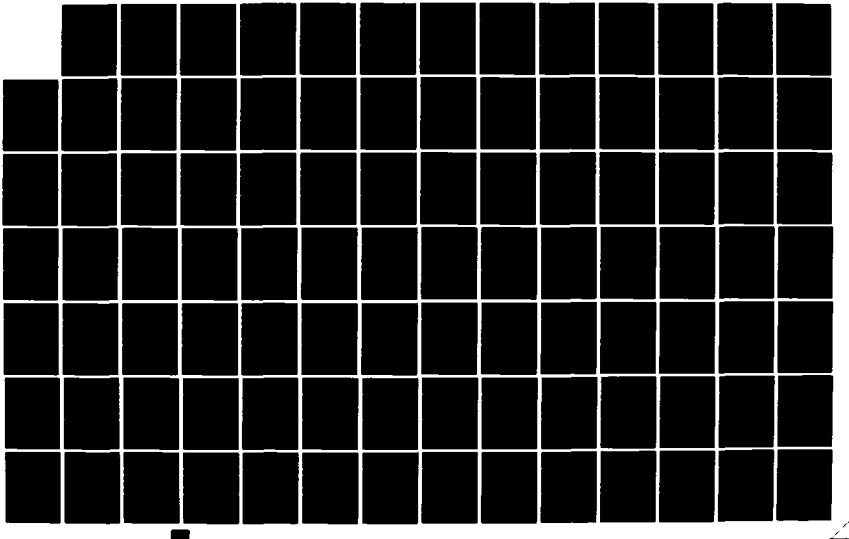

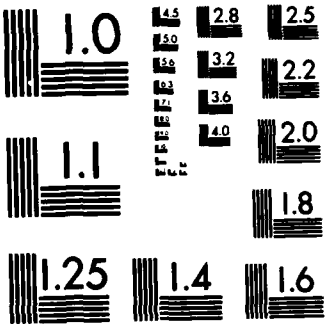

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c. Previous Actions

Prior to a surge in procurement, it would be useful to identify exportable commodities likely to be in short supply so that export controls could be imposed quickly if needed at the time of a surge.

d. Effectiveness

Restricting exports would make additional domestic production resources available for the defense effort.[1] It could, however, provoke retaliatory restrictions on exports to the U.S. by other countries. The form of such retaliation could be moderated by negotiating agreements with the countries most affected. The effectiveness of restrictions could also be limited by the need for the U.S. to support any allied surge efforts. In principle, Title 1 authority would be sufficient to make domestic resources available as needed for the surge effort without any moves to control exports as such. However, in practice, enforcement problems would render the Defense Materials System/Defense Priorities System (DMS/DPS) less than totally effective. Export controls could thus supplement the DMS/DPS and provide an alternative to imposing formal allocation on certain domestic industries.[2]

e. Deterrent Impact

Export controls would be highly visible and hence a clear indicator of U.S. resolve in the crisis at hand. But a

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[1]But by reducing total current demand and by threatening future (i.e., after the surge) export demand, controls might inhibit expansion of output by U.S. firms.

[2]Export controls would be particularly useful in lower-tier industries with large numbers of firms.

domestic, public rejection of export controls could signal political weakness at home, while allied alienation due to export controls would weaken the U.S. position abroad.

f. Budget Cost

Budget costs for implementing export restrictions would be administrative in nature and hence relatively low. In addition, by effectively reducing foreign demand for certain domestic resources, export restrictions could reduce prices somewhat (compared to what they otherwise would have been) and thereby reduce DoD acquisition costs somewhat.

g. Civilian Disruption/Economic Impact

Export restrictions could reduce the civilian disruption inherent in a surge by effectively reducing total demand for U.S. resources. This might appear disruptive, however, to domestic firms whose foreign markets had been disrupted.[1] And of course, any foreign retaliation would be disruptive. In addition, reducing exports would have adverse consequences for the U.S. Balance of Payments.

h. Political Feasibility

Explicit moves to restrict exports would generate political opposition from the business firms affected as well as from those within the government who were concerned with enhancing international relations. The need for such controls to support the surge would have to be compelling in order to obtain domestic approval. And in any event, international

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[1]Controls might do permanent damage to export markets if foreign customers found substitutes or alternative sources.

politics could severely limit the restrictions finally imposed.

11. Release Materials from the National Defense Stockpile

a. Definition

If a decision were made to surge procurement, the demand for raw and processed materials for defense-related production would increase quickly and substantially. This increase in demand would be met, in part, by:

- drawing down private inventories (at both materials users and materials distributors and producers);[1]
- using Title 1 of the Defense Production Act (DPA) to allocate a larger share of new materials production to defense-related applications;[2] and
- increasing materials production (within the constraint of existing plant capacity) at domestic and foreign producers.

But, at the same time that materials demand would be increasing, events associated with the crisis at hand might be curtailing the availability of overseas sources. These events could include:

- military actions affecting production sites or transportation links;
- policy actions by governments hostile to U.S. policy or by allied governments needing materials for their own defense-related production; and

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[1]Most large materials users retain inventories adequate to meet their usual requirements for 30-60 days.

[2]For example, the DMS/DPS was used to assure a flow of cobalt to defense-related production when an invasion of Zaire precipitated a 1978-1979 cobalt shortage.

- panic buying, speculation, and other disruptions of international markets (induced, in part, by the surge in U.S. demand for materials).

Given the surge in defense-related materials demand, the limitations on production capacity, and the potential for curtailment of overseas supplies, there would almost surely be cases where the surge in defense-related production would be delayed because materials could not be obtained. In some of those cases, the required materials would be included in the holdings of the National Defense Stockpile.[1] Accordingly, DoD could enhance the prospects of the procurement surge by securing the release of certain materials from the National Defense Stockpile.

b. Concurrent Actions

In order to support the release of materials from the National Defense Stockpile, a number of actions could be taken at the time of a surge, including:

- together with FEMA and the Commerce Department, identify potential materials shortages and evaluate the potential contribution that the National Defense Stockpile could make toward alleviating those shortages;
- support FEMA in obtaining Presidential authorization for the release of materials that might be needed to support the surge effort;[2]

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[1]The Strategic and Critical Materials Stockpiling Act (50 USC 98) provides for a National Defense Stockpile to meet defense-related and civilian materials needs during a three-year emergency. FEMA establishes stockpile goals and provides overall management, the Commerce Department provides technical advice and allocates materials released from the stockpile, and the General Services Administration (GSA) procures, maintains, and disposes of stockpile inventories.

[2]Materials may be released for national defense purposes at the discretion of the President.

- support the release of materials as needed to defense contractors or to the Commerce Department for allocation; and
- together with FEMA and the Transportation Department, obtain Title 1 priority for the movement of materials from storage locations to production sites.

c. Previous Actions

A number of actions would be required prior to a decision to surge procurement in order to enhance the utility of the National Defense Stockpile, including:

- perform good surge IPP to identify potential materials shortages, and take actions to reduce dependence on those materials;
- support efforts to build up National Defense Stockpile inventories to meet FEMA goals for materials likely to be needed in the event of a surge;[1]
- upgrade the quality of certain stockpile materials;[2]

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[1]FEMA's 1980 stockpile goals (which are considered to be too low in Committee on Armed Services, "The Ailing Defense Industrial Base: Unready for Crisis" (1980), p. 29) are not met for 37 of the 62 material categories. For 23 of those categories, stockpile holdings amount to less than 50 percent of the goals. In March, 1981 prices, $12.5 billion would be required to purchase sufficient additional materials to meet the goals. Current holdings are valued at $12.56 billion, but include $4.92 billion in materials in excess of FEMA goals. FEMA's stockpile acquisitions for FY81 amounted to $100 million. (This information is based on an unpublished paper by OSD.)

[2]In some cases, stockpile materials do not meet quality requirements for today's applications. For example, cobalt in the stockpile is 25 years old, may have some surface oxidation, and may contain certain trace elements now known to cause problems in certain applications. OSD is considering an advisory board to evaluate such complaints.

- advance the stage of processing for certain stockpile materials;[1]
- move stockpile materials closer to prospective users in certain cases;[2]
- support the use of Title 3 of the Defense Production Act (DPA) to encourage expansion of domestic materials production capacity.[3]

d. Effectiveness

Releasing materials from the National Defense Stockpile would enhance the surge by supplementing other supply sources in order to prevent materials-related delays in defense production. In some cases, immediate releases would prevent delays in initiating production of long-leadtime parts (if sufficient materials could not be obtained from private inventories soon enough). In other cases, releases might not be required for many months since defense producers would need time to hire and train workers and solve other expansion

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[1]For example, in Committee on Armed Services, "The Ailing Industrial Base: Unready for Crisis" (1980), p. 29, it is suggested that both processing time and energy could be saved at the time of an emergency if certain materials were converted from their raw to their processed form (e.g., from bauxite to aluminum, from chromium to ferro-chrome, and from manganese to ferro-manganese).

[2]Stockpile materials are stored at some 113 locations, primarily in industrial areas such as the Ohio River Valley. Due to the mobility of industry during the 20-30 years since the materials were acquired, some materials are no longer located near prospective users. While it would be very expensive to move entire storage locations, it might be feasible to move smaller amounts of material in anticipation of a surge and thereby alleviate transportation bottlenecks in the event of a surge.

[3]Title 3 authorizes the use of loans, loan guarantees, and price supports to support the expansion of production. FEMA is currently considering the use of Title 3 to expand domestic capacity for cobalt, guayule (a source of natural rubber), titanium, and refractory bauxite. See the testimony of FEMA's Paul K. Krueger in Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 1339.

problems. The effectiveness of releases from the National Defense Stockpile would be limited by insufficient holdings of the materials required, as well as by problems with the qualities, forms, and locations of stockpile materials. In addition, administrative delays in obtaining the release of materials might occur.[1]

Use of the National Defense Stockpile during a surge would also be limited by the need to save stockpile materials for use in the event of full-scale mobilization. For example, if there were a good chance that the crisis would escalate into a major war, it might be prudent to meet more of the surge requirements by diverting materials from the civilian economy so that more of the stockpile could be saved for the later contingency.

e. Deterrent Impact

Releases from the National Defense Stockpile might signal the seriousness with which the U.S. viewed the international situation. U.S. credibility could be damaged, however, if releases called attention to inadequacies in the stockpile.

f. Budget Cost

Releasing materials from the National Defense Stockpile might prevent materials prices from increasing as much as they otherwise would. This could have a favorable impact on DoD's acquisition costs. Of course, building up the holdings prior to a procurement surge would be very expensive.[2]

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[1]For example, it took three to seven months to obtain authorization in 1979 for the release of long-fibered asbestos.

[2]At least $7.6 billion would be required to meet FEMA's current goals.

g. Civilian Disruption/Economic Impact

Releases from the National Defense Stockpile would reduce civilian disruption inherent in the surge by increasing the available supply of materials. They would permit less reliance to be placed on diverting new production to defense-related applications. In fact, the decision to release stockpile materials might well be based on a Commerce Department finding that further diversion of materials would seriously damage the civilian economy. Such releases, however, would be viewed as disruptive by any domestic materials producers since the increased supply might depress prices somewhat (below the levels that would otherwise have occurred). This might weaken their incentive to expand output.

h. Political Feasibility

Releases from the National Defense Stockpile would be difficult due to the probable opposition of any domestic producers of the particular materials and to disagreements over whether current circumstances warranted depletion of this insurance against future shortages. In addition, previous uses of the stockpile for purposes other than defense have made any release of materials controversial.[1]

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[1] In Committee on Armed Services, idem., p. 1334, Paul K. Krueger observed that releases of copper and nickel during the Vietnam War were probably appropriate in light of defense requirements during that period. But the 1973 reduction of stockpile goals and sale of materials was inappropriate. The most recent release was authorized in 1979 for long-fibered asbestos which has applications in rockets and submarines. The Canadian mine for this material had been depleted and the U.S. had embargoed imports from the only other source at the time, Rhodesia.

12. Support Productive Labor Relations

a. Definition

In the event of a surge in defense procurement, labor strikes at defense-related producers could directly retard the surge effort. In addition, a number of work rules established by collective bargaining to improve the work-place environment or to increase the number of jobs might also restrict the expansion of defense-related production. DoD could thus enhance the surge effort by supporting efforts to prevent or settle strikes and to enlist union support in increasing output.

b. Concurrent Actions

DoD could take a number of actions to support productive labor relations, including:[1]

- monitor labor relations problems that could lead to strikes or other job actions and request the use of Federal, state, and local mediation resources when appropriate;[2]
- together with FEMA, obtain legislation providing authority to terminate strikes, or seek injunctions

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[1]Also, imposition of wage controls by the President might reduce the incentive to strike in many cases.

[2]In Arthur D. Little, Inc., loc. cit., p. 235, the Missile Site Labor Commission at Cape Canaveral, which was established by Executive Order to reduce labor problems during the manned space flight program, is described. Labor unions agreed to submit conflicts to that commission and it was highly effective.

under the authority of the Taft-Hartley Act to halt particular strikes detrimental to the surge effort;[1]

- avoid awarding contracts to firms with known (e.g., a history of) labor relations difficulties likely to impact directly and adversely on their ability to maintain or accelerate production; and
- request and support the efforts of FEMA and the Labor Department to promote industry/labor cooperation in meeting surge requirements (e.g., relaxation of certain restrictive work rules).

c. Previous Actions

Prior to a decision to surge, a number of actions would be useful, including:

- prepare standby legislative proposals for authority to settle labor disputes;
- avoid selecting planned surge producers with a history of poor labor relations if those difficulties are likely to impact adversely on surge production.

d. Effectiveness

Labor strikes could directly delay the production of critical weapon systems. Further, strikes at certain lower-tier producers could indirectly delay production of many weapon systems at the same time. Thus, authority to terminate detrimental strikes would be an effective tool to enhance the surge program. Avoiding strikes, in part through government mediation, would be preferable since work stoppages would thereby be avoided altogether and less damage would be done to worker morale. While restrictive work rules could have

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[1]Authority to settle labor disputes, including seizure and operation of the plants if necessary, was included in the original Defense Production Act (DPA) but was terminated after the Korean War. Under the Taft-Hartley Act, the President may seek injunctions to halt strikes that are detrimental to the national interest for an 80-day cooling-off period.

important consequences, little could be done to ease them besides negotiations between producers and unions at the local level.

e. Deterrent Impact

Attempts to secure legislation to provide authority to terminate strikes would provide a clear signal (for good or ill) of the strength of political support for the President's defense program. Damaging strikes during the crisis would weaken U.S. credibility.

f. Budget Cost

Strikes and restrictive work rules tend to increase acquisition costs, so that promoting productive labor relations would tend to reduce budget costs.

g. Civilian Disruption/Economic Impact

Reducing strikes and increasing productivity would tend to increase total output and thereby reduce the amount of output diverted from civilian uses. On the other hand, DoD's unwillingness to endure labor strikes could lead to more generous settlements and thereby exacerbate wage inflation.

h. Political Feasibility

Legislation to provide authority to terminate strikes detrimental to the surge effort would generate severe labor opposition. The crisis would have to be viewed as extremely serious before such legislation could be passed or before injunctions under the Taft-Hartley Act would be obtained.

13. Support Labor Training Programs

a. Definition

In the event of a surge in defense procurement, a large number of workers (including managers and supervisors) would have to learn new jobs. This would include newly hired workers as well as those promoted to new positions or reassigned to different products. In addition to company- and product-specific skills, there would be shortages of certain occupational or trade skills.[1] Using inadequately trained workers would reduce labor productivity and hence (if the economy were fully employed) would constrain surge output. On the other hand, long training programs would seriously delay surge output. Accordingly, DoD could enhance the surge effort by supporting programs to increase the number of persons being trained before a surge and to reduce the duration of individual training at the time of a surge.

b. Concurrent Actions

There are a few actions that could be taken at the time of a surge to support contractor training efforts, including:

- request that the Labor and Education Departments seek to accelerate graduations of existing trainees from manpower training programs and to reorient those

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[1] In Committee on Armed Services, "The Ailing Defense Industrial Base: Unready for Crisis" (1980), p. 11, it is reported that peacetime shortages of skilled manpower are expected to continue through the decade. Shortages exist for engineers, electronic technicians, computer programmers, machinists, and tool and die makers. In Defense Science Board, "Industrial Responsiveness" (1981), it is reported that the Department of Labor estimates annual openings for machinists at 22,000 between 1978 and 1990 while the output of apprenticeship programs amounted to 2800 per year between 1976 and 1978. In 1980, defense-related demand amounted to 8.4 percent of the total demand for machinists (based on estimates of OSD's Defense Economic Impact Modelling System).

programs toward defense skills that could be learned within three to twelve months;[1]

- fund and otherwise support contractor training efforts;[2]
- encourage the use of experienced workers (including supervisors and managers) from prime contractors and other firms to train employees and otherwise assist subcontractors in expanding production.[3]

c. Previous Actions

Prior to the surge, a number of actions could be useful including:

- perform good surge IPP to identify potential shortages of skilled workers, and adjust production methods and contractor selections to alleviate those shortages;
- encourage planned producers to establish standby training programs;
- support the use of Federal, state, and local manpower programs to train workers in the needed skills (including provision of government-owned equipment under the Tools for Schools program);[4]

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[1]For example, vocational programs for machine operators might be enlarged in certain areas.

[2]In William Yandell Elliott, loc. cit., p. 224, it is reported that during World War II the government sponsored effective pre-employment training programs as well as in-plant programs to support on-the-job training.

[3]Provision of such help by prime contractors, for example, is recommended in Defense Science Board, "Industrial Responsiveness" (1981), p. xviii.

[4]In Defense Science Board, idem., p. xvi, it is observed that current training programs are not solving the skilled-manpower shortage. Programs under the Comprehensive Employment and Training Act (CETA) are directed toward helping the disadvantaged and do not primarily train skilled workers. The Labor Department's programs under the Bureau of Apprenticeship and Training are now being addressed by FEMA, DoD, and the Labor Department under the Civilian Manpower Mobilization Study.

- support the hiring or retention of cadres of skilled and experienced workers by planned surge producers to facilitate training in the event of a surge.[1]

d. Effectiveness

Since three to four years are required to train a skilled machinist, not much could be done to increase the supply of machinists at the time of a surge. To some extent, semi-skilled machine operators or apprentices would be used to do machinists' jobs under close supervision, but this practice could be extended only so far before product quality would suffer.[2] However, leadtimes for defense producers to obtain materials, components, and production equipment would provide opportunities for pre-employment and on-the-job training programs for the less demanding skills. Such programs would be particularly useful for small and inexperienced contractors.

e. Deterrent Impact

Expanding skills training programs would be a visible indicator of action to strengthen the U.S. industrial base.

