AN ECONOMIC ANALYSIS OF THE TARIFF AND OTHER MEASURES OF THE UNITED STATES FOR AIDING INDUSTRIES ESSENTIAL TO NATIONAL DEFENSE

DISSERTATION

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By

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CHAPTER I

INTRODUCTION

Since the enactment of the Defense Production Act in September, 1950, the United States has embarked upon the construction of what is known as a mobilization base. This mobilization base or "high plateau of preparedness" is completely unprecedented in American economic life in that it constitutes the building and maintenance in being, for security reasons alone, of a significant segment of American industry over a prolonged period of time. This obviously has had, and will continue to have, a significant impact upon the American economy and upon the economies of the free world. To analyze some of the aspects of this impact is the primary purpose of this study.

Initially, this will require a definition and delineation of the mobilization base. Here, heavy reliance must be placed upon the judgments of the military authorities and civilian experts in military affairs, as reflected in the general policy statements and publications of the Office of Defense Mobilization, the Defense Department, and other defense agencies. The reason for this heavy, but not uncritical, reliance is obvious, in that military expertise lies far afield from the economist's purview.
In any study as complex and as variegated as a mobilization base, which, as of this writing includes 245 separate items, it is obviously impossible to be exhaustive and definitive. What, however, is to be attempted is to identify and analyze the main components and the various subcomponents of the mobilization base. In this way, the analysis will be kept within manageable dimensions. More important, this framework should aid in arriving at the formulation of some common principles, and consequently, policy measures, for each of the various components.

For convenience components are classified in seven groups: minerals; chemicals; precision manufacturing; electrical machinery (including general machinery); fuel and power; transportation; and miscellaneous.

Not all seven will receive equal, nor necessarily complete treatment. The analysis may be relatively general for some of the components, the intent being merely to approach alternative policy criteria. Nor will all items within a component receive equal treatment. Here again the approach will be general, focussing occasionally upon a case study of a 'typical' item in an attempt to arrive at a generalization about comparable items within a component.

It ought to be made clear that this study cannot be definitive for another reason, namely, the imprecise nature of the data. This is due, in the first instance, to
the constantly shifting concepts of the mobilization base, and secondly, to the restricted classification of some of the data.

To narrow still further the terms of reference of this project, only the mobilization base will come under analysis, not other military or security problems. That is, what the military experts and production economists call the "capabilities - requirements" equation will be studied. This means an attempt to determine principles by which a production level necessary to meet the requirements of a prolonged period of cold war can be constructed and maintained. The capabilities of the American economy to fulfill this desired production level is studied with a view toward elimination of any deficiencies. Other problems, such as might be the concern of strategists, tacticians, and others, lie outside the scope of this study.1

The main focus, then, will be economic. That is, while security considerations in general and a mobilization base in particular, constitute new problems, this does not mean the rejection of economic principles, but rather the absolute necessity of the acceptance of these principles. In brief, if a mobilization base is to be maintained over a prolonged period of time, it should be maintained on a

economic, least-cost basis. With this underlying thesis in mind, each of the various components can be analyzed, and in this way, policy criteria may be established.

No attempt will be made in this analysis to study the past or present purely administrative aspects of the mobilization base, except where these aspects impinge upon the main body of analysis. This is clearly outside the intent of this study.

Aside from the purely administrative aspects which are not to be covered, certain aspects which are within the legitimate province of economics are also to be disregarded. Areas such as price control, inflation, priorities in the allocation of resources, the flow of materials, budgetary and monetary considerations inherent in mobilization which any authoritative textbook on mobilization economics would cover in detail, are to be disregarded in this study, except as they encroach upon the main part of the analysis.

Broadly speaking, there are two possible divergent approaches to a study of the current mobilization base. The first, and more exhaustive, approach is to begin with each of the 245 items and attempt to arrive at a mobilization policy for each (some of which, of course, would come out with the same types of policy). This approach involves the case-by-case method. A second approach is to begin with the existing policy - or future policy - and work
toward broad generalizations for groups of items, perhaps an entire component. This approach, which will be used in the analysis, does not completely avoid "case studies," but has the advantage of being more manageable and concise.

In regard to policy, there are three distinct general views. Each view is virtually selfexclusive; and each calls for the implementation of a certain pattern of devices - mainly governmentally directed - which is not necessarily selfexclusive. That is, some devices, such as a rapid tax amortization plan or the stockpiling of essential, non-indigenous raw materials, might be included in all three policy-views. This should not obscure the main objectives of the analysis which are: (1) to demarcate clearly the three policy-views; (2) to indicate a pattern of devices within each policy; and (3) to establish criteria for the selection of the series of devices to be used.

The first of these policies might be considered to be purely domestic in scope. This approach would involve building a war potential purely within the domestic borders of the United States and would rely exclusively upon domestic resources. This is autarchy in its pure form and severely limits the number and pattern of economic devices which can be implemented.

A second policy, while related to the first, is less restrictive and extreme. It would call for a mobilization effort within the confines of the Western Hemisphere and
would rely upon the resources and the production potential of this hemisphere only. This policy, obviously, allows for more latitude in the implementation of devices for a mobilization structure.

The two 'Gibraltar' conceptualizations of defense have many adherents among whom are some outstanding military and civilian authorities.\(^2\) The reasons for their adherence are mainly tactical.\(^3\) In the first instance, the problem of accessibility of raw materials and productive potential arises, and this school of thought, in the main, holds that any lands outside the Western Hemisphere will be inaccessible for military purposes once a "shooting war" begins. Accessibility and the dynamics of mobilization economics in general will be covered in the next chapter. Another tactical reason is that many in this school of thought favor heavy, if not exclusive, reliance upon air power. A balanced and diversified mobilization base does not come within these terms of reference.

On this latter point, there is already in existence, both in theory and in practice, a "balanced" mobilization

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\(^2\) For further references in this regard, see *Stockpile and Accessibility of Strategic and Critical Materials to the United States in Time of War*, Hearings before the Special Subcommittee on Minerals, Materials and Fuels Economics, United Senate, 83rd Congress, second session, Washington, D.C., 1954 (hereinafter referred to as the "Malone Hearings"), Part 2, pp. 582-585 and throughout the hearings.

\(^3\) Some, of course, are ideologically opposed. The political parallel of "isolationism" readily suggests itself.
base, and acceptance of the above two policies would mean reversion to another type of mobilization structure and to a narrower resource base. These approaches also would disturb much of the existing mosaic of international relations. For these two practical reasons, exclusive of the larger ideological considerations involved, these concepts are not included in the analysis. This is not to say that these policies are not challenging points of view, nor is it to say that none of the devices which these policies call for will be analyzed. These approaches are merely too confining and disruptive in terms of existing political and economic relations.

The third policy may be considered global in scope. It appears to be incontrovertible that security considerations are now global; in fact, security is often-times indistinguishable from, and of secondary importance, in some cases, to our larger global interests. Much of our present national defense legislation reflects this, and is currently integrated into our larger world interests. Thus, this policy will receive the main emphasis in the analysis, and an underlying thesis in this connection is that nothing should be done to disturb the existing fabric of international relationships, where these relations are mutually beneficial. Rather, the existing machinery should be continued or further strengthened. Any attempt to move in the direction of self-sufficiency by uneconomic means, with
the support of the national defense argument, should be
discouraged. A section in the next chapter will be devot-
ed to the purely international aspects of this problem.

The devices which these policies can call into being
are manyfold, and by now relatively familiar. Of main
importance to this study is foreign trade policy, and,
specifically, tariff questions. No discussion of defense
economics is complete without a thorough analysis of tariff
policy implications - and this is particularly true current-
ly and likely to remain so for some time to come. Those
who adhere to the first two policies discussed above gen-
erally favor higher tariffs and almost never are in favor
of lowering existing tariff barriers. The third school of
thought would generally favor the removal of tariff restric-
tions with, however, a strong reservation when considera-
tions of defense are involved.

Three choices are available in an analysis of tariff
policy and national defense. The first and most exhaustive
is to study the tariff hearings before the Congress since
1950, and the hearings before the Committee for Reciprocity
Information, in order to determine industries which seek
"protection" on the grounds of "essentiality" to national
defense. This method, however, could lead to an empirical
wilderness, and, in the main, would be futile. It would be
futile, in that almost all industries or industry represen-
tatives claim "essentiality" and, therefore, reference to defense authorities would have to be resorted to in order to evaluate these claims. This substantiates the point made earlier, that heavy reliance must be placed upon the military and the civilian expert in this area.

A second method, the one which will be used generally throughout this study, is to begin with the list of industries, or end-items, or facility-expansion which have been declared "essential" to our mobilization base by defense agencies. From this list, already referred to, the tariff issues of the specific items, or of the aggregate component can be analyzed. The specific question to be kept in mind in this analysis is - What would be the impact upon an industry producing a specific item in the mobilization base in the event of tariff liberalization on that specific item?

A third procedure, one which will augment the above approach, is to analyze "escape clause" actions initiated by industries included in the mobilization base, and to study "peril point" decisions concerning national security arrived at by the Tariff Commission. This will help focus attention upon the principles involved in the decisions to

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4 The Tariff Commission under the current Trade Agreements Extension Act (1955) is not empowered to make decisions upon the "essentiality" of an industry to national defense. In fact, this is at the root of the problem since no agency is authorized to make tariff decisions when "essentiality" is involved. Attention will be addressed to this knotty administrative problem in Chapter 7.
date, and thereby, will be helpful in arriving at general policy criteria for an import policy when national security considerations are in issue. The entire area of tariff issues will come in for analysis in Chapter 7.

Another device, as controversial as the tariff, but perhaps of lesser importance in order of magnitude, is the use of the "Buy American" Act. The first two schools of thought would implement this act stringently, even though the act can hardly be justified on economic grounds in a high-employment economy. In fact, an extreme implementation of the first policy would virtually countermand this act since all government purchasing would have to be done domestically. The third policy approach would be less stringent in its application of the act.

A third technique which will be included in the analysis is the implementation of the 'Stockpile' Act. All three policies would make extensive use of this technique. However, some favor the implementation of this act only for defense stockpiling, others as a technique for counter-cyclical action and the bringing into production of sub-marginal mines. The economics of stockpiling will be discussed for certain kinds of commodities.

Other devices such as rapid tax amortization, subsidies, premium price, maintenance of standby capacity, government loans, offshore procurement, and use of "counter-
part" funds will receive adequate attention as the analysis progresses. Generally speaking, all three policies would make use of most of these devices. The main conflict would occur over those with international ramifications and over the division of these incentives between domestic production and foreign production. That these are problems involving a series of troublesome economic calculations cannot be denied. This analysis will consider some of the elements of these economic calculations.

Finally, since the mobilization base will have such a profound impact upon the American economy and the economies of friendly foreign countries, attention will be directed to these larger areas wherever necessary throughout the study. While the aim of this study is to concentrate mainly upon defense economics and policy criteria for implementing rationally an "enduring posture" of defense, it is to be hoped that it will also contribute, in a modest and tangential fashion, to an understanding of the modern, viable, American economy. This procedure may throw some light upon our capacity to advance the economic strength of the free world, exclusive of the ideological considerations involved.

In summary, then, the main intent is to analyze some of the major economic aspects of the current mobilization base, making no pretense to be exhaustive in so complex an
area. The various components and subcomponents within the defense base will be identified and analyzed so as to arrive at policy criteria for each of them. An underlying hypothesis is that this enduring defense posture can be constructed and maintained upon sound economic principles. The purely administrative aspects and many economic aspects not falling directly within the purview of this study are not to be analyzed simply in the interests of keeping the study within manageable dimensions.
CHAPTER II

THE CONCEPT OF MOBILIZATION ECONOMICS

Introduction:

Although there is no finished blueprint of the problems posed by national defense, they are not entirely unlike the problems of peacetime. In a defense effort, national resources have to be allocated to provide both for the materials of war and for the preservation of the civilian economy. Both in a mobilization effort, of whatever dimensions, and in peacetime, effective use should be made of the scarce means of production.

Put in economic terms, the problem can be stated as follows:

In a full mobilization, national policy centers on the achievement of maximum military power for defense and victory. This objective is not and cannot be, met by trying to see how much military end-item equipment, in general or specific mixes, the economic system can turn out. Rather, the problem is to extract that last unit of war material from the economy without seriously impairing the capacity of the economic machine to produce either armaments or those goods and services
needed to maintain the health and morale of the people. The solution of this problem obviously necessitates a balanced assignment of resources to all essential claims. In economic nomenclature it means equating marginal uses for scarce resources.¹

A specific problem which is generally absent in a peace-economy, is the size and speed of the intended mobilization effort. That is, the limits of the mobilization effort have to be defined - a decision of the military authorities and civilian experts - and within these limits an economic calculus can then be applied. These limits can and should be changed from time to time contingent upon both exogenous factors, such as the changing nature of the threat from without which may call for a diminished or an expanded mobilization effort, and endogenous factors, such as using a different 'factorial mix' to accomplish the same defense effort. Defense structures are not static, a point which will be developed later, but the main point here is that the dimensions of the defense posture have to be delineated before implementation of policy can take place.

¹ Steiner, George A., "Resource Allocation in Mobilization," Current Economic Comment, August, 1954. University of Illinois. Edward S. Mason, "Nationalism and Raw Materials," Atlantic Monthly, March, 1953, p. 65, states the same problem this way. "It can be seen, then, that although security considerations create a new set of materials problems for which special action is required, these considerations neither involve a departure from the general principle of meeting our requirements, however defined, from lowest-cost sources, nor favor in all-out expansion of domestic production at the expense of foreign sources of supply."
This main point involves the conceptualization of four different "stages" of mobilization: full; limited or partial; a sustained high plateau of preparedness; and reconversion. These four stages are self-evident, and, preparing for any one depends upon the authorities' judgment as to the immediacy and scope of the external threat. The distinction between full mobilization and the partial mobilization witnessed since 1950, may be made by considering the latter as having been accomplished mainly through the expansion of domestic production, rather than through the diversion of goods and services from normal civilian consumption. The fourth stage, that of reconversion, need not be considered here since it involves demobilization. The third stage, however, a sustained high plateau of preparedness, is of central importance in subsequent analysis.

The unique feature of the third stage is summarized

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2 Here it ought to be reemphasized that much of the data in this chapter necessarily involves heavy reliance upon the concepts and the judgment of the military authorities and civilian experts in military affairs, such as the concepts of the four "stages" of mobilization, contained in Lincoln, George A., Economics of National Security, 2nd edition, West Point Military Academy, 1954, pp. 1920. Particularly heavy reliance has been put upon this book, an authoritative text in the field of mobilization economics, because of its recent publication and because it most closely parallels the subject matter and approach of this project. Other data in this chapter, particularly that pertaining to the mobilization base, per se, comes from Quarterly Reports, Office of Defense Mobilization, U. S. Government Printing Office, October 1, 1951 - October 1, 1953.
in the following statement.

A sustained high plateau of preparedness is a security program applicable to an extended period of no war - no peace. This condition of a "plateau of preparedness" is unprecedented in United States experience.3

The Office of Defense Mobilization, which since June, 1953, has been charged with the responsibility of building and administering this "plateau of preparedness" describes it this way.

The plateau pattern, speaking generally, is well adapted to maintenance of maximum strength over the long run. Besides assuring the maintenance of a strong and healthy economy - which is itself an asset of the greatest importance in a long period cold war - the plateau pattern permits a high degree of modernization of equipment instead of pushing production to peaks on obsolescent models. It also maintains for a long period, with the expenditure of the same amount of money, the high production levels that will assure the existence of trained and ready production organization that can expand their output quickly to still higher levels if required.4

3 Lincoln, op. cit., p. 20.

4 Quarterly Report, Office of Defense Mobilization, op. cit., April 1, 1952, pp. 3-4. The apparent contradiction in dates - note above where it is remarked that O.D.M. was charged with over-all responsibility in June, 1953 - occurs because the original O.D.M. was reorganized as of this latter date. This will be developed later in this chapter.
The Mobilization Base:

The "high plateau of preparedness" is a broader and less specific concept than the mobilization base, which defense authorities describe in this manner.

The mobilization base - that is, the facilities necessary to enable us to expand military production quickly to high levels....

This excess capacity throughout the productive system, held in reserve against the contingency of all-out mobilization, is defined as the mobilization base. Building this base has been one of the objectives of defense mobilization from the beginning ....5

Thus, by various means, most of which will be critically developed later, the defense officials have been constructing and maintaining, since 1950, an "enduring posture" of defense. Along with strength there has been balance and diversity. Even the stockpiling of money - in the event that nuclear war should disrupt our monetary system6 - and of seeds, such as opium,7 have been provided for.

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The mobilization base extends across the whole of the economy - from basic materials through the various stages of fabrication to finished products, and giving consideration to manpower and all of the other factors of production, including fuel, power and transportation.8

Within these conceptual terms of reference as to the size and balance required for the mobilization effort, a myriad of decisions concerning hundreds of end-items has to be made.9 This amounts to filling in the capabilities-requirements formula referred to earlier.

The computation of the mobilization base begins with the military plans themselves - the plans for the size and nature of the Armed Forces which would have to be built in the first year of a war, the second year and so on.

The equipment required for these forces then has to be computed....a large part of the equipment, if it were to be ready in time, would have to be put into production on the day the enemy struck, in plants which had been kept ready for that purpose.10

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9 For a discussion of the 1000 major end-items chosen by the Pentagon - the list of which, of course, is top secret - see Green, Sterling, "Here's Where War Mobilization Stands," op. cit., p. 54.

Expansion Goals:

Once the proportions of the mobilization base have been decided and the selection of end-items made, this creates the necessity for expanding some facilities to a certain production level and maintaining others at a given level. Thus, "expansion goals" are set to achieve the necessary 'mix' in order to turn out the required end-items. Expansion goals have been set for about 245 items since the inception of the mobilization effort, and, at the present, approximately 150 expansion goals, having been met, are "closed"; approximately 90, not yet having been completed, are "open," and a few others are classified as "suspended." This list of expansion goals, provided and administered by the Office of Defense Mobilization, will provide the core of subsequent analysis.  

The point ought to be emphasized that analysis of the mobilization base includes data up to the end of September, 1954. There is an extremely practical reason for this, since the O.D.M., and defense authorities in general, have consistently thought of 1954-1955 as peak target years for mobilization. "The expansion goals are fixed at the level necessary to support both the defense program and civilian requirements as of a future year - usually 1954 or 1955 - or the level necessary for full mobilization readiness whichever is higher." "Quarterly Report," O.D.M., op. cit., July 1, 1952, p. 15. Centering the analysis around a "closing date" of September, 1954 might imply a static concept of the mobilization posture; no such implication is warranted and, wherever significant dynamic changes - there should not be very many, except over the long-pull - can be considered, the necessary 'projections' will be attempted.
In establishing expansion goals, two different calculations are made depending upon the nature of the end-item. In the case of fabricated materials, production levels are generally established on the basis of consumption that would be required for the first three years in an all-out war, basing this estimated consumption upon the peak World War II consumption of the item involved.\(^2\) For minerals and raw materials, a five year base is used.

The yardstick we had in mind to measure the extent of our acquisitions was that quantity of any strategic or critical materials necessary to supply us in an emergency of 5 years' duration and at a consumption rate equal to the maximum annual rate of consumption that was our experience in World War II, from which we were to deduct the amount of that material that we could reasonably expect to produce within our own boundaries or within easily accessible neighboring lands in that 5-year emergency period of time.\(^3\)

These expansion goals, then, are established for the construction or maintenance of production levels for the

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\(^2\) Where there is danger of this type of production facility being destroyed in any initial attack, another calculation may be made, namely, stockpiling enough material to sustain the mobilization effort while the production facility is being rebuilt. "...where dispersion, protection and transfer are alike impossible - it may be necessary to calculate how long it would take to rebuild the plant, then stockpile enough of its output to last during reconstruction." Green, Sterling, "Here's Where War Mobilization Stands," op. cit., p. 50.

\(^3\) Testimony of a military authority in reference to the acquisition of minerals and raw materials, not to fabricated output. See "Malone Hearings, op. cit., Part II, p. 18."
myriad of items which will turn out either the components or the end-items required for the defense effort. Most of them are established on a target date of 1954-1955, and are based upon sustained consumption requirements of a three-year or five-year effort. Various inducements are used by the government, the most common of which is the accelerated tax amortization technique, in order to achieve these goals.

The (expansion) goals which have been set provide for increases ranging generally from 15 to 100 percent over the 1950 capacity, and in a few cases much higher. The goals provide for the allocation of materials as well as for granting certificates of necessity for accelerated tax amortization, guaranteeing loans, and providing other financial assistance.\(^{14}\)

If private industry, both large and small, is willing to expand to meet the goal, expansion projects up to that total are considered for accelerated tax amortization - which provides that the portion of the cost of the facility attributable to the defense program, after allowing for post-emergency usefulness and other factors, may be written off for tax purposes over 5 years, instead of the normal depreciation period.\(^{15}\)

These expansion goals do not necessarily imply the construction of new facilities. Expansion goals also provide for the use of two other alternatives, namely, conversion, and increased utilization of existing facilities.


\(^{15}\) Ibid., July 1, 1952, pp. 15-16.
These latter two methods, in fact, may be more economical methods for building and maintaining defense readiness and it will be necessary to analyze criteria for these alternatives throughout the study.\textsuperscript{16}

Reference was made above to the various inducements the government offers to domestic producers\textsuperscript{17} in order to build and maintain the mobilization effort. While these inducements will receive adequate attention throughout the study, some brief references ought to be cited here, particularly concerning the accelerated tax amortization procedure.