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[1]For example, in Robert L. McDaniel et al., loc. cit., p. 42, it is observed that overhaul and major modification work has been assigned to retain a cadre of experienced personnel at certain aircraft plants.

[2]In Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 49, Harry J. Gray observes that the use of esoteric materials and extremely tight tolerances in today's aerospace work can require as much as one year of retraining for a newly hired machinist from the automobile industry.

f. Budget Cost

Expanding training programs would be expensive, both before and during a surge.[1]

g. Civilian Disruption/Economic Impact

By eventually increasing the number of skilled workers, expanding skills training programs would reduce the civilian disruption inherent in the surge. This might disrupt skilled-labor markets after the surge ended, however, in the sense that relative wages for the skilled workers involved might decline as a result of the increased supply.

h. Political Feasibility

Expanding government-funded skills training programs might draw opposition from political conservatives as well as from those skilled-trade unions whose future wages might be affected.

14. Obtain Waivers to Socioeconomic Regulations[2]

a. Definition

In the event of a surge in defense procurement, the required expansion in defense-related production would be constrained by the need to comply with various socioeconomic regulations. This would be particularly true as regards regulations dealing with environmental pollution and

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[1] In Committee on Armed Services, idem., p. 1791, it is estimated that $45 million would be required for pre-employment training to obtain 10,000 skilled journeymen by 1985.

[2] See Appendix II for further discussion of the process of obtaining waivers from environmental regulations.

occupational safety and health.[1] Serious compliance problems would result from activating standby facilities and equipment. Further, expansion of production or conversion to military products would cause some currently active facilities to fall out of compliance.[2] Attempts to comply could cause unacceptable production delays or be prohibitively expensive. In some cases, Presidential authority to waive compliance with regulations exists but the implementing procedures are cumbersome. In other cases, Presidential waiver authority does not exist. Table 1 indicates existing waiver authority for some of the important socioeconomic regulations.[3] Accordingly, DOD could enhance the surge by taking actions to obtain additional waiver authority through legislation, to streamline procedures for obtaining waivers, and to expedite the granting of waivers in particular cases. In addition, it would be important to anticipate which necessary waivers would not be granted, and to take

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[1] In Defense Science Board, "Industrial Responsiveness" (1981), p. 15, it is reported that over 400 foundries have gone out of business over the past decade, primarily because of EPA and OSHA requirements. In Association of the U.S. Army, loc. cit., p. 15, it is observed that the foundries that have gone out of business are the small jobber shops that were willing to accept specialized, low-volume defense work.

[2] For example, continued production of E-glass marbles for antiaircraft chaff would have required an investment of $2 million to comply with EPA regulations. As a result, the sole domestic source discontinued production. If alternative foreign sources were not available during a surge, restarting domestic production would involve compliance problems.

[3] Waivers would be necessary for other socioeconomic regulations as well. In particular, a number of regulations would impact on the ability to hire, train, and transfer workers. For some of the available authorities, see DAR 12-808 (e, f) (Equal Employment Opportunity), DAR 12-1302 (d) (Handicapped Workers), and DAR 12-1402 (d) (Disabled and Vietnam Veterans).

Table 1. WAIVERS FROM ENVIRONMENTAL AND SAFETY AND HEALTH REGULATIONS

Law	President May Authorize[1] Waiver from Regulations for:		Limitations
	Federal Agencies	Private Contractors	
1. Clean Air, 42 USC 7401 et seq.	yes	yes	Exemptions apply to 2-year periods, but may not be granted for hazardous materials. President must explicitly exempt procurement from facilities in violation.
2. Water Pollution Control, 33 USC 1251 et seq.	yes	no	Waivers may not be granted for new construction or for toxic substances. President must explicitly exempt procurement from facilities in violation.
3. Solid Waste Disposal, 42 USC 6901 et seq.	yes	no	Exemptions apply for 1-year periods but may not be granted for hazardous materials.
4. Toxic Substanes Control, 15 USC 2601 et seq.	yes	yes	
5. Noise Control, 42 USC 4901 et seq.	yes	no	Exemptions apply for 1-year periods, but may not be granted for common commercial equipment and certain other items.
6. Public Health/Safe Drinking Water, 42 USC 300 et seq.	yes	no	
7. Environmental Impact Statements, 42 USC 4321 et seq.	no	n.a.	Requirement applies only to Federal actions.
8. Occupational Safety and Health, 29 USC 651 et seq.	yes	yes	Exemption for private contractors (including government-owned contractor-operated facilities) would require prior notice and opportunity for hearings. Present procedures are very time-consuming.

[1]Presidential authorization would be based on necessity in the interest of national defense, national security, or the paramount interest of the United States (depending on the regulation).

Source: Based on Systems Research and Applications Corporation, Compendium of Emergency Authorities (October 1980).

preparatory measures to reduce compliance leadtimes in those cases.

b. Concurrent Actions

In order to avoid delays in surge production due to environmental regulations, a number of actions would be required, including:[1]

- identify the extent of compliance problems under each of the constraining regulations;
- through the Office of Management and Budget (OMB), seek new legislation to enhance waiver authority if needed;[2]
- develop and recommend quick-response procedures for granting waivers, including delegation of authority to DoD in certain cases; and
- establish policy guidance regarding the circumstances under which waivers would be considered.

c. Previous Actions

Prior to a decision to surge defense procurement, certain actions would be useful, including:

- perform good surge IPP to identify potential compliance problems and cases in which waivers would enhance the expansion of production;
- implement IPMs to bring potential surge production into compliance in cases where waivers would not be feasible;

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[1]To the extent possible, the actions should be accomplished before a decision to surge has been made.

[2]As indicated on Table 1, there are many limitations on available waiver authorities. The most serious limitations affect waivers that might be necessary for toxic or hazardous substances, for privately owned facilities, and for environmental impact statements. DoD is aware of these limitations and is developing appropriate legislative proposals.

- obtain new legislation to expand waiver authorities where needed; and
- establish standby procedures for granting waivers expeditiously in the event of a surge.

d. Effectiveness

Obtaining waivers to certain socioeconomic regulations would enhance the surge by:

- eliminating production delays that would otherwise be necessary in order to bring certain facilities into compliance;
- permitting full use of equipment and facilities that would otherwise be partially or completely unusable;[1]
- removing certain work rules restricting labor productivity.

The most obvious needs for waivers would arise in connection with the activation of inactive government-owned facilities and/or industrial equipment, including standby Army ammunition plants, certain Navy repair facilities, inactive production lines at active facilities, and plant equipment packages (PEPs). In many cases, these facilities and equipment were last active prior to enactment of present regulatory legislation and have not been brought into compliance. Compliance problems would be less likely at currently active plants since the laws are being enforced. Still, there would be cases in which plants currently in compliance would fall out of compliance in the event of a surge. For example,

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[1] In Robert L. McDaniel et al., loc. cit., p. 142, it is observed that OSHA and EPA regulations affect the efficiency of aircraft plants adversely. Also, a large forging hammer in San Diego cannot be operated after 11 P.M. due to the noise it makes. And, in Committee on Armed Services, "Capability of U.S. Defense Industrial Base" (1980), p. 675, it is observed that production would be limited in some cases by water effluent standards.

civilian facilities might be used (for the first time) to produce military products involving hazardous materials or by-products. And, in some cases, expanding production would cause plants to exceed their permissible discharges of pollutants into the environment. Also, extended working hours might cause workers to exceed permissible exposure to hazardous substances. But, at this point, little is known about the potential magnitude of such compliance problems for private contractors.

But there would surely be cases in which the President would disapprove necessary waiver requests in order to avoid serious harm to human health and safety or permanent damage to the environment. This would particularly be a problem during a period of rising tensions that was not so serious as to require mobilization. Thus, it would be essential that DoD anticipate those waivers likely to be disapproved, and initiate preparatory efforts to reduce leadtimes for bringing the affected facilities into compliance.

e. Deterrent Impact

Attempts to obtain additional waiver authority through new legislation would be controversial and would provide highly visible signals of the political strength of the President's defense program. Similarly, U.S. credibility could be weakened if private interests were able to delay surge production by initiating legal actions to enforce these regulations.

f. Budget Cost

Actions to obtain waivers would be administrative in nature and not particularly costly. But preparatory actions

to reduce compliance leadtimes in cases where waiver requests would probably be disapproved would be expensive.

g. Civilian Disruption/Economic Impact

By permitting fuller use of existing production assets, waiving socioeconomic regulations would reduce the level of disruption inherent in the surge. Waivers would reduce the defense-related demand for capital goods as well as increase the production of materials used for both civilian and defense-related goods. On the other hand, waivers would increase disruption (i.e., pollution) of the environment.

h. Political Feasibility

Obtaining additional legislation as well as convincing the President to use existing waiver authority would be highly controversial. Opponents to weakening these regulations (e.g., environmentalists, labor unions) would be well organized and might make waivers difficult even if the surge program had general public support. Further, opponents to defense policies could use certain regulations to delay surge production. Extensive waivers might not be feasible unless the situation were extremely serious.

15. Utilize Inactive Production Equipment

a. Definition

In the event of a surge in defense procurement, additional production equipment would be needed to reactivate production of previously produced items as well as to expand production and alleviate bottlenecks for currently produced items. Due, in part, to the long leadtimes required to obtain newly produced industrial equipment, DoD retains a substantial

inventory of inactive machine tools and other production equipment. Much of this inactive equipment is assigned to plant equipment packages (PEPs) managed by the Services. Each PEP is a collection of machine tools, other production equipment, and special test equipment as well as special tooling and fixtures. A PEP is intended for use at a particular plant in the event of an emergency, and could provide for production of a number of items. In addition, a general reserve of plant equipment is managed by the Defense Industrial Plant Equipment Center (DIPEC) of the Defense Logistics Agency (DLA).[1] Unfortunately, much of this equipment is old, obsolete and/or inoperable. Further, many of the PEPs are missing industrial plant equipment or other items that would be needed in order to resume production.[2]

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[1]The Army owns over 100,000 pieces of industrial plant equipment, including 36,400 pieces (as of July 31, 1981) assigned to PEPs. Some 59 percent of the PEP items are stored in contractor plants while the remainder are stored by the Army and DLA. The DIPEC inventory includes approximately 19,000 pieces.

[2]Seventy-five percent of DoD industrial plant equipment was over 20 years old in 1978. Thus, much of this equipment is obsolete. Related items such as electronic test equipment also become obsolete rapidly. In addition, this equipment has not been properly maintained over the years. In Maxwell Alston, loc. cit., p. 6, the PEP for 20mm projectiles was found to be in unusable condition due to mistreatment, cannibalization (to obtain repair parts for equipment no longer being manufactured), and a lack of necessary tooling. In ODCSRDA, "Review of Army Mobilization Planning" (1975), p. 3-16, it was reported that DIPEC testing records indicated that only 31 percent of industrial plant equipment in Army PEPs would be found to be in acceptable condition if it were to undergo testing. That study's own sample of 276 items indicated that only 29 percent of them were in acceptable condition. In U.S. Army Audit Agency, "Industrial Preparedness Program" (1980), p. 25, 1297 shortages of industrial plant equipment are noted for 56 PEPs. PEP items other than industrial plant equipment (e.g., special tooling, special test equipment, other plant equipment) are not even inventoried. The condition of some 5000-6000 of the DIPEC items is unknown. In Defense Science Board, "Industrial Responsiveness" (1981), p. 63, a representative of the National Machine Tool Builder's Association is reported to view the DIPEC inventory as worthless.

Accordingly, a considerable effort would be required before much of the inactive equipment could be utilized to support surge production.

b. Concurrent Actions

A number of actions would be necessary at the time of a surge in order to make full use of inactive production equipment, including:[1]

- determine the condition of PEPs for surge items, including the extent of repair needs and of missing items;
- review the DIPEC inventory and other PEPs to identify items that could be used to replace missing or inoperable PEP items as well as to meet other needs of defense producers;[2]
- survey the used equipment market throughout the country and aid producers in matching requirements with the available supply;
- expand programs to repair (i.e., restore to original operating condition) or remanufacture (i.e., restore to better than original operating condition) production equipment;[3]

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[1]Due to implementation leadtimes, most of these actions should be taken prior to a surge decision. Nevertheless, concurrent actions would still be necessary to remedy preparedness deficiencies.

[2]ARRCOM was able to fill 168 PEP shortages by drawing from 38 excess PEPs. See U.S. Army Audit Agency, loc. cit., p. 28.

[3]Repair facilities for production equipment are operated by DLA, the Army, and private contractors. Most repaired equipment is used for peacetime production but the Army's facility (Seneca) was established for PEP items and refurbishes approximately 200 items per year (see Association of the U.S. Army, "A Primer on What It Takes to Stay until the War Is Over" (1979), p. 21). Also, DLA has identified remanufacturing possibilities that could increase equipment productivity by from 50 to 75 percent.

- initiate a program to produce and stockpile spares and repair parts for newly activated production equipment in cases where such parts are no longer readily available;
- together with FEMA and the Transportation Department, obtain Title 1 priority in transporting government-owned and newly purchased used industrial equipment to production sites; and
- together with FEMA, and the Energy and Labor Departments, obtain waivers from socioeconomic regulations that would otherwise inhibit (or prevent) the use of old equipment.[1]

c. Previous Actions

The value of inactive equipment would stem largely from its availability at the beginning of a surge. Thus, previous actions to keep that equipment in operable condition would be critically important. Following are a number of actions that could be taken prior to a decision to surge procurement:

- expand programs to repair or remanufacture inactive production equipment and to acquire replacements for missing items;[2]
- monitor the used equipment market on a continuing basis;
- as part of surge IPP, assure that planned producers become familiar with the condition and operational characteristics of their assigned PEP equipment;
- monitor the availability of spares and repair parts for old, inactive equipment and stock such parts if

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[1]Most inactive production equipment is older than current environmental or safety regulations and little or no effort has been made to bring such equipment into compliance.

[2]In Defense Science Board, "Industrial Responsiveness" (1981), p. xix, upgrading of government-owned machine tools is recommended in the form of a one-time 25 percent investment together with selective modernization of five percent per year.

they would not be readily available in the event of a surge;

- in anticipation of an impending surge, transport PEP equipment from government storage sites to planned producers and set up production lines;[1] and
- fund keep-alive contracts whereby DoD would pay contractors to store and maintain contractor-owned equipment and tooling that would be needed in the event of a surge.

d. Effectiveness

In principle, inactive production equipment would be available as soon as a decision to surge were made. Long leadtimes for new equipment would thus be avoided and the process of starting up production could begin. Even so, long leadtimes would be required before inactive production lines would be in full operation.[2] But the leadtime advantage of inactive equipment would be reduced if much of that equipment had to be repaired and if extensive replacement of missing

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[1] In Gaylen R. Fischer, "A Mobilization Planning Study" (1979), it was determined that more than 60 days would be required to remove all PEP equipment from most of the government storage locations (where 38 percent of Army PEP items were stored).

[2] In ARRCOM, "Industrial Base Responsiveness Study for Howitzer, Medium, Self-Propelled: 155 mm, M109A2" (1978), p. I-6, it is reported that it would take 20 months to reactivate the Firestone cannon PEP and 30 months to construct a related chrome-plating facility. In "Defense Industrial Analysis Summaries" (1981), p. 10-10, leadtimes from a cold start to mobilization rate production for small-arms PEPs ranged from 12 to 27 months. In Association of the United States Army, loc. cit., p. 22, it is reported to have taken an average of ten months to reactivate ammunition plants for the Korean War and seven months for the Vietnam War.

items was necessary.[1] Further, old production equipment would be more prone to break down during operation. Thus, stockpiling repair parts that were no longer readily available would be essential.

e. Deterrent Impact

Activating PEPs or transporting them to production sites could provide early, visible signs of activity. However, U.S. credibility would be hurt if repair and obsolescence problems were to become visible.[2]

f. Budget Cost

While much inactive production equipment is already owned, utilizing that equipment could be very expensive. The costs of repair and remanufacture programs would be substantial, as would be the costs of acquiring new equipment, tooling, and other items needed to fill gaps in the PEPs. Further, using technologically obsolete equipment and equipment likely to break down would raise production costs. Nevertheless, a surge is likely to be short-lived compared to the life of new production equipment. It could thus be less costly overall to use equipment with relatively low

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[1]Repair facilities are currently operating at capacity. Further expansion would require hiring additional skilled machinists who would be in short supply during a surge. Further, leadtimes for repairing individual pieces of equipment could be as long as one year due to a lack of familiarity with the equipment and the difficulty of obtaining or making repair parts.

[2]For example, representatives of one U.S. ally surveyed 700 pieces of inactive U.S. production equipment in order to find 100 pieces in suitable condition for use. That experience cannot have enhanced the credibility of the U.S. production base.

acquisition costs and high operating costs (e.g., used or inactive equipment).

g. Civilian Disruption/Economic Impact

Utilizing used production equipment might reduce the defense-related demand for new equipment and thereby reduce disruption of industrial equipment industries and their civilian customers. This could be offset, in part, by the technological obsolescence of some of that equipment. Such obsolete equipment would require more materials and/or (skilled or unskilled) labor than new equipment and thus would be more disruptive of those markets.

h. Political Feasibility

If the surge did not strain the capacities of manufacturers of new production equipment, they might raise political opposition to the acquisition and repair of used equipment. Waiving socioeconomic regulations so that old equipment could be used would also generate political opposition. Acquiring equipment before the surge to replace missing PEP items, however, would be supported by equipment manufacturers.

16. Change Production Methods to Reduce Leadtimes

a. Definition

Production methods for defense items are frequently designed to accomplish peacetime objectives (e.g., cost

efficiency) in a peacetime environment.[1] Procurement programs are planned years in advance and long production leadtimes are factored into those plans. But in the event of a sudden procurement surge, production leadtimes would take on critical significance. Actions taken to reduce those leadtimes could not only advance the dates at which increased deliveries began, but also increase the total number of deliveries over the surge period. Accordingly, DoD could aid the surge program by motivating contractors to change production methods in order to reduce production leadtimes, and by taking actions to support those contractors' efforts.

There are a number of ways in which producers could change production methods in order to reduce production leadtimes, including:

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[1]The following observations are made in LTC Howard E. Bethel et al., loc. cit., p. 37: "Current DoD policies and procedures require contractors to minimize costs and have a high probability of on-time delivery. The consequence of this policy is longer leadtimes since contractors generally build in substantial slack time, load plants for efficiency not maximum output, and avoid overtime and other extra (premium) cost actions. For instance, Firestone plans on one month from the time they have all parts in plant to fabricate, assemble, inspect and package tracks. However, they have accomplished this process in 11 days. Ratheon, Lowell builds in about one month of slack time for each buy item. Production planning personnel at Ratheon indicate they could achieve a 20-30 percent reduction in leadtime by squeezing the program schedule and doing the manufacturing less efficiently to increase output. The process would cost more and have a higher probability of slipping deliveries. The General Manager of a first tier subcontractor told us he felt there would be a fundamental difference in the manufacturing process he would use to maximize output versus the process currently used to minimize cost/delivery risk."

- change work procedures and plant layout to enhance speed even if that increases unit costs;[1]
- seek relief from restrictive, union- or government-imposed work rules;[2]
- change the need point for long-leadtime items or work around missing items and retrofit later;
- circumvent equipment bottlenecks by reverting to previous manual methods;
- acquire equipment to speed up manual operations or to circumvent skilled labor shortages;
- change methods of product testing;[3] and
- circumvent bottlenecks by subcontracting work previously done in-house.

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[1]The number of units produced in a given period of time could be increased by adding work shifts or duplicating an existing production line. But the measure under discussion contemplates reducing the duration of production for each unit individually. For example, work stations could be subdivided in order to permit more workers at a given stage of assembly (beyond the point where such subdivision would minimize unit costs). In Robert L. McDaniel et al., loc. cit., p. 42, it is noted that production increases for the UH-1, the CH-47, the F-4, and the A-10 all were accompanied by reconfiguration of production lines. Also, in ARRCOM, "Industrial Base Responsiveness Study for Howitzer, Medium, Self-Propelled: 155 mm, M109A2" (1978), plant rearrangement is an important step toward preparing for a surge in production.

[2]For example, aisle space standards of the Occupational Safety and Health Agency (OSHA) could limit worker density and plant utilization. See Robert L. McDaniel et al., loc. cit., p. 6.

[3]For example, in Defense Science Board, "Industrial Responsiveness" (1981), p. 178, 11 out of 18 electronics suppliers indicated that simplified acceptance testing and qualification methods would have a high impact on reducing leadtimes by 50 percent. Also, a participant at the ADPA Conference on Critical and Strategic Materials observed that the requirement that aluminum armor plate for the infantry fighting vehicle be tested only at Aberdeen Proving Grounds added three months to leadtimes for that material.

b. Concurrent Actions

While DoD cannot dictate production methods to its contractors, there are actions it could take to support contractor efforts to change production methods, including;

- establish policy guidance emphasizing (to procurement officers) the priority attached to reduced production leadtimes and provide appropriate incentives to contractors;
- arrange for waivers of socioeconomic regulations where necessary in order to change production methods;
- establish emergency procedures to ease contractual changes necessary to accommodate different and (possibly) more expensive production methods; and
- encourage flexibility in applying military standards as they restrict production and testing methods.

c. Previous Actions

Useful actions prior to a decision to surge include:

- perform good IPP to identify opportunities to reduce production leadtimes by changing production methods and implement IPMs to aid those changes;[1]
- consider the potential need to reduce production leadtimes when production methods are initially established;[2]
- support retention of tooling and equipment when manual methods are automated.

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[1]The Services are currently identifying such IPMs pursuant to additional funding made available by OSD.

[2]Once production has been facilitized, much of the flexibility to reduce process leadtimes has been lost.

d. Effectiveness

Changing production methods would effectively support the surge effort if it resulted in faster and/or increased deliveries of needed items. There are, however, a number of potential limitations on the effectiveness of changing production methods, including:

- most potential changes would take time to implement (e.g., additional tooling might be required);
- in some cases, production would be lost during the changeover period;
- faster production methods would have little impact unless the inflow of materials and components could also be accelerated.

On the other hand, this last disadvantage suggests that some production methods could be changed while firms waited for increased inflows of materials and components without thereby reducing production.

e. Deterrent Impact

These actions would not be particularly visible and would impact deterrence mainly by their effectiveness in speeding and/or increasing deliveries.

f. Budget Cost

Procurement costs would increase if changing production methods required acquisition of additional equipment. Procurement costs would also increase if the faster methods adopted were less (cost) efficient (e.g., required more materials or labor) than the previous methods. On the other

hand, costs might be reduced if production were simplified or certain tests were found to be unnecessary.[1]

g. Civilian Disruption/Economic Impact

Adoption of less (cost) efficient methods in order to speed production would somewhat exacerbate the civilian disruption inherent in the procurement surge. Such methods would increase the amount of labor and other production resources required to accommodate a given amount of surge output. Thus, the drain of resources away from the civilian sector might increase.

h. Political Feasibility

Adoption of less (cost) efficient methods could appear wasteful and thereby generate political opposition. This would particularly be true as regards designing peacetime production methods so as to reduce leadtimes at the expense of higher peacetime costs. Waiver of socioeconomic regulations could also generate opposition.

17. Institute Product Changes to Reduce Leadtimes

a. Definition

If a decision were made to surge procurement, it would signal a sudden increase in the urgency with which procurement items were needed. While product quality and performance characteristics would remain important, the time it takes to achieve these traits would become much more costly (in terms of defense capabilities delayed). Indeed, there might be

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[1] In addition, certain economies of scale or learning would be inherent in increasing output per se.

cases in which military users of procurement items would be willing to sacrifice product quality and/or performance characteristics if necessary to advance and increase deliveries.[1]

There are a number of ways in which product changes could be instituted in order to reduce procurement leadtimes, including:

- order less-capable, previously produced products if that would reduce procurement leadtimes;[2]
- initiate production of mobilization prototypes especially designed for producibility and to reduce reliance on long-leadtime items;[3]

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[1]The possibility of producing less sophisticated equipment in greater quantities in the event of mobilization was recommended for further study as a result of the Nifty Nugget mobilization exercise. See Office of the Secretary of Defense, "An Evaluation Report of Mobilization and Deployment Capability" (1980), p. 20.

[2]Such products might be out of production or else in production for foreign military sales (FMS). A closely related idea would be to circumvent long leadtimes for one weapon system by increasing orders for a more producible weapon system capable of performing the same mission.

[3]A mobilization prototype is a more producible but less capable version of a state-of-the-art weapon system. The mobilization prototype would be designed during peacetime with a limited production run to prove out manufacturing methods. It would then be produced in great quantities in the event of an emergency. It could be an entirely new system or more likely a more austere version of an existing system. In Herman Kahn and William Schneider, Jr., "The Technological Requirements of Mobilization Warfare" (1975), p. 189, prototype examples include design of an austere main battle tank or substitution of a missile system for the tank gun if the gun would be a production bottleneck. In Roderick L. Vawter, "Industrial Base Mobilization" (1981), p. 14, prototype examples include development of a diesel-powered version of the turbine-powered M-1 tank or of turbo-prop aircraft to substitute for helicopters in providing close air support. While mobilization prototypes would be designed primarily for production in the event of full-scale mobilization, they might also be utilized in the event of an extended surge.

- substitute subassemblies (e.g., black boxes, armament) with lower performance characteristics in order to reduce leadtimes on items currently produced, retaining the potential for retrofitting higher quality subassemblies later;[1] and
- relax product specifications and standards in order to improve producibility and utilize readily available materials, parts, commercial components, labor skills, and production equipment even if product quality would suffer as a result.[2]

b. Concurrent Actions

A number of actions would be required in order to implement appropriate product changes, including:

- identify potential leadtime and producibility problems that could be alleviated by product changes, and consider these tradeoffs during the initial formulation of the surge program;
- establish policy guidance on what product changes should be considered and what relief should be granted

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[1]For example, it might be feasible to substitute the J-79 engine from the F-4 for the F-100 engine on the F-16 if the J-79 were more producible.

[2]Unique military specifications can cause serious producibility problems and are not always justified even during peacetime. For example, in Joint Committee on Defense Production, "Civil Preparedness Review" (1977), p. 71, an alleged military tendency to overstate product specifications is discussed. In LTC Howard E. Bethel et al., op. cit., contractors are reported to feel that certain military specifications (e.g., the hardness of gear forgings) are overly rigid and their relaxation would reduce leadtimes. "Defense Industry Analysis Summaries" (1981), p. 6-13, describes possibly unrealistic specifications for the 155mm improved conventional munition. In Theodore J. Panayotoff, "The Department of Defense Industrial Mobilization Production Planning Program in the United States" (1972), p. 92, an example is reported wherein standardization of a product for the Air Force and Navy raised specifications (and producibility problems) to the level of the more demanding Service for the entire production run. Finally, there would be instances in which certain specified product characteristics would be unnecessary in the given crisis (e.g., storability characteristics for bombs intended for immediate use).

from military standards in order to reduce qualifying leadtimes associated with redesigning parts and using new materials; and

- implement emergency regulations designed to simplify any contract changes required to accommodate product quality changes under existing contracts.

c. Previous Actions

A number of actions prior to the decision to surge would facilitate implementing the required product changes, including:

- control foreign military sales (FMS) to promote production of items that would be highly producible substitutes for items currently in production for U.S. forces;
- as part of IPP, identify the potential need for product downgrades in the event of a surge and prepare by designing and qualifying product changes in advance;
- retain plant equipment packages (PEPs) for selected previously produced items in a high state of readiness;
- reemphasize producibility in the design of new items, and design-in a potential for downgrading if it should become necessary;
- design mobilization prototypes and complete small production runs;
- reduce potential procurement bottlenecks in advance in order to reduce the need for product changes; and
- consider potential surge leadtimes when selecting materials and maintain a bank of information on potential substitutes for the materials used.

d. Effectiveness

The effectiveness of this measure ultimately depends on the military utility of the changed products. However,

limitations can be identified as to the usefulness of product changes in reducing procurement leadtimes, including:

- extended start-up leadtimes would delay production (from a cold start) of mobilization prototypes and previously produced items;
- downgrading selected subassemblies of production items could face a similar problem in that lower quality substitutes might be out of production or might face substantial difficulties in expanding production;[1]
- incorporating parts and materials changes into production items could require redesign and testing delays.[2]

Even if product changes did not provide instantaneous solutions, they still could provide net reductions in procurement leadtimes in particular cases. Further, if different facilities were involved, initiation of production of more producible items could proceed simultaneously with increased production of the current items.

e. Deterrent Impact

The impact on deterrence of downgrading product quality would depend, in part, on the visibility of the downgrading. Producing obsolete models might fail to impress allies and adversaries (unless the resulting quantity increases were truly prodigious). Outsiders would have difficulty

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[1]Previous subcontractors for items out of production would be occupied with other products. Obsolete electronic components would be particularly difficult to obtain. See Defense Electronics Supply Center, "Study of the Influence of Technological Change and Diminishing Manufacturing Sources on DoD Electronics Parts Support" (1979).

[2]Qualification of new parts could take as long as a year as initial parts are produced and then tested. See, for example, Arthur D. Little, Inc., loc. cit., p. 167.

identifying or assessing the impact of any downgrading of internal components of state-of-the-art models.[1]

f. Budget Cost

Most product changes would be costly. The greatest up-front costs would be incurred by starting up production of items not currently in production, although variable production costs might be less than those for the currently produced items. Incorporating changes into currently produced products would also be expensive as products were redesigned and tested, and as production methods were changed. While reverting to simpler, proven technologies would tend to reduce future repair and maintenance costs, adopting unproven changes and lowering quality control standards would tend to raise future repair and maintenance costs. Finally, procurement costs might be reduced if expensive long-leadtime materials could be replaced by less-expensive, available materials.

g. Civilian Disruption/Economic Impact

Product changes to reduce procurement leadtimes would tend to reduce defense-related demand for the most scarce production resources. Such changes would thus reduce the civilian disruption inherent in the surge program. Of course, this would look like disruption to users of the production resources to which DoD turned.

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[1] In Herman Kahn and William Schneider, Jr., loc. cit., p. 197, a distinction is drawn between the visible weapon systems that a potential adversary could count and the less visible performance characteristics about which he could only speculate.

h. Political Feasibility

Production of lower-performance models could generate political opposition from producers of state-of-the-art models. Mobilization prototypes might be viewed as too expensive and duplicative to be designed in the first place. Downgrading product quality could also attract opponents. However, these changes might well be supported as necessary to implement the surge program. Perhaps the most serious opposition to designing mobilization prototypes would come from within the military. Opponents might fear that accepting lower performance capabilities in the event of a surge would weaken Congressional support for higher performance capabilities on peacetime models.[1]

18. Reorient Foreign-Military-Sales Resources

a. Definition

A substantial portion of peacetime defense production is sold to foreign governments as part of foreign military sales (FMS) programs. In the event of a crisis requiring a surge in overall procurement, substantial changes could be expected in FMS programs. Priorities among U.S. and foreign requirements would change and in certain cases resources would be transferred from low-priority FMS production to meet critical U.S. and foreign needs under the surge program.

There are a number of ways in which FMS resources could be used to support surge requirements, including:

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[1]See Norman Friedman, "Surge Mobilization: The United States versus the Soviet Union," p. 150. Of course, during peacetime long production leadtimes are less critical while procurement budgets are tighter.

- redirect deliveries of current-technology models to high priority customers;
- redirect deliveries and surge production of previous-technology models that could still provide useful (if downgraded) service if this would provide reductions in procurement leadtimes (compared to further increases in the production of current-technology models);[1]
- convert production lines from previous FMS items to different items more useful for the surge program;[2]
- terminate production of (or give lowest priority to) certain FMS items in order to free production resources (at both prime and sub-tier levels) for other programs.[3]

b. Concurrent Actions

In order to utilize FMS resources to support surge procurement a number of actions could be taken, including;

- consider the utility of FMS end items and production resources as part of formulating the surge program;
- obtain Secretary of Defense approval for redirecting FMS resources and establish policy guidance regarding redirecting resources from low-priority FMS; and
- revise arrangements with the Commerce Department that grant priority to particular FMS programs under the Defense Materials System/Defense Priorities System (DMS/DPS).

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[1]For example, A-7 aircraft being produced for foreign sale could be diverted to the Air National Guard which uses A-7s.

[2]In some cases, only minor changes would be necessary. For example, model A of the Maverick air-to-ground missile is being produced for foreign sale but production could be converted to model D which is used by the Air Force.

[3]For example, an aircraft plant could be used to produce wing skins and subassemblies for other programs.

c. Previous Actions

Prior to a decision to surge procurement, a number of actions could aid implementation of this measure, including:

- plan the use of FMS resources as part of surge IPP; and
- structure the FMS program so that items produced would be useful in the event of potential surge programs.

d. Effectiveness

Redirecting deliveries of existing FMS production would be a very effective method of immediately supporting the surge program.[1] Even most previous-technology items would be useful. Surging their production could reduce procurement leadtimes both because they might be more producible and because their current production would be less likely to be at capacity levels than might be true for current-technology items. Changing the items produced at FMS facilities could delay deliveries but might be an effective use of the resources if the currently produced items were not useful to the surge effort. Terminating production of low-priority FMS items would release valuable resources to other surge programs, including skilled labor and perhaps some production equipment at the prime level, and materials, components, and subassemblies at the sub-tier levels. Depriving such low-priority FMS programs of any priority rating under the DMS/DPS could also be effective at freeing lower-tier resources for use in other surge programs.

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[1]The magnitude of FMS is substantial, amounting to $15 billion in FY81. See Business Week (August 31, 1981), p. 49.

e. Deterrent Impact

Reallocating deliveries among FMS recipients would be a quick and visible signal of U.S. intentions. Even termination or delay of certain deliveries could signal that the U.S. was taking the crisis seriously. Congressional rejection of new FMS agreements, however, would have very damaging consequences for U.S. credibility.

f. Budget Cost

Changing FMS facilities to produce different items could be expensive, but most steps to utilize FMS resources would reduce procurement costs in comparison with other methods.

g. Civilian Disruption/Economic Impact

Since utilizing FMS resources (and reducing certain FMS sales) is a way of freeing up production resources already used for defense-related purposes, this measure would reduce the civilian disruption inherent in the surge program.

h. Political Feasibility

This measure could generate some political opposition from contractors or countries whose FMS programs were terminated.

19. Use Spares and Repair Parts for New Production

a. Definition

During the early stages of a surge in procurement, production increases would be limited, in part, by a shortage of long-leadtime parts, components, and subassemblies. At the same time, parts, components, and subassemblies would be inventoried as war reserve materiel (WRM) or at repair depots

for use as spares and repair parts. In some cases, these spares and repair parts could be used as parts for new production items and thereby shorten procurement leadtimes. DoD could thus enhance the surge by supporting the use of spares and repair parts for new production in selected cases.

b. Concurrent Actions

In order to support the use of spares and repair parts for new production, DoD could take a number of actions, including:

- review surge requirements, parts bottlenecks, and spares inventories to identify cases wherein use of the spares could reduce procurement leadtimes for finished items; and
- establish policy guidance regarding depletion of WRM and depot inventories to support new production based on anticipated usage rates for spares and repair parts for the crisis at hand (and potential future crises).

c. Previous Actions

Prior to a decision to surge procurement, a number of actions would enhance this measure, including:

- perform good surge IPP to identify long-leadtime parts, components, and subassemblies and implement IPMs to reduce those leadtimes; and
- increase inventories of selected spares and repair parts in anticipation of a potential dual role as production parts.

d. Effectiveness

Using spares and repair parts could reduce procurement leadtimes, but this would be rare without prior planning. Effectiveness would depend on whether a lack of parts was the

constraining factor in expanding production as well as on whether spares inventories included the variety of parts needed. Without deliberate preparatory efforts, there would be no reason to assume that spares inventories would include the necessary mix of pacing items. Further, the circumstances of the crisis would dictate whether spares and repair parts could be released at all. For example, if the crisis involved immediate hostilities, the most urgent requirement would be to keep weapon systems in the field operational. Indeed, new production parts might be diverted for use as repair parts as occurred for F-4 parts during the Vietnam War. But, it might make sense to utilize repair parts for new production during the early stages of an extended build-up in anticipation of future hostilities, or in cases where new production was urgently needed to support action in a local crisis that was not expected to escalate. Effectiveness would be enhanced considerably by an advance program to stock parts for potential use in either production or repair.[1]

e. Deterrent Impact

This measure would not be particularly visible, but it could hurt the credibility of the U.S. deterrent for outsiders to know that WRM stocks were being drawn down. On the other hand, faster deliveries of end items could enhance the U.S. deterrent.