The government can encourage private enterprise to build the needed capacity by favorable priorities and allocations on materials and machines, government loans, guaranteed bank loans, guaranteed purchase contracts for the product of the expansion, and accelerated tax amortization. All these incentives, and particularly, the last, were used in the partial mobilization after 1950.

What is meant by accelerated amortization and why is it used? Basically the device

\textsuperscript{16} "The expansion of facilities, since it takes scarce resources needed for more direct support of the war effort, is less desirable than conversion or increased utilization ....But some expansion would undoubtedly be necessary in all-out mobilization, even if we maintained a strong mobilization base. New developments, new industrial processes, and expedients forced upon this country by unforeseen turns in a struggle for survival are likely to establish requirements which can be met only through new construction." Lincoln, \textit{op. cit.}, p. 344. See also p. 341, \textit{ibid}.

\textsuperscript{17} Various inducements are offered abroad, also, and these will be commented upon later in this chapter and throughout the study.
of accelerated amortization is used so that the builder of new plant and equipment can recoup his investment more rapidly. This is done to encourage investment in war material plants which are likely to have a short productive life and also to encourage construction of reserves of capacity for civilian-type commodities - steel, power, etc. Under the provisions of accelerated amortization, an industrialist may charge off as depreciation 20 per cent per year of the original cost of a facility when he computes his corporate income tax. Under normal methods, he could charge only 4-6 per cent. He may still deduct only 100 per cent of the original cost over a period of years; but, under this method, the rate at which he claims this deduction is accelerated. Generally, this privilege is granted only for a portion of the cost of a new facility.18

Further analysis of the granting of tax amortization certificates will be deferred to the next chapter in which a study of the figures to date will provide a better quantitative picture of the mobilization base. The other inducements will also be studied quantitatively in subsequent chapters.

Dynamics of Mobilization Economics:

It was pointed out earlier in the introductory section

18 Lincoln, op. cit., p. 346. For a critical evaluation of the advantages accruing to the industrialist using this technique, see ibid., pp. 346-8.
of this chapter that an enduring defense posture is not and should not be a static concept. The nature, scale and location of the external threat can change and this was labeled an exogenous factor. The technology or the 'mix' needed to turn out the same end-items may be and should be constantly shifting and this was labeled as an endogenous factor.

The problems of projecting military requirements for long spans of time go far deeper than the inadequacies of available data, however. Future overall military needs depend more on the nature, scale, and location of a possible war than on economic aggregates rigidly defined, and there is little basis on which to project these factors. Furthermore, the technology of warfare changes so rapidly that the raw materials needed for future defense cannot be predicted. The defensive strength of the United States can be expected to grow as its productive power grows, but the commodity composition of the growth cannot be foreseen.19

It requires but little imagination to see the relationship between the shifting of exogenous factors, mostly geographical in nature, and the contingent problem of accessibility. That is, as forces shift outside the United States, this in turn changes the orbit of accessibility to raw materials and productive potential. Obviously, at best, this is a complex problem, and projections concerning

accessibility are extremely precarious. Accessibility does not mean areas purely within the confines of the United States, but should mean the area which the United States is militarily committed to defend. This latter method may not always be an economical way to provide for raw materials security. Some degree of reliance is placed upon sources within the area from Great Britain to the Philippines. Accessibility has great bearing upon our minerals program in general and thus reference will be made to this in a subsequent chapter. Here, two citations will clarify the point: in the first, attention is drawn to the fact that the Office of Defense Mobilization is aware of the absolute necessity of keeping the mobilization effort technologically advanced; and in the second, the global aspect of this problem are indicated:

Maintenance of the mobilization base does mean having in readiness that combination of facilities, production equipment and skilled workers whose production, together with withdrawals from military reserves of weapons, can meet rapidly accelerating wartime requirements. It is a dynamic concept. For any individual item the relative weight of the elements required for an adequate base may change from time to time. As re-

20 In fact, discussion of this point is extremely vague or lacking entirely in all the literature in this field. For instance the entire Malone Hearings dealing with this very problem of accessibility comes up with no definition or adequate discussion of the problem. Two slight references may be found in Staff Papers Presented To The Commission On Foreign Economic Policy (The Randall Report), Washington, D.C., 1954, p. 220 and in Mason, Edward S., "Raw Materials, Rearmament and Economics," Quarterly Journal of Economics, August, 1952, pp. 339-340.
serves go up, it may be possible to reduce the number of operating production lines. As techniques and arrangements are developed for getting plants back into production quickly, the period over which a sustaining rate of production is continued may be shortened. Conversely, when reserves are low, facilities may have to be maintained in a higher state of readiness.21

The best estimates of requirements are going to change from year to year with changes in war plans, changes in plans for rates of mobilization, changes in weapons, and changes in estimates of the accessibility of different foreign sources of supplies in cases of emergency. There is the further imponderable of the shifting requirements of our allies in case of emergency. The supply of essential material for them from their own sources, from foreign sources on which we also depend, or from our own indigenous resources is a certain problem of an emergency.22

Thus, while it is clear that continual reexamination of the mobilization base must be made in the light of shifting external factors and changing technology, the point cannot be overemphasized that the United States mobilization base - just as its over-all economy in both peace and war - must embody the most modern and dynamic technology. The "stockpiling" of technology supplemented by acquisition of raw materials and minerals not indigenous to the American economy or easily accessible areas will eliminate the need for other "protective" devices. This


22 Lincoln, op. cit., p. 191.
is an argument, in effect, that even for defense purposes, our government needs to erect but very few trade barriers to protect our manufacturing and extractive industries, so long as our emphasis continues to be upon technology. It may appear unreasonable to include extractive industries here, but clearly, technology can provide flexibility by devising ways of substituting one mineral for another - what one economist has chosen to call "engineering out of" reliance upon a high-cost mineral.

A slightly tangential but important point to be kept in mind concerning "engineering out of" a tight materials situation is that this in turn creates an economy even more heavily dependent upon the vast consumption of raw materials and minerals.

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23 A similar point of view is expressed in "Staff Papers," op. cit., "Fortunately for the United States, the problem of making up for deficiencies in scarce skills is very slight. Our range of industrial production is so broad that we have within our borders a cadre of skilled workers to deal with virtually every conceivable production problem. ...The basic lesson which was learned during World War II... is that an industrialized economy with a cadre of skills and aptitudes can overcome apparently serious deficiencies in both skills and materials through the use of what they have; the important thing is the general level of skills and aptitudes, not the precise use to which they are at the moment being applied." pp. 221-222.

24 "...materials security may be increased by advanced "engineering out of" various materials which are likely to be excessively short in wartime. Much too little attention has been given to this possibility in the United States." Edward S. Mason, "Raw Materials, Rearmament and Economics," Quarterly Journal of Economics, August, 1952, p. 340.
Mineral requirements are more a function of technology and industrialization than of population. Put another way, they seem to bear a fairly direct relationship to per capita national income.25

The production of synthetics...is sometimes based on natural raw materials, for example, wood-pulp in the case of rayon. Indeed...the substitution of synthetics for natural products is in fact a replacement of particular raw materials available at certain prices and produced in certain countries by certain other raw materials which are more abundant and more widely distributed geographically; a substantial increase in demand, caused by the development of synthetic production, may even result in pressure upon supplies and prices of raw materials used in synthetic production.26

To conclude this point, then, it becomes evident that, if the United States is to keep a "high plateau of preparedness" over a prolonged length of time, and if, in the process of doing this, it is to continually inject new technology into its mobilization effort - and its growing, industrialized economy - then it must prepare to become more dependent upon foreign sources of supply. This is the recurrent theme of the President's Materials Policy Commission Report (the Paley Report), which report will be the basis of much of the data on the minerals component of the

25 Lincoln, op. cit., p. 166.

mobilization base, to be discussed in Chapter 4. It is equally logical to state here another theme that will appear in subsequent chapters, namely, that the United States should either maintain the current relatively low level, or remove entirely, tariffs on the importation of minerals and raw materials, particularly those which are being stockpiled or are necessary, in any degree, to our national security. This point will be developed in detail in later chapters.

While we will never use up all our natural resources in an absolute sense, we have nevertheless reached the point in many cases where either we must bring into operation more and more of our marginal resources, which means higher costs and a subsequent lowering of our standard of living, or we must greatly expand our imports. The latter course appears to be the clear choice.27

Civilian Requirements:

It will be recalled that earlier in this chapter four stages of mobilization were delineated, the first of which

27 A bulletin entitled "Raw Materials Imports: Area of Growing Dependency" and released on February 5, 1953 by the Office of Public Information through the O.D.M. and quoted in "Malone Hearings," op. cit., Part 10, p. 308. This same bulletin corroborates the previous point "... the net effect of the growth of technology has been to make us increasingly dependent on imports." See ibid., p. 309.
was full mobilization. The distinction was made between this stage of mobilization and the one the American economy is now experiencing, and which is the main area for analysis in this study, namely, the "high plateau of preparedness," by indicating that the latter is achieved, in the main, through expansion of facilities rather than cutting into and rechanneling civilian consumption. Thus, under our present mobilization effort, civilian requirements are not expected to cause considerable difficulty. This does not mean that the problem is entirely absent and that certain priority echelons do not have to be established at present; it simply means that the problem is not one of "bedrock civilian requirements" as would be required in any full mobilization effort.28

Currently, our defense authorities, primarily concerned with building and maintaining our defense posture from an expansion of productive potential rather than through austerity in civilian consumption, have nevertheless evolved four loosely defined priority levels: military

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28 This concept does not warrant elaborate discussion here, in that, even in World War II, we did not evolve criteria for handling "bedrock civilian requirements." For a discussion of what criteria were established, however, see Industrial Mobilization for War, Volume I (Program and Administration), 1947, Civilian Production Administration, pp. 332-336, 614-619. A definition of this concept that will suffice here is "the minimum below which civilian requirements could not go without endangering public health and safety and imperiling the success of the war program," ibid., p. 334.
requirements; directly supporting requirements; essential
civilian requirements; and nonessential civilian require-
ments. Again international considerations are integrated
within these categories.

In general, however, top priority should
be given to military requirements and di-
rectly supporting requirements, whether
for our own military forces or for the
forces of the NATO countries and other
countries actively collaborating in free
world defense measures.

Even the top priority for military require-
ments would have to be qualified if the
quantity of supplies thus required would
make it impossible to maintain the basic
civilian economy of the United States and
friendly nations. For this reason, essen-
tial civilian requirements should be con-
sidered as generally ranking second only
to military and directly supporting require-
ments. In considering what civilian re-
quirements are strictly essential, the test
should be that of being necessary to main-
tain a level of goods and services in the
United States and friendly countries which
will permit the desired rate of defense
production, prevent the growth of danger-
ous dissension, and promote effective
civilian participation in the basic defense
goals of the free world.

The lowest priority of requirements is
obviously that for nonessential civilian
use. This may be considered as civilian
consumption not required for the support
of defense production, the basic economy,
or civilian order.29

In brief, the providing for basic civilian require-

29 Office of Defense Mobilization "memo," quoted in
"Malone Hearings," op. cit., Part 4, pp. 304-305. For a
discussion of the allocation and priority problems as a
consequence of these classifications, see, Lincoln, op. cit.,
pp. 349-352.
ments during our current and continuing mobilization effort does not envisage the same type of stringency as would "bedrock civilian requirements" in an all-out mobilization effort; this does not mean the absence of all problems in this regard, however.  

International Considerations:

There has been ample reference up to this point to indicate that our current national security problems involve many global commitments, both military and economic. Much of our existing legislation in the area of foreign economic policy is thoroughly integrated with our defense legislation. The literature in mobilization economics, particularly the two sources footnoted earlier as being the main sources for much of the data in this chapter, abound with references to

30 There is evidence to support this contention that our expanded defense production has come from an increase in output and not a curtailment of consumption, or by other means. Using Sumner Slichter as the source of the data, Lincoln, op. cit., p. 278 writes "...the increase in national output was greater than the increase in goods going into national defense during the first two and one-half years of the Korean emergency." This does not militate against the point made earlier that our current defense posture has had, and will continue to have, an impact upon the American economy; the problem, it appears, is to continue to achieve our security requirements out of an expanding national productivity - on a rational, least-cost basis - while, at the same time, increasing the real standard of living.
the necessity for global cooperation. A few such citations will suffice to make the point.

On a piecemeal basis we have focused foreign aid programs...on the security objective. We have recognized that national security has to be defined not only in terms of our own power and that of an aggressor but also in terms of geographical location of friendly nations involved. This recognition has led inevitably to an international cooperation in security matters, and to abandonment of our traditional policy of no alliances.31

In the long run, our own strength and capacity to mobilize will be only as great as that of the free world as a whole. Readiness to mobilize must be pursued as a joint objective by all of the free world nations, just as our present defense mobilization is a common undertaking of virtually the whole free world.

For the long pull, therefore, the alliances that underlie the present program must be preserved and strengthened.32

It is evident, then, that, as the United States defense officials embarked upon construction of the mobilization base, an awareness of the international ramifications involved led to a shift in emphasis in our foreign economic policy from that of purely economic and technical assistance aid to an integration of this aid with military assistance

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31 Lincoln, op. cit., p. 85.

wherever necessary. The European Recovery Program (Marshall Plan; later, in 1948, administered by the European Cooperation Administration), thus, merged into the Mutual Security Program in 1951. This latter program integrated, for the first time, all our foreign assistance program under the Director for Mutual Security. A reorganization plan of August, 1953 shifted these coordinated functions to the present Foreign Operations Administration.

Throughout these programs some $50 billions have been appropriated. As of mid-1953, with $37 billion having been appropriated, the sum had been equally divided between purely military assistance and economic and technical assistance programs.

33 "The relationship of technical assistance programs to the security objective varies from country to country. In those where the building of military strength is not an immediate objective, these programs are pointed at the objectives of political and economic health and stability. In countries like Formosa and Indo-China, technical assistance, economic aid, and military aid combine to produce military strength." Lincoln, op. cit., p. 608. While much of the data in this section and throughout this study will pertain primarily only to our European commitments, the data has relevance for other areas, such as Southeast Asia, where much of our defense aid expenditures have been committed in recent months. Very little of this latter data, however, is available currently.

34 A chronological listing, then, of these agencies - showing the changing emphasis - runs as follows: European Recovery Program, 1947; European Cooperation Administration, 1948; Point IV, 1949. Mutual Defense Assistance Program (to implement the operations of NATO), 1949; Mutual Security Program, 1951; Foreign Operations Administration, 1953. For a more detailed elaboration of the Chronology of these agencies, see "Staff Papers," op. cit., pp. 23-40. Chapter 2 of these "Staff Papers" reinforces the point that security considerations have become an indispensable part of our entire foreign economic policy and that our main areas of interest have been shifting geographically.
assistance. Out of $22 billion expenditures at that time, $7 billion had been spent on arms.\textsuperscript{35} Approximately $6.7 billion of the $7.3 appropriated for foreign aid for fiscal 1954 was allocated to "defense support." The remaining $660 million was allocated, in the main, for reconstruction and rehabilitation purposes.\textsuperscript{36}

"Defense support" aid, then, has clearly become one of the main considerations of our current foreign economic policy.\textsuperscript{37} Within this coordinated "defense support" program, the United States has made use of "offshore procurements" and "counterpart" funds to further its international defense posture. By "offshore procurement," the United States places dollar contracts with factories of allies for production of end-items either for the ally concerned or for another country. As of Fiscal 1954 the United States had obligated $2.3 billion for offshore procurement contracts.\textsuperscript{38}

\textsuperscript{35} Lincoln, \textit{op. cit.}, p. 595.

\textsuperscript{36} For a detailed breakdown of foreign aid made available for fiscal 1954, see "Staff Papers," \textit{op. cit.}, p. 39.

\textsuperscript{37} "The provision of economic assistance has sometimes been called "defense support" when the purpose is to further the building of military power....Put oversimply, the purpose of "defense support" aid is to fill a deficit in foreign exchange which the recipient country would otherwise incur in maintaining both a desired level of defense effort and the necessary standards of living and economic strength." Lincoln, \textit{op. cit.}, pp. 601-602.

\textsuperscript{38} "Staff Papers," \textit{op. cit.}, p. 44.
The advantages and disadvantages of this method may be considered in these terms:

The...method - offshore procurement - has both assets and liabilities. It raises total allied arms production, furthers standardization, provides indigenous capacity for maintenance and replacement, may maintain some industrial mobilization base in the allied country, saves some United States resources, and provides dollars for countries needing them in foreign trade. On the other hand, it may cause the country concerned to lag in giving budgetary support to its own production; it is slow to get under way and involves the United States in very complicated internal matters such as local taxation.39

Legislation since 1948, with the enactment of the European Cooperation Act, has provided for the disposal of "counterpart" funds acquired from grants-in-aid by this country to friendly foreign nations. When dollar aid is granted, the recipient countries deposit equivalent "counterpart" local currency funds in a special account. As of the spring of 1952, nearly 8 billion dollars worth of these funds has been released, 53 per cent for encouraging

39 Lincoln, op. cit., p. 597. "In conjunction with this (offshore procurement) plan, the Mutual Security Agency (now FOA) has taken steps to expand European defense production through commercial arrangements. This includes licensing measures, exchange of patents and technical know-how between American and foreign procedures, and the provision of private capital to foreign manufacturers seeking defense orders." "Quarterly Report," op. cit., April 1, 1952, p. 43. For a more detailed analysis of our offshore procurement program to date, see "Staff Papers," op. cit., pp. 58-68.
civilian production, 30 per cent for debt retirement, and the remainder for miscellaneous purposes including only 3 per cent for military production. Of the latter three per cent, the funds were used either for local exploration and development of minerals or for outright purchase of these minerals by our government. This will be developed in subsequent chapters.

"Defense support" measures, then, such as offshore procurement, the designation of specific uses for counterpart funds, technical assistance, and various other methods, some of which will be elaborated upon later, are related to the larger and continuing economic problem of the "cold war," namely, balance of payments problems. This is a unique phenomenon in military considerations; and, to reiterate a thesis of this study, nothing should be done to disturb the fabric which has already been established in this larger area of international affairs. Rather, our current machinery should be strengthened and enhanced wherever necessary.

The balance of payments is a new and unwelcome factor in defense planning. A satisfactory solution is essential to achieving the objectives of collective security....But the method of operation of our own security program has a major effect on the number of dollars (the scarest type of foreign exchange) available to allies. We have

40 Lincoln, op. cit., p. 607.
mentioned "defense support" economic aid, United States construction abroad, and offshore procurement. Foreign purchases of supplies for our forces and the local expenditures of troops stationed abroad help. These is, however, no formula which erases the problem. The balance of payments is here to stay as a defense problem and may sometimes be the principal factor determining the level of defense effort of an ally.41

The minerals and raw materials component within the "defense support" program has posed certain special problems which will be dealt with in detail later. A few preliminary observations are in order here, however. The government, mainly through the Technical Cooperation Administration and the Mutual Security Administration agencies, has offered six inducements to foreign and domestic producers to stimulate investment abroad: investment guarantees; removal of tax handicaps; technical assistance; indirect assistance such as loans by the Bank for Reconstruction and Development and the Export-Import Bank; purchase agreements; and government loans. These will be discussed later when the minerals component is analyzed.

Another method of handling the special problems created by minerals and raw materials was the creation of the International Materials Conference in February, 1951. This conference, at present no longer in existence, consisted of a Central Group and seven Commodity Committees and

41 Ibid., p. 574.
ultimately included 28 nations, some of them primarily producers and some primarily consumers of the seven commodities involved. On a commodity-by-commodity basis, priorities were established, paralleling those discussed earlier under civilian requirements, whereby for distribution purposes, direct defense requirements received first priority, minimum stockpile requirements, second, and the third priority went to civilian requirements on the basis of consumption in 1950.42

A secondary purpose of the International Materials Conference was, of course, to limit the flow of these materials under "control" of the I.M.C. to within the free nations and thereby prevent the flow into the Soviet bloc. This, obviously, therefore was consonant with the purposes of the Mutual Defense Assistance Control Act (Battle Act) enacted into law in 1951. This particular act, in turn, is integrated within our "defense support" programs and our over-all foreign economic policy. While it is clearly outside the scope of this study to analyze the act in any great detail, some general remarks will be offered here in order to conclude these global considerations.

First, position paper #29 of the State Department,

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42 For a more elaborate discussion of the I.M.C. and the seven commodities involved, refer to Chapter 4 of this project and to Part 4, "Malone Hearings," op. cit. This entire volume, entitled "International Materials Conference" is devoted to the many aspects of this conference.
issued on April 20, 1951, points out the coincidence of interests between the International Materials Conference and the intent of the Battle Act.

It is hoped that an important byproduct of the international commodity committees (IMC) will be to reduce shipments of the commodities concerned from the free world to the Soviet bloc.... The major purpose of the commodity committees is to obtain the most efficient distribution of the raw material available to the free world. A subsidiary purpose, of course, is to increase the total amount available, and this necessarily means to limit so far as possible the flow of any such commodities outside the free world. In this sense, it may be possible to reduce the total supplies received by the Soviet bloc as a direct result of committee action but this secondary purpose should not jeopardize the accomplishment of the principal objective.43

That the provisions of the Battle Act are integrated within the purpose of our assistance aid program is clear when consideration is given to the proviso within the act that dollar aid may be denied any country violating the export regulations, at the discretion of the President in most instances, and mandatory when any nation ships arms or atomic materials to the Soviet bloc.

The Battle Act, then, not only coordinates security considerations with economic aid, but it impinges upon the even larger area of trade within the free world.