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[1] In Defense Science Board, "Industrial Responsiveness" (1981), p. 58, it is observed that inventories of critical spares are already so low as to be damaging to the readiness posture, particularly for aircraft.

f. Budget Cost

Utilizing (and later replacing) spares and repair parts for production would not particularly increase budget costs. But, building up spares inventories in preparation for potential use in production would be expensive.

g. Civilian Disruption/Economic Impact

This measure would reduce the civilian disruption inherent in the surge somewhat by reducing early pressure for deliveries of the long-leadtime parts involved.

h. Political Feasibility

Depleting WRM inventories might appear hazardous to some political observers, but this measure is not likely to draw much opposition from industry. While funding for WRM spares and repair parts typically has a low peacetime priority, the potential use of such parts for surge production might raise the priority somewhat.

Chapter IV

SUMMARY OF ACTIONS REQUIRED

A. INTRODUCTION

This chapter presents summary information regarding the actions identified in Chapter III. In particular, certain actions that would require similar implementation methods are listed.

1. Concurrent Actions

Most of the IBAs in Chapter III would require that policy decisions be made and guidance be issued at the Services, JCS, and/or OSD. Because such guidance would influence planning of the surge program, and because implementation leadtimes would frequently be significant, early decisions on initiating IBAs would be important. In some cases, however, the need for extraordinary actions to support the surge would not be known until problems developed as the surge was being executed.

A quick-reaction information system within the defense community would be critical to the effectiveness of the emergency actions taken. Early information would be required regarding potential shortages of materials, parts suppliers, production equipment, and skilled labor. Information would also be required regarding the potential need for waivers to environmental and safety regulations, the extent of foreign dependencies, and the condition of government-owned equipment. While much of this information could be obtained in advance of a surge (e.g., through a revitalized Industrial Preparedness Planning (IPP) program), there would still be a

need for a quick-reaction method of updating the information at the time of the surge.

2. Previous Actions

Implementation leadtimes for the IBAs could be reduced through prior actions, such as preparing draft policy guidance and standby programs and procedures. In addition, most of the problems addressed by the IBAs could be alleviated through good IPP and through implementation of hard industrial preparedness measures (IPMs), such as acquiring bottleneck equipment items and stockpiling components. Long implementation leadtimes make prior action mandatory for certain programs, such as enlarging the National Defense Stockpile, training skilled workers, and repairing government-owned equipment. In other cases, potential surge problems could be prevented by prior actions, such as controlling the extent of foreign dependence or considering emergency production when weapon systems are designed. Finally, there are certain actions that could be taken to turn on the industrial base in anticipation of a surge, such as hiring key personnel, setting up plant equipment packages, and qualifying additional suppliers.

B. NEW LEGISLATION

A number of the IBAs include actions that would require new legislative authority. If the actions appeared useful, leadtimes could be reduced if standby authorities were legislated in advance, but that would not always be feasible.

- Quick-reaction contracting would be aided by legislation authorizing emergency procurement in advance of Congressional appropriation of the requisite funds. It would also be useful for Congress to relax

restrictions on the reprogramming of appropriations within DoD (see IBA number 2).

- Tax changes would support a number of IBAs. These changes might include further acceleration of allowable depreciation on new investments in defense-related production equipment (see IBA number 8) and income tax exemptions for workers in critical, defense-related occupations (see IBA number 6).
- Authority to exempt certain defense-related construction projects from local regulations would require new legislation (see IBA number 7).
- Any legislation to authorize resumption of the draft would have to provide suitable authority if deferments were to be granted to workers in critical defense-related occupations (see IBA number 6).
- Any legislation to authorize wage controls would have to provide suitable authority if selected defense-related industries were to be exempted from such controls (see IBA number 6).
- Legislation would be required in order to provide additional authority to terminate strikes detrimental to defense-related production (see IBA number 12).
- Legislation would be required in order to provide additional Presidential authority to waive certain socioeconomic regulations inhibiting defense-related production (see IBA number 14, and also numbers 4,7,8, and 15).

C. PRESIDENTIAL AUTHORIZATIONS REQUIRED

A number of IBAs would require authorities already enacted into law but requiring Presidential approval before they could be used. Administrative leadtimes would be reduced if such approval were obtained in anticipation of the times at which particular authorities would be required. The authorities that might be needed are listed below.

- Presidential authorization would be required in order to extend export controls to additional production resources in short supply (see IBA number 10).

- Presidential authorization would be required in order to release materials from the National Defense Stockpile (see IBA number 11).
- Presidential authorization would be required in order to waive compliance with regulations dealing with environmental pollution and occupational safety and health, to the extent that such authorities existed (see IBA number 14 and also numbers 4, 7, 8, and 15).
- Presidential authorization would be required in order to seek injunctions to halt labor strikes under the provisions of the Taft-Hartley Act of 1947 (see IBA number 12).
- Presidential approval would be necessary to adjust assignments of DX ratings to defense programs (see IBA number 1).

D. HELP FROM OTHER DEPARTMENTS

Many of the IBAs would depend on help from other executive branch departments in obtaining production resources. In most cases, it would be essential for DoD to estimate its resource needs before those departments could provide meaningful assistance. Particular cases where help would be needed from other agencies are listed below.

- The Commerce Department would be asked to extend its activities under the Defense Materials System/Defense Priorities System (DMS/DPS). This would include broadening the DMS/DPS, providing special priorities assistance in particular cases, and increasing efforts to enforce priority ratings (see IBA number 1).
- The Commerce Department would be asked to help identify potential suppliers and subcontractors (see IBA number 4).
- The Commerce Department and the White House would be asked to contact top executives of major corporations in order to obtain access to certain in-house resources (see IBA number 5).
- The Commerce Department and the Federal Emergency Management Agency (FEMA) would be asked to encourage the expansion of production of needed basic resources,

including extension of subsidies in certain cases under the authority of Title 3 of the Defense Production Act (DPA) (see IBA number 8).

- The Commerce Department would be asked to impose import controls under Section 232 of the Trade Expansion Act of 1962 in order to protect certain defense-related domestic industries (see IBA number 9).
- The Commerce Department and the State Department would be asked to assist in obtaining foreign resources. Such help would include collecting information on the reliability of various sources and on the resources available, securing priority assistance from allied governments, easing certain import restrictions, negotiating bilateral agreements to secure resource supplies, and participating in multi-lateral resource allocation schemes (see IBA number 9).
- The Commerce Department and FEMA would be asked to assist in controlling certain exports. Such help would include identifying exports involving critical resources in short supply, extending export controls, and restricting financing agreements at the Export/Import Bank (see IBA number 10).
- The Commerce Department and FEMA would be asked to help identify the need for and obtain the release of certain materials in the National Defense Stockpile. Prior to the surge, FEMA would be encouraged to increase stockpile holdings (see IBA number 11).
- The Labor Department would be asked to provide help in recruiting workers. This assistance would include enlisting the aid of state and local employment offices and easing restrictions under programs of the Equal Employment Opportunity Commission (see IBA number 6).
- The Labor and Education Departments would be asked to adjust manpower training programs in light of surge requirements. And, prior to the surge, they would be asked to expand programs to increase the supply of certain scarce skills (see IBA number 13).
- The Labor and Energy Departments would be asked to expedite the provision of needed waivers to environmental and safety regulations (see IBA number 14 and also numbers 4, 7, 8, and 15).
- FEMA and the Transportation and Energy Departments would be asked to provide priority assistance under

Title 1 of the DPA for needed transportation services and energy (see IBA number 1 and also numbers 8, 11, and 15).

- FEMA would be asked to exercise any strike termination authority to prevent or halt damaging labor strikes (see IBA number 12).

Chapter V

COMPARISON OF INDUSTRIAL BASE ACTIONS (IBAs)

A. INTRODUCTION

Which industrial base actions (IBAs) would be implemented in the event of a procurement surge would depend, in part, on circumstances at the time. Such current conditions would influence both the usefulness and the feasibility of the individual IBAs. Relevent characteristics of the current situation would include those defining the crisis and surge requirements as well as those reflecting the condition and availability of the industrial base. Some of the more obvious situational characteristics are discussed below. The impact of each characteristic in choosing among the IBAs of Chapter III is considered. While most of the IBAs would be useful and feasible to some degree under most circumstances, still it is possible to distinguish those that would be more suitable than others under given conditions.

B. COMPARISON OF INDUSTRIAL BASE ACTIONS (IBAs)

Table 2 presents comparisons among the IBAs with respect to their suitability under different characteristics of potential surge situations. These comparisons are explained below.

1. Magnitude of Requirements

The magnitude of the surge requirement defines the level of production resources that would be needed. It is determined by the number of items whose procurement is surged

Table 2. COMPARISON OF INDUSTRIAL BASE ACTIONS (IBAs)[1]

		CHARACTERISTICS OF SURGE SITUATION						
		Large Magnitude	Great Urgency	Visibility Important	Preparedness Deficient	Budget Tight	Full Employment	Political Support weak
1.	Obtain Priority Access to Current Production	*	*	*	*	*		*
2.	Initiate Surge by Quick-Reaction Contracting		*					*
3.	Surge by Accelerating Deliveries Under Existing Contracts		*					
4.	Surge by Adding Suppliers	*			*			*
5.	Access In-House Resources at Commercial Firms	*		*	*	*		
6.	Support Hiring and Retention of Workers	*	*		*		*	
7.	Support Emergency Construction	*			*		*	
8.	Support Expansion of Resource Production	*			*		*	*
9.	Realign Dependence on Foreign Suppliers	*		*	*		*	*
10.	Restrict Exports of Production Resources	*		*	*	*	*	
11.	Release Materials from the National Defense Stockpile			*		*	*	
12.	Support Productive Labor Relations	*	*	*	*			
13.	Support Labor Training Programs	*			*		*	*
14.	Obtain Waivers to Socioeconomic Regulations	*	*		*	*		
15.	Utilize Inactive Production Equipment		*			*		*
16.	Change Production Methods to Reduce Leadtimes	*			*			*
17.	Institute Product Changes to Reduce Leadtimes	*	*		*	*		*
18.	Reorient Foreign-Military-Sales Resources		*	*			*	*
19.	Use Spares and Repair Parts for New Production		*					*

[1]The symbol * indicates that an IBA is more suitable than others in a surge situation with the corresponding characteristics.

as well as by the corresponding rates of increase. Most of the IBAs would be useful if the magnitude were small and would become more useful as the magnitude increased. That is, the more demands that the surge program placed on production resources, the greater need there would be for DoD to take extraordinary actions to acquire those resources. Nevertheless, there are a number of IBAs whose contribution would be limited at higher levels of magnitude. IBAs that would not be so limited are indicated by the symbol (*) on Table 2.

2. Urgency of Requirements

Surge situations would differ, depending on how soon the increased deliveries were needed and how long those increases would have to be sustained. While an immediate increase in deliveries would be useful in most surge situations, it would be more critically needed in some situations (e.g., existing combat involving U.S. forces) than others. Most of the IBAs would take time to implement and would be useful in sustaining a medium-length surge (say, one to three years). While substantial, immediate increases in deliveries would be impractical for most items, a number of the IBAs would be somewhat useful in increasing near-term (say, six-month) deliveries. These IBAs with potential for near-term payoffs are indicated by the symbol (*) in Table 2.

3. Need for Visibility

A surge in procurement would inherently have value for deterring potential adversaries from initiating or escalating hostilities as well as for convincing potential allies of the credibility of U.S. support. In cases where sending such signals would be particularly important, potential deterrent

value could be a criterion in selecting IBAs to facilitate implementation of the surge program. Certain IBAs might be useful signals of U.S. determination and visible tests of the strength of political support for the President's defense posture. There is a downside risk associated with most of the IBAs since controversial rejections (by the public) of attempts to use them would provide embarrassing indications of political weakness for the defense program. Those IBAs that would be particularly visible are indicated by the symbol (*) in Table 2.

4. State of Preparedness

The condition of the industrial base at the time a decision to surge is made would have an important influence on which industrial base actions (IBAs) would be needed to support the surge. If the industrial base were in particularly good condition, surge objectives could be more readily attained with less reliance on extraordinary actions. Further, the initial state of preparedness would have an important bearing on the effectiveness of those IBAs that were implemented. While all of the IBAs of Chapter III would be more effective if prior preparedness actions were taken, there are several for which prior actions would be indispensable. Those IBAs least dependent on the initial state of preparedness are indicated by the symbol (*) in Table 2.

5. Budget Constraint

Defense spending would always be constrained by budget limitations in conditions short of full-scale mobilization. However, there are gradations possible in the severity of the budget constraints associated with surge programs. In some

cases, the DoD budget might be increased to accommodate the incremental cost of a surge program; in more severe cases, a significant portion of the surge program would be funded by reductions in other defense programs. Such variations in the severity of the DoD budget constraint would influence the choice of IBAs to support the surge. Many of the IBAs would tend to increase budget costs in order to reduce procurement leadtimes. Others would tend to reduce (DoD) budget costs while increasing the availability of production resources. Those IBAs that would tend to reduce (DoD) budget costs are indicated by the symbol (*) in Table 2.

6. Economic Conditions

A surge in defense-related procurement would employ resources diverted from civilian applications as well as resources that would otherwise be underutilized. Because there would be political limits to disruption of the civilian economy, defense producers would experience greater difficulty in obtaining production resources if the economy were more fully employed. Most of the IBAs would be useful whether the civilian economy was fully employed or not. But the need for some of these IBAs would be particularly great if full-employment conditions made it especially difficult to obtain production resources. Those IBAs that would be much more useful if the civilian economy were fully employed are indicated by the symbol (*) in Table 2.

7. Political Support

If the President were to propose a surge program and the Congress were to appropriate the requisite funds, that would surely demonstrate the existence of substantial political support for successfully implementing the surge.

Nevertheless, there could be important gradations in the tolerance of the public for surge-related disruptions depending, in part, on the gravity of the perceived threat. Most of the IBAs would generate political opposition within DoD, the executive branch, or the Congress as well as among affected businesses. However, a number of the IBAs would stimulate more general opposition from the private sector and would require particularly strong public support in order to implement. Those IBAs not requiring particularly strong public support are indicated by the symbol (*) in Table 2.

Chapter VI

CONCLUSIONS

This study has identified and analyzed measures that could be taken to support a surge in procurement during a period of rising tensions. The information collected should be useful both as a check on the adequacy of current preparations and as input to crisis response decision packages.

The period of rising tensions considered in this study is a time preceding possible mobilization for a major war. It is assumed that international crises would generate conditions requiring an immediate surge in defense procurement and/or preparations for a future surge or for industrial mobilization. A surge in procurement, for example, might be necessary in order to provide materiel support to allied or U.S. forces engaged in regional hostilities, to increase the readiness of U.S. forces, or to expand the force structure. The concept of a period of rising tensions, thus, could encompass a wide variety of circumstances and responses. The common thread among rising-tension situations would be their intermediate positions between peacetime and full-scale mobilization. This intermediate condition would apply to the severity of the situation, the resulting increase in the DoD budget, and the tolerance of the public for disruption of civilian output and for authoritative measures.

Accordingly, it would be difficult even at the time of a surge to know which industrial base measures would be politically feasible. While the potential for controversy should not stop DoD from attempting to initiate the measures

it found necessary and while many useful measures would not be controversial, uncertainty over whether the President and/or Congress would authorize certain measures does complicate the planning process. This complication is superimposed on the difficulties of preparing for a surge when the items and quantities that would be required are uncertain because the future precipitating crisis is unknown. But if adequate preparatory measures have not been implemented, the objectives of a potential procurement surge could not be achieved. That is, considering that both time and industrial authorities would be limited, a substantial and urgent procurement surge could not succeed without extensive and costly preparatory measures.

In this study, nineteen industrial base action (IBA) categories have been identified and analyzed. Each IBA addresses a particular problem that would arise in the event of a procurement surge, and enumerates specific measures that could be implemented concurrent with or before the surge decision. These measures are analyzed with respect to several characteristics impacting on their effectiveness and feasibility. In order to formulate decision packages incorporating these measures, additional study should determine the specific decisions to be made and the adequacy of existing authorities, procedures, and information systems. Appendices II and III provide two examples of such additional study.

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Appendix I

INTERVIEWS AND MEETINGS

Appendix I

INTERVIEWS AND MEETINGS

A. INTERVIEWS IN THE WASHINGTON, D.C. AREA

During 1981-1982, the individuals listed in this section were interviewed in order to obtain information for this study.

- Office of the Under Secretary of Defense for Research and Engineering: COL Ronald L. Carlberg, John E. DuBreuil, Kenneth R. Fcster and John Osterday
- Office of the Secretary of Defense, Industrial Task Force: LTC Tim D. Gill and S. Love
- Defense Industrial Resources Support Office: Hugh Bradley, James H. Kordes (Director), and John Eck
- Office of the Assistant Secretary of Defense (International Security Affairs): COL Donald Kendall
- Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics): LTC Steve Denny, Dr. Donald K. Emig, Stuart Nelson and LTC W.R. Shope
- Defense Logistics Agency, Executive Directorate, Technical and Logistics Services: LTC Daniel T. Mattioli and Robert R. Sweeney
- Office of the Joint Chiefs of Staff, Logistics Directorate: LTC Sheldon W. Dearden and LTC Fred J. Sineath
- Office of the Assistant Secretary of the Army (Installations, Logistics and Financial Management): LTC Daniel R. Voss
- Office of the Assistant Secretary of the Army (Research, Development and Acquisition): William K. Takakoshi
- Office of the Deputy Chief of Staff for Research, Development, and Acquisition, U.S. Army: Richard Barnett and Roderick L. Vawter

- Office of the Deputy Chief of Staff for Research, Development, and Acquisition, U.S. Air Force: LTC Richard W. Burton and S.M. Cohen
- Office of the Chief of Engineers, U.S. Army: LTC Dennis R. Gilson and Gary Robinson
- Development and Readiness Command, U.S. Army: Gale Quist, MAJ David Theimer and Gary Tull
- Naval Material Command Headquarters: Paul Buck, John Todaro and Robert R. Hallmark
- National Security Council Staff: Colonel Horace Russell
- U.S. Department of Commerce, Office of Industrial Resource Administration: John Richards (Director)
- General Service Administration: John Babby

B. INTERVIEWS IN OTHER AREAS

Information was also obtained through interviews at procurement sub-commands in other locations.