It is clearly inconsistent for the United States to insist on the one hand that a free country not export certain strategic goods to the Soviet bloc, while on the other hand it erects barriers which effectively prevent that country from exporting to the United States. The logical and vital counterpart to a strategic trade control policy is an expansion of trade within the free world, including imports into the United States.\textsuperscript{44}

Stated briefly, the terms of reference of the current American mobilization effort, as implemented by the defense authorities, clearly call for global commitments, from which the United States cannot now withdraw without seriously impairing the defense posture of the free world.

Reference was made to the shifting focus of American foreign economic policy from that in 1947-1948 of purely economic and technical assistance to an integration of this aid with military assistance after the establishment of NATO in 1949. Offshore procurements, designation of the disposal of "counterpart" funds and various other methods were cited as methods whereby international cooperation is being attempted. The minerals component of defense, posing special problems, brought into being various United States governmental inducements to stimulate exploration and productivity abroad and the creation of the International Materials Conference.

A byproduct of this latter conference was to prevent the shipment of certain commodities to the Soviet bloc. This is consonant with the intent of the Battle Act of 1951. This latter act is coordinated with American aids program and raises the larger question of how to stimulate trade within the free world.

Exclusive of the ideological problems involved, this section has attempted to point out the need for consideration of global ramifications when analyzing the current United States defense effort. Subsequent analysis will include these ramifications as important data.

Summary:

From the foregoing analysis, it is clear that the problems posed by defense economics are not entirely unlike those of a peacetime economy in that the main consideration is still one of "equating marginal uses for scarce resources." The problem, then, neither calls for a movement towards domestic self-sufficiency, at whatever costs, nor the abandonment of enlightened economic principles.

The main difference between a peacetime economy and a defense economy, however, comes in the spelling out of the
dimensions of the proposed defense effort. Since this is obviously outside the domain of all except militarists and civilian experts in military affairs, heavy, but not un­critical, reliance must be placed upon the judgments of these officials.

Once, then, the dimensions of the defense effort have been decided upon a high plateau of preparedness in this instance, and the establishment of the necessary end-items within this mobilization effort have been made, expansion goals are set up. (Expansion goals need not always imply construction of new facilities, but rather can entail the conversion of existing facilities or more intensive utiliz­ation of existing facilities. These latter two possibil­ities are, in effect, more economical.) To date, expansion goals have been established for approximately 245 items, with 90 of these still short of completion.

The various items involved entail different calcula­tions. That is, in the case of fabricated materials, production facilities are generally established on the basis of the consumption that would be required for the first three years in an all-out war, basing this projected consumption upon a peak annual consumption of the commodity involved in World War II. For minerals and raw materials, the same general calculations are made, except a five year base and the added imponderable of accessibility are taken into consideration.
Various inducements, such as government loans, guaranteed bank loans, guaranteed purchase contracts, and accelerated tax amortizations are employed by the government in order to bring the expansion goals into existence. By far the most common of these techniques is the accelerated tax amortization method, whereby an industrialist is granted a "certificate of necessity" by the Office of Defense Mobilization which entitles him to write off the tax burden on the portion of the new facility being devoted to defense at an accelerated pace. Inducements are also offered to stimulate productivity abroad. All of these incentives will be analyzed later.

It was also established that the defense concept is not and should not be a static concept. It is dynamic in that exogenous imponderables such as a change in the nature, scale, and location of a possible war, require constant reevaluation of the defense posture. Endogenous factors, such as changes in technology and changes in the materials "mix," also have to be taken into account. To the extent that the United States can maintain an accelerated technological pace, it will need less protective devices for its defense industries. Aside from stockpiling raw materials and minerals not indigenous to the Western Hemisphere or strategically accessible areas, the United States by "stockpiling" technology, can almost entirely avoid erecting trade barriers to protect its industries.
The United States should also continue to attempt to "engineer out of" a scarce materials-situation by endeavoring to find economical methods of substituting the more plentiful materials for the scarce materials.

However, it is generally accepted that, if the American economy is to build and maintain a technologically efficient defense posture over a long period of time, and, if an increasing rate of consumption of minerals and raw materials is a function of this accelerated industrialization, then the United States will be forced to import a significant segment of its raw materials. Therefore, tariffs on the importation of these materials should be maintained at their current low level, or, better, be eliminated entirely.

Essential civilian requirements are considered in the mobilization program. Although conditions since the defense buildup did not warrant the austerity implied in the concept of "bedrock civilian requirements," defense officials have been aware of the problems involved to the extent of delineating four loosely-defined priority levels (military requirements, directly supporting requirements, essential civilian requirements, and nonessential civilian requirements). Evidence that this aspect of current mobilization has posed no serious problems can be gained by the realization that present defense achievements were attained
mainly through expansion of production facilities and not by cutting back normal civilian consumption.

On a piecemeal basis, the domestic defense effort became coordinated with and integrated into our larger global interests. Thus, American economic and technical assistance aid became merged with military aid so that currently, in some areas, all three types of aid are in operation. Offshore procurements, the use of some three percent of "counterpart" funds available, and other devices were used in order to stimulate international participation.

Minerals and raw materials, posing the most difficult problems, received special treatment both from the United States government and by an international organization (the International Materials Conference). The United States offers investment guarantees, removal of tax handicaps, technical assistance, purchase agreements, government loans, and indirect assistance such as loans by the Bank for Reconstruction and Development and the Export-Import Bank, to stimulate exploration and development of minerals abroad. The International Materials Conference attempted to distribute the supply of seven commodities to the consuming countries on a military priority basis. A byproduct of this plan was to coordinate it with the intent of the Mutual Defense Assistance Control Act (the Battle Act) of 1951 (i.e., to keep strategic materials from countries in the
Soviet orbit). This, in turn, leads to another persistent problem of creating markets within the free world.
APPENDIX A

Chronology of Defense Agencies

While it is not intended here to tabulate a detailed list of the agencies responsible for our current defense effort, some comment concerning their development is essential. No attempt will be made to evaluate the effectiveness of the agencies, inasmuch as this clearly falls outside the scope of this study.

The most important of these agencies from the point of view of this analysis and, in essence, for the present mobilization buildup, is the Office Defense Mobilization. It is the agency which administers and coordinated that portion of the Defense Production Act which applies to the production of material. This agency, under the direction of civilian experts and aided by military officials, attempts to fill in the defense requirements-capabilities formula referred to earlier.

The current Office of Defense Mobilization came into being on June 12, 1953, and, by this reorganization, came to be responsible for the functions previously performed by three separate agencies as well as the stockpile-function which had been previously under the jurisdiction of the Department of Defense. The chronology, then, of these agencies since the Korean crisis has been the National Production Authority, the Defense Production Administration,
and the Office Defense Mobilization, with the latter undergo­ing a reorganization in June, 1953.45

The ODM, working through a host of claimant or delegate agencies, such as the Defense Department, Atomic Energy Commission, General Services Administration, the Agriculture, Interior, and Commerce Departments, sets the policies and directives to be administered by these agencies, and assembles data for final evaluation. All agencies of the Government having functions under the Defense Production Act perform these functions subject to the direction and control of the Director of Defense Mobiliza­tion.

Specifically, the Office of Defense Mobilization's main functions are: to determine and coordinate production programs required to meet defense needs; to determine the adequacy of defense production facilities and the procedure and methods for maintaining these facilities; to act as the certifying authority to the Internal Revenue Department for rapid tax amortization programming; to sponsor the exploration, development, and production of strategic minerals and

metals; to determine stockpile requirements; and to administer the priorities and allocations section of the Defense Production Act. 46

This reorganization of defense efforts in June, 1953, along with the coordination of American global efforts referred to earlier (with the formation of the Foreign Operations Administration in August, 1943), resulted in a greater coordination and integration of all defense efforts.

An even higher authority in the hierarchical scale is the National Security Council, which is a cabinet-level body created to review the over-all security problems. Thus the Office of Defense Mobilization's programs, and the programs of other defense agencies, are subject to review by the National Security Council, and all these programs are occasionally put before the Executive cabinet. This cabinet-level body, the National Security Council, will, however, receive little attention in this analysis.

Neither the Office of Defense Mobilization nor the Foreign Operations Administration perform procurement functions. Procurement functions, generally, are performed by the General Services Agency, created in 1949, and successor to the Defense Materials Procurement Agency. This procurement agency, then, to which there will be occasion to refer later in the analysis, under specifications laid down by

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the policy-making defense agencies, proceeds to negotiate contracts and to handle the commitment of funds to administer these contracts.

One further comment needs to be added about the role of the Atomic Energy Commission. This agency, while undoubtedly the most important agency in all the current defense picture, will not be included in the analysis. It has a special defense task and a special position in government. It is autonomous and independent of other defense agencies, and does not constitute a part of the balanced mobilization base under study. Thus, except insofar as the functions of the Office of Defense Mobilization and the Atomic Energy Commission should impinge upon each other, i.e., the stockpiling of materials by O.D.M. needed by A.E.C., the latter agency will receive no attention.
CHAPTER III
THE MOBILIZATION BASE

Introduction:

The 245 items included as of September 30, 1954 on the expansion goals list of the Office of Defense Mobilization can be grouped into seven major components. These seven major components comprise only about 60 per cent of the items. The remaining 40 per cent, some of which are not end-items per se, but rather merely expansion facilities for the production of end-items, are not amenable to detailed analysis for one reason or another. These, however, will be grouped and listed and reasons will be proferred for not covering them in this analysis.¹

These seven major components, then, are: minerals and

¹ The entire list of the 245 items, with the O.D.M. expansion goal number and other pertinent data is to be found in Appendix A of this chapter. Appendix B presents the estimated total cost of projects covered by certificates of necessity (for tax amortization benefits) as of September 30, 1954, by types of industry. Virtually all of the data presented in this chapter are from several releases concerning the Subject: Expansion Goals, Executive Office of the President, Office of Defense Mobilization, January 29, 1954 to August 23, 1954; and from Expansion Progress, Projects Under Certificates of Necessity, Office of Defense Mobilization, Washington, D.C., August 4, 1954.
metals; chemicals; precision manufacturing; electrical machinery (including general machinery); fuel and power; transportation; and a miscellaneous component composed of various sub-components, such as lumber products, textile products, rubber, and stone, clay and glass products. Each of these components will be analyzed in the aggregate, giving attention on a case-by-case basis where necessary and feasible, and focusing particularly on the individual items which appear to need distinct attention. The rationale for grouping them into an aggregate component is that, in this manner, general policy criteria may be evolved more easily for each of the components. Not all of the components will get equal attention, nor will all of the items within a component; that is, it will be impossible to be exhaustive; hence the selectivity.

The Components:

Minerals and metals are the real foundation of any

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2 Selection of these seven components and of the O.D,M. expansion goal items to be included within each component is necessarily arbitrary and may not in all cases correspond with generally accepted classifications. Justification for the various selections will be attempted as the analysis progresses. One method used for the selection was to take the 24 classifications found in Appendix B and re-group these into the seven chosen; this process entailed complete dismissal of some of the classifications.
mobilization effort, and, as indicated earlier, of any industrialized, technological economy. Minerals and metals pose the most troublesome economic problems, hence attention will first be directed to this segment of our current mobilization base. This component comprises 31 of the 245 items, or 12.7 per cent of all the items.\(^3\) As of September 30, 1954 this particular component comprised approximately 11.4 per cent of the total cost of expansion projects covered by certificates of necessity granted for accelerated tax amortization purposes. (See Appendix B). There are, of course, other techniques than accelerated tax amortizations to stimulate the exploration and production of these minerals and metals and these will be discussed later. The 31 items, as listed by O.D.M. are:

| Iron ore (taconite) | Aluminum, Primary |
| Cobalt             | Alumina          |
| Columbite and Tantalite ores | Mercury |
| Lead               | Bauxite          |
| Magnesium          | Antimony         |
| Manganese ore, Metallurgical Grade | Beryl |
| Molybdenum         | Titanium         |

\(^3\) Appendix C of this chapter lists items which are not classified as strategic and critical materials but which are not on O.D.M. expansion goal lists. Because these items create virtually no supply problem, they will be analyzed only incidentally.
Nickel  
Sulphur  
Tungsten ore  
Chromite (Metallurgical Grade)  
Chromite (Chemical Grade)  
Chromite (Refractory Grade)  
Zinc  
Copper

Iron ore  
Potash  
Asbestos, Chrysatite, Strategic Grades  
Rutile  
Fluorspar, Acid Grade  
Selenium  
Rare Earths  
Manganese ore, Battery and Chemical Grades

The next most significant component, certainly in terms of size and perhaps in most other respects, is chemicals. This component, containing 68 items, comprises slightly more than one quarter - 27.8 per cent - of all the items in the mobilization base. The chemical items account for 10 per cent of the total costs of projects covered by certificates of necessity as of September 30, 1954, and ranked second only to primary metals industries in this project. (See Appendix B)

A third component, that of precision manufacturing, exhibits certain troublesome economic problems in our current mobilization structure. The selection of the items in this component are extremely arbitrary and the component is far from homogeneous. Seven items have been chosen; these

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4 For a list of these items, and their O.D.M. expansion goal numbers, see Appendix D of this chapter.
represent only 2.9 per cent of all the items in the mobilization base, and an estimated 2.0 per cent of the total costs of all projects receiving tax amortization benefits. (See Appendix B) The seven items, as listed by O.D.M., are:

Screw Machine Products, Precision
Metal Cutting Tools
Dies, Jigs, Fixtures
Machine Tools

A fourth component, also an extremely heterogeneous one, but nevertheless amenable to some analysis as an entity, is electrical machinery (including general machinery). In this component are included 12 items or 4.9 per cent of all items included in the mobilization effort, and these items accounted for approximately 4.0 per cent of the total cost of all projects receiving rapid tax write-offs. These items are:

Turbines, Hydraulic
Turbines, Steam
Generators, Waterwheel Driven
Boilers, Steam
Condensers
Transformers, Distribution
Sensitive Electrical Switches

Air Preheaters, Regenerative
Electronic Products, Military
Mechanical Power Transmission Equipment (except gears)
High Voltage Switchgear
Electrical Connectors

The next component, that of fuels and power includes 14 extremely different items, and, obviously, presents a
complex pattern of problems. Furthermore, it would require an extremely lengthy analysis, one much more detailed than can be handled in this project. However, a general survey will be attempted of the fuel and power policy for mobilization. While this component includes only 14 items or 5.7 per cent of all items, it has undergone heavy expansion costs - 27.6 per cent of the total costs of all expanded projects. The O.D. M. listing of these items is:

Coke-By-Product
Coal, Metallurgical For By-Product Coke
Oil Wells Drilled (domestic)
Oil (Crude) Refining Capacity (domestic)
Natural Gas Liquids Capacity
Oil Pipe Lines (domestic)
Oil Storage Facilities (domestic)
Oil Wells Drilled (foreign)
Oil (Crude) Refining Capacity (foreign)
Oil Pipe Lines (foreign)
Coal, Territory of Alaska
Gas Pipe (large) Lines Laid
Gas Pipe (small) Lines Laid
Electric Power

A sixth component, that of transportation (other than air and trucking), will also be examined only partially because of its extreme complexity and diversity. There are,
however, some general policies being implemented in this area in the current mobilization buildup, and these will be analyzed. This component, having only 9 items, which is 3.7 per cent of all items, has been responsible for 15.1 per cent of the total cost of expanded projects under the certificates of necessity program. The nine items are:

Tankers, Ocean Going
Freight Cars
Ore Carriers, Great Lakes
Ore Carriers, Ocean Going
Inland Water Vessels, (Specified Types)

Railroad Equipment (Production Facilities)
Railroad Terminal and Road Facilities
Locomotives, Diesel
Railroad Passenger Cars

The final component selected for analysis, is a miscellaneous one and includes four sub-components; lumber, wood pulp, etc., which includes six O.D.M. items; textile products, which includes two items; rubber, three items and; stone, clay, and glass, which includes seven items, most of which are refractories. This miscellaneous aggregation, then, includes 18 items or 7.3 per cent of all items and has involved approximately 7.0 per cent of the total costs of expansion under the mobilization effort. These items, as listed by the O.D.M., are:

Paper
Paper Board
Woodpulp

Lumber and Wood Products (except debarking and chipping facilities)
Lumber and Wood Products
(debarking and chipping facilities)
Plywood, Exterior Type, Softwood
Cotton Gins
Cotton Compressor
Tires (Specific Types)
Vulcanized Fiber
Rubber and Rubber Products
Refractories, Basic
Refractories, Insulating Fire Brick
Refractories, Fire Clay, Super Duty, and High Alumina Bricks
Refractories, Ladle Bricks
Refractories, Pouring
Refractories, Silica
Abrasives Products

Other Expansion Goals:

As indicated earlier, this by no means exhausts the entire list of expansion goals items; rather it is a highly selective list, aggregating those items which lend themselves to be analyzed as a group. Forty per cent of the items, however, for one reason or another, do not lend themselves to such easily manageable analysis, or are items
so broad in scope as to entail analysis far beyond the confines of this project. In general, these items as listed by the O.D.M. fall into four categories: (1) facilities, that is, facilities-expansion for the production of end-items; (2) military transportation items, such as combat airplanes, a category which appears to be far too broad and complex (to say nothing of the scanty nature of the data) to be easily handled herein; (3) vaguely and broadly-worded items, such as item number 206, Laboratories, Research and Development, a category involving data available only to a few top policy makers (and which, in the light of the intent of this project, may have but little economic significance); and (4) "residual" items, which because of their individuality or lack of available data, do not lend themselves to any analytical treatment.

In the first category, that of expansion-facilities, there are 21 items or approximately 8.6 per cent of all items. Since these items are not end-items, but rather, expansion-facilities for the production of end-items, they are not amenable to analysis within the scope of this project. In some instances, of course, the end-items involved

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5 See Appendix A.

6 A rough calculation of the amount of the cost of expansion undergone by this group under the tax amortization program can be made by cross-checking this list with the figures in Appendix B. To say that these items are to be dismissed in this project is not to say that these expansion facilities are without economic significance.
are to be covered in one of the components under analysis, so that, in effect, a separate study of the facilities would amount to a second analysis. Most of the expansion-facilities are for the processing of metals, notably, aluminum, copper and titanium, and for the expansion of transportation facilities. The items are:

Copper wire Mill Facilities
Optics - Facilities for Producing Precision Type
Kenaf Fibert Processing Facilities
Aluminum Sheet and Plate, Producing Facilities
Aluminum Sheet and Plate, Heat Treating Facilities
Ordnance, Facilities
Brass Mill Facilities
Copper Foundry Facilities
Beryllium Copper Alloy Mill Products Facilities
Beryllium Copper Master Alloy Producing Facilities
Elephant Tools - Manufacturing Facilities
Military Canvas Reclamation Facilities
Titanium Melting Facilities
Motor Truck Terminal and Repair Facilities
Warehouses and Storage Facilities (Refrigerated Storage)
Inland Waterway Terminal Facilities
Port Facilities
Airport Facilities
Aluminum Forging Facilities
Titanium Processing Facilities
Production Facilities For Military and Atomic Energy Procurement

The next category, that of military ground and air transportation, includes only three O.D.M. items, but is, nevertheless, a broad category. Any detailed analysis would be extremely cumbersome, and would seem to add little of significance to this study. The expansion goals are:

- Military Vehicles and Engines
- Aircraft Military
- Aircraft Commercial

Three items are of such a generalized nature as to warrant a distinct category but no detailed analysis later. As indicated earlier, only policy makers would be aware of the exact nature of the items involved. These items, as listed by the O.D.M., are:

- Special Industrial Services
- Special Components
- Laboratories, Research and Development

Thus far, 171 of the 245 items on the Office of Defense Mobilization expansion goals list of September 30, 1954 have been accounted for either in the seven major components or, in the above three categories. There remains, then, 74 "residual" items which comprise 30 per cent of all the items. This 30 per cent, listed separately in Appendix E of this chapter, defies easy categorization or analytical treatment. A quick glance at this list should readily indicate that
many of these items are common to any industrialized economy and present no particular economic problems, such as seeking "protection," subsidization, or special legislation, either in a mobilization effort or otherwise. Another readily evident aspect is that some of the items belong in categories already demarcated or are related to items being covered, i.e., the items may be the secondary stage of a fabricated item. In this case principles which apply to those demarcated categories would apply to these items. Other items involve heavy metals, specialized storage equipment, or miscellaneous fabricated products, such as tin cans. In most instances, however, the items will display extreme individuality and hence, no general analytical investigation is warranted.  

Tax Amortizations and Other Inducements:

There are, as pointed out elsewhere in this study, many inducements or incentives offered by the government

7 It ought to be readily apparent, at this point, that one of the factors bearing upon the selectivity used in arriving at these various categories, has been the special economic problems that arise relevant to the production of the items in the various aggregative components for mobilization purposes. Any item, therefore, which is a "unique" item will require special policy considerations or legislation. Any attempt to be exhaustive in following through these special "actions" would be interminable.
<table>
<thead>
<tr>
<th>Component</th>
<th># of items</th>
<th>% of total items</th>
<th>% of total cost of projects covered by certificates 1/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minerals and Metals</td>
<td>31</td>
<td>12.7</td>
<td>11.4</td>
</tr>
<tr>
<td>Chemicals</td>
<td>68</td>
<td>27.8</td>
<td>10.7</td>
</tr>
<tr>
<td>Light Mfg.</td>
<td>7</td>
<td>2.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Electrical Mch. 2/</td>
<td>12</td>
<td>4.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Fuels and Power</td>
<td>14</td>
<td>5.7</td>
<td>27.6</td>
</tr>
<tr>
<td>Transportation 3/</td>
<td>9</td>
<td>3.7</td>
<td>15.1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>18</td>
<td>7.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Lumber, wood pulp, etc. (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textile prod. (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stone, clay and Glass (7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities expansion</td>
<td>21</td>
<td>8.6</td>
<td>n  c</td>
</tr>
<tr>
<td>Military Trans</td>
<td>3</td>
<td>1.2</td>
<td>n  c</td>
</tr>
<tr>
<td>&quot;Generalized&quot; items</td>
<td>3</td>
<td>1.2</td>
<td>n  c</td>
</tr>
<tr>
<td>&quot;Residual&quot; items</td>
<td>61</td>
<td>24.9</td>
<td>n  c</td>
</tr>
<tr>
<td>TOTAL</td>
<td>247</td>
<td>100.9</td>
<td>n  c</td>
</tr>
</tbody>
</table>

1/ approximate
2/ includes general machinery
3/ excludes air transportation and trucking
4/ Totals more than 245 because two items are double counted (two in the facilities group are also included in the transportation category). Thus the percentage total is slightly greater than 100.

n  c not computed

to bring into being the items necessary for the current mobilization structure, but the main one is the granting of certificates of necessity for accelerated tax amortization purposes. The inducements, however, are broader in scope than merely rapid tax write-offs, many of them being offered abroad and in various forms, particularly those which attempt to stimulate the exploration and production of raw materials and minerals abroad.

As of March 31, 1954 over 29 billion dollars worth of expansion had taken place under the rapid tax amortization program; 53 per cent of this amount in manufacturing industries, and the other 47 per cent in nonmanufacturing industries. However, of the 17,757 certificates of necessity granted, over 12,000 of these were granted to the manufacturing industries, with slightly over 5,500 being granted to nonmanufacturing industries, indicating, of course, that the cost of expansion per project in the latter group was much heavier.

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8 It ought to be underscored that not all expansion within these industries is necessarily allowed to be written off for tax purposes, but rather only that portion of expansion which O.D.M. deems to fully attributable to defense. It is estimated that the average percentage write-off is 60 per cent. Thus, of the total cost of expansion within all industries listed in Appendix B since the inception of the program, approximately $17 billion has been allowed amortization benefits. This figure - with the addition of expansion costs which took place under other inducements - is a rough estimate of the amount of expansion in our current mobilization structure. See "Malone Hearings," op. cit., Unnumbered Volume (Report of the Committee on Interior and Insular Affairs), p. 323 and Lincoln, op. cit., p. 345.
Within the manufacturing industries, the heaviest expansion in terms of cost took place in the primary metals industries which have received almost 20 per cent of all certificates issued thus far - again in terms of cost of expansion. The chemical and allied products industry is second, receiving 10 per cent; petroleum and coal (exclusive of pipe lines) is third with 7.6 per cent; transportation equipment is next with 3.7 per cent; paper and allied products is next with 2.9 per cent; and then follows machinery (except electrical) which has received the greatest number of certificates of necessity of any category (2,976) but only 2.7 per cent in terms of cost of expansion.

Of the nonmanufacturing industries, mining, extraction and quarrying rank fourth in number of certificates received (508) and third in percentage of cost of expansion - 7.2 per cent. (For other data consult Appendix B.)

In addition to the rapid tax amortization aid received by the minerals component - expansion involving almost $3 billion in total costs as of mid-1953 - direct government outlays of over $1 billion have been made both here and abroad to further our mineral expansion program. Thus our total minerals expansion program, since the inception of our mobilization build up, has involved approximately $4 billion.

9 Some minerals and ores expansion - such as the taconite program - received only the tax write-off aid; others may receive a combination of incentives.
Of the slightly more than $1,120 million assistance involving direct outlays of government funds, $594 million have been expended for minerals expansion abroad. This is over $60 million more than has been expended on domestic expansion. These data tend to substantiate the point made earlier, namely, the importance of global considerations in our current defense effort.  

The Defense Materials Procurement Agency, the Export-Import Bank, and the ECA-MSA, have been the three main agencies involved in the American foreign minerals expansion program. The first agency has expended over $200 million in expansion and procurement contracts; the second organization offered loans totaling over $288 million for expansion and procurement of essential materials abroad; and the third agency has made use of over $90 million in counterpart funds and $15 million in grants-in-aid to stimulate minerals expansion abroad.

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10 This also, of course substantiates another theme of this study and of the Paley Report and other commissions, namely, that the United States will come increasingly to depend upon foreign sources of supply in the area of raw materials. The data in this chapter are by no means the final word and will be analyzed in more detail in the next chapter. The data can be found in "Malone Hearings," op. cit., Part II, pp. 24-26 and summed up in the Unnumbered Volume, p. 161.

11 For a more thorough analysis of Export-Import loans for essential and strategic materials abroad - for the materials, geographic areas, etc., involved - see, Hearing before the Committee on Banking and Currency, United States Senate 83rd Congress, second session, June, 1954, Part 2, pp.917-937.

Agencies involved in the domestic program to date have been the Defense Materials Procurement Agency, which expended through March 31, 1953, over $300 million in expansion and procurement contracts; the Reconstruction Finance Corporation, which under section 302 of the Defense Production Act, loaned amounts totalling $155 million; and the Defense Materials Exploration Administration of the Interior Department which expended $13 million in its various domestic projects.\textsuperscript{13}

Other Defense Industries:

It is undoubtedly reasonable to question at this point whether the O.D.M. expansion-goals-list, supplemented by the stockpile list, covers the entire area of defense industries. Keeping in mind the dynamics referred to earlier, and industries which are wholly government operations (i.e., the atomic energy program and other pure research programs), it is obvious that using the O.D.M. expansion goals list as a definitive checklist is inadequate. The above two instances, however, do not constitute serious deficiencies in this analysis, since the point has already been made that

\textsuperscript{13} \textit{Ibid.}, pp. 24-25.
mobilization economics is a dynamic concept, and therefore not subject to a finished analysis, and in the case of a wholly governmental operation - carried out in government arsenals, ordnance plants, and specially constructed plants - the problem is one purely of administration, or of decisions involving whether to proceed with the research or not. In short, this latter situation is not likely ever to become a commercial operation or to present problems of economic import (e.g., tariff protection).

There still remain, however, fundamentally commercial industries or segments of industries, which do not seem to appear on the defense lists, but which claim "essentiality," and which do present complicated economic decisions for policy-makers.\(^14\) Such an industry is the domestic jeweled-watch industry which has been at the center of this controversy and has continually asked for tariff and import quota protection because of alleged essentiality for defense since the end of World War II. It would be remiss, therefore, not to include this type of situation in the analysis. The most feasible place for an analysis of this industry and this

\(^{14}\) While there may be a complex of reasons why such industries or segments thereof do not appear on the lists of essential industries, the main reason may well be that no definitive decision has ever been made as to its "essentiality," and that such decisions are made on an ad hoc basis, whenever the issue of its "essentiality" is raised, as in the recent domestic jeweled-watch situation. This again illustrates that no such governmental agency exists for determining essentiality per se, thus complicating many tariff issues which arise in this area. This will be looked into in Chapter 7.
type of situation is with the analysis of the precision manufacturing component which will be undertaken in a subsequent chapter. In fact, this industry may be reasonably used as a case-study "model" for the entire component.

Summary:

Of the 245 items on the Office of Defense Mobilization's list of expansion goals, as of September 10, 1954, only 60 per cent are to be taken into account in this analysis. These 60 per cent are grouped into seven major components. The selectivity used is necessarily arbitrary and may not always coincide with generally accepted classifications. Each component will not receive equal analytical treatment, nor will each item in the components selected be analyzed. Rather, an attempt will be made to establish broad policy criteria for each of the components, giving attention to individual items only when feasible.

Of the seven components, minerals and metals will be analyzed first, inasmuch as this component is the most important and poses complex economic problems in a mobilization structure. Chemicals, comprising the largest component in terms of number of items, will then be analyzed. The other five components are: precision manufacturing;
electrical machinery; fuels and power; transportation (ex­cluding air transportation and trucking); and a miscel­laneous group.

Of the 40 per cent of the items which will not be included, the largest segment is composed of items which defy easy categorization because of their individuality or "uniqueness." These items are referred to as "residual." Another important group that will not be analyzed is that group of items labeled by the O.D.M. as expansion facili­ties. Two other lesser groups of three items each are not to be covered either - military transportation and "general­ized" items.

Another way to arrive at the magnitude of both the expansion since the inception of our mobilization effort and the importance of each of the components listed above, is to study the accelerated tax amortization benefits granted thus far, and other incentives offered to stimulate defense production. In the first instance, over $29 bil­lion worth of expansion has taken place in the current mobilization effort under the tax amortization program. Approximately 60 per cent of this expansion has received rapid tax write-off benefits. Fifty-three per cent of the total costs of expansion have been involved in the manufac­turing industries; 47 per cent in the nonmanufacturing in­dustries. The former group of industries, however, have
received over twice as many certificates of necessity, with the precision manufacturing industries receiving the largest share of these of any category.

The minerals and metals component has received other incentives in addition to rapid tax write-off benefits. Special purchase contracts, loans, the use of "counterpart" funds, the grants-in-aid have been offered to stimulate exploration and production of minerals abroad; the former two techniques have been offered domestically. As of mid-1953, over $1 billion had been expended on these mineral projects. In addition to this, the domestic minerals industries had undergone approximately a $3 billion expansion under the tax amortization program, making total expansion, both here and abroad, approximately $4 billion.

Other industries or segments of industries which do not necessarily appear on the O.D.M. expansion goals list, or on the stockpile list, but which may claim special governmental action on the grounds of their "essentiality" present problems which legitimately fall within the scope of this analysis. Therefore, the domestic jeweled-watch industry, being a case in point, will come under analysis in a subsequent chapter.
## APPENDIX A

Office of Defense Mobilization Expansion
Goals, September 30, 1954

<table>
<thead>
<tr>
<th>ODM No.</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lubricating oil</td>
</tr>
<tr>
<td>2.</td>
<td>Newsprint</td>
</tr>
<tr>
<td>3. *</td>
<td>Iron Ore (taconite)</td>
</tr>
<tr>
<td>4. *</td>
<td>Coke-by-product</td>
</tr>
<tr>
<td>4a *</td>
<td>Coal, Metallurgical for By-Product Coke</td>
</tr>
<tr>
<td>5.</td>
<td>Blast Furnaces</td>
</tr>
<tr>
<td>6.</td>
<td>Steel Ingots</td>
</tr>
<tr>
<td>7.</td>
<td>Phenol</td>
</tr>
<tr>
<td>8.</td>
<td>Phthalic Anhydride</td>
</tr>
<tr>
<td>9. *</td>
<td>Nitrogen</td>
</tr>
<tr>
<td>10. *</td>
<td>Cobalt</td>
</tr>
<tr>
<td>11. *</td>
<td>Columbite and Tantalite Ores</td>
</tr>
<tr>
<td>12. *</td>
<td>Lead</td>
</tr>
<tr>
<td>13.</td>
<td>Magnesium</td>
</tr>
<tr>
<td>14. *</td>
<td>Manganese Ore, Metallurgical Grade</td>
</tr>
<tr>
<td>15. *</td>
<td>Molybdenum</td>
</tr>
<tr>
<td>16. *</td>
<td>Nickel</td>
</tr>
<tr>
<td>17.</td>
<td>Sulphur</td>
</tr>
<tr>
<td>18. *</td>
<td>Tungsten Ore</td>
</tr>
<tr>
<td>19. *</td>
<td>Chromite (metallurgical Grade)</td>
</tr>
<tr>
<td>20. *</td>
<td>Chromite (Chemical Grade)</td>
</tr>
<tr>
<td>21. *</td>
<td>Chromite (Refractory Grade)</td>
</tr>
<tr>
<td>22. *</td>
<td>Zinc</td>
</tr>
<tr>
<td>23.</td>
<td>Aniline</td>
</tr>
<tr>
<td>24.</td>
<td>Chlorine</td>
</tr>
<tr>
<td>25.</td>
<td>Hydroflouric Acid</td>
</tr>
<tr>
<td>26.</td>
<td>Napthalene</td>
</tr>
<tr>
<td>27. *</td>
<td>Tankers, Ocean Going</td>
</tr>
<tr>
<td>28.</td>
<td>Oxygen, High-Purity</td>
</tr>
<tr>
<td>29.</td>
<td>Phosphorus, Elemental</td>
</tr>
<tr>
<td>30.</td>
<td>Hydrogen Peroxide</td>
</tr>
<tr>
<td>31.</td>
<td>Anthraquinone Vat Dyes (Single Strength Basis)</td>
</tr>
<tr>
<td>32. *</td>
<td>Hose, Horizontal Wire Braided</td>
</tr>
<tr>
<td>33. *</td>
<td>Tires (Specific Types)</td>
</tr>
<tr>
<td>34. *</td>
<td>Portland Cement</td>
</tr>
<tr>
<td>35.</td>
<td>Carbon Tetrachloride</td>
</tr>
<tr>
<td>36. *</td>
<td>Formaldehyde</td>
</tr>
<tr>
<td>37.</td>
<td>DDT</td>
</tr>
<tr>
<td>38.</td>
<td>Methyl Chloride</td>
</tr>
<tr>
<td>39.</td>
<td>Quinoline</td>
</tr>
<tr>
<td>40.</td>
<td>Resorcinol</td>
</tr>
</tbody>
</table>
41. Trichlorethylene
42. Iron Oxide, Yellow (Synthetic)
43. Maleic Anhydride
44. Benzene Hexachloride (Technical Grade)
45. Vulcanized Fiber
46. Plywood, Exterior Type, Softwood
47. * Vehicles and Engines (Military)
48. Crawler-Type Tractor Industry
49. a Paper
49. b Paperboard
49. c Wood Pulp
50. Sodium Cyanide
51. Titanium Dioxide Pigment
52. Perchloroethylene
53. Benzene Hexachloride (lindane) 99% or more Gamma Isomer Content
54. Storage Batteries, Electric
55. Electric Power
56. * Copper
57. Carbon Electrodes
58. Anti-Friction Bearing Industry
59. * Methanol Synthetic
60. Calcium Carbide
61. Butadiene
62. * Rubber and Rubber Products
63. * Aluminum, Primary
63. a Alumina
64. * Mercury
65. a Oil Wells Drilled (Domestic)
65. b Oil (Crude) Refining Capacity (Domestic)
65. c Natural Gas Liquids Capacity
65. d Oil Pipe Lines (Domestic)
65. e Oil Storage Facilities (Domestic)
66. a Oil Wells Drilled (Foreign)
66. b Oil (Crude) Refining Capacity (Foreign)
66. c Oil Pipe Lines (Foreign)
67. Power Crane and Shovel Industry
68. * Freight Cars
69. Scrap, Ferrous and Non-Ferrous
70. Ethylene Oxide
71. Ethylene Glycol
72. Carbon Black
73. Turbines, Hydraulic
74. * Turbines, Steam
75. Generators, Water Wheel Driven
76. * Boilers, Steam
77. Condensers
78. * Transformers, Distribution
79. Air Preheaters, Regenerative
80. Photographic Film and Paper
81. * Military Photographic Equipment (Motion and Still)
82. * Glycerine
83. * Cryolite (Synthetic)
84. * Electronic Products, Military
85. * Aircraft, Military
86. Mining Machinery
87. Sebacic Acid
88. Sodium Chlorate
89. Methylene Chloride
90. * Ore Carriers, Great Lakes
91. * Welded Aluminum Tubing
92. * Bauxite
93. Plastics Materials
94. Gears and Gear Drives
95. Cotton Gins
96.a Lumber and Wood Products (Except Debarking and Chipping Facilities)
96.b* Lumber and Wood Products (Debarking and Chipping Facilities)
97. Friction Bearings
98. * Inland Water Vessels (Specified Types)
99. * Heavy Aluminum Aircraft Forgings
100.* Lithium Compound
101. Screw Machine Products, Precision
102. Carbon, Activated (Water Purification and Decolorizing Grade)
103. Industrial Ethyl Alcohol
104. Special Industrial Services
105. Precision and Large Size Fasteners
106 * Mechanical Power Transmission Equipment (except
107. Heavy Metal Tanks (Special Process and Storage Vessels)
108. Phosphatizing of Steel Drums
109. Styrene Monomer (Including Methyl Styrenes)
110. Soda Ash
111. Special Components
112. * Antimony
113. * Ore Carriers, Ocean Going
114. * Metal Can Manufacturers - Tin Conservation
115. Graphite, Artificial
116.a* Fibrous Glass, Continuous Filament
116.b* Fibrous Glass, Superfine
117. Heat Exchangers, Tubular
118. * Beryl
119. * Barite
120. Railroad Equipment (Production Facilities)
121. * Titanium Metal
122. * High Voltage Switchgear
123. Machine Tools
124. Presses and Forging Equipment
125. Abrasive Products
126. Synthetic Fibers, Non-Cellulosed
127. Metal Cutting Tools
128. Dies, Jigs and Fixtures
129. Penicillin
130. * Electrolytic Tin Plate
131. Continuous Galvanized Sheet and Strip
132. * Iron Ore
133. * Coal, Territory of Alaska
134. * Tapered Aluminum Sheet
135. * Railroad Terminal and Road Facilities
136. Optical Glass
137. Electrical Connectors
138. Phosphate Rock
139. Materials Handling Equipment
140. Metalworking Equipment, Miscellaneous
141. Potash
142. Pumping Machinery
143. Telegraph, Domestic Service
144. Tape, Acetate
145. Tape, Filament
146. Motors, Miniature Electric
147. Strapping, Steel
148. * Aircraft, Commercial
149. a Phosphatic Fertilizers
150. Copper Wire Mill Facilities
151. * Asbestos, Chrysatile, Strategic Grades
152. * Locomotives, Diesel
153. Refractories, Basic
154. Refractories, Insulating Fire Brick
155. Optics - Facilities for Producing Precision Type
156. * Toluene
157. Benzene
158. Actone
159.a Adipic Acid
159.b Adiponitrile
159.c Cyclohexane
159.d Hexamethylenediamine
160. Ketone, Methyl Ethyl
161. Ketone, Methyl Isobutyl
162. Sodium Bichromate
163. * Rutile
164. Cotton Compresses
165. * Fluorspar, Acid Grade
166.a Electronic Glass Envelopes (Ribbon Machine)
166.b Electronic Glass Envelopes (other than Ribbon Machine)
167. Chemical Manufacturing Machinery
168. Valves and Fittings, Industrial
169. Kenaf Fiber Processing Facilities
170. Limestone and Dolomite
171.a* Gas Pipe (Large) Lines Laid
171.b* Gas Pipe (Small) Lines Laid
172. Hexamethylenetetramine
173. Octyl Alcohols
174. * Pentaerythritol
175. Tetraethyl Lead
176. * Scientific Instruments
177.a* Aluminum Sheet and Plate, Producing Facilities
177.b* Aluminum Sheet and Plate, Heat Treating Facilities
178. * Selenium
179. Ferro-Alloys, Blast Furnace
180. Ferro-Alloys, Electric Furnace
181. * Casting, Steel
182. Batteries, "AA" Type Dry Cell
183. Acetic Acid
184. Metal Cans
185. * Rare Earths
186. * Ordnance Facilities
187. * Manganese Ore, Battery and Chemical Grades
188. Brass Mill Facilities
189. Copper Foundry Facilities
190. Refractories, Fire Clay, Super Duty and High Alumina Bricks
191. Refractories, Ladle Brick
192. Refractories, Pouring
193. Refractories, Silica
194.a Ethylchloride
194.b Ethylene Dibromide
195. Beryllium Copper Alloy Mill Products Facilities
196. Beryllium Copper Master Alloy Producing Facilities
197. * Cylinders, Compressed Gas
198. * Medical Supplies and Equipment
199. Elephant Tools - Manufacturing Facilities
200. Sulphuric Acid
201. Filter Aids - Calcined Diatomite
202.a Glass Tubing (Lead and Soda Lime)
202.b Glass Tubing (Boro-Silicate)
203. Reels and Spools
204. * Gray Iron Castings (Over 3,000 lbs.)
205. * Ammunition Metal Boxes, 30 and 50 caliber
206. * Laboratories, Research and Development
207. * Alkylate
208. Sensitive Electrical Switches
209. Military Canvas Reclamation Facilities
210. Argon
211. * Structural Shapes, Wide Flange
212. * Heavy Steel Plate (Over 20,000 lbs.)
213.
214. * Steel Sheets, Grain Oriented
215. * Titanium Melting Facilities
216. * Motor Truck Terminal and Repair Facilities
217. * Warehouse and Storage Facilities (Refrigerated Storage)
218. * Inland Waterway terminal Facilities
219. * Port Facilities
220. * Airport Facilities
221. * Railroad Passenger Cars
222. * Aluminum Forging Facilities
223. * Titanium Processing Facilities
224. * Production Facilities for Military and Atomic Energy Procurement

* Expansion goal still open

Source: Releases (ODM) re:Subject: Expansion Goals, op. cit.
### APPENDIX B

#### TOTAL COST OF PROJECTS COVERED BY CERTIFICATES OF NECESSITY

**AS OF MARCH 31, 1954 BY TYPE OF INDUSTRY**

(Thousands of dollars)