- U.S. Army Tank and Automotive Command, M-1 Tank Program Management Office: Major R.J. Ramseth, et al.
- U.S. Army Aviation Research and Development Command and Troop Support and Readiness Command, including Project Management Offices for the UH-60A, CH-47D, AH-1S, and AH-64 Helicopters: R. Cline, et al.
- U.S. Air Force Ballistic Missile Organization, MX Missile Program Management Office: Doug Launer, et al.
- U.S. Air Force Space Division: Colonel Niederman, et al.
- U.S. Air Force Aeronautical Systems Division: Robert Morris, et al.
- Joint Aeronautical Materials Activity: Lowell Horseman, et al.

C. CONFERENCES ATTENDED

Information was also obtained at several conferences that included representatives of both private industry and government.

- Defense Readiness and Requirements Symposium, American Defense Preparedness Association, September 24-25, 1980.
- Conference/Workshop on DoD Responsibilities under the National Materials and Minerals Policy, Research, and Development Act of 1980, American Defense Preparedness Association, May 5-7, 1981.
- Conference on Mobilization, National Defense University, Industrial College of the Armed Forces, June 4-5, 1981.
- Defense Industrial Base National Issues Seminar, The Brookings Institution, February 24, 1982.

Appendix II

WAIVERS FROM ENVIRONMENTAL REGULATIONS

Appendix II

WAIVERS FROM ENVIRONMENTAL REGULATIONS

A. INTRODUCTION

In Chapter III of the main report, Industrial Base Action (IBA) number 14 deals with obtaining waivers to socioeconomic regulations that would otherwise delay surge production. In this appendix, a more detailed examination is made of waivers from environmental regulations. The purpose of this discussion is to explore the waiver decision process, identify implementation problems that might arise, and consider preparatory actions that could be taken prior to a decision to surge procurement.

During a pre-mobilization period of rising tensions, environmental protection would remain a priority national objective. Thus, waivers from environmental regulations that would otherwise delay surge production would be controversial. Indeed, some waiver requests would be rejected by the President, especially those that could endanger human health and safety or that could result in long-lasting environmental damage. It would be hazardous, then, to focus preparatory efforts solely on enhancing waiver authorities and planning the waiver approval process. In addition, attention must be paid to identifying cases where waiver requests would probably be denied and measures must be implemented to reduce the leadtimes needed to bring the corresponding production facilities into compliance.

This appendix is based primarily on discussions with environmental specialists at the Office of the Secretary of

Defense (OSD), the Office of the Secretary of the Army (OSA), the Corps of Engineers (COE), and the Development and Readiness Command (DARCOM). Any legal concepts discussed here are addressed from the perspective of a layman, not a lawyer. This appendix is organized as follows:

- Section B outlines the assumed scenario of DoD actions;
- Section C provides background information on environmental regulations;
- Section D considers existing and needed waiver authorities;
- Section E explores possible waiver criteria and procedures;
- Section F discusses certain alternatives to waivers;
- Section G lists recommended preparedness actions; and,
- Section H presents concluding remarks.

B. SCENARIO AND SUMMARY OF DoD ACTIONS

This discussion assumes that the President has already decided to surge the procurement of war materiel; for example, such a surge might be necessary in order to provide materiel support to a U.S. ally involved in hostilities and to increase the readiness of U.S. forces for possible intervention in that conflict. The increase in procurement requirements would necessitate a substantial increase in defense production, including activation of certain standby facilities. While it is assumed that the President's crisis responses would have broad-based popular support, no decision would have been made to undertake full-scale mobilization.

For certain producers, increases in defense-related output would be delayed by the need to bring their facilities into compliance with environmental regulations. Knowing this, and having received inquiries from the Services and the

Defense Logistics Agency (DLA), the Director of Environmental Policy in the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) (OASD(MRA&L)) would initiate certain actions.

- Task the Services and DLA to determine what environmental waivers would be required by the particular surge program.
- Propose new legislation through the Office of Management and Budget (OMB) to obtain additional waiver authorities (that could not be obtained during peacetime).
- Support OMB in developing any crisis-specific waiver criteria and procedures and provide appropriate policy guidance to the services and DLA.

At the same time, installation commanders and private contractors would inform the procurement sub-commands of the Services and DLA that surge production would create specific problems in complying with environmental regulations and they would request assistance. In response to these requests and the tasking of the Office of the Secretary of Defense (OSD), the Services and DLA would advise OSD of their waiver needs. OSD would evaluate these waiver requests and forward those that were necessary to OMB for Presidential approval. The President would approve some, but not all, of the requests.

C. BACKGROUND DISCUSSION

1. Environmental Regulations

a. Introduction

During the decade of the 1970s, Federal laws dealing with environmental protection were greatly strengthened and

expanded in scope[1]. The Environmental Protection Agency (EPA) was granted substantial authority to develop and enforce programs to control and improve the quality of the U.S. air, water, and land environments. The EPA established criteria for environmental quality as well as standards and guidelines for limiting the discharge of particular pollutants into the environment. To some extent, state and local agencies were responsible for developing their own pollution control standards. But EPA retained the right to approve those programs and to establish its own standards in other cases. Some states established requirements even more stringent than those of EPA.

The principal tool for enforcement of environmental regulations is the permitting process. Each point source of pollution (e.g., each industrial plant) is required to obtain permits before discharging various pollutants into the environment. Permits are issued by both EPA and state and local agencies; it is not unusual for one plant to need permits from more than one agency. A permit specifies maximum discharge limits for particular pollutants and may also impose operating restrictions or specify the pollution abatement technology to be used. While the permitting process is designed to enforce national and local standards, permits are granted in some cases even though those standards are exceeded. For example, enforcement of certain standards may be delayed for a plant that is in the process of installing

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[1]Background information on environmental regulations was obtained from U.S. Environmental Protection Agency, "National Accomplishments in Pollution Control: 1970-1980" (December, 1980); U.S. Environmental Protection Agency, "Managing the Environment" (November, 1973); and Allen V. Kneese and Charles L. Schultze, "Pollution, Prices, and Public Policy" (1975).

appropriate abatement equipment. But while standards may sometimes be exceeded, permits may not. Operation in violation of permits may be prohibited by court order and may be subject to heavy fines and criminal penalties.[1]. Further, agency enforcement may be supplemented by the right of the public to intervene.

A large number of environmental laws could restrict DoD actions during a surge. The U.S. Army Corps of Engineers has identified over 20 such laws at the Federal level alone that could affect construction, base operation, or production of war materiel. Those laws having direct impact on surge production include:

- Clean Air Act, as amended, 42 USC 7401 et seq.
- Clean Water Act, 33 USC 1251 et seq.
- National Environmental Policy Act of 1969, as amended, 42 USC 4321 et seq.
- Resource Conservation and Recovery Act of 1976, 42 USC 6901 et seq.
- Toxic Substances Control Act, 15 USC 2601 et seq.
- Noise Control Act of 1972, 42 USC 4901 et seq.
- Public Health/Safe Drinking Water Act, 42 USC 300 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, PL 96-510.

The first three of these acts are discussed further below.

b. Clean Air Act

Under the Clean Air Act, the EPA has established national ambient air quality standards that must be met in all

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[1]In particular, the states may sue to enforce environmental regulations at production facilities owned by the Federal government.

regions. Primary standards were designed to prevent injury to human health, while more stringent secondary standards were designed to protect public welfare. Emphasis has been placed on controlling six "criteria" pollutants, namely:

- sulfur dioxide,
- total suspended particulates,
- hydrocarbons,
- carbon monoxide,
- photochemical oxidants, and
- nitrogen dioxide.

Each state was required to submit an implementation plan indicating those controls it would impose in order to achieve the ambient air quality standards. The state plans were subject to EPA approval and EPA reserved the right to impose its own plans if necessary in particular cases. These plans provide a basis for establishing emission permits at particular industrial plants. Thus, the emission levels tolerated vary, depending on geographic location and type of industrial source. EPA establishes performance standards for certain categories of new industrial sources, based on current abatement technologies. Further, EPA sets and enforces emission standards for certain hazardous pollutants with especially serious health implications (e.g., mercury, asbestos, lead, and beryllium).

c. Clean Water Act

Under the Clean Water Act, EPA established effluent guidelines for most major industries in order to control the discharge of waterborne pollutants. Permits to discharge wastes into navigable U.S. waters are issued to individual plants by EPA or by the states. State-issued permits are subject to EPA veto and must be based on EPA-approved criteria

and procedures as well as EPA effluent guidelines. The states may set quality standards for the bodies of water receiving the effluents, depending on how those bodies are used. For example, standards might vary depending on whether the use was for:

- public water supply,
- water contact recreation,
- propagation of aquatic life, or
- industrial water supply.

In some cases, these water quality standards may necessitate more stringent standards for individual polluters than those implied by EPA effluent guidelines. Pollutant classes of concern include:

- bacteria and viruses,
- pollutants that deplete the life-supporting dissolved oxygen in the body of water,
- pollutants that lead to excessive algae growth (e.g., nitrogen, phosphorus), and
- toxic substances (e.g., metals such as lead, chromium, cadmium or mercury and certain petroleum-derived synthetic substances).

EPA establishes stringent standards for toxic pollutants and also determines standards for new sources based on current abatement technology. Violation of effluent limits could result in fines up to $50,000 per day as well as jail sentences. Citizens have the right to sue to enforce those limits.

d. National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) requires Federal agencies to consider environmental impacts in planning

their actions[1]. In particular, Section 102 requires that environmental impact statements (EISs) be prepared for major Federal actions significantly affecting the quality of the human environment. EISs must identify adverse environmental consequences of the actions and consider alternative courses of action, based on consultation with certain Federal, state, and local agencies. Further, regulations issued by the Council on Environmental Quality (CEQ) to implement the NEPA requirements provide for substantial public and agency review periods for the EIS documents. Thus, a decision to take a major action normally may not be made until at least 90 days after a draft EIS is filed with the Environmental Protection Agency, and until at least 30 days after a final EIS is filed. Disagreements among Federal agencies over proposed actions affecting the environment are to be referred to the CEQ for resolution.

2. Compliance Problems

a. Introduction

A surge in defense production could lead to a variety of problems in complying with environmental regulations. These problems could arise at both government- and contractor-owned facilities, and would constrain surge if not resolved.

- The surge might require activation of old standby production facilities that had never been brought into compliance with current environmental standards.
- Surging production might cause an active, complying facility to be used more intensively than before, so

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[1]Information on the NEPA was obtained from Arnold W. Reitze, Jr., "Environmental Law" (1972); and from the NEPA regulations issued by the Council on Environmental Quality at 40 CFR Parts 1500-1508 (November 29, 1978).

that its waste discharges exceeded the permitted limits. For example, the capacity of abatement equipment might be inadequate to handle the increased rate of waste generation.

- The surge might also require a plant to be operated for longer periods of time than before (e.g., due to adding a work shift). This might violate permit restrictions on hours of operation and also cause abatement equipment to break down due to longer periods of use and possibly less time for maintenance.
- Finally, the surge might require active facilities to produce different products than before. The existing abatement methods might not be effective at controlling the contaminants associated with new products.

b. Government-Owned Facilities

It is the policy of the Federal government[1] to comply with environmental regulations (rather than to seek waivers during peacetime). The Department of Defense has made a serious effort to bring its active facilities into compliance, especially since 1978. While a number of active production facilities are still in process of complying, enforcement proceedings have been delayed in accordance with a written agreement with the EPA and the Justice Department. Little or no effort has been made to enable inactive facilities to comply in the event of activation. This would be a problem particularly if a surge forced standby Army ammunition plants to be activated. Operation of these plants could violate standards for both common pollutants and toxic substances. Waterborne TNT by-products would present a serious problem. While the exact composition of the waste products associated with operation of a particular standby plant is difficult to

[1]See Executive Order 12088 and DoD Directive 5100.50.

predict, Army environmental specialists believe they are aware of the potential compliance problems.

c. Privately-Owned Facilities

Compliance problems that might result from surge production at privately owned facilities remain largely unknown. DoD has not made a serious effort to collect this information. While there are relatively few privately owned standby facilities, contractors would operate production lines formed from inactive, government-owned plant equipment packages (PEPs). The most common compliance problems for privately owned facilities might be exceeding permitted discharge levels due to increased production and discharging untreated contaminants resulting from the introduction of different products. For example, abatement equipment designed to remove one substance from a gaseous emission might be ineffective at removing a different hazardous by-product of a military item.

D. WAIVER AUTHORITY

1. Existing Authority

A decision to surge would generate situations in which DoD and defense-related contractors would have no reasonable means of complying with environmental regulations without delaying surge production. That is, there would be no reasonable means unless environmental regulations could be waived for those cases.

As illustrated by Table II-1, existing Federal laws make a number of provisions for waiving environmental regulations. The President may invoke these provisions if he makes the findings of necessity required by the various laws. Use

Table II-1. WAIVERS FROM ENVIRONMENTAL REGULATIONS

Law	President May Authorize[1] Waiver from Regulations for:		Limitations
	Federal Agencies	Private Contractors	
1. Clean Air, 42 USC 7401 et seq.	yes	yes	Exemptions apply to 2-year periods, but may not be granted for hazardous materials. President must explicitly exempt procurement from facilities in violation.
2. Water Pollution Control, 33 USC 1251 et seq.	yes	no	Waivers may not be granted for new construction or for toxic substances. President must explicitly exempt procurement from facilities in violation.
3. Solid Waste Disposal, 42 USC 6901 et seq.	yes	no	Exemptions apply for 1-year periods but may not be granted for hazardous materials.
4. Toxic Substanes Control, 15 USC 2601 et seq.	yes	yes	
5. Noise Control, 42 USC 4901 et seq.	yes	no	Exemptions apply for 1-year periods, but may not be granted for common commercial equipment and certain other items.
6. Public Health/Safe Drinking Water, 42 USC 300 et seq.	yes	no	
7. Environmental Impact Statements, 42 USC 4321 et seq.	no	n.a.	Requirement applies only to Federal actions.
8. Occupational Safety and Health, 29 USC 651 et seq.	yes	yes	Exemption for private contractors (including government-owned contractor-operated facilities) would require prior notice and opportunity for hearings. Present procedures are very time-consuming.

[1]Presidential authorization would be based on necessity in the interest of national defense, national security, or the paramount interest of the United States (depending on the regulation).

Source: Based on Systems Research and Applications Corporation, Compendium of Emergency Authorities (October 1980).

of these authorities, however, does not require declaration of a national emergency. These authorities were invoked under Executive Order 12244 of October 3, 1980 to permit Fort Allen, Puerto Rico to be used to house Haitian and Cuban refugees.

While existing laws make some provision for waivers, the authorities provided would be inadequate in a number of respects.

- Several important environmental laws make no provision to exempt privately owned facilities. Since DoD relies heavily on the private sector for both end items and production materials, these omissions are potentially serious.
- There is no authority to waive regulations controlling the discharge of hazardous materials or toxic substances into the land, air, or water. This omission applies to government-owned as well as privately owned facilities. DARCOM, for example, has identified eight standby government-owned ammunition plants, including 50 percent of TNT capacity, that could not now comply with these regulations.
- There is no statutory provision to waive preparation of environmental impact statements (EISs) for major Federal actions, as required by the National Environmental Policy Act (NEPA). The regulations issued by the President's Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508) do provide for special CEQ arrangements when actions are necessary to control the immediate impacts of an emergency. Nevertheless, it is not clear that this provision would eliminate EIS requirements (and the attendant delays) during a surge. Since activation of a standby plant by DoD or granting of an operating permit by EPA could be considered major Federal actions significantly affecting the environment, private groups might use NEPA requirements to delay surge production.
- There is no authority to waive state and local regulations affecting the environment. Thus, authority to waive Federal regulations would be insufficient.

2. New Legislation

Existing authorities would be inadequate to meet potential needs for environmental waivers in the event of a procurement surge. One peacetime approach to enhancing authorities is being pursued by the Office of the Secretary of Defense (OSD), namely, as existing environmental legislation comes up for Congressional renewal, OSD is requesting (through the Office of Management and Budget (OMB)) that the laws be amended to strengthen waiver authorities. The Clean Air Act is being reviewed at the present time and the Clean Water Act is due for review this year. One current proposal would establish two levels of authority:

- during peacetime, the President could exempt any government-owned facility from any or all provisions of the particular law, if that were in the paramount interest of the U.S.;
- upon declaration of war (by Congress) or of national emergency (by the President or Congress), the President could suspend any or all portions of the particular law for privately owned facilities as well.

This approach would provide waiver authority for toxic and hazardous substances and would provide for waivers for privately owned facilities in a national emergency. While this would actually weaken the partial waiver authority available in some acts (e.g., the Clean Air Act) for privately owned facilities during non-emergency periods, it is not clear that this weakening would have any practical effect. More serious limitations are that this approach would not provide waiver authority over state and local regulations and that it would not impact on all of the relevent Federal laws for some time to come.

In another approach, OSD and the Army are considering a single, omnibus bill that would provide waiver authority for

all of the relevant environmental laws at the Federal, state and local levels. This authority would extend to both government-owned and privately owned sources and to any or all portions of the relevant acts. Again, this approach would have two levels of implementation:

- during periods of imminent national crisis, the waiver authority would vest in the President;
- after a declaration of war or national emergency, waiver authority would vest in the Secretary of Defense.

This approach would seemingly provide adequate waiver authority, but it is not clear whether Congress would enact such a law during peacetime. If not, the proposed bill would serve as standby legislation to be requested at a time of crisis.

In any event, at a time of surge it would be the responsibility of the Director of Environmental Policy under ASD (MRA&L) to assess the need for additional legislation and to request such legislation through OMB. The limitations of existing waiver authority are well understood, and while the consequences of these limitations are understood for Federal facilities, little is known about the potential need for waivers at privately owned facilities. Potentially, this could weaken DoD's position in requesting additional waiver authorities for privately owned facilities.

E. WAIVER CRITERIA AND PROCEDURES

1. Criteria

a. Introduction

The critical question for this discussion is what waivers would the President approve during a pre-mobilization period of rising tensions. That is, if the laws were amended so that

the President had the authority to waive any or all environmental requirements, how would he use that authority? Clearly, this would be a political decision, influenced by the views of the President, the severity of the crisis, the level of popular support for the defense effort, and the degree of opposition that proposed waivers generated among environmentalists and local affected parties. While the President's decisions in a particular crisis cannot be predicted accurately, surge planning would be aided if at least the waiver evaluation criteria were understood.[1]

The substantive basis for the President's decision might a cost/benefit comparison, where the principal cost was environmental damage and the principal benefits were attainment of surge objectives and reduction of budget costs. This comparison suggests the following waiver evaluation criteria:

- potential for environmental damage,
- military priority of procurement item,
- need for waiver to meet surge procurement objectives,
- impact of waiver on budget cost, and
- impact of waiver on civilian economy.