<table>
<thead>
<tr>
<th>Number of Certificates</th>
<th>Total Cost(^*/) Amount</th>
<th>% of Total</th>
<th>Value in Place(^*/) Amount</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL - ALL INDUSTRIES</strong></td>
<td>17,757</td>
<td>29,010,892</td>
<td>100</td>
<td>21,500,143</td>
</tr>
<tr>
<td><strong>MANUFACTURING INDUSTRIES - TOTAL</strong></td>
<td>12,252</td>
<td>15,395,091</td>
<td>53.1</td>
<td>11,519,309</td>
</tr>
<tr>
<td>Primary Metal Industries - Total</td>
<td>1,623</td>
<td>5,662,989</td>
<td>19.5</td>
<td>3,967,184</td>
</tr>
<tr>
<td>Blast furnaces</td>
<td>106</td>
<td>1,039,665</td>
<td>3.6</td>
<td>458,991</td>
</tr>
<tr>
<td>Steel works and rolling mills</td>
<td>423</td>
<td>2,673,580</td>
<td>9.2</td>
<td>2,114,219</td>
</tr>
<tr>
<td>Electrometallurgical products</td>
<td>39</td>
<td>237,962</td>
<td>0.8</td>
<td>217,613</td>
</tr>
<tr>
<td>Welded and heavy riveted pipe</td>
<td>48</td>
<td>214,873</td>
<td>0.7</td>
<td>187,070</td>
</tr>
<tr>
<td>Iron and steel foundries</td>
<td>308</td>
<td>105,729</td>
<td>0.4</td>
<td>92,643</td>
</tr>
<tr>
<td>Preliminary refining of aluminum</td>
<td>39</td>
<td>782,714</td>
<td>2.7</td>
<td>536,671</td>
</tr>
<tr>
<td>Primary smelting and refining of copper</td>
<td>5</td>
<td>80,914</td>
<td>0.3</td>
<td>23,630</td>
</tr>
<tr>
<td>Primary smelting and refining of other nonferrous metals</td>
<td>39</td>
<td>84,564</td>
<td>0.3</td>
<td>52,040</td>
</tr>
<tr>
<td>Rolling, drawing, and alloying of aluminum</td>
<td>73</td>
<td>155,945</td>
<td>0.5</td>
<td>35,010</td>
</tr>
<tr>
<td>Rolling, drawing, and alloying of copper</td>
<td>24</td>
<td>11,344</td>
<td>0/</td>
<td>10,422</td>
</tr>
<tr>
<td>Rolling, drawing, and alloying of other nonferrous metals</td>
<td>54</td>
<td>65,978</td>
<td>0.2</td>
<td>58,778</td>
</tr>
<tr>
<td>Other</td>
<td>465</td>
<td>209,730</td>
<td>0.7</td>
<td>179,897</td>
</tr>
<tr>
<td>Chemical and Allied Products - Total 1,012</td>
<td>2,902,280</td>
<td>10.0</td>
<td>2,265,818</td>
<td>70.1</td>
</tr>
<tr>
<td>Alkalies and Chlorine</td>
<td>60</td>
<td>277,045</td>
<td>1.0</td>
<td>266,812</td>
</tr>
<tr>
<td>Other industrial inorganic chemicals</td>
<td>272</td>
<td>808,319</td>
<td>2.8</td>
<td>646,575</td>
</tr>
<tr>
<td>Plastic materials</td>
<td>108</td>
<td>258,339</td>
<td>0.9</td>
<td>139,395</td>
</tr>
<tr>
<td>Synthetic fibers</td>
<td>34</td>
<td>264,918</td>
<td>0.9</td>
<td>214,276</td>
</tr>
<tr>
<td>Other industrial organic chemicals</td>
<td>173</td>
<td>601,931</td>
<td>2.1</td>
<td>477,051</td>
</tr>
<tr>
<td>Pharmaceutical preparations</td>
<td>40</td>
<td>99,282</td>
<td>0.3</td>
<td>77,903</td>
</tr>
<tr>
<td>Fertilizers</td>
<td>17</td>
<td>84,729</td>
<td>0.3</td>
<td>30,496</td>
</tr>
<tr>
<td>Compressed and liquified gases</td>
<td>85</td>
<td>122,896</td>
<td>0.4</td>
<td>107,214</td>
</tr>
<tr>
<td>Other</td>
<td>233</td>
<td>384,821</td>
<td>1.3</td>
<td>306,096</td>
</tr>
<tr>
<td>Products of Petroleum and Coal - Total 551</td>
<td>2,040,786</td>
<td>7.6</td>
<td>1,420,391</td>
<td>64.7</td>
</tr>
<tr>
<td>Petroleum refining</td>
<td>487</td>
<td>1,554,086</td>
<td>6.4</td>
<td>1,195,480</td>
</tr>
<tr>
<td>By-product coke ovens</td>
<td>43</td>
<td>219,355</td>
<td>0.8</td>
<td>155,774</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>131,343</td>
<td>0.5</td>
<td>75,337</td>
</tr>
<tr>
<td>Transportation Equipment - Total 1,984</td>
<td>1,080,824</td>
<td>3.7</td>
<td>918,169</td>
<td>85.0</td>
</tr>
<tr>
<td>Aircraft engines and parts</td>
<td>513</td>
<td>508,480</td>
<td>1.8</td>
<td>430,008</td>
</tr>
<tr>
<td>Aircraft parts and auxiliary equipment</td>
<td>677</td>
<td>203,627</td>
<td>0.7</td>
<td>190,242</td>
</tr>
<tr>
<td>Aircraft</td>
<td>269</td>
<td>173,537</td>
<td>0.6</td>
<td>141,030</td>
</tr>
<tr>
<td>Aircraft propellers and engine parts</td>
<td>42</td>
<td>29,793</td>
<td>0.1</td>
<td>28,868</td>
</tr>
<tr>
<td>Motor vehicles and parts</td>
<td>157</td>
<td>81,428</td>
<td>0.3</td>
<td>72,591</td>
</tr>
<tr>
<td>Other</td>
<td>126</td>
<td>63,959</td>
<td>0.3</td>
<td>55,422</td>
</tr>
<tr>
<td>Machinery (Except Electrical) - Total 2,976</td>
<td>796,406</td>
<td>2.7</td>
<td>668,887</td>
<td>84.0</td>
</tr>
<tr>
<td>Metal working machinery</td>
<td>1,326</td>
<td>243,401</td>
<td>0.8</td>
<td>217,222</td>
</tr>
<tr>
<td>General industrial machinery and equipment</td>
<td>443</td>
<td>137,132</td>
<td>0.5</td>
<td>114,617</td>
</tr>
<tr>
<td>Steam engines, turbines, and water wheels</td>
<td>28</td>
<td>47,098</td>
<td>0.2</td>
<td>27,110</td>
</tr>
</tbody>
</table>
### Total Cost of Projects Covered by Certificates of Necessity

#### As of March 31, 1954 by Type of Industry

(Thousands of dollars)

<table>
<thead>
<tr>
<th>Number of Certificates</th>
<th>Total Cost</th>
<th>Value in Place</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>% of Total</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>% of Total</td>
</tr>
</tbody>
</table>

#### Diesel and semi-diesel, and other internal engines
- Total Cost: $38,910
- Value in Place: $35,580

#### Tractors
- Total Cost: $57,283
- Value in Place: $52,379

#### Valves and fittings (except plumbers' valves)
- Total Cost: $32,653
- Value in Place: $24,285

#### Ball and roller bearings
- Total Cost: $73,294
- Value in Place: $71,355

#### Other
- Total Cost: $139,001
- Value in Place: $121,178

#### Paper and Allied Products - Total
- Total Cost: $829,532
- Value in Place: $616,399

#### Electrical Machinery, Equipment, and Supplies - Total
- Total Cost: $466,114
- Value in Place: $404,867

#### Ordnance and Accessories - Total
- Total Cost: $339,435
- Value in Place: $325,360

#### Textile Mill Products - Total
- Total Cost: $86,669
- Value in Place: $81,857

#### Lumber and Wood Products - Total
- Total Cost: $70,488
- Value in Place: $54,909

#### Rubber Products - Total
- Total Cost: $100,222
- Value in Place: $89,772

#### Stone, Clay and Glass Products - Total
- Total Cost: $347,347
- Value in Place: $288,366

#### Cement, hydraulic Refractories, clay and nonclay Abrasives Other
- Total Cost: $125,199
- Value in Place: $96,675
- Value in Place: $34,848
- Value in Place: $21,264
- Value in Place: $25,180
- Value in Place: $96

#### Fabricated Metal Products - Total
- Total Cost: $266,555
- Value in Place: $203,506

#### Tin cans and other tinware Bolts, nuts, washers, and rivets Other
- Total Cost: $53,202
- Value in Place: $25,889
- Value in Place: $56,664
- Value in Place: $155,689

#### Other Manufacturing Industries - Total
- Total Cost: $241,245
- Value in Place: $203,624

#### Nonmanufacturing Industries - Total
- Total Cost: $13,615,801
- Value in Place: $9,980,834

#### Utilities and Sanitary Services - Total
- Total Cost: $4,789,493
- Value in Place: $3,577,336
# APPENDIX B (Cont.)

## TOTAL COST OF PROJECTS COVERED BY CERTIFICATES OF NECESSITY

**AS OF MARCH 31, 1954 BY TYPE OF INDUSTRY**

(Thousands of dollars)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of Certificates</th>
<th>Total Cost&lt;sup&gt;a&lt;/sup&gt;</th>
<th>% of Total</th>
<th>Value in Place&lt;sup&gt;b&lt;/sup&gt;</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric light and power</td>
<td>658</td>
<td>4,275,711</td>
<td>14.7</td>
<td>3,126,699</td>
<td>73.1</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>77</td>
<td>456,930</td>
<td>1.6</td>
<td>407,723</td>
<td>92.2</td>
</tr>
<tr>
<td>Other</td>
<td>48</td>
<td>55,852</td>
<td>0.2</td>
<td>42,914</td>
<td>75.5</td>
</tr>
<tr>
<td><strong>Railroads - Total</strong></td>
<td>1,528</td>
<td>3,640,737</td>
<td>13.2</td>
<td>3,344,000</td>
<td>89.4</td>
</tr>
<tr>
<td>Railroads, line-haul operating</td>
<td>1,584</td>
<td>3,789,565</td>
<td>13.1</td>
<td>3,386,981</td>
<td>89.4</td>
</tr>
<tr>
<td>Switching and terminal companies</td>
<td>44</td>
<td>51,172</td>
<td>0.2</td>
<td>45,019</td>
<td>88.3</td>
</tr>
<tr>
<td><strong>Mining, Extraction, and Quarrying - Total</strong></td>
<td>506</td>
<td>2,074,468</td>
<td>7.2</td>
<td>1,173,303</td>
<td>56.7</td>
</tr>
<tr>
<td>Iron ores</td>
<td>133</td>
<td>1,097,769</td>
<td>3.9</td>
<td>485,485</td>
<td>44.2</td>
</tr>
<tr>
<td>Copper ores</td>
<td>12</td>
<td>122,912</td>
<td>0.4</td>
<td>87,130</td>
<td>70.9</td>
</tr>
<tr>
<td>Lead and zinc ores</td>
<td>19</td>
<td>36,204</td>
<td>0.1</td>
<td>26,513</td>
<td>73.0</td>
</tr>
<tr>
<td>Bauxite and other aluminum ores</td>
<td>11</td>
<td>138,179</td>
<td>0.6</td>
<td>55,776</td>
<td>40.4</td>
</tr>
<tr>
<td>Bituminous coal and lignite</td>
<td>40</td>
<td>66,332</td>
<td>0.2</td>
<td>50,514</td>
<td>76.0</td>
</tr>
<tr>
<td>Natural gas</td>
<td>25</td>
<td>78,386</td>
<td>0.3</td>
<td>74,309</td>
<td>95.2</td>
</tr>
<tr>
<td>Natural gasoline</td>
<td>170</td>
<td>318,638</td>
<td>1.1</td>
<td>278,791</td>
<td>87.5</td>
</tr>
<tr>
<td>Sulphur</td>
<td>8</td>
<td>25,249</td>
<td>0.1</td>
<td>20,724</td>
<td>82.2</td>
</tr>
<tr>
<td>Other</td>
<td>90</td>
<td>190,709</td>
<td>0.7</td>
<td>94,141</td>
<td>44.3</td>
</tr>
<tr>
<td><strong>Pipe Line Transportation (Petroleum) - Total</strong></td>
<td>167</td>
<td>1,004,886</td>
<td>3.5</td>
<td>630,904</td>
<td>62.8</td>
</tr>
<tr>
<td><strong>Water Transportation - Total</strong></td>
<td>590</td>
<td>564,948</td>
<td>2.0</td>
<td>314,226</td>
<td>55.7</td>
</tr>
<tr>
<td>Ocean borne foreign transportation</td>
<td>8</td>
<td>62,304</td>
<td>0.2</td>
<td>23,870</td>
<td>38.5</td>
</tr>
<tr>
<td>Coastwise and intercoastal transportation</td>
<td>26</td>
<td>78,953</td>
<td>0.3</td>
<td>12,208</td>
<td>15.5</td>
</tr>
<tr>
<td>Great Lake transportation</td>
<td>99</td>
<td>188,873</td>
<td>0.7</td>
<td>150,444</td>
<td>79.7</td>
</tr>
<tr>
<td>Transportation on rivers</td>
<td>313</td>
<td>164,290</td>
<td>0.6</td>
<td>95,514</td>
<td>56.4</td>
</tr>
<tr>
<td>Other</td>
<td>144</td>
<td>69,638</td>
<td>0.2</td>
<td>35,190</td>
<td>50.5</td>
</tr>
<tr>
<td><strong>Transportation by Air - Total</strong></td>
<td>44</td>
<td>467,427</td>
<td>1.6</td>
<td>331,055</td>
<td>70.9</td>
</tr>
<tr>
<td>Air transportation (common carrier)</td>
<td>30</td>
<td>451,615</td>
<td>1.5</td>
<td>317,107</td>
<td>70.2</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>15,812</td>
<td>0.1</td>
<td>13,948</td>
<td>88.2</td>
</tr>
<tr>
<td><strong>Trucking and Warehousing - Total</strong></td>
<td>459</td>
<td>110,301</td>
<td>0.4</td>
<td>94,911</td>
<td>86.3</td>
</tr>
<tr>
<td>Trucking, except local</td>
<td>152</td>
<td>34,582</td>
<td>0.1</td>
<td>30,699</td>
<td>87.7</td>
</tr>
<tr>
<td>Farm product warehousing</td>
<td>168</td>
<td>23,420</td>
<td>0.1</td>
<td>23,063</td>
<td>98.6</td>
</tr>
<tr>
<td>Refrigerated warehousing</td>
<td>41</td>
<td>20,281</td>
<td>0.1</td>
<td>15,890</td>
<td>79.5</td>
</tr>
<tr>
<td>Other</td>
<td>98</td>
<td>32,010</td>
<td>0.1</td>
<td>25,259</td>
<td>78.0</td>
</tr>
<tr>
<td><strong>Agricultural Services - Total</strong></td>
<td>116</td>
<td>22,782</td>
<td>0.1</td>
<td>22,782</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Services Incidental to Transportation - Total</strong></td>
<td>76</td>
<td>241,172</td>
<td>0.8</td>
<td>156,063</td>
<td>65.0</td>
</tr>
<tr>
<td>Rental of railroad cars</td>
<td>61</td>
<td>239,202</td>
<td>0.8</td>
<td>154,093</td>
<td>64.2</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>1,970</td>
<td>0.1</td>
<td>1,965</td>
<td>99.7</td>
</tr>
<tr>
<td><strong>Other Nonmanufacturing Industries - Total</strong></td>
<td>1,134</td>
<td>500,497</td>
<td>1.7</td>
<td>246,174</td>
<td>49.2</td>
</tr>
</tbody>
</table>

<sup>a</sup> Estimated total costs of projects covered by certificates of necessity.

<sup>b</sup> Dollar value in place of projects covered by certificates of necessity.

<sup>c</sup> Less than 0.05 percent.

Source: Expansion Progress (ODM), op. cit., pp. 4-5.
APPENDIX C

List of Strategic and Critical Materials
Not on O.D.M. Expansion Goals List

Abrasive; Crude Aluminum Oxide
Asbestos; Amosite
Asbestos; Crocidolite
Bismuth
Cadmium
Celestite
Corundum
Diamonds, Industrial
Fluorspar, Metallurgical Grade
Graphite, Amorphous Lump
Graphite, Crucible Grade
Graphite, Lubricant and Packing Grade
Kyanite
Mica; Muscovite Block; Good Stained and Better
Mica; Muscovite Block, Stained (Adio Tube Quality)
Mica; Muscovite Film
Mica; Muscovite Splittings
Mica; Phlogopite Splittings
Platinum Group Metals; Iridium
Platinum Group Metals, Platinum
Quartz Crystals
Tin
Vanadium
Uranium
Thorium
Cryolite, Natural
Graphite, Crystalline Fines
Ilmenite
Mica; Muscovite Block, Stained and Lower
Mica, Phlogopite Block
Platinum Group Metals; Osmium
Platinum Group Metals; Palladium
Platinum Group Metals; Rhodium
Platinum Group Metals; Ruthenium
Zirconium Ore; Baddelevite
Zirconium Ore, Zircon


<table>
<thead>
<tr>
<th>ODM No.</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Phenol</td>
</tr>
<tr>
<td>8.</td>
<td>Phthalic Anhydride</td>
</tr>
<tr>
<td>9. *</td>
<td>Nitrogen</td>
</tr>
<tr>
<td>23.</td>
<td>Aniline</td>
</tr>
<tr>
<td>24.</td>
<td>Chlorine</td>
</tr>
<tr>
<td>25.</td>
<td>Hydrofluoric Acid</td>
</tr>
<tr>
<td>26.</td>
<td>Naphthalene</td>
</tr>
<tr>
<td>31.</td>
<td>Anthraquinone Vat Dyes (Single Strength Basis)</td>
</tr>
<tr>
<td>35.</td>
<td>Carbon Tetrachloride</td>
</tr>
<tr>
<td>36. *</td>
<td>Formaldehyde</td>
</tr>
<tr>
<td>37.</td>
<td>DDT</td>
</tr>
<tr>
<td>38.</td>
<td>Methyl Chloride</td>
</tr>
<tr>
<td>39.</td>
<td>Quinoline</td>
</tr>
<tr>
<td>40.</td>
<td>Resorcinol</td>
</tr>
<tr>
<td>41.</td>
<td>Trichlorethylene</td>
</tr>
<tr>
<td>42.</td>
<td>Iron Oxide, Yellow (Synthetic)</td>
</tr>
<tr>
<td>43.</td>
<td>Maleic Anhydride</td>
</tr>
<tr>
<td>44.</td>
<td>Benzene Hexachloride (Technical Grade)</td>
</tr>
<tr>
<td>50.</td>
<td>Sodium Cyanide</td>
</tr>
<tr>
<td>51.</td>
<td>Titanium Dioxide Pigment</td>
</tr>
<tr>
<td>52.</td>
<td>Perchlorethylene</td>
</tr>
<tr>
<td>53.</td>
<td>Benzene Hexachloride (lindane) 99% or more Gamma Isomer Content</td>
</tr>
<tr>
<td>59. *</td>
<td>Methanol Synthetic</td>
</tr>
<tr>
<td>60.</td>
<td>Calcium Carbide</td>
</tr>
<tr>
<td>61.</td>
<td>Butadiene</td>
</tr>
<tr>
<td>70.</td>
<td>Ethylene Oxide</td>
</tr>
<tr>
<td>71.</td>
<td>Ethylene Glycol</td>
</tr>
<tr>
<td>72.</td>
<td>Carbon Black</td>
</tr>
<tr>
<td>82. *</td>
<td>Glycerine'</td>
</tr>
<tr>
<td>87.</td>
<td>Sebacic Acid</td>
</tr>
<tr>
<td>88.</td>
<td>Sodium Chlorate</td>
</tr>
<tr>
<td>89.</td>
<td>Methylene Chloride</td>
</tr>
<tr>
<td>100. *</td>
<td>Lithium Compound</td>
</tr>
<tr>
<td>102.</td>
<td>Carbon, Activated (Water Purification and Decolorizing Grade)</td>
</tr>
<tr>
<td>103.</td>
<td>Industrial Ethyl Alcohol</td>
</tr>
<tr>
<td>109.</td>
<td>Styrene Monomer (Including Methyl Styrenes)</td>
</tr>
<tr>
<td>110.</td>
<td>Soda Ash</td>
</tr>
<tr>
<td>129.</td>
<td>Penicillin</td>
</tr>
<tr>
<td>138.</td>
<td>Phosphate Rock</td>
</tr>
</tbody>
</table>
149.a  Phosphatic Fertilizers
149.b  Phosphatic Feed Supplements
156.  *  Toulene
157.  Benzene
158.  Acetone
159.a  Adipic Acid
159.b  Adiponitrile
159.c  Cyclohexane
159.d  Hexamethylenedizmine
160.  Ketone; Methyl Ethyl
161.  Ketone, Methyl Isobutyl
162.  Sodium Bichromate
172.  Hexamethylenetetramine
173.  Octyl Alcohols
174.  *  Pentaerythritol
175.  Tetraethyl Lead
183.  Acetic Acid
194.a  Ethylchloride
194.b  Ethylene Dibromide
200.  Sulphuric Acid
207.  *  Alkylate
210.  Argon

* Expansion Goal still open

Source: Releases (ODM) re:Subject:Expansion Goals, op. cit.
APPENDIX E

Residual Items: Office of Defense Mobilization
Expansion Goals Not included in the analysis