It cannot be known in advance what importance the President would attach to each of these criteria. The following actions consider how the criteria might be defined.

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[1]While a crisis might be so severe that the President would automatically grant virtually all necessary waiver requests, this seems unlikely in situations short of mobilization.

b. Potential for Environmental Damage

Some types of polluting, such as dumping a known carcinogen into a city's source of drinking water, would not be permitted even after a declaration of war and full-scale mobilization. Other types, such as emitting non-hazardous gases in a sparsely populated area, might be permitted if necessary to achieve surge objectives even prior to declaration of a national emergency. Presumably, the President would base his waiver decisions on specific guidelines regarding the degree of environmental damage likely to result from various types of waivers. Surge planning would be facilitated if DoD could anticipate which types of waivers would be assigned to the most damaging categories (and hence would least likely be granted). Further, by developing guideline proposals in advance, DoD could influence the President's selection of guidelines so that waivers with acceptable types of environmental damage were properly identified.

Development of damage guidelines is a matter for study by environmental experts, and there are a number of distinctions that could be made.

- Waiver of primary standards, designed to protect the public health and safety, might cause more serious damage than waiver of more stringent secondary standards, designed to promote public welfare.
- Waivers might cause more harm in areas whose environmental quality fell short of the required ambient standards than where those standards were exceeded.
- Waiver of standards controlling the discharge of toxic substances and hazardous materials might cause more damage than waivers dealing with general or "criteria" pollutants.

- Waivers of standards controlling known human health hazards (e.g., carcinogens) might cause more harm than waiver of standards for suspected health hazards.
- Waiver damage might depend on the relative impact of the resulting pollutant discharges on overall pollutant concentrations in the area.
- The use of a body of water (e.g., drinking water, human recreation, propagation of fish, or industrial water supply) receiving pollutants might influence the evaluation of waiver damage.
- As a precautionary measure, certain standards might have been set at overly stringent levels. Waivers might raise those standards to levels where risks were greater but still acceptable.
- Waiver damage might be considered more severe if the pollutants involved were of a non-degradable or persistent type than if the pollutants were degradable.
- Waiver damage might be considered more severe the longer the resulting pollution was expected to continue. Thus, waivers for the duration of the surge might be more damaging than waivers pending installation of abatement equipment.
- Waiver damage might be judged to be more severe if an area possessed unique characteristics, such as a wild and scenic river, a critical ecology, historical significance, or an endangered species.

The above list illustrates the variety of considerations involved in evaluating potential damage to the environment. The basic question underlying most of these points is how great a risk to human health and safety would a waiver pose.

c. Military Priority of Procurement Item

In evaluating waiver requests, the President would place great weight on the military importance of the procurement items involved. The relevant assessment would concern how essential the items were to meeting the crisis at hand, including increasing readiness for future actions. The Master Urgency List (MUL) could provide a priority ranking among

surge items if it were revised to reflect the crisis. Surge items might be classified as either combat-essential or non-essential.

d. Need for Waiver to Meet Surge Procurement Objectives

Another key question in evaluating waiver requests would be whether waivers were the only reasonable means available of achieving surge objectives for the items involved. Most importantly, would complying with the relevant environmental regulations necessarily delay surge production to the point that the items could not be delivered by the times needed?

- Installing or constructing pollutant treatment or storage facilities might take longer than starting up production. Some standby facilities might require so much work that compliance would never be practical. Other facilities might be able to comply but only if their operating rates or capacity utilization were restricted.
- Even if plants could physically comply, delays in obtaining operating permits could still delay surge production. Such delays could occur as permitting agencies processed requests or as private parties brought court actions to obstruct surge production. Requirements for public hearings on environmental impact statements (EISs) would be particularly troublesome. Such delays would create uncertainty over whether a permit would eventually be granted and hence could delay decisions on source selection and facilitization.

Thus, it would be important that waiver requests indicate the production delays and limitations that would occur without the waivers. It might also be required that waiver requests indicate what alternatives to waivers had been considered and why they had been rejected.

e. Impact of Waiver on Budget Cost

In a surge situation short of full-scale mobilization, DoD budgets would be tight. Thus, one motivation for requesting waivers would be to avoid the costs of bringing facilities into compliance.

f. Impact of Waiver on Civilian Economy

A surge would place a great demand on non-defense industries to produce the materials, parts, and components used in the production of defense end items. If environmental regulations constrained the expansion of output in certain non-defense industries, waivers might be appropriate. Such waivers would be controversial since those industries would continue to produce for civilian customers, and since DoD theoretically could use the Defense Priorities System (DPS) to divert civilian products to defense uses. Nevertheless, such diversion would be disruptive to the civilian economy and the President might prefer environmental waivers to encourage expansion of production.

2. Procedures

a. Obtaining Presidential Approval

Present procedures require the Services and DLA to submit waiver requests through the Deputy Assistant Secretary of Defense (Energy, Environment, and Safety) (DASD(EE&S)) under ASD (MRA&L), in accordance with DoDI 4120.14. In turn, Executive Order 12088 requires that agency heads recommend waiver requests through the Office of Management and Budget. The Environmental Protection Agency is required to submit its views on the waiver requests through OMB, and OMB is required to advise the President within sixty days

thereafter. Agency responses under the National Environmental Policy Act (NEPA) follow an analogous procedure. Environmental impact statements (EISs) for proposed major Federal actions are filed with the EPA. Interagency disagreements are forwarded to the Council on Environmental Quality (CEQ) for resolution or referral to the President.

In the event of a surge, a number of methods could be used by the President to evaluate waiver requests.

- The President (or OMB or CEQ) could review waiver requests on a case-by-case basis. If the reviews were substantive (i.e., if the potential for environmental damage were given serious consideration), this would be a slow and uncertain procedure.
- The President might reduce the delays by considering waiver requests for various facilities simultaneously. But again, if the reviews were substantive, the entire package of requests could be delayed until all of the facilities had been reviewed. Further, while a package of waiver requests could be compiled quickly for government-owned facilities, it would take some time to identify waiver needs at contractor-owned facilities.
- The President might make a general decision, approving certain classes or types of waivers. He might make a determination and finding that waiver requests meeting certain detailed criteria were in the paramount interest of the U.S. and were therefore waived. Certification that those criteria were met could be delegated to and within DoD. The criteria would be detailed to the point of enumerating specific pollutants and standards, rather than simply cautioning against harming human health and safety. While this option would have the advantage of providing quick approval for the waivers covered, it would probably be very difficult to define politically feasible criteria with widespread applicabilty. Remaining requests would still be reviewed on a case-by-case basis.
- The President might delegate his waiver authority to the Secretary of Defense. Indeed, prior to Executive Order 12088 (October 13, 1978), waiver authorities applicable to Federal facilities had been delegated to

agency heads. If the Secretary of Defense could exercise this authority without challenge from EPA, waivers could be granted more quickly and in a higher proportion of cases. But such a delegation would be very difficult politically during a period of rising tensions, particularly if legislation had extended waiver authorities to toxic and hazardous substances. And it would be even more difficult to provide DoD with the authority to grant waivers for privately owned facilities.

How the President would choose to use or revise existing waiver approval procedures during a future crisis is unknown. But these procedures would impact on both the review time and the likelihood of approval for waiver requests. It is thus important that DoD be prepared to support the adoption of expeditious procedures by the President.

b. Preparing Waiver Requests

Needs for waivers would be identified in a number of ways:

- some contractors or installation commanders would have identified their waiver requirements prior to the decision to surge;
- other producers would consult with local enforcement offices after the decision to surge, to verify the standards they were expected to meet and to request operating permits to accommodate surge production;
- in other cases, permit violations would be discovered by enforcement agencies or producers only after production had been surged.

Producers might attempt to resolve compliance problems by negotiating agreements for alternative control methods and delayed enforcement while controls were put in place. But when it became obvious that permits could not be obtained without delaying surge production, the need for waivers would be apparent. Producers would ask contracting officers and environmental specialists at the procurement sub-commands what

could be done and the inquiries would be passed up the chain of command.

In preparing waiver requests, the Services and DLA would define and justify their needs in a straightforward manner. Indeed, if the President decided that surge objectives clearly dominated environmental goals, internal DoD processing of waiver requests would consist mainly of identifying situations in which waivers were needed. In a pre-mobilization period of rising tensions, environmental advocates are likely to contest waiver requests, so that internal screening and substantive justifications would be necessary. The content of those justifications would depend, in part, on what mechanisms the President established to evaluate waiver requests. Thus, a number of questions requiring guidance from OSD might arise for the Services and DLA.

- Has the President made a general decision to approve or deny certain types of waiver requests?
- Does the Presidential approval procedure impose any specific information or other requirements on waiver requests?
- Should waiver requests for privately owned facilities be forwarded through DoD or other channels?

Initially, OSD would probably answer such questions informally. But a formal program might be needed if waiver requests (e.g., from contractors) were expected to continue in volume over time.

F. ALTERNATIVES TO WAIVERS

The discussion above suggests that, in some cases, environmental waivers would not be available to support surge production during a period of rising tensions. This could occur because Congress would not provide the requisite waiver

authorities or because the President would not allow certain adverse environmental consequences. What alternative courses of action would be open to DoD? Following are listed a number of actions that DoD might consider at the time of a surge if waivers were not available to circumvent certain compliance problems. Some of these actions would be considered even if waivers were available, or in conjunction with temporary waivers. The purpose of this discussion is to indicate that there are severe limitations to DoD's ability to initiate environmental actions at the time of a surge without delaying surge production.

- **Install Abatement Equipment**

  In some cases, standard abatement equipment could be procured after the surge decision and installed before a plant was ready to initiate or increase production. Such equipment might include electrostatic precipitators and stack scrubbers to remove particulates and sulfur dioxide (respectively) from flue emissions. Carbon column filters might be acquired to remove toxic substances from liquid effluents. Even if funding were available and the equipment could be acquired and installed quickly, production might still be delayed by the process of testing discharges and obtaining permits. It is not always obvious beforehand how effective treatment methods will be and what levels of particular pollutants enforcement agencies will tolerate. If provisions must be made for public comment or if environmental impact statements (EISs) are required, granting of permits could be delayed for months.

- **Temporary Storage**

  In some cases it would be possible to hold waste materials in on-site lagoons or storage containers until later arrangements could be made to treat the waste or dispose of it permanently. But large volumes could render this alternative infeasible. Further, storage of toxic waste materials presents its own environmental risks (e.g., leaching into ground water) and is also subject to regulation.

- **Change Producers**

  Ability to comply with environmental regulations could be an important factor in selecting producers for surge-related items, where choices are possible. However, start-up leadtimes at new producers might well exceed the leadtimes required to bring existing producers into compliance.

- **Change Product**

  It might be possible to avoid regulatory constraints by substituting products that could perform the same missions but whose production would not encounter compliance problems. For example, this might affect the choice of rocket propellants or explosive materials. Installing abatement equipment might take less time than re-designing products.

- **Accept Delay**

  In some cases, complying with environmental regulations would require major construction or specialized, long-leadtime abatement equipment. DoD might delay production until such projects were completed, but surge timing objectives would thereby be frustrated.

- **Negotiate**

  To some extent, there is flexibility in the permitting process. Enforcement agencies have some discretion to delay enforcement of environmental standards and issue interim operating permits. This might be possible if steps were initiated to comply eventually and to mitigate environmental damage in the meantime. But such agreements must be negotiated with each relevant enforcement agency. For example, the agreement referred to above among DoD, EPA, and the Justice Department was not binding on state agencies and their concurrence had to be achieved separately. Further, attitudes regarding environmental protection and national defense would vary among agencies, and the outcome of negotiations would be most uncertain.

- **Violate**

  DoD could ignore enforcement agencies and pursue surge objectives even where that would necessitate unauthorized pollution. But the legal justification for such actions is not obvious, particularly in a surge situation short of full-scale mobilization. Even if EPA officials, belonging to the same

administration as DoD officials, were to acquiesce to this strategy, state agencies and private groups could still bring legal action to enforce environmental regulations. Even if installation commanders were willing to risk prison terms, it seems doubtful that private contractors would concur.

G. PREPAREDNESS RECOMMENDATIONS

Prior to a decision to surge procurement, there are a number of actions that could be taken to reduce the impact of environmental constraints on procurement leadtimes. These actions would be implemented during peacetime or, in some cases, early in a period of rising tensions. The following list includes actions that would improve DoD's ability to obtain waivers as well as actions that would facilitate compliance in the event that waivers would not be available.

- Identify potential compliance problems at individual plants, including the specific types and estimated quantities of relevant pollutants, and the difficulties of complying with corresponding environmental standards in the event of a surge. Such studies should focus on products likely to be needed during a pre-mobilization surge. While much is known already about potential problems at government-owned facilities, little or nothing is known about potential problems at contractor-owned plants. Greater emphasis should be placed on identifying potential compliance problems during Industrial Preparedness Planning (IPP) with private contractors.
- Establish dialogues between plant managers and relevant enforcement agencies regarding permit requirements in the event of a surge. Such dialogues could verify the applicable standards and identify the compliance actions that would be necessary in order to obtain permits. Dialogues would permit DoD or planned contractors to determine agency attitudes toward delayed enforcement in the event of a surge, and would clarify where waiver authority would be needed.
- Prepare standby environmental impact statements (EISs) that might be required to activate or surge production at certain plants, including any EIS requirements

associated with granting permits or waiving environmental regulations. It might even be useful to hold public hearings and circulate EISs for agency comments prior to a surge decision. Going through the EIS process in advance could save valuable time in the event of a surge. It would also establish a record of agency views and thus could be used to expedite the evaluation of waiver requests at the time of a surge. Advance EISs might be unnecessary for plants with lengthy start-up leadtimes or to the extent that emergency provisions in the relevant CEQ regulations were applicable.

- Evaluate environmental standards and consider what standards might be reasonable in the event of a surge. In some cases, EPA has not yet established standards for toxic by-products that defense production would generate during a surge. If reasonable standards were not thought through in advance, a hurried and conservative EPA might impose standards that were overly stringent and difficult to meet. Prior analysis could also identify reasonable levels to which existing standards could be relaxed (in waiver agreements) without creating undue health risks. Studying the effects of toxic pollutants could be a lengthy process, although this problem has already been addressed for munitions by the Army.

- Enhance the waiver authorities provided by existing laws. The additional authorities that might be needed have already been identified but have not been enacted into law.

- Develop standby waiver criteria and procedures to propose to the President in the event of a surge. DoD could thus influence the waiver program to promote quick and favorable responses to waiver requests. In addition, to the extent that waiver procedures can be anticipated, DoD can prepare to justify waiver requests. This could be important for controversial requests made in a pre-mobilization period of rising tensions. If proposed criteria were reviewed with OMB and EPA in advance, DoD might also learn more about what waivers were likely to be granted.

- Implement projects to bring needed facilities into compliance for potential surge production. This would include installation of abatement equipment and construction of treatment and storage facilities. Emphasis would be placed on plants likely to be used during a pre-mobilization surge, where compliance

projects initiated at the time of a surge would delay production, but where waiver requests would probably be denied. It should be noted, however, that DoD policy restricts funding of treatment facilities to active plants. Funding of treatment projects at inactive plants would not be considered prudent management since those facilities might never be used or since applicable regulations might change by the time such facilities were activated. In addition, it would be technically difficult to predict effluent constituents and to select appropriate treatment methods without at least pilot production runs. Nevertheless, in certain cases, failure to implement compliance projects during peacetime would cause delays in surge production.

- Design standby compliance projects to be initiated during a period of rising tensions, either before or at the time of a surge decision. Such standby projects would consider probable implementation leadtimes and could thus provide some assurance that compliance would not delay surge production. It should be noted that such standby projects would be contrary to present DoD policy.

H. CONCLUSIONS

This discussion suggests several conclusions.

- In the event of a procurement surge, a number of government-owned production facilities would have substantial difficulty complying with environmental regulations. As a result, surge production might be delayed. While the potential for serious compliance problems also exists for privately owned facilities, little is known by DoD about the extent of such difficulties.
- Waiver authorities provided by existing laws would be inadequate to meet potential waiver needs during a surge, particularly as regards toxic and hazardous substances and privately owned facilities. While the need for additional legislation has been addressed within DoD, Congress has not yet enhanced the required authorities.
- Criteria and procedures to be used in evaluating waiver requests during a surge would be based, in part, on political circumstances. As a result, it is

difficult to predict what waivers the President would and would not grant, especially during a pre-mobilization period of rising tensions when waivers would be most controversial.

- There are a number of actions (listed in Section F) that could be taken before a surge to reduce compliance leadtimes as well as to expedite the process of obtaining waivers.

If the U.S. were to mobilize to meet a serious threat to national survival, waiver requests would probably be granted almost automatically. But in a lesser crisis, such as surging procurement to support allied forces in a regional conflict involving U.S. interests, the impact of waivers on the environment would be given much more serious consideration. Waivers that posed a threat to human health and safety or that would cause long-lasting damage might well be denied. Thus, it is important to identify those cases where the risks are unacceptably high that necessary waivers would be denied. Failure to take prior actions to reduce compliance leadtimes in such cases could seriously delay surge production.

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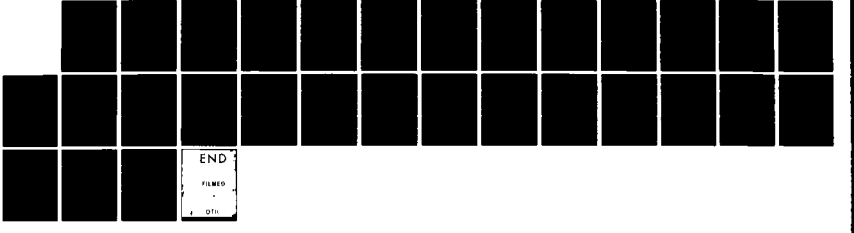

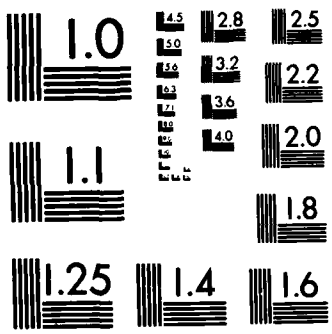

Appendix III

REDUCING THE RISKS OF DEPENDENCE ON FOREIGN MANUFACTURED ITEMS

Appendix III

REDUCING THE RISKS OF DEPENDENCE ON FOREIGN MANUFACTURED ITEMS

A. INTRODUCTION

In Chapter III above, Industrial Base Action (IBA) number nine deals with realigning U.S. dependence on foreign suppliers. Part of that discussion deals with the need to replace foreign suppliers that might be cut off from the U.S. during a period of rising tensions. This appendix addresses that question in more detail, and focuses on defense-related imports of manufactured items.[1] The purpose of this discussion is to analyze specific measures that could be implemented and to consider their proper timing.

The following analysis suggests that while there are a number of steps that could be taken to reduce the risks associated with foreign dependence, there is a serious question regarding their effectiveness and feasibility if they are not initiated until a cutoff of foreign sources appears imminent. Steps should be taken during peacetime to prevent hazardous foreign dependencies from developing.

This appendix is based primarily on discussions with officials at the Office of the Secretary of Defense (OSD), the Office of the Secretary of the Army (OSA), and the Development

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[1]This appendix does not address the serious problem of dependence on foreign sources for raw materials. For a recent discussion of that problem, see U.S. Department of Commerce, "Critical Materials Requirements of the U.S. Aerospace Industry" (1981).

and Readiness Command (DARCOM). The discussion is organized as follows:

- Section B outlines the assumed scenario of DoD actions;
- Section C provides background information on problem definition;
- Section D discusses the existing programs to control the risks of foreign dependence;
- Section E analyzes actions that could be taken to reduce those risks; and
- Section F presents concluding remarks.

B. SCENARIO AND ACTION SUMMARY

This discussion assumes that future international crises have increased the Secretary of Defense's concern about the dependence of defense procurement on foreign sources of manufactured items. He has concluded that the risks associated with the current level of foreign dependence are intolerably high, and directs his staff to initiate efforts to reduce those risks. For example, the probability might have increased that certain foreign sources would be disrupted due to war damage or to political actions taken by governments opposed to U.S. policies. Accordingly, actions would be needed to provide for alternative sources of supply for items imported from certain countries. While it is assumed that the public supports the President's defense posture and an increasing defense budget, no decision has been made to initiate a major surge in procurement.

In response to the Secretary's direction, the Deputy Undersecretary of Defense (Acquisition Management) (DUSD(AM)) would advise the Services and the Defense Logistics Agency (DLA) regarding the supply sources at risk, and task them to

initiate actions to reduce the damage that a cutoff of those sources would cause. The Services and DLA would be asked:

- to review a specified number of the most critical procurement items in order to determine their dependence on imports from the affected countries;
- to initiate actions to replace critical end items and pacing components imported from those foreign sources, either immediately or in the event of a supply cutoff;
- to report on those critical items whose procurement would still be unacceptably delayed if imports from the particular foreign countries were cut off after a specified date; and
- to identify particular items for import restrictions under Section 232 of the Trade Expansion Act of 1962.

The Services and DLA would review any relevant information collected under the Industrial Preparedness Planning (IPP) program and seek additional information through project management offices (PMOs) and contractors. The Services and DLA would then evaluate their abilities to resolve potential problems through:

- planning alternative producers for the critical items and pacing components in jeopardy, if this had not already been done under the Industrial Preparedness Planning (IPP) program;
- funding industrial preparedness measures (IPMs) to stockpile the jeopardized items and to reduce start-up leadtimes for planned alternative producers;
- extending the use of DAR 3-216 authority to restrict the use of certain foreign sources at both prime and sub-tier levels; and
- recommending renegotiation of certain co-production and offset agreements, where possible, to reduce obligations to purchase foreign items.

Due to the short planning horizon, the scarcity of funding, and the lack of complete information, the Services and DLA would expect to be only partially successful at identifying

and resolving potential problems.[1] They would submit the requested reports to DUSD(AM).

Based on the submissions of the Services and DLA, OSD would initiate actions:

- to support related funding requests by the Services and DLA;
- to assist in renegotiating relevant co-production and offset agreements (where possible), to tighten review procedures for any new agreements affecting the area in question, and to cancel (if appropriate) the Memoranda of Understanding (MOUs) with the countries involved; and
- to review the implications of those risks that could not be alleviated, together with the Joint Chiefs of Staff (JCS), the Services, and DLA.

If the threatened cutoff of supplies were general rather than limited to only a few foreign sources, or if it were necessary to protect alternative domestic sources, OSD would also initiate actions:

- to revise the DoD list of items excluded from foreign procurement to reflect DAR 3-216 actions by the Services;
- to recommend through the Office of Management and Budget (OMB) a tightening of procedures to restrict foreign purchases under the Buy American Act (BAA); and
- to request import restrictions for certain items through the Commerce Department under Section 232 of the Trade Expansion Act of 1962.

As a result of DoD actions, the adverse consequences of a potential disruption of certain foreign supplies would be

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[1]Both the extent of potential problems and the difficulty of resolving them would depend greatly on how fully the IPP program had been implemented prior to this scenario. This is discussed further in Section D below.

reduced somewhat. Because these actions would not have been implemented earlier, serious problems would remain.

C. BACKGROUND DISCUSSION: PROBLEM DEFINITION[1]

1. Advantages of Foreign Trade

The focus of this appendix is on the potential hazards of relying on foreign sources for critical defense end items and components. Nevertheless, it is important to remember that foreign trade in defense-related items serves the national interest in a number of ways. Mutual trading among the U.S. and its allies can provide advantages by:

- promoting standardization of equipment and interoperability among allied forces, thus simplifying logistics and increasing effectiveness;
- encouraging efficiency in the design and production of weapon systems through greater competition and specialization among allied suppliers and;
- strengthening economic and political ties among allied nations.

Buying defense-related items overseas can serve U.S. interests by:

- strengthening allied defense industrial bases;
- encouraging greater defense spending by allies; and
- supporting the sale of U.S. items overseas.

Selling defense-related items overseas aids the U.S. by:

- strengthening the U.S. defense industrial base; and
- promoting domestic employment.

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[1]This discussion is based, in part, on 1981 briefing notes supplied by Col. Ronald L. Carlberg, OUSDRE and on DoD Task Group to Review International Co-production/Industrial Participation Agreements, "Final Report" (February, 1982).

Necessary steps to control foreign dependence thus involve the sacrifice of certain benefits to the U.S. of defense-related foreign trade.

2. Causes of Foreign Dependence

a. Normal Market Transactions

Normal market forces can provide strong incentives for defense-related imports, particularly for components and other sub-tier items. In certain cases, foreign suppliers have cost, quality, or availability advantages over domestic suppliers. In other cases, DoD's requirements for small quantities of certain specialized, difficult-to-produce items do not interest domestic sources. Indeed, even certain civilian requirements (e.g., electronic components, fasteners) are increasingly dependent on overseas sources.

b. Memoranda of Understanding (MOUs)

Memoranda of Understanding (MOUs) have been signed with eleven NATO nations as well as Egypt, Israel, Australia, and Switzerland.[1] The first MOU was reached with the United Kingdom in 1975, and additional agreements are currently under consideration. The purpose of these agreements is to promote cooperation in research and development, production, and procurement of defense equipment. Major impetus for these agreements was provided by the Culver-Nunn Amendment to the DoD Appropriations Authorization Act of 1977. That amendment directed the Secretary of Defense to change procurement procedures to promote standardization and interoperability of equipment used by U.S. and other NATO forces in Europe.

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[1]Copies of MOUs are reproduced in the DAR, Section 6.

The MOUs are designed to foster a balance in defense-related trade between the U.S. and the signatory nations. While MOUs do not set numerical objectives for trade balances, they do provide for a number of actions designed to encourage two-way trade in defense-related items. These provisions include:

- waivers of "buy national" laws such as the Buy American Act (BAA) when evaluating foreign offers;
- exemptions from customs, duties and related taxes for defense-related imports;
- fair and equal opportunities for industrial firms to bid on the other country's procurement.

Thus, while the MOUs do not create a bias in favor of overseas sources, they do seek to remove existing barriers to free trade.

The MOUs do permit barriers to remain for certain purposes. Most importantly, they permit restrictions when necessary to protect defense mobilization bases. Thus, OSD maintains a list of defense items for which MOU provisions do not apply in order to protect industrial mobilization capacity for those items. In accordance with the MOUs, the list of excluded items represents only a small fraction of total defense procurement (approximately $2 to 3 billion in annual procurement). The MOUs also permit use of the authority of DAR 3-216 to restrict procurement of items not on the list when necessary to protect the mobilization base.

c. Co-Production and Offset Agreements

Increasingly, major overseas arms sales include offset agreements whereby the sellers agree to provide some form of compensation to the buyers, in addition to delivering the items sold. Under co-production offset agreements, the buying

nation is licensed to produce some portion of the item being purchased. Under trade offset agreements, the seller agrees to purchase or distribute goods from the buying nation. Offset agreements thus cause the U.S. to import defense-related components and end items.

Offset agreements are frequently necessary due to the market power of the buyer. That is, the buyer is able to extract concessions as competing sellers try to outbid one another. Since the buyer is a national government, it has an interest in concessions other than lower prices. For example, the buying country may be concerned with:

- improving its balance of payments,
- increasing domestic employment,
- improving its technology and management techniques, and
- strengthening its defense industrial base.

Due to the increasing strength of the European arms industry, buyers have gained in their ability to extract offset concessions from U.S. sellers.

Co-production might simply involve the seller licensing the buyer to produce the end item. The buyer might purchase some components from the seller and manufacture some components itself, or the buyer might manufacture some components while the seller would continue to assemble the end item. Co-production frequently increases the unit cost of the end item to the buyer, since certain production facilities must be duplicated and economies of scale may be lost.

Co-production agreements have been implemented or proposed for a wide range of defense items, including tracked vehicles, ships, aircraft, antiaircraft missile systems, rifles, and ammunition. Examples from the early 1960s include

the F-104 aircraft and the Hawk air defense system. A recent, well-known example is the 1975 agreement to co-produce the F-16 aircraft with Norway, Denmark, Belgium, and the Netherlands. Due, in part, to competition from the French, the U.S. agreed to guarantee a minimum offset of 58 percent of the value of the consortium's initial purchases, and to seek a 100 percent offset. The consortium would produce 10 percent of the value of U.S. requirements (650 aircraft), 15 percent of the value of third-party sales (at least 500 aircraft), and 40 percent of the value of its own requirements (348 aircraft).[1] In addition to co-production, a number of efforts are being made to co-develop weapon systems.

Under trade offset agreements the seller agrees to purchase or distribute items originating in the buying country. These items are not necessarily related to the defense item provided by the seller or even to defense. For example, a 1968 agreement with Norway did not provide for co-production but instead obligated DoD to see that 25 percent of Norway's $200 million purchase of tracked vehicles and TOW missile systems was offset. A similar agreement with Switzerland in 1975 provided for a 30 percent offset for a $400 million purchase of F-5 aircraft. Due to administrative difficulties in seeing that offset agreements were fulfilled, a memo from the Deputy Secretary of Defense (May 4, 1978) directed that DoD avoid being a party to future offset agreements, where possible. Thus, the recent agreement to offset procurement of F-18 aircraft was between the contractor (McDonnell Douglas) and the Canadian government. Due, in part, to competition between McDonnell Douglas and General

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[1]The co-production and offset examples in this section are based on information from DoD Task Group, op. cit.

Dynamics for the sale, the Canadian government was able to extract an offset commitment approximating 100 percent and involving co-production, transfer of unrelated technology, and marketing of Canadian goods and services.

3. Dangers of Foreign Dependence

There are substantial pressures to procure defense-related items from overseas sources. But what dangers do defense-related imports pose to DoD in procuring its materiel? The basic problem is that the supply of imported items might be cut off during some future crisis.

- Transportation from or production in the supplying country might be interrupted by military action.
- The government of the supplying country might withhold supplies due to its opposition to U.S. policies in the crisis.
- The supplying nation might commandeer the materiel for use in its own defense.

An unanticipated cutoff in the supply of imported items might delay procurement of materiel at a time when it was urgently needed. Unless imported end items were commercially available (i.e., in stock) in the U.S., an interruption in their supply would directly delay procurement. A cutoff of imported parts and components would delay procurement of end items if those parts were not commercially available and to the degree that they were pacing items in production. Replacement of specialized imported items through domestic production would take time as suppliers were recruited, materials and production equipment were ordered, workers were hired and trained, and production was established and qualified. If the item cut off were already being produced in the U.S., start-up leadtimes to increase domestic production might be less but still significant. Further, these problems in replacing

imported items would be aggravated to the extent that reliance on foreign suppliers caused an erosion of defense-related capacity and skills in the U.S.

A cutoff during peacetime could have a serious impact on costs and delivery schedules. It seems likely that a cutoff would occur, however, at a time of crisis when readiness and sustainability of U.S. forces would be critically important. A cutoff would be particularly damaging if it were to coincide with a surge in procurement requirements, since the replacement task would be that much more demanding. Further, it might be more difficult to surge production at a foreign than at a domestic source even if the foreign source were not interrupted. For example, it would be more difficult to provide priority assistance to a foreign source in obtaining production materials.

Co-production can expose weapon programs to the risks of supply cutoffs and procurement delays discussed above. This would occur if the arrangement called for foreign sources to produce some of the parts incorporated in systems assembled in the U.S. Such arrangements are often necessary when procurement volumes are insufficient to justify completely autonomous production programs. In order to achieve some economies of scale, it might be rational for the participating countries to specialize somewhat in the parts they produced. Such specialization occurred, for example, under the F-16 agreement referred to above. While it is a DoD goal to have a domestic source for every critical component of a co-produced weapon system, start-up delays might still be incurred in expanding domestic production of critical components if the portions supplied by overseas sources were interrupted. This would particularly be a problem to the extent that domestic capacity for critical components was insufficient to produce

the amounts interrupted. This discussion of co-production risks is applicable whether the systems produced were originally developed in the U.S. or overseas.

On the other hand, co-production could provide certain capacity advantages in the event of a peacetime surge of U.S. procurement requirements. That is, foreign producers would be in a position to contribute quickly to the U.S. surge effort, if they were willing to do so. During a long industrial warning period, overseas co-producers could thus be important while the U.S. increased its own production capacity.

Trade offset agreements can create pressures to import that are particularly difficult to direct. That is, trade offset agreements may specify that some proportion of the sale be offset by purchases from the buying country. Those purchases might involve parts and components for a number of different weapon systems, and the weapon systems involved might be indeterminate. This would make it very difficult for DoD to control the potential for production delays in the event of a future supply cutoff. At the same time, fulfilling offset requirements could put a great deal of pressure on the contractors involved to import parts and components, making it difficult for them to cooperate with DoD efforts to manage the associated risks. Further, it is at the lower tiers that DoD's ability to control foreign dependence is weakest.

The extent of defense-related imports of manufactured items is difficult to determine. The number of end items manufactured overseas for U.S. forces is evidently relatively small. When foreign systems are procured, DoD frequently requires that they be co-produced within the U.S. But a problem might exist at the level of intermediate, subcontractor items. As indicated in the discussion of IBA number 9 in Chapter III of the main report, imported items

used in defense-related production include nuts and bolts, fasteners, optical coatings, castings and forgings, semiconductors, and machine tools. Unfortunately, the magnitude of foreign dependence for lower-tier supplies is unknown. A previous requirement that prime contractors report foreign subcontract awards was eliminated by the DAR Council in order to ease the paperwork burden on DoD's contractors. And while the Industrial Preparedness Planning (IPP) program uncovers some particular import dependencies, it does not now provide comprehensive data on the extent of those dependencies, especially at the lower tiers. Thus, while market forces, MOUs, and co-production and trade offset agreements suggest that foreign dependence is probably increasing, and while many examples of defense-related imports are known, the magnitude and severity of the potential problem are unknown.

D. BACKGROUND DISCUSSION: EXISTING CONTROLS ON FOREIGN DEPENDENCE

1. Industrial Preparedness

The Industrial Preparedness Planning (IPP) program is designed to plan the production of critical items that would be needed in the event of a surge or mobilization. Under IPP, information is to be collected from individual planned producers and other sources regarding emergency production capabilities as well as bottlenecks and other production problems likely to arise. Planners would then identify corrective actions to be initiated, including the funding of Industrial Preparedness Measures (IPMs) (e.g., acquiring equipment to ease bottlenecks or stockpiling components).

The IPP program requires that planned producers for end items and critical pacing components be restricted to

producers in the U.S. or Canada.[1] Further, IPP requires that existing foreign sources be identified. Since the IPP program requires that critical end items and pacing components be planned, it implicitly assumes that overseas sources would be cut off in the event of a surge or mobilization. Thus, in principle, IPP would lead to actions to develop domestic producers for critical items. This might take the form of DAR 3-216 restrictions to stop the use of overseas sources during peacetime, or, it might involve identifying and planning standby domestic producers to be used in the event of a surge or mobilization. Such standby producers would also be available in the event of an interruption of foreign supplies in a situation that did not involve surge or mobilization. Developing standby domestic producers, however, would frequently be expensive. In order to reduce start-up leadtimes in the event of an emergency, it might be necessary to acquire production equipment and tooling, stockpile pacing components and materials, and maintain a cadre of skilled workers and production know-how. In some cases, it would not be possible to reduce start-up leadtimes enough, so that the critical imported items would have to be stockpiled to meet requirements during the start-up period.

Unfortunately, the IPP program outlined above has not been fully implemented.[2] There are severe limitations on IPP as it now exists, particularly as regards extending planning to critical pacing components and funding necessary IPMs. Important efforts are currently under way to revitalize the

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[1]See DoD Directive 4005.1, July 28, 1972, and OSD, "Industrial Preparedness Planning Manual" (Draft, 1980).

[2]See the discussion on the limitations of the existing IPP program in Chapter II, Section C.2 of the main report.

program by increasing funding and improving IPP guidance. Industrial preparedness planners play a pivotal role in managing the risks of foreign dependence.