<table>
<thead>
<tr>
<th>ODM No.</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lubricating oil</td>
</tr>
<tr>
<td>2</td>
<td>Newsprint</td>
</tr>
<tr>
<td>5</td>
<td>Blast Furnaces</td>
</tr>
<tr>
<td>6</td>
<td>Steel Ingots</td>
</tr>
<tr>
<td>32. *</td>
<td>Hose, Horizontal Wire Braided</td>
</tr>
<tr>
<td>34. *</td>
<td>Portland Cement</td>
</tr>
<tr>
<td>48.</td>
<td>Crawler-Type Tractor Industry</td>
</tr>
<tr>
<td>54.</td>
<td>Storage Batteries, Electric</td>
</tr>
<tr>
<td>57.</td>
<td>Carbon Electrodes</td>
</tr>
<tr>
<td>58.</td>
<td>Anti-Friction Bearing Industry</td>
</tr>
<tr>
<td>67.</td>
<td>Power Crane and Shovel Industry</td>
</tr>
<tr>
<td>69.</td>
<td>Scrap, Ferrous and Non-Ferrous</td>
</tr>
<tr>
<td>80.</td>
<td>Photographic Film and Paper</td>
</tr>
<tr>
<td>81. *</td>
<td>Military Photographic Equipment</td>
</tr>
<tr>
<td>86.</td>
<td>Mining Machinery</td>
</tr>
<tr>
<td>91. *</td>
<td>Welded Aluminum Tubing</td>
</tr>
<tr>
<td>94.</td>
<td>Gears and Gear Drives</td>
</tr>
<tr>
<td>97.</td>
<td>Friction Bearings</td>
</tr>
<tr>
<td>99. *</td>
<td>Heavy Aluminum Aircraft Forgings</td>
</tr>
<tr>
<td>105.</td>
<td>Precision and Large Size Fasteners</td>
</tr>
<tr>
<td>107.</td>
<td>Heavy Metal Tanks (Special Process and Storage Vessels)</td>
</tr>
<tr>
<td>108.</td>
<td>Phosphatizing of Steel Drums</td>
</tr>
<tr>
<td>114. *</td>
<td>Metal Can Manufacturers - Tin Conservation</td>
</tr>
<tr>
<td>115.</td>
<td>Graphite, Artificial</td>
</tr>
<tr>
<td>116.a*</td>
<td>Fibrous Glass; Superfine</td>
</tr>
<tr>
<td>116.b*</td>
<td>Fibrous Glass, Continuous Filament</td>
</tr>
<tr>
<td>117.</td>
<td>Heat Exchangers, Rubular</td>
</tr>
<tr>
<td>124.</td>
<td>Presses and Forging Equipment</td>
</tr>
<tr>
<td>130. *</td>
<td>Electrolytic Tin Plate</td>
</tr>
<tr>
<td>131. *</td>
<td>Continuous Galvanized Sheet and Strip</td>
</tr>
<tr>
<td>134. *</td>
<td>Tapered Aluminum Sheet</td>
</tr>
<tr>
<td>139.</td>
<td>Materials Handling Equipment</td>
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<tr>
<td>142.</td>
<td>Pumping Machinery</td>
</tr>
<tr>
<td>143.</td>
<td>Telegraph, Domestic Service</td>
</tr>
<tr>
<td>144.</td>
<td>Tape; Acetate</td>
</tr>
<tr>
<td>145.</td>
<td>Tape, Filament</td>
</tr>
<tr>
<td>146.</td>
<td>Motors, Minature Electric</td>
</tr>
<tr>
<td>147.</td>
<td>Strapping, Steel</td>
</tr>
<tr>
<td>166.a</td>
<td>Electronic Glass Envelopes (Ribbon Machine)</td>
</tr>
<tr>
<td>166.b</td>
<td>Electronic Glass Envelopes (other than Ribbon Machine)</td>
</tr>
</tbody>
</table>
167. Chemical Manufacturing Machinery
168. Valves and Fittings, Industrial
179. Ferro-Alloys; Blast Furnace
180. Ferro-Alloys; Electric Furnace
181. * Casting, Steel
182. * Batteries, "AA" Type Dry Cell
184. Metal Cans
197. * Cylinders, Compressed Gas
198. * Medical Supplies and Equipment
201. Filter Aids - Calcined Diatomite
202.a Glass Tubing (Lead and Soda Lime)
202.b Glass Tubing (Boro-Silicate)
203. Reels and Spools
204. * Gray Iron Castings (Over 3,000 lbs.)
205.* Ammunition Metal Boxes, 30 and 50 Caliber
211. * Structural Shapes, Wide Flange
212. * Heavy Steel Plate (Over 20,000 lbs.)
214. * Steel Sheets, Grain Oriented
None Marginally punched continuous forms

* Expansion Goals still open

Source: Releases (DM) re: Subject: Expansion Goals, op. cit.
CHAPTER IV

THE MINERALS AND METALS COMPONENT AND
A NATIONAL MATERIALS POLICY

Introduction:

The primary and essential basis of a highly industrialized economy is the quantity and diversity of its natural resources. This resource base is of even more significance in a war or emergency period. Not only is the military "take" (i.e., the raw materials needed for turning out the end-items of war) of natural resources greater in an emergency period than in peacetime, but also there is the danger of serious deficiencies in specific raw materials. Thus, a continuous and high-level flow of materials for a defense effort presents specific and troublesome economic calculations. Some of the problems inherent in bringing into production and in maintaining the minerals component of the current mobilization base will now be analyzed.

Along with the specific current problem of the gaps in the supply of certain raw materials (i.e., their absolute
non-availability domestically or their inaccessibility abroad during wartime) there is another long-run problem, namely, the growing dependence of the United States upon foreign raw materials. This latter problem arises both from insatiable consumption of raw materials, both in peace and in mobilization, and the corollary aspects of the rising real costs of production being experienced in American mining industries. Evidences of the first point have already been commented upon (Chapter 2). Evidences of the latter point can be gained by indicating the growing percentage of imports for consumption vis-a-vis domestic production, and the increasing difficulties which segments of the domestic mining industry are experiencing in attempting to compete with foreign producers. These will be examined in this chapter.

In a preliminary way two points are important concerning the current mobilization minerals component. First, the growing dependence upon foreign sources of supply involves global ramifications and corroborates the adoption of a broad policy of defense indicated previously. Secondly, this is the only component of those analyzed in detail which exhibits rising real costs in the aggregate whenever efforts at domestic expansion are called for. It is in distinct contrast to the chemicals component which experiences decreasing real costs. Thus, unique and complex cost considerations enter into analysis of the minerals and
metals\textsuperscript{1} component. (Some precision manufacturing industries, i.e., the domestic jeweled-watch industry might require subsidies for defense purposes in order to survive, but this does not imply that these are rising cost industries, as are some segments of the mining industry.)

There are two generalizations, or underlying hypothesis, which are important in the following analysis. The first is a reemphasis of the argument for seeking the lowest real cost avenue to resources whenever feasible. Or to state it in the opposite fashion, any movement toward autarchy in a national minerals policy, strictly under the justification of the defense argument, should be resisted. Both in the long run and for defense purposes, any legislation which attempts to foster the development and maintenance of a high-cost domestic industry is detrimental to the interests of the consumer, foreign allies, and ultimately to American economic growth and strength. Even the probability that a source of material supply will be closed to

\textsuperscript{1} Of the innumerable observations which could be made centering around these points, two would seem to require special mention. The raw materials problem of mobilization comprises by far the largest share of attention in the literature of the field. Most of this attention is focused on the growing dependence upon foreign sources and the extreme importance of minerals in our mobilization effort. The other observation is that certain segments of the mining industry continue to be most vociferous in claiming tariff "protection," "escape clause" action, etc., even in the face of the highest output in history, undoubtedly reflecting their increasing inability to compete with lower-cost foreign sources of supply.
the United States in time of war does not necessarily militate against procuring from that source in time of peace, particularly in a stockpiling policy. "It is far from obvious that because we need a material desperately in wartime, the one best solution is to maintain a high-cost domestic industry in peacetime."2

The other generalization, or hypothesis, is that there is no one device or formula for implementing a minerals policy. Each particular supply problem must be evaluated separately and the remedy must be specifically compounded to meet that particular problem. Various mobilization devices, as indicated later, may be adopted in various combinations to eliminate the deficiency in supply. The decision whether to encourage high cost production at home or lower-cost production abroad, as far as defense implications are involved, has to be made on a case-by-case basis.

The element of time is perhaps a more pronounced

2 "The Paley Report," op. cit., Volume I, p. 20. Much of the material in the early section of this chapter is from this source which is a comprehensive study of the minerals requirements of the free world for the next 25 years (1950-1975) and is a significant work in the vast literature on minerals for defense, mentioned earlier. The concept of real costs is derived from this report and implies the meaning "classical" economists ascribe to real costs. As the Paley Commission sees it - and the author in this chapter also concurs - the over-all objective of a national materials policy should be "to insure an adequate and dependable flow of materials at the lowest cost consistent with national security and with the welfare of friendly nations." ibid., Volume I, p. 3.
problem in a national minerals policy than in policy for any other component. Clearly there are two distinct time phases, the long period involving decades and the short emergency period. A minerals policy for the long run would embrace a more global framework and would be concerned with exploring and maintaining production in the most feasible manner. The objective would be to ease any materials deficiencies in the United States, provide a market and dollars for the resource-rich nations and thereby promote the flow of international trade and investment.

For the short run emergency problem, no such "easy" solution exists. While the United States still seeks the most economical sources of supply, the complex and shifting problem of accessibility referred to earlier becomes the significant factor in determining policy. Thus, the choice may be between the lesser vulnerability but perhaps higher cost of domestic or contiguous Western Hemisphere sources of supply, versus the greater vulnerability but lower costs of distant minerals. In this latter situation, cost alone will not be the only determinant; a continuing source of supply should be taken into account. However, to reiterate, during a protracted "cold war," there is no reason to discourage an economical and continuing source of foreign supply, and thereby avoid bringing into production a high-cost domestic source, particularly when
stockpiling may overcome any deficiency.\(^3\) Stockpiling is, of course, the main short-run device in the current minerals policy of the United States.

Other problems emerge. The problem of depleting, or exhausting completely, the limited reserves of the United States has no clear solution when national security aspects are considered. In some cases it is best to keep these reserves "stockpiled" underground. The solution of substitution as a way out in the face of nonexistent domestic supply or inaccessible foreign supply also is important. This has been referred to earlier under the subject matter of endogenous dynamics. Substitution of more abundant materials for less abundant is dependent upon technology and costs, and is to be encouraged. However, as also pointed out earlier, the long-run "net effect" of substitution does not completely alleviate United States dependence upon natural resources.

The policy-maker concerned with minerals for mobilization has at his disposal a number of devices, most of which have already been mentioned in one form or other.

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\(^3\) The problems connected with accessibility and minerals policy are eased considerably when recognition of this fact is taken into account, "that the bulk of our imports of metals and minerals is supplied by countries of the Western Hemisphere, sources that are reasonably dependable even in the event of war. Canada and some of the Latin American countries purchase more than half of their total imports from the United States and sell more than half of their total exports to the United States." "Staff Papers," op. cit., p. 235.
Each supply problem should be analyzed separately and then a specific device or combination of devices can be implemented to provide supply requirements. The most common and practicable of these devices is stockpiling. Attainment of materials for stockpile may required any of a number of devices; general mine subsidy, additional tonnage subsidy, limited tonnage subsidy, premium price plan, exploration aid, rapid tax amortization, maintenance of standby capacity, and finally, tariff policy including tariff quotas and import quotas. Any or all these may be implemented to encourage domestic production. 4

Encouragement abroad can take the same forms of aid by either direct government assistance, such as guaranteed purchase agreements with, and direct loans to, producers abroad, removal of tax handicaps of American producers abroad, management contracts, technical assistance, use of "counterpart" funds, and loans by the International Bank for Reconstruction and Development and the Export-Import Bank. In the long run, of course, encouragement of the flow of American capital abroad under the stimulus of tax incentives for American producers abroad and other devices

4 It should be noted here that emphasis thus far has been primarily upon supply and improving the supply situation. There are, of course, two other alternatives in a minerals policy, which necessarily cannot receive adequate attention in this project. The first of these has already been indicated, namely, substitution of one mineral for another. The other alternative is limiting the use of a particular raw material, or, in effect, channeling demand.
would be most conducive to a sound minerals and trade program.

Stockpiling:

As indicated above, stockpiling is the main and continuing device to obtain raw materials for the American mobilization base. Its main objective is to fill any projected specific wartime deficit of a strategic or critical material. From the requirements standpoint, the needs of the military, industry, essential civilian production, and for exports in wartime are calculated. These calculations are matched against the capabilities of domestic mines and strategically accessible foreign sources, and materials sufficient for a five year war are "stockpiled." Thus the capabilities-requirements formula and the five-year factor for extractive industries - both of which were referred to earlier - are both used to arrive at stockpile goals.

Stockpiling constitutes readiness in two ways. First, it provides for the initial increase in demand in all-out mobilization and, second, it supplements the flow of production of the particular stockpiled-item thereby providing a deterrent to any immediate market dislocation. The stockpile alone, however, is a static defense against
shortages and should be accompanied by all the other measures mentioned earlier - encouraging the flow of materials from domestic and foreign production, encouraging substitution where feasible, and economizing in the consumption of materials, including the elimination of waste. Thus stockpiling alone is no panacea and should give rise to no "Maginot Line kind of complacency."\(^5\)

Stockpiling may be accomplished in either of five ways: at the source (oil reserves in the ground), as extracted raw materials, semiprocessed goods, finished goods, or by taking account of normal inventory supplies existent in the economy.

The form in which a material is to be stored also presents economic problems. The consensus seems to be that, since the stockpile is a capital investment and a national asset, in the long run, materials should be stored in their "highest homogeneous form," that is, they should be processed up to a point where there begins to be danger of obsolescence. The danger of obsolescence may be twofold:

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\(^5\) See "Paley Report," op. cit., Volume I, p. 163. To say that stockpiling is static defense is not to imply that constant re-evaluations of our stockpile needs and capabilities are not being continually made. They are, and must continue to be, contingent upon the "dynamics" referred to earlier. Because of these continuing re-evaluations, it is literally true that our stockpile can never be 100 per cent filled.
the nature of the material itself; or technological advances may make the stored material outmoded and therefore obsolete (e.g., machine tools are subject to both kinds of obsolescence). Stockpiling materials in their "highest" homogeneous form" also presents the budgetary problem of using up defense appropriations more rapidly.

Stockpiling purchases should be made, as far as practicable, from the supply of materials in excess of current demand, and with the least possible disruption of "normal" commodity marketing procedures. This is not to say, that stockpiling should be used as a counter-cyclical or stabilizing device, or as a device to provide preferential treatment for submarginal mining firms which could not

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6 If there is a danger of deterioration such as in the case of film and drugs, a "rotating stockpile" is more practicable. This would simply involve a six month enlargement of inventory on hand. The government, of course, would be expected to finance this enlarged inventory. See Green, Sterling, "Here's Where War Mobilization Stands," op. cit., p. 4.

In recent months attention has been focused upon a "supplemental stockpile," authorized under the Agriculture Trade Development and Assistance Act of 1954, Public Law 480, 83rd Congress, which calls for the acquisition of stockpile materials through bartering (by the Commodity Credit Corporation) surplus agricultural commodities. Since this opens up the whole area of agricultural policy impinging upon foreign economic policy, an extremely vast and complex area - and since the principles of the "supplemental stockpile" should be similar to the ones being enumerated in this section - no further analysis of this policy will be attempted.
otherwise compete. By the same token, withdrawals should not be made except in an emergency as provided by the law, and in those "emergency" case (e.g., the supply has become obsolete or excessive), with withdrawals should be made in an orderly, gradual fashion. Thus stockpiling can be integrated into the current minerals program calling for special incentives and it can be integrated into orderly commodity market operations, but if used beyond this context, it is perversion of the law and, in most instances, an uneconomic policy.

Another aspect of stockpiling which requires scrutiny in the larger context is the use of the "Buy American" principle. The Buy American Act which has been subject to a cycle of changing interpretations and administrative permutations since its inception in the early thirties, cuts across the entire range of mobilization economics. This aspect of the Act is analyzed in detail later, but at this

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On the surface this may appear to be an exaggerated, strongly-worded point. However, there is the danger of domestic mining interests attempting to use the Stockpiling Act to encourage high-cost and definitely submarginal domestic production. There is as much danger here as in their demands, on the grounds of essentiality for defense, for tariff "protection" and both should be carefully scrutinized since both would lead to the same end - preferential treatment for high-cost domestic producers. The former appeal is implied, if not explicitly stated, in the perennial recommendations of the American Mining Congress, quoted in "Malone Hearings," op. cit., Unnumbered Volume, p. 78.
point it may be noted that a rigid implementation of the "Buy American" principle in the stockpiling program clearly militates against the underlying hypothesis of this study, namely, the least-cost principle. Since there are innumerable ways to aid essential domestic mining industries, other than the adherence to this principle, it would be wiser to abandon completely the use of the "Buy American" policy in the minerals program for mobilization. Also, all duties on materials for the stockpile should be removed. This has generally been the policy since the enactment of Public Law 152 of June 30, 1949. This policy of the elimination of duties applies only to purchases made under the "Stockpile" Act, Public Law 520, passed July 23, 1946.8

The Paley Commission holds that adherence to "Buy American" practices in our stockpile program is "incongruous, unnecessary and harmful." It is incongruous in that this principle is at cross-purposes with the intent of the Stockpile Act, in that the intent of the latter act is to insure a steady flow of raw materials at low cost; it is unnecessary in that there other means by which domestic production may be "protected"; and it is harmful in that it does not provide the most economical method of stockpile procurement.9

8 Ibid., Part 2, pp. 1-20, and p. 110.

There are approximately 76 items classified as strategic and critical under the "Stockpile" Act of 1946, and all of these are now or have been stockpiled. A rather loose definition of critical and strategic materials has been applied, namely, those in which the United States will experience a deficiency. However, the Act does list the 76 specific items. Not all of these would be in short supply in the event of major hostilities, thus the reason for the list of only 31 expansion goals for minerals which comprises the component under analysis. (For the other approximately 40 items - not all of which are raw materials - see Appendix C in the preceding chapter). Concentrating the analysis upon the first group of 31 items is in keeping with the terms of reference already mentioned, namely, focusing upon the supply problems of the current minerals mobilization buildup.

Over $7.1 billion of materials have been scheduled for procurement for stockpile purposes, and as of mid-1954, over $4.2 billion have been acquired. This represents 80 per cent of the total dollar value of the program and an inventory average of 61.3 per cent of the objective. The goals have been reached on 30 of the materials. Nine goals are more than 90 per cent complete and 19 items are between 50 and 90 per cent complete. Eighteen materials are less than 50 per cent complete. Nickel, tantalum, selenium,
titanium, and strategic mica are the scarcest of the materi­
als, but titanium is the largest incomplete program in
terms of dollars. Through bartering $81,352,000 worth of
materials have been obtained. Materials acquired under
this program include extra-long staple cotton, industrial
diamonds, metallurgical chromite, and mercury.10

In summary, stockpiling should continue to be a
"permanent instrument of policy," since it provides mobil­
ization readiness and a steady flow of materials. It
should not, however, lapse into a static concept but should
be continually re-evaluated and supplemented by other de­
vices at hand to maintain a healthy flow of raw materials.
The materials should be stored in their "highest homogenous
form," whenever practicable. Stockpiling should have in it
no element of subsidy and should not be used for objective
other than the procurement of materials in deficient supply
for wartime purposes. As of mid-1954, 80 per cent of the
$7.1 billion ultimately to be stockpiled had been procured.
This represents an inventory average of approximately 62

10 "Fourth Annual Report of the Activities of the
It is to be recalled that constant re-evaluations of stock­
pile goals - shifts both in the items involved and in the
amounts to be acquired - prevent 100 per cent completion.
What is important is a continuing flow of materials. While
information as to when a stockpile goal is completed is
available, security considerations prevent disclosing the
amount stockpiled. For additional data on progress of
stockpiling, see Semi-annual Stockpile Report to the
President, Office of Defense Mobilization, Washington, D.C.
per cent. In all, approximately 76 items come within the purview of the "Stockpile" Act of 1946.

Domestic Program:

Of the 31 minerals comprising the component under analysis, all but two of them have received some form of government aid since the defense buildup in 1950. One of these two is potash, the expansion goal for which is closed (see Appendix A, preceding chapter) and the supply of which in the United States is abundant. Selenium is the only mineral not accounted for. Twenty-one of these same 31 minerals also received indirect government assistance abroad.

Indirect assistance, that is, assistance not involving a direct outlay of government funds, took the form of tax amortization certificates and guaranteed loans by the Defense Materials Procurement Agency. The former was by far the most significant in magnitude, accounting for over $2,888 million in value of expansion from July 1, 1950 through March 31, 1953. Over a billion and half of this went for iron ore and steel expansion; aluminum (and bauxite) accounting for over $900 million during the same period. The next largest expansion was experienced in copper. Approximately $2,714 million of the $2,888 million, or 97 per
cent of the value of expansion granted rapid amortization certificates, involved iron ore, steel, aluminum (bauxite) and copper. DMPA guaranteed loans to mineral firms during this period amount to $83,786 million (see Table II).

Of the assistance involving direct government outlays during this same period, DMPA expansion and procurement contracts (together with advances to contractors) comprised by far the most significant expenditure, slightly over $350 million. Manganese ore, mangesium, copper, titanium, chromite and molybdenenum were the important materials procured through these contracts (See Table III).

Reconstruction Finance Corporation, under the authority of the Defense Production Act (section 302), loaned over $150 million during this period, almost all of it going to the copper industry. Exploration programs, by the Defense Materials Exploration Administration, mainly in lead-zinc and tungsten totaled over $13 million from July 1, 1950 through March 31, 1953. (See Table III).