2. Solicitation Restrictions

DAR 3-216, based on the authority of 10 USC 2304 (a)(16), provides a powerful tool for controlling foreign dependence. Under DAR 3-216, the Secretary of a Military Department is authorized to negotiate (rather than compete) contract awards if he finds it to be necessary in the interest of national defense or industrial mobilization in the event of an emergency. Thus, this authority may be used to direct contract awards to domestic firms when necessary to create or maintain industrial mobilization capabilities. For example, this authority could be used to restrict procurement solicitations for particular items to domestic offerors only or to direct contract awards to planned mobilization producers. Identification of cases requiring the use of DAR 3-216 depends on both industrial preparedness planners and those directly involved in the procurement process.

Items included on a Service's Industrial Preparedness Planning List (IPPL) would normally be good candidates for the use of DAR 3-216 to restrict contract awards to domestic producers, if that were necessary to maintain mobilization capabilities. Other items would be identified on a case-by-case basis. In addition, the DoD List of Restricted Defense Items under MOU and Offset Agreements is based on items for which the Services have made DAR 3-216 findings. This list advises MOU signatory nations of items that will not be considered for foreign procurement due to the need to protect domestic mobilization capabilities. For items not on this

list, rejection of an offer from an MOU country requires notification to OUSDRE(AM) ten working days in advance.

It is not known whether the DAR 3-216 authority is invoked as much as necessary in order to prevent the loss of domestic mobilization capabilities. Since DAR 3-216 restrictions frequently increase procurement costs by denying contracts to the potential bidder with the lowest price, budget constraints may inhibit the use of this authority. Further, DAR 3-216 is used primarily to direct prime contract awards (although it can be used to restrict the use of foreign sources for sub-tier items). Thus, DAR 3-216 does not usually counter the pressures on prime contractors to import sub-tier items due to offset agreements or economic forces.

3. Buy American Act (BAA)

The Buy American Act (41 USC 10 a-d) was passed by Congress in 1933. While it was originally intended to promote domestic employment by restricting Federal procurement to domestic sources, it has also been used to safeguard national security.[1] But while the Buy American Act (BAA) provides substantial authority to restrict Federal purchases, implementing procedures established in Executive Order 10582 and DAR Section VI permit exceptions that greatly weaken the impact of the BAA.

As implemented, the BAA requires that domestic offers be given preference over foreign offers in awarding contracts. For this purpose, a domestic end product is defined as an item procured by DoD for which the cost of components mined, produced, or manufactured in the U.S. exceeds 50 percent of

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[1]See Major Harry D. Gerber, "The Application of the Buy American Act to Federal Procurement Activities" (1975).

the cost of all of its components. There are, however, a number of exceptions under which domestic offers need not be given preference.

- If the cost of a domestic offer is unreasonable, a foreign offer may be accepted. A domestic offer price is deemed unreasonable if it exceeds the lowest qualified foreign offer price by more than 50 percent.
- BAA restrictions do not apply if domestic end products are not reasonably available in sufficient quantity and quality. DAR 6-105 includes a list of such items. If domestic components are found not to be reasonably available, foreign components are to be treated as though they were domestic components in determining whether an end product is domestic.
- A domestic end product need not be given preference if the Secretary concerned determines that that would be inconsistent with the public interest. Under this provision (Section 2, Title III of the 1933 Act) and as authorized by the Culver-Nunn Amendment (Section 802 of the DoD Appropriations Authorization Act of 1977), the Secretary of Defense has waived the BAA in accordance with the Memoranda of Understanding (MOUs) signed with eleven NATO nations and certain other countries. Thus, components and end products made in the MOU countries are considered to be domestic when BAA procedures are applied, with certain exceptions.
- Under the Trade Agreements Act of 1979 (Public Law 96-39), which implements the 1979 General Agreement on Tariffs and Trade (GATT), the BAA is waived for 44 nations for government purchases under selected Federal Supply Classes. The waiver applies to acquisitions in excess of $196,000 for a wide range of products, but does not apply to arms, ammunition, war materials, or purchases indispensable for national security.

Together, these exceptions eliminate BAA preference for domestic offers in a wide variety of cases. Since MOUs have been signed with most major industrial trading partners of the U.S. (Japan being a notable exception), the BAA offers protection primarily against imports from the less developed nations. Where the BAA has not been waived, the 50 percent

evaluation penalty applied to foreign offer prices does provide a substantial preference for domestic offers. Yet, even when domestic offers are accepted, this does not provide much protection against a potential cutoff of foreign supplies at the lower tiers.

- The BAA definitions permit a domestic end product to contain foreign components whose cost represents up to 50 percent of the cost of all components.
- This 50 percent does not include foreign components not reasonably available in the U.S. or those that are imported from MOU signatory nations.
- There is no explicit restriction on the permissible foreign content of those components that are classified as domestic components.
- There are no provisions to assure that the most critical components (from a production standpoint) are included within the 50-percent- of-cost reservation for domestic components.

Nevertheless, the BAA does provide some positive features where it is effective.

- To the extent that domestic prime contractors prefer to deal with domestic subcontractors, BAA control over end products may provide substantial indirect protection to lower-tier products.
- While the 50-percent evaluation penalty does reduce pressures on domestic offerors to keep prices low, it still provides more price pressure than a flat prohibition of imports would provide.
- BAA controls are automatically responsive to the availability of domestic suppliers, since they come into effect only if a domestic offer is received.

4. Import Controls

Import controls may be established to protect certain defense-related industries from foreign competition. The authority to do so is provided under Section 232 of the Trade

Expansion Act of 1962, which is now administered by the Commerce Department.[1]

Section 232 may be invoked if particular commodity imports are found to "threaten to impair the national security." In reviewing petitions for import relief, the Commerce Department considers the impact of imports on the economic welfare of the affected industry and on its ability to meet mobilization requirements. Investigations to assess the impact of imports can be lengthy and need not be completed until one year has elapsed. If import relief is found to be necessary, the Commerce Department recommends to the President the imposition of tariffs, quotas, or other means to control imports. The Commerce Department is now investigating a petition for relief under Section 232 from the Ferroalloys Association. Other commodities which might be considered for import relief include industrial fasteners, glass-lined steel tubing, and certain electronic parts.

Import controls under Section 232 would be useful to protect the commercial markets of lower-tier industries that also support defense production. That is, if the domestic commercial markets for certain commodities were eroded by foreign competition, the affected industries might not be viable during peacetime. Hence, those industries would not be available to meet DoD needs during peacetime or in the event of an emergency. In addition, import controls could give DoD a means of restricting the use of certain foreign-made items in defense production, when DoD could not otherwise influence its contractors. It would be important to identify the need for import controls early, before the threatened damage became

[1]See U.S. Department of Commerce, "Critical Materials Requirements of the U.S. Aerospace Industry" (1981), p. 263.

actual and irreversible. Approval of import controls under Section 232 would be time-consuming and politically difficult. Further, imposition of such controls could provoke retaliation from the foreign countries involved.

5. Other Controls

There are a number of additional reasons why defense procurement does not depend on overseas sources more than it does.

- DAR 1-2207 restricts purchases of certain sub-tier items to U.S. or Canadian sources in order to preserve the domestic industrial base. These items include jewel bearings and related items, miniature and instrument ball bearings, and precision components for mechanical time devices.
- Congress has attached certain import restrictions to DoD appropriations acts. These restrictions apply to a number of items, including specialty metals, construction of naval vessels in foreign shipyards, and others. Some of these restrictions cannot be waived under MOU agreements.[1]
- OSD review of proposed co-production and trade offset agreements provides an opportunity to weigh the mobilization base implications of those agreements against other national objectives.
- Technology export controls have the effect of reducing the ability of foreign sources to compete with domestic sources in some cases.
- Import duties discourage defense-related imports in some cases.
- Normal market conditions give U.S. firms advantages over foreign producers in certain cases. That is, some U.S. firms have lower production or transportation costs, better technology or quality control, or greater familiarity with DoD requirements than their potential foreign competitors.

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[1]For example, DoD may not procure items that incorporate specialty metals from foreign sources, regardless of the existence of MOUs.

E. ANALYSIS OF ACTIONS TO REDUCE THE RISKS OF FOREIGN DEPENDENCE

1. Introduction

As discussed in Section B above, this appendix addresses a scenario in which the Secretary of Defense determines that the risks associated with the dependence of defense procurement on certain foreign sources of manufactured items are unacceptably high. He directs that actions be initiated to reduce those risks. The following discussion analyzes a number of actions that could be taken to reduce the risks associated with foreign dependence. In reviewing these actions, special consideration is given to the timing of their effects. While each of these actions would have some short-run effects, their full impacts would be felt only gradually. Hence, none of them would be particularly suited to a situation in which a cutoff appeared to be imminent.

2. Industrial Preparedness

Industrial Preparedness Planning (IPP) and Industrial Preparedness Measures (IPMs) would provide the underpinning for the other actions discussed below.

- A special effort could be made to identify and plan domestic producers for foreign end items and critical pacing components. In principle, this is done currently, but as discussed above, IPP has suffered severe limitations in recent years. A special effort could be directed at vertical planning for items dependent on imports from particular, threatened foreign sources. Planning could have a short-run impact only to the extent that producers could be identified that would not need long-leadtime items (e.g., additional production equipment and tooling) in order to start up production in the event of a cutoff of foreign sources. Information provided by IPP would be a major input to assessments of the need for the various actions discussed below.

- Industrial Preparedness Measures (IPMs) to reduce start-up leadtimes to replace particular foreign sources could be funded. Again, in principle, this is done now. But IPMs have historically been underfunded. By developing active or standby domestic sources for critical end items or pacing components, DoD would buy insurance against a cutoff of foreign sources, and still obtain the economic or political advantages of arms cooperation with U.S. allies. In some cases, IPP would identify IPMs that could be implemented quickly and thus have short-run impacts on preparedness. Frequently, developing domestic sources with acceptable start-up leadtimes would require IPMs that had long implementation leadtimes of their own (e.g., acquiring production equipment or long-leadtime components) and that were expensive.

3. Solicitation Restrictions

The authority provided under DAR 3-216 could be used more extensively to restrict defense-related procurement to domestic sources.

- The list of items excluded from foreign procurement could be extended. The Service Secretaries could approve the use of DAR 3-216 to exclude critical foreign sources for additional items thought to be relevant to the impending crisis or whose primary foreign sources were threatened.[1] Consideration would be given to items on the Industrial Preparedness Planning Lists (IPPLs) and others. While this would lessen DoD's reliance on imports for the added items, observance of current contracts would dampen the impact in the short run. Further, it would take time to develop domestic sources for items that had previously been obtained overseas. And any substantial extension of the list would create political problems with U.S. allies, since the MOUs contemplate that such exclusions would represent a

[1]Procurement could be excluded only from the particular foreign sources in jeopardy. Or, if protection were needed to build up domestic sources for the items involved, procurement could be excluded from all overseas sources.

relatively small proportion of defense procurement.[1] Finally, since domestic alternatives to existing imports would often be more expensive, tight DoD budgets would make extending the list of excluded items costly in terms of procurement items foregone.

- Restrictions on foreign procurement could be extended further to sub-tier items. That is, the Services could extend the practice of including directed-sources-of-supply requirements in prime contracts to exclude particular foreign sources for critical pacing components. Such restrictions would be identified on a case-by-case basis and would include any sub-tier IPPL items. In addition, certain components common to a number of systems could be identified for automatic exclusion based on the need to protect domestic production capacities. The advantages and limitations of sub-tier restrictions are analogous to those discussed above for end items. But it should be observed that restrictions on end items may do little good if critical pacing components are not similarly restricted.

4. International Agreements

Part of the pressure leading to imports of defense-related items stems from various international agreements to promote cooperation with allies on defense procurement. Steps could be taken to be more restrictive with regard to both existing and future agreements.

- Particular MOUs could be cancelled. The agreements run for periods ranging from 6 to 10 years, usually with provisions for renewal thereafter, and usually requiring notice of intent to cancel six months in advance. Cancellation would rescind BAA waivers for future contracts, but would not affect existing contracts unless existing contracts included provisions for early termination that were exercised. Even without BAA waivers, existing foreign sources might retain competitive advantages for

[1] See, for example, Annex 1, Section III-H of the MOU with the United Kingdom.

future, follow-on contracts. These advantages would include production experience as well as having the requisite specialized manpower and facilities in place. Thus, while cancelling MOUs would reduce defense-related imports over time, the impact in the short run would be much less. Further, cancelling MOUs would be very difficult politically. Cancellation might be feasible in the case of a country that rejected previous alliances and adopted policies hostile to the U.S; cancellation would not be feasible in the case of loyal allies that the U.S. was about to defend. Cancellation could cause the countries involved to question the ability and intention of the U.S. to defend them and thus weaken their support for U.S policies.

- Approval of new offset agreements could be restricted further.[1] Offset agreements affecting major programs are reviewed within OSD to evaluate their potential impact on defense cooperation objectives and peacetime procurement as well as industrial mobilization capabilities. The DoD Task Group to Review International Co-production/Industrial Participation Agreements has identified certain weaknesses in the current review process and recommended evaluation criteria and organizational changes.[2] Assuming that any necessary organizational changes had been made before the scenario in question began, there might still be a need to give mobilization criteria greater weight (than had been accorded during peacetime) in the decision-making process. While this would be politically feasible, the major impact would be to prevent further dependence on unreliable foreign sources rather than to reduce existing dependence in the short run.

- Offset bidding wars could be restrained. Competition for the sale of major weapon systems leads producers to attempt to outbid each other with regard to offset offers as well as price and other features. DoD could establish ground rules in specific situations to restrain offset competition among U.S. sellers, and

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[1]In some cases, it might also be possible to revise existing offset agreements.

[2]See DoD Task Group to Review International Co-Production/Industrial Participation Agreements, "Final Report" (February, 1982).

could seek international agreements to reduce such competition between U.S. and foreign sellers.[1] While restraining offset competition among at least U.S. sellers would be feasible, this action would prevent an increase in foreign dependence rather than reduce the existing level.

5. Buy American Act

In addition to rescinding the BAA waivers provided under the MOUs (as discussed above), steps could be taken to amend implementation procedures and strengthen the protection offerred by the BAA. This would require changes to Executive Order 10582 as well as the DAR, Section 6.

- The definition of domestic products could be tightened. As noted above, an end product is considered to be domestic if the cost of its domestic components represents at least 50 percent of the cost of all of its components. The percentage could be increased to 80 to 90 percent. Further, the present definition of a domestic component does not specify the degree to which a domestic component may contain foreign parts. A specific percentage limitation could be established. Tightening the definitions of domestic end products and components would tend to reduce defense-related imports at both prime and sub-tier levels, although the short-run impact would be muted since current contracts would have to be honored. A major difficulty with this approach is that it does not discriminate well among the foreign nations affected. Thus, it would impact on all trading partners for whom the BAA had not been waived, and might not impact on the threatened foreign sources unless certain existing BAA waivers were rescinded. Another serious weakness is that it would not prevent

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[1] In the 1975 competition with France to sell fighter aircraft to Belgium, Denmark, Norway, and the Netherlands, DoD restrained offset competition between General Dynamics (F-16) and Northrop (YF-17) in advance. But no such ground rules were established in the competition to sell fighter aircraft to Canada between General Dynamics (F-16) and McDonnell Douglas and Northrop (F-18). See Michael R. Gordon, "Pentagon Contractors Divided over Foreign Arms Co-production Deals" (1982), p. 332.

critical pacing items from being included within whatever percentage of foreign components was allowed.

- The foreign offer price evaluation factor could be increased. If an evaluation penalty greater than the existing 50 percent were imposed, potential domestic producers would have a greater incentive to bid for DoD contracts, and foreign dependence would gradually be reduced. This approach, however, would have drawbacks similar to the previous approach.

6. Import Controls

As discussed above, Section 232 of the Trade Expansion Act of 1962 provides authority for the President to impose import controls to protect domestic capacity required for national security purposes. DoD would request such controls through the Commerce Department.

- o Import controls could be imposed to protect certain lower-tier industries. DoD together with FEMA and the Commerce Department could identify particular lower-tier industries whose capacities to meet mobilization requirements were threatened by competition from imports, and could request imposition of appropriate import controls. Such protection might be necessary to build up domestic industries after particular foreign sources were threatened. While it would take time for industries to install any new capacity in response to import protection, such controls could have short-run impacts by preventing further deterioration of existing domestic capabilities. But import controls would be controversial, and it could take one year to obtain a decision on a particular petition. Since import controls could adversely affect productivity and could provoke foreign retaliation, they would not be feasible in many cases.

F. CONCLUSION

If foreign sources of defense-related manufactured items were jeopardized during a period of rising tensions, DoD could initiate a number of actions to reduce the risks of a future cutoff of those supplies.

- IPP resources could be used to verify critical dependencies, assess the actions necessary to reduce the associated risks, and plan alternative domestic producers.
- By increasing funding for IPMs, DoD could develop both active and standby domestic alternatives to unreliable foreign supplies.
- DoD could gradually repatriate defense-related procurement from threatened foreign sources to domestic producers by tightening implementation procedures for the Buy American Act (BAA) and by extending the use of DAR 3-216 authority to restrict production of critical end items and pacing components to domestic sources.
- In order to prevent further reliance on undependable foreign sources, DoD could be more restrictive in approving offset agreements and could request import controls under Section 232 of the Trade Expansion Act of 1962.

Unfortunately, there are a number of reasons to doubt the effectiveness of such a program.

- These actions would impact on defense production only gradually, and hence the risks associated with foreign dependence might still be unacceptably high by the time a threatened cutoff of foreign supplies occurred. The principal problem is that existing procurement contracts would have to be honored until they were fulfilled, so that new controls would impact only on new procurement contracts. Further, it would frequently take a year or more to develop domestic sources after procurement contracts were signed.
- Repatriating defense-related production would be expensive and hence might be difficult to justify in the assumed environment of an increasing but tight DoD budget. Repatriation would be expensive both because domestic producers would frequently be more costly and because substantial start-up costs might be incurred.
- Finally, international politics could render initiation of some protective actions infeasible. It would be very difficult to reduce defense-related imports without alienating allies. To argue that such actions were necessary because of anticipated war damage to an ally's industry would bring into question the ability and intention of the U.S. to defend that

ally. This could weaken the ally's morale and its support for U.S. policy during the crisis.

Thus, it is not at all clear that a period of rising tensions would be used effectively to reduce the risks associated with a threatened cutoff of foreign sources before that cutoff actually occurred. Rather, actions such as those discussed in Section E of this Appendix should be implemented during peacetime. Hazardous foreign dependencies should not be allowed to develop in the first place. At the same time, the potential economic, political, and military benefits of international arms cooperation dictate that programs to protect the defense industrial base and to guard against a cutoff of foreign sources be limited to what is truly required.

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