All domestic programs during this period, involving either direct or indirect outlays by the government, totaled approximately $3,555,306,000. Along with the overseas assistance, involving over $594,126,000, total assistance to minerals amounts to over $4,094 million.11

11 All figures and data are from "Malone Hearings," op. cit., Part II, pp. 24-26. Additional information, particularly by each agency involved, i.e., DMPA, DMEA, can be obtained from "Fourth Annual Report of the Activities of the Joint Committee on Defense Production, op. cit.
TABLE II
DOMESTIC MINERALS EXPANSION PROGRAM
July 1, 1950 Through March 31, 1953
(Thousands of Dollars)

<table>
<thead>
<tr>
<th>Material</th>
<th>Loans guarantees by DMPA</th>
<th>Tax amortization certificate issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasives, crude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aluminum oxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td>$76,750</td>
<td>$838,918</td>
</tr>
<tr>
<td>Antimony</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asbestos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bauxite</td>
<td></td>
<td>85,154</td>
</tr>
<tr>
<td>Beryl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Columbite tantalum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td></td>
<td>197,031</td>
</tr>
<tr>
<td>Corundum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cryolite</td>
<td></td>
<td>2,730</td>
</tr>
<tr>
<td>Dolomite</td>
<td>2,625</td>
<td></td>
</tr>
<tr>
<td>Fluorspar</td>
<td></td>
<td>3,956</td>
</tr>
<tr>
<td>Graphite</td>
<td></td>
<td>236</td>
</tr>
<tr>
<td>Iron ore and steel</td>
<td></td>
<td>1,592,761</td>
</tr>
<tr>
<td>Lead-zinc</td>
<td></td>
<td>12,842</td>
</tr>
<tr>
<td>Lime rock</td>
<td></td>
<td>18,395</td>
</tr>
<tr>
<td>Manganese ore</td>
<td>3,750</td>
<td>5,064</td>
</tr>
<tr>
<td>Magnesium</td>
<td>386</td>
<td>11,500</td>
</tr>
<tr>
<td>Mercury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mica</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minerals, expl. &amp; development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molybdenum</td>
<td></td>
<td>23,322</td>
</tr>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rare earths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur</td>
<td></td>
<td>26,608</td>
</tr>
<tr>
<td>Talc, steatite block</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tin and tungsten</td>
<td>275</td>
<td></td>
</tr>
<tr>
<td>Titanium</td>
<td></td>
<td>14,742</td>
</tr>
<tr>
<td>Tungsten</td>
<td></td>
<td>6,549</td>
</tr>
<tr>
<td>Uranium</td>
<td></td>
<td>5,300</td>
</tr>
<tr>
<td>Vanadium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable tann - in extract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc &amp; Zinc-cadmium</td>
<td></td>
<td>43,519</td>
</tr>
<tr>
<td>Total</td>
<td>83,786</td>
<td>2,888,627</td>
</tr>
</tbody>
</table>

TABLE III
DOMESTIC MINERALS EXPANSION PROGRAM
July 1, 1950 Through March 31, 1953
(Thousands of Dollars)

<table>
<thead>
<tr>
<th>Material</th>
<th>Assistance involving direct outlays of Government funds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sec. 305(b) of Defense Production Act borrowing authority</td>
</tr>
<tr>
<td></td>
<td>DMPA</td>
</tr>
<tr>
<td></td>
<td>Expansion and procurement to contracts tractors (DMEA)</td>
</tr>
<tr>
<td>Abrasives, crude</td>
<td></td>
</tr>
<tr>
<td>aluminum oxide</td>
<td>--</td>
</tr>
<tr>
<td>Aluminum</td>
<td>$16,059</td>
</tr>
<tr>
<td>Antimony</td>
<td>--</td>
</tr>
<tr>
<td>Asbestos</td>
<td>225</td>
</tr>
<tr>
<td>Bauxite</td>
<td>--</td>
</tr>
<tr>
<td>Beryl</td>
<td>390</td>
</tr>
<tr>
<td>Chromite</td>
<td>26,939</td>
</tr>
<tr>
<td>Cobalt</td>
<td>1,300</td>
</tr>
<tr>
<td>Columbite tantalum</td>
<td>625</td>
</tr>
<tr>
<td>Copper</td>
<td>41,876</td>
</tr>
<tr>
<td>Corundum</td>
<td>--</td>
</tr>
<tr>
<td>Cryolite</td>
<td>742</td>
</tr>
<tr>
<td>Dolomite</td>
<td>--</td>
</tr>
<tr>
<td>Fluorspar</td>
<td>292</td>
</tr>
<tr>
<td>Graphite</td>
<td>1,866</td>
</tr>
<tr>
<td>Iron ore &amp; steel</td>
<td>--</td>
</tr>
<tr>
<td>Lead-zinc</td>
<td>300</td>
</tr>
<tr>
<td>Lime rock</td>
<td>--</td>
</tr>
<tr>
<td>Manganese ore</td>
<td>87,094</td>
</tr>
</tbody>
</table>
TABLE III (CONT'D)

Assistance involving direct outlays of Government funds

<table>
<thead>
<tr>
<th>Materials</th>
<th>DMPA</th>
<th>Interior Department</th>
<th>RFC loans under sec. 302 of</th>
<th>RFC loans under sec. 4 (a) of</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium</td>
<td>$45,000</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>$45,000</td>
</tr>
<tr>
<td>Mercury</td>
<td>--</td>
<td>--</td>
<td>$502</td>
<td>--</td>
<td>502</td>
</tr>
<tr>
<td>Mica</td>
<td>13,395</td>
<td>--</td>
<td>346</td>
<td>--</td>
<td>13,371</td>
</tr>
<tr>
<td>Minerals, exp. &amp; development</td>
<td>801</td>
<td>--</td>
<td>--</td>
<td>$1,100</td>
<td>2,226</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>23,672</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>23,672</td>
</tr>
<tr>
<td>Nickel</td>
<td>946</td>
<td>$3,413</td>
<td>--</td>
<td>--</td>
<td>4,362</td>
</tr>
<tr>
<td>Rare earths</td>
<td>--</td>
<td>--</td>
<td>174</td>
<td>--</td>
<td>176</td>
</tr>
<tr>
<td>Rutile</td>
<td>20</td>
<td>--</td>
<td>15</td>
<td>--</td>
<td>45</td>
</tr>
<tr>
<td>Sulfur</td>
<td>--</td>
<td>--</td>
<td>118</td>
<td>--</td>
<td>413</td>
</tr>
<tr>
<td>Talc, steatite block</td>
<td>--</td>
<td>--</td>
<td>29</td>
<td>--</td>
<td>29</td>
</tr>
<tr>
<td>Tin</td>
<td>--</td>
<td>--</td>
<td>372</td>
<td>--</td>
<td>408</td>
</tr>
<tr>
<td>Tin &amp; tungsten</td>
<td>1,433</td>
<td>1,018</td>
<td>--</td>
<td>--</td>
<td>2,451</td>
</tr>
<tr>
<td>Titanium</td>
<td>29,725</td>
<td>12,365</td>
<td>--</td>
<td>--</td>
<td>42,090</td>
</tr>
<tr>
<td>Tungsten</td>
<td>13,056</td>
<td>88</td>
<td>1,759</td>
<td>206</td>
<td>15,595</td>
</tr>
<tr>
<td>Uranium</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>4,755</td>
</tr>
<tr>
<td>Vanadium</td>
<td>--</td>
<td>--</td>
<td>769</td>
<td>--</td>
<td>769</td>
</tr>
<tr>
<td>Vegetable tannin extract</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>33</td>
</tr>
<tr>
<td>Zinc &amp; Zinc cadmium</td>
<td>287</td>
<td>542</td>
<td>1,495</td>
<td>58</td>
<td>2,382</td>
</tr>
<tr>
<td>Total</td>
<td>306,041</td>
<td>45,639</td>
<td>13,091</td>
<td>154,988</td>
<td>527,893</td>
</tr>
</tbody>
</table>

Thus, from these figures and the data contained in Tables II and III, it is evident that the many devices referred to earlier have been and are being implemented to expand initially, and to sustain a flow of, raw materials into either the stockpile or fabricating defense industries. It is further evident that implementation is on a case-by-case basis and may involve a combination of devices. Finally, when considered against the alternatives offered abroad, and tariff policy in general, both of which will be covered presently, the contention earlier that complex economic calculations are necessary, is borne out.

In the matter of pricing for procurement purposes, three choices are available; uncontrolled prices; guaranteeing a minimum price; and subsidies. The former is generally unacceptable except for unique instances in which the general price level will not be greatly affected.

Further imponderables arise when implementing the second choice, by far the most common and feasible in long-term government purchase contracts. The imponderables center around the structure of the mineral industry involved. If the mineral is produced by a large number of small producers, the open purchase program method is employed. By this method the government provides for a certain stipulated period of time to purchase and pay for any quantity of materials offered which meets the specifications. Domestically produced tungsten, manganese, mica, beryl,
chrome, asbestos, columbium-tantalum, and foreign production of columbium-tantalum were included in this program. DMPA has authority to offer this incentive until 1958 under Public Law 206.  

If the mineral is produced by a relatively small number of large operators, the government contracts on an individual basis to purchase in whole or in part the material produced, or offers floor-price contracts. The former attempts to guarantee a "profit" contingent upon the value of the property at the time of termination of the specific contract. The latter provides for a minimum price and is designed to protect the producer from loss due to a rapid decline in prices. Purchase programs have been offered in the molybdenum, nickel, and cryolite programs; floor-price contracts in aluminum, copper and zinc.  

Finally, subsidies, or in effect the Premium Price plan, can be implemented to bring in selected high cost producers while still attempting to preserve an equilibrium market price, which in some cases of heavy government purchasing would be a governmentally-controlled ceiling price. This particular program can be offered in lieu of a "protective" tariff, and, is in effect, a more feasible method.

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13 Ibid., p. 172.
It has the advantages of being as easily manageable as tariff policy; it can be "tailored" to fit the specific circumstances; it can be carried in the defense budget and can be readily terminated; and, finally, and most important, it is not disruptive of "normal" international trade channels or relations -- it does not seriously disrupt the flow of materials internationally. Thus, whenever they can be justified on economic grounds, subsidies are definitely preferable to tariff restrictions.

Maintenance of standby capacity, pilot plant operations, experimental prospecting, tax incentives, and other devices can be implemented wherever practicable. However, since these open up new and larger horizons, as in the tax question; and specific, technical aspects, as in experimental prospecting, no analysis can be made at this point in this study.

Foreign Programs:

While the foreign minerals expansion program relies fundamentally upon the same type of incentives for producers abroad, it clearly emphasizes some of the points made earlier, most importantly, America's growing dependence upon foreign sources of raw materials supply. Again
considerations of acquiring the material abroad are weighed against domestic acquisition, and again, a combination of devices may be utilized on a case-by-case basis to bring about the necessary flow of materials. And, finally, it raises the larger and longer-run question of the flow of American investment abroad, and, as a corollary, the stimulation of complementary international trade.\textsuperscript{14}

The whole area of policy abroad opens extremely broad questions, centering around both indirect assistance by the government and direct aid by public agencies such as the Export-Import Bank and the International Bank for Reconstruction and Development. It opens up the vast area and possibilities of creating favorable climates both here and abroad for the flow of American capital internationally. It offers a long-run "solution" to the American quest for low-cost sources of supply and, thereby, provide dollars, "balanced growth," a rising level of employment and consumption for the resource-rich nation, and a greater flow of goods internationally. However, this is the long-run approach, and not to be expected solely as a result of Ameri-

\textsuperscript{14} While it has nowhere been explicitly stated in this study, it is taken for granted within the terms of reference delineated earlier, that the impact of U.S. policy abroad should ultimately rebound to the benefit of both countries involved in the transaction, and to stimulating world trade in general. This undoubtedly involves long-term prospects, but there is no inherent reason why even short-run, purely national defense policies of the U.S. should not aid in fostering viable economies abroad.
can defense policies abroad. Integration of the two should be attempted, however, wherever possible.

The real question, therefore, is whether capital, equipment, technology and management skills will flow into the expansion of lowest cost sources of supply in the less developed countries at a rate sufficient to yield the necessary production.15

The indirect assistance may take either of at least four forms: investment treaties with foreign nations; bilateral special resource agreements (this can be brought into being without a comprehensive investment treaty); investment guarantees to the American investing abroad; and, special tax incentives for the American investing abroad.

The first of the four indirect assistance approaches, the investment treaty, is the most ambitious and all-embracing of the four. These "comprehensive instruments" attempt to overcome non-business hazards of overseas investment, which, in recent years, have taken many forms; inequitable tax structures, confiscatory expropriation laws, employment controls, specific favors to state-owned businesses, drastic exchange restrictions, and other discriminations against foreign capital. Taken together these can be quite formidable obstacles. Because of the extreme complexity and comprehensiveness of these treaties, and be-

cause they are essentially legal in nature, they fall outside the purview of this study.

These comprehensive investment treaties, while offering hope in the long-run not only in the area of raw materials but in all economic activity, cannot in themselves induce a flow of raw materials. The second form of indirect assistance, that of special resource agreements, is necessary for this, either in conjunction with an investment treaty or without recourse to such comprehensive agreements. Initiation of this type of agreement can come from the private investor in the United States, with the U.S. government guaranteeing the purchase of minerals at stated prices as an inducement to the American investor.

Investment guarantees is a third type of indirect assistance which may be offered to the American investor overseas. These guarantees, provided for a fee by the Foreign Operations Administration acting through its agent, the Export-Import Bank, offer protection against inconvertibility and expropriation. "As of September 30, 1953, 54 guarantees had been issued (51 against the inconvertibility and three against the risk of expropriation) in the total amount of $41,210,000."¹⁶ The difficulty of this technique is one of administration and raises the larger

¹⁶ "Staff Papers," op. cit., p. 128.
question of whether public participation in projects involving foreign investment should be on a guaranty basis, a direct loan basis, or on the basis of a liberalized tax structure for foreign investment.

The issue of liberalized tax treatment for domestic investors overseas, which is the fourth of the indirect assistance approaches, has even more complexities and ramifications than a purely domestic tax revision, and is currently coming in for more attention. It is clear that a tax liberalization program offers the best long-term hope for stimulation of the flow of American capital internationally and, therefore, the best long-term hope for a high-level flow of international trade. However, this question is far too extensive and involved to be analyzed here.17

Two further comments may be advanced before turning to direct assistance overseas by public agencies. The first is the erroneous conception that resource development abroad needs to be a detriment to the balanced growth of the resource-rich nation because it cannot be integrated

17 For a detailed analysis of these four methods, see "Paley Report," op. cit., Volume I, pp. 59-78 and in passim, and "Staff Papers," op. cit., pp. 23-147. The latter work is particularly intensive and comprehensive. That both of these studies devoted a great deal of attention to this problem reflects both the growing global ramifications of our current foreign economic policy and of our growing dependence upon foreign sources of supply.
into a program of "social overhead capital" expansion, that is, in balanced expansion abroad.

This (Paley) Commission believes that the habit of regarding diversified economic growth for the underdeveloped countries as an alternative to materials development is erroneous. Many facilities needed for the production of materials are also basic to the expansion of industry, agriculture and public services - in short, basic to a balanced growth of real income and rising standards of living. Directly or indirectly the expansion of materials production in a country depends upon the realization of all the conditions which make for a more efficient use of its human and material resources.18

The other point concerns the direct investment pattern that has evolved in the last two decades. Of the $13.5 billion directly invested abroad at the end of 1950, 4 billion was in petroleum and 1.3 in mining and smelting. This represents a considerable increase in petroleum operations overseas but a relatively stationary investment pattern in mining and smelting abroad over the past two decades. Seventy per cent of our total direct investment abroad at the end of 1952 was in Canada and Latin America, 17 per cent of it was in Western Europe, and 13 per cent in all other areas. Relatively few and large corporations are involved, because the risk, size and length of duration of the investment, make it virtually prohibitive for

smaller organizations to invest abroad. With the implementation of the four methods mentioned above, particularly tax liberalization, the hope would be that more capital, possibly from new and smaller firms, on a wider base, would be forthcoming.  

Turning now to the direct assistance by public agencies and by the United States government in minerals-expansion abroad, it is found that the largest aid takes the form of expansion and procurement contracts under the aegis of the Defense Minerals Procurement Agency; as in the domestic program, with Export-Import loans providing a second and important aid. The Foreign Operations Administration (formerly Economic Cooperation Administration, and Mutual Security Administration) also engaged in direct assistance, contributing dollars directly and making use of "counterpart" funds referred to earlier. The Technical Corporation Agency has also engaged in lesser technical assistance grants programs.

The DMPA expansion and procurement contracts, embracing essentially the same techniques mentioned earlier in the domestic minerals expansion program, amounted to almost $220 million from July, 1950 to March 31, 1953. Nickel, columbite-tantalum and tungsten were the important items

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19 For an elaboration of these points, for the regions and industries involved, etc., see "Staff Papers," op. cit., p. 78-89 and "Paley Report," op. cit., Volume I, p. 63.
(See Table IV). Export-Import loans for this same period under the basic Export-Import Act amounted to $213 million (uranium and manganese ore constituted over two-thirds of this amount). The total FOA program (then ECA-MSA) amounted to almost $106 million during this period; the aluminum program and transportation facilities comprising the bulk of the program. Ninety-one million of this program was financed by the use of "counterpart" funds, fifteen million by the direct outlay of dollars. The TCA program for this period was more modest, amounting to slightly over $4 million. (See Table IV).

The total direct government outlays for the foreign minerals-expansion, then, amounted to $594 million for the period from July 1, 1950 through March 31, 1953. This was almost $70 million more, for the same period, as the domestic minerals-expansion program (exclusive of the rapid tax amortization program and loan guarantees by DMPA shown in Table II).

One further technique needs mention here, that of the "management contract." This is a device which has been used domestically, as well as abroad. Currently "the Government's powers have been limited to special statutes

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20 For a more recent and detailed analysis of Export-Import loans see "hearing before the Committee on Banking and Currency," U.S. Senate, 83rd Cong., 2nd session, June, 1954, op. cit., Part 2, pp. 917-937.
<table>
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<tr>
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<td>$ --</td>
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<tr>
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<td>--</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-334</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<td>Sec. 304b, Defense Prod. Act borrowing auth.</td>
<td>Export- Exp. &amp; Import proc. contracts</td>
<td>TCA loan under basic ass't</td>
<td>Export- MSA, ECA loans</td>
<td>TCA tech grants</td>
<td>Total MSA-ECA</td>
<td>$ U.S. portion of counterpart funds</td>
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<tr>
<td>-------------------</td>
<td>---------------------------------------------</td>
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<td>Minerals, exp.</td>
<td>Total</td>
<td>DMPA expansion &amp; import procurement sec. 302 contracts</td>
<td>TCA Import loans under basic ass' t</td>
<td>Total $</td>
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<td>$4,110</td>
<td>$156,609</td>
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<td>$98</td>
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<td>$145,723</td>
<td>5,000</td>
<td>98</td>
<td>10,345</td>
<td>6,230</td>
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<td>60</td>
<td>98</td>
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<tr>
<td>Tin</td>
<td>98</td>
<td>145,723</td>
<td>98</td>
<td>16,345</td>
<td>6,230</td>
<td>907</td>
<td>15,395</td>
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<td>27,556</td>
<td>6,230</td>
<td>87,400</td>
<td>20,800</td>
<td>1,494</td>
<td>1,494</td>
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<tr>
<td>Tungsten</td>
<td>34,693</td>
<td>27,556</td>
<td>6,230</td>
<td>87,400</td>
<td>20,800</td>
<td>1,494</td>
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<td>Uranium</td>
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<td>87,400</td>
<td>907</td>
<td>907</td>
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<td>1,494</td>
</tr>
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<td>Zinc &amp; Zinc-cadmium</td>
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<td>684</td>
<td>338</td>
<td>20,800</td>
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</table>

on specific commodities (e.g., tin and abaca) and to residual powers to continue operation of plants constructed during the war (e.g., six magnesium plants in the United States and the Nicaro Nickel Plant in Cuba)."21 This is a device whereby the government undertakes the cost of construction and operations, but then either leases to, or pays a fee to, a private company for the management of the facilities. This is justified economically when the great bulk of the investment must be supplied by the government, since private capital is either reluctant or unable to participate.

The foregoing brief analysis serves to point out again the international ramifications of American current foreign economic policy and the increasing attention this area of policy is receiving.22 The long-run "answer" to the minerals question, as to all questions of multilateral trade, is an increasing flow of international investment, mainly American in origin. A corollary feature of this flow of investment should be a liberalization of American


22 Obviously not all the issues involved in our minerals policy have been touched upon here. Areas such as "buffer stocks" schemes, commodity agreements and the International Materials Conference - referred to in Chapter 2 - have been omitted. These issues and others obviously impinge upon the minerals policy and multilateralism in general, and open areas far too wide for extensive treatment here.
import policy, to which attention will now be directed. Stimulating the flow of American capital abroad, while maintaining restrictive import policies, is to operate at cross-purposes.

Tariff Policy:

While tariff duties alone are not a significant deterrent to the importation of raw materials and minerals into the United States, mainly because they are relatively low in the aggregate; and also, while reduction in tariffs in general will not obviate the staggering disequilibrium in world trade, even in the long run, they do form an

\[\text{It has long been recognized that complete removal of tariff restrictions by the United States will not necessarily close the "dollar gap," nor restore equilibrium conditions in international trade and, thus it is not intended here to offer tariff removals as the single solution to world trade problems. A general liberalization, however, keeping in mind protection in bona fide defense cases, will aid in ameliorating the existing disequilibrium, as well as provide a long-run policy more consistent with our current creditor status. Recent data (Piquet, Howard S., Aid, Trade and the Tariff, Thomas Y. Crowell Company, New York, 1953) suggest that temporary suspension of all tariffs for three years would result only in an increase in imports of from } \$1.7 \text{ billion to } 2.4 \text{ billion. A later unofficial study by the Treasury Department, assuming permanent removal of all tariff barriers, concludes that after a ten-year period imports might increase by as much as } \$3.5 \text{ billion a year. See "Staff Papers," op. cit., p. 301. Neither of these figures indicates a complete elimination of the "trade gap." These figures are merely enlightened "projections," are to be used cautiously for the time being, and are to be scrutinized more closely in Chapter 7 which analyzes the tariff issues in toto.}\]
integral part of American minerals-policy and trade policy. As suggested above, it is inconsistent to attempt to encourage the flow of American investment abroad, a policy which is consistent both with our current creditor status and our growing long-run dependence upon foreign raw materials, and at the same time continue a restrictionist import policy. This not only discourages the flow of investment abroad, but discriminates against American investors abroad who rely upon an American market for their products. Thus, considering international investment and the entire foreign economic policy, American tariff policy becomes an integral and necessary aspect of the entire pattern.

Clearly, tariff restrictions have other and more familiar impacts. They discourage the flow of trade, restrict the supply of dollars for foreign nations, invite retaliation, make for higher prices domestically, impede the growth of American export markets, and create "rigidities" in the domestic market. The impact is widespread and usually uneconomic.

Consideration of the impact of high import duties on domestic industries - particularly export industries - consuming imported minerals ought to be taken into account. Since most of the raw materials imported into the United States are in the form of ores, or in the primary stage of fabrication, any increase in the tariff rates, other things being equal, would obviously raise costs for the domestic
fabricator. This in turn might harm the competitive position of the domestic fabricator and might also result in higher prices for the consumer. This would be especially true of the expanding export industries which might find their competitive position in the world market weakened. Thus, while attempting to "protect" one segment of the economy, the "net effect" may be detrimental; this is merely one manifestation of the point that tariff policy is an integral part of general economic policy and that the impact of a change in tariff policy may be widespread and diffused.

While the duties levied are generally low on the importation of minerals, they are by no means consistent when considered against the need for the respective minerals. In general, those minerals which are not produced in the United States are admitted duty-free. However, for other key metals, duties are high. These include aluminum, magnesium, and tungsten. Another inconsistency is the discrimination by means of considerably higher duties on processed as compared with raw or crude materials. This is the situation with antimony, chrome, lead, manganese and petroleum.

Arguments on this latter point can be made either way, namely, that it is prudent to discriminate against processed materials in order to strengthen the domestic fabricating technology; or that liberalizing duties on processed
materials is consonant with the least-cost principle. This latter point is substantiated when foreign processing costs, in conjunction with the lower costs of shipping the more concentrated processed materials rather than bulky ores, would actually deliver lower-cost materials. This latter policy of allowing preliminary processing to take place abroad also offers the foreign countries the added advantages of developing industrial capacity and increasing their dollar earnings. These foreign nations, of course, would have to come within the orbit of being reasonably "safe."

In answer to the former argument, it will be recalled that a strong point was made earlier concerning the few "protective" devices needed to be employed, even for defense purposes, in view of the wide range of the cadre of skilled workers now existing within the borders of the United States. The emphasis should focus upon the general level of skills and aptitudes, thus a policy of allowing "competitive conditions rather than either the United States tariff or equivalent action of other governments to determine where the first processing (should) take place,"\textsuperscript{24} is consistent with this point of view.

In the aggregate the ad valorem equivalents on metals

\textsuperscript{24} "Bell Report," \textit{op. cit.}, p. 19. This report categorizes discriminatory rates on fabricated materials as "unnecessary" tariffs.
manufactures was 12.1 per cent on January 1, 1953. These have been lowered since the Tariff Act of 1930 from 23.7 per cent. Although 15 of the 31 items in the component under analysis are on the free list, some duties range as high as 66 per cent of the value of the imported material (magnesium). Since many of the items are subject to specific rates, the increases in the price of these items in recent years has lowered considerably the ad valorem equivalent (e.g., the tariff of 1 1/2 cents a pound of lead, in terms of its 1930 price amounted to a 27 per cent ad valorem, while, in 1950, it amounted to only 11 per cent).

Generally, as pointed out previously, tariffs have been suspended when purchases were made by the government for the stockpile (Public Law 152, 1949). It would seem that this could prudently become a long-run import policy of the United States in regard to deficient materials. Unilateral action, and possibly permanent special legislation independent of the existing Reciprocal Trade Agreements machinery, might be undertaken to eliminate entirely duties on minerals and metals, imports of which are a major part of United States supplies. 25

The question remains, however, of the impact upon domestic industries (i.e., the "displacement" problem), as

25 In this connection the "Bell Report," op. cit., cites as a possible criterion for a change in tariff policy a situation in which U.S. production amounts to only 1/3 of its consumption (See p. 123). When security issues are at stake, it would place the commodity on an Extraordinary List which would call for exceptionally high duties, or quotas, or other restrictions (See p.1).
a result of a policy of eliminating entirely, although gradually, tariff barriers on minerals and metals. Exclusive for the moment of the security questions posed, the consensus is that no serious disruption to the domestic mining industry, in general, would occur. "Informed guesses" of the study cited earlier (Piquet), and of the commodity specialists in the Bureau of Mines would place minerals and metals importations as a group in the category where the smallest over-all percentage increases in imports would occur. Of the 16 dutiable materials under analysis, only two would show increases in imports exceeding 100 per cent (barites with an ad valorem rate of 35 per cent and fluorspar with an ad valorem equivalent rate of 34 per cent); and only one would show an increase in imports of about 50 per cent (magnesium with a 33 per cent ad valorem duty). Zinc, aluminum, manganese ore, bauxite, tungsten, copper and mercury, would show increases in imports up to 25 per cent.26

Increases in imports of these magnitudes, of course, does not necessarily give any indication of the amount of displacement or "serious injury" which would occur by the

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26 Piquet, op. cit., pp. 36-41. It ought to be underscored at this point that the many assumptions used in this study seriously limit the use to which these data can be applied (See p. 20). Unofficial and unpublished analyses since this study seem to corroborate the conclusions arrived at, however. The figures in all cases are based upon the import situation and tariff duties prevailing in 1951.
increase. Price elasticity of demand at the moment and whether demand is expanding or contracting for the commodity involved, inter alia, are the main determinants of the amount of displacement which will occur. As indicated previously the "projections" are that there will be an expanding market for most minerals, and certainly for raw materials in the aggregate, over the next 25 years. The displacement in most cases, therefore, ought to be eased thereby. Generally, it would mean that domestic industries would have a smaller percentage of the expanding market.

Estimates of the share of the market after tariff suspensions, of seven of the 16 dutiable items under analysis, based again on extremely qualified assumptions, and, still exclusive of security considerations, have been made and are indicated in Table V.

All the above estimates of displacement as a result of assumed tariff suspensions were made exclusive of security considerations. When this additional factor is taken into consideration, the difficulties are compounded. The specific question centers upon the imports of minerals which would increase significantly and thereby "displace" or jeopardize a going domestic concern, and from what geographic area are the minerals imported. Obviously those imports coming from outside the orbit of accessibility give rise to all the security aspects mentioned earlier and
<table>
<thead>
<tr>
<th>Commodity</th>
<th>Proportion</th>
<th>Estimated Domestic Production, 1951 (in thousands)</th>
<th>Imports, 1951 (in thousands)</th>
<th>Estimated Increase in Imports</th>
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<tbody>
<tr>
<td>Crude Barytes</td>
<td>17%</td>
<td>7,828</td>
<td>419</td>
<td>100-300%</td>
</tr>
<tr>
<td>Fluorspar</td>
<td>33</td>
<td>15,000</td>
<td>1,396</td>
<td>50-100</td>
</tr>
<tr>
<td>Manganese</td>
<td>89</td>
<td>7,100</td>
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<td>Mercury</td>
<td>84</td>
<td>1,502</td>
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</tr>
<tr>
<td>Bauxite</td>
<td>65</td>
<td>12,478</td>
<td>13,943</td>
<td>10-25</td>
</tr>
<tr>
<td>Zinc</td>
<td>29</td>
<td>268,240</td>
<td>57,985</td>
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</tr>
<tr>
<td>Tungsten</td>
<td>47</td>
<td>22,976</td>
<td>12,996</td>
<td>10-25</td>
</tr>
</tbody>
</table>

1/ dutiable only


Aluminum, lead, zinc, copper and bauxite are imported from areas judged by military experts as relatively safe. Fluorspar is a mixed case, coming about equally from the most and least safe areas. The possible problem commodities, then, are narrowed to fluorspar, manganese, mercury and tungsten; four of the 31 under analysis. Of these four, the domestic output of three - manganese, mercury, and...
and tungsten - are small and the present tariff levels do not contribute very much to the maintenance of a sizeable domestic output, and hence there is a relatively minor displacement problem. There is, however, a serious stockpiling and domestic expansion problem. (The expansion goals of these three items, as well as fluorspar, are open as of September 30, 1954. See Appendix A, preceding chapter.) Figures in Tables II, III, and IV reflect this situation and indicate that these four minerals have involved a heavy share of both domestic and foreign expansion program.

Fluorspar, then, remains the one mineral which is both a "displacement" problem and a security problem, that is, if tariff restrictions were removed, penetration of the domestic market by foreign producers might possibly occur to a point of endangering the existence of the domestic industry. (Table V indicates that foreign producers would have about 33 per cent of the market if the duties on fluorspar were eliminated.)

This, per se, does not,

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28 Piquet, op. cit, pp. 126-27. There are three grades of fluorspar; the one under consideration here, as listed on the ODM expansion goal, is fluorspar, acid grade, which for import classification purposes means fluorspar containing more than 97 per cent calcium fluoride and has a lower ad valorem equivalent rate (16%) than fluorspar of lower calcium fluoride content (44.6%). This is the only mineral to exhibit this obverse pattern. Piquet's estimate is as follows:

"Suspension of the duties on fluorspar would result in a "substantial" increase in imports, although total consumption would not necessarily increase. There would probably be some curtailment in the production of fluorspar at domestic mines owned by the steel and aluminum industries." p. 127.
however, automatically call for maintaining or increasing the duty. As ample evidence has already made clear, many devices exist and are being implemented for handling the situation. In the final analysis, a detailed examination of the stockpile supply of this mineral - and the above three - is the crucial security issue. The evidence is that none of the four has posed a particularly difficult stockpile problem.

The concept of "displacement" poses serious questions and is germane to the tariff and import policy, not merely the mobilization aspects under analysis in this study. There are several current proposals concerned with easing "displacement" as a result of governmental import policy. All involve financial aid by the United States government, either directly, or on a basis of grants-in-aid to the states. The aid would go to the worker, firm, industry or community involved in the displacement. One proposal is an "adjustment subsidy" which would reduce the amount of government aid annually over a stipulated period of time. This is advocated as a counter proposal to continuing operating subsidies, which have the disadvantage of tending to perpetuate resistance to adjustment. 29

29 Ibid., pp. 58-59. The problem of displacement, which as indicated earlier, is germane in our entire report policy, will come in for extended analysis in chapter 7. Suffice it to say here, that assuming complete suspension of tariffs, the "projection" is that the adjustment problems posed "probably would be no greater than those than normal- ly accompany technological change." Ibid., p. 49.
These particular indemnification aids mentioned above are, of course, justified on the ground that the increased imports and displacement should be offset "in the national interest." A word of caution ought to be injected that this particular argument of the "national interest" may become a dangerous precedent.

Against this approach to the problem of injury occasioned by increased imports it might be argued that indemnification of individuals, firms or industries for losses sustained because of tariff action on the part of the Federal Government would set a dangerous precedent. Workers and capital displaced by improvements in technology or adversely affected by Government decisions in many fields might be able to show that their difficulties also were brought about "in the larger national interest. 30

Displacement is currently merely of academic interest, pending the outcome of current reciprocal trade legislation and an actual influx of imports subsequent to the lowering of a tariff. Of more immediate concern are the "escape clause" and "peril point" provisions of the Reciprocal Trade Agreements Act. While there has been but one "peril point" overruling to date, there have been innumerable requests under the "escape clause" provision. 31 The lead and


31 These two provisions, also will come in for more detailed analysis in a subsequent chapter. Generally, "protectionists" are in favor of strengthening the administration of these provisions and of granting the Tariff Commission more power in this respect. This may be referred to as the "avoidance of injury" approach as opposed to the "absorption of imports" approach (by means of displacement indemnifications) advocated by those who favor a general liberalization of our tariff policy.
zinc industry, representing two of the materials under analysis in this chapter, requested "escape clause" action in September, 1953, under Section 7 of the Trade Agreement Act of 1951. The hearing by the Tariff Commission was conducted under Section 322 of the Tariff Act of 1930, the so-called "equalization of costs" provision; the request was ultimately rejected.32 This whole issue will be discussed in a subsequent chapter.

As part of the lead and zinc issue, however, is the proposal put forth in legislation, but never passed, calling for a sliding-scale tariff on imports of lead and zinc.33 This proposal is also advocated outside legislative circles. In essence it provides for a domestic parity price and whenever the market price falls below this price, the tariff would be raised a commensurate amount to offset

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the decline in price and thereby impede the flow of imports. This would "guarantee" domestic mines a steady share of the market and a continuous level of income.

The most serious objection to this proposal is that it throws the burden of price fluctuations upon foreign producers, many of whom are American investors (55 per cent of our lead imports and 25 per cent of our zinc imports are directly attributable to U.S. investments abroad), and thereby disrupts a steady flow of materials internationally. This policy would also, of course, have a disruptive effect on domestic marketing of lead and zinc and may in the long-run have an adverse impact upon the lead and zinc industry, particularly the zinc producers who compete with substitute minerals, the prices for which are relatively stable. And, finally, this proposal has all the disadvantages of any proposal which attempts to "equalize costs" of internationally-traded commodities. The essence of a rational import policy is, obviously, to import from low-cost sources, not to legislate against them in favor of domestically-produced items. Therefore, this proposal should be unequivocally rejected.

Evidence exists that the problem of the lead and zinc industry as it existed in 1953 was of a short-run duration and has since improved. Two of the members of the Tariff

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34 "Staff Papers," op. cit., p. 236.
Commission recommended no relief on the grounds that increasing the tariff when viewed in the context of the world price would have a depressing effect on world prices, and thus might in turn have a depressing effect upon the domestic price and limit the effectiveness somewhat on the tariff increase. Also, they indicated that a rise in the domestic price might induce the use of substitute metals, particularly aluminum for zinc, and that any increase in price might bring into production sub-marginal mining firms which may be all the more difficult to "protect" in the long run. Further, they questioned whether the proposed increase in price, by increasing the tariff, would be sufficient to bring forth the supply needed by the United States, particularly in the event of war (postwar experience creates this doubt). These commissioners recommended an intermediate policy of attempting to keep a going lead and zinc industry, using whatever "props" necessary, to maintain domestic production at levels that generally prevailed in post-war years.

The intermediate program would enable the United States to maintain its lead and zinc industries and, at the same time, would (1) permit the United States to maintain good relations with other lead-and zinc mining countries, especially Canada and Mexico, and (2) encourage the maintenance of well-developed lead and zinc industries in those countries. The maintenance of Canada and Mexico as sources of supply is especially important since in the event of a serious national
emergency we would again largely depend upon them to supply the increased United States requirements for lead and zinc.\textsuperscript{35}

In addition to "escape clause" action, and the proposal for a sliding-scale tariff, the "protectionist" interests among the mining industries have advocated many other devices both in and out of legislative halls. These include the creation of a special government agency to handle tariff matters on materials of a strategic and critical nature, these tariffs to "insure" a "reasonable profit" for domestic producers and this agency to be autonomous. Also, proposals to make the Tariff Commission findings binding upon the Executive (and even to make the Tariff Commission an instrument of partisan politics) and to strengthen the administration of the "escape clause" and "peril point" provisions, as indicated earlier, have been advocated. The traditional proposal of import quotas has been reiterated. These "protectionist" arguments, of course, embrace more than security considerations, but the essence of the argument generally revolves around the issue of security, and involves anarchy in American minerals policy.

It is true that tariff duties on minerals and metals in the aggregate are relatively low; 12.1 per cent ad

\textsuperscript{35}"Lead and Zinc Industries," \textit{op. cit.}, p. 97. The material in this section is from this volume, pp. 91-97.
valorem. This low ad valorem equivalent rate is the result of reduction in many commodities since 1930 and the rise in the prices of these commodities which have the effect of lowering the ad valorem equivalent of specific duties. Nevertheless, while these duties are low, tariff policy is still of importance in the broad context of foreign economic policy. Furthermore, the tariffs imposed on this group of commodities are not consistent with the need for the specific commodities, and discriminate against processed metals. This latter policy, aside from its discriminatory features, counteracts somewhat the low rates on minerals.

The proposal is put forth that through special legislation or unilateral action, all tariffs on minerals and metals in which the United States finds itself deficient, should be removed (as is done under Public Law 152 for stockpiling purchasing). This would be consistent with both the current creditor status and our long-run increasing deficiency in raw materials of the United States. Absolute suspension will give rise to some "displacement" problems.

Considering the 31 materials analyzed, only one fluor spar, can be considered both a "displacement" and a security problem. The displacement problem in general for minerals and metals would not be severe according to the best informed estimates. "Adjustment subsidies" and other devices could be implemented to ease the adjustment problem.
The lead and zinc industry provide a unique domestic mineral problem. Requested "escape clause" action in 1953 and arguments for a sliding-scale tariff were presented. Both proposals should be rejected and an intermediate policy as advocated by two members of the Tariff Commission should be adopted.

The current tariff rates on the 31 minerals under analysis are shown in Table VI. The items are listed in the order of the preceding chapter, which is the order in which they appear on the ODM expansion goals list (see Appendix A, preceding chapter). The items are arbitrarily considered to be comparable to those classified in the tariff schedule and in all cases are assumed to be the ore of the material in question, not the metal (ODM lists in some cases do not specify). Again it should be repeated that the metals may often carry a dutiable rate, whereas the ore may not (see antimony in following table). The last column of the table shows the ad valorem equivalent (considering the 1950 rate) and is given only for analytical purposes. In some cases the rates have been lowered or suspended, and, obviously, some price changes have occurred, thus the ad valorem equivalents might be considerably different currently. The table also indicates the tariff paragraph numbers involved, the tariff rate of 1930, and the current rate.
## TABLE VI

### TARIFF RATES ON SELECTED MINERALS AND METALS

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Tariff Par.#</th>
<th>Full Rate</th>
<th>Reduced Rate</th>
<th>Ad Valorem Equiv. of 1950 Rate of Duty (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron ore (taconite)</td>
<td>1700</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Cobalt</td>
<td>1652</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Columbite and Tantalite</td>
<td>1719</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Lead</td>
<td>312</td>
<td>1/2$lb.</td>
<td>3/4$lb.</td>
<td>6.8</td>
</tr>
<tr>
<td>Magnesium</td>
<td>375</td>
<td>40$lb.+</td>
<td>20$lb.+</td>
<td>66.4</td>
</tr>
<tr>
<td>Manganese ore Metallurgical gr.</td>
<td>302a</td>
<td>1$lb.</td>
<td>1/4$lb.</td>
<td>16.0</td>
</tr>
<tr>
<td>Chemical grade</td>
<td>302a</td>
<td>1$lb.</td>
<td>1/4$lb.</td>
<td>12.1</td>
</tr>
<tr>
<td>Battery grade</td>
<td>302a</td>
<td>1$lb.</td>
<td>1/4$lb.</td>
<td>9.3</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>302b</td>
<td>35$lb.</td>
<td>---</td>
<td>n.a.</td>
</tr>
<tr>
<td>Nickel</td>
<td>1734</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Sulphur</td>
<td>1777</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Tungsten ore</td>
<td>302c</td>
<td>50$lb.</td>
<td>---</td>
<td>39.3</td>
</tr>
<tr>
<td>Chromite</td>
<td>1647</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Chemical grade</td>
<td>1647</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Metallurgical gr.</td>
<td>1647</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Refractory grade</td>
<td>1647</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Zinc</td>
<td>393</td>
<td>1 1/2$lb.</td>
<td>3/5$lb.</td>
<td>14.7</td>
</tr>
<tr>
<td>Copper</td>
<td>3425[1/2]</td>
<td>4$lb.</td>
<td>2$lb.</td>
<td>9.4</td>
</tr>
<tr>
<td>Aluminum primary</td>
<td>374</td>
<td>4$lb.</td>
<td>1 1/2$lb.</td>
<td>14.6</td>
</tr>
<tr>
<td>Alumina</td>
<td>6</td>
<td>1/2$lb.</td>
<td>1/4$lb.</td>
<td>n.a.</td>
</tr>
<tr>
<td></td>
<td>Tariff Par. #</td>
<td>Full Rate</td>
<td>Reduced Rate of 1950 Duty (%)</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>-----------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td>386</td>
<td>25¢ lb.</td>
<td>---</td>
<td>39.5</td>
</tr>
<tr>
<td>Bauxite</td>
<td>207</td>
<td>$1 ton</td>
<td>50¢ ton</td>
<td>7.8</td>
</tr>
<tr>
<td>Antimony Ore</td>
<td>1608</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Antimony Metal</td>
<td>376</td>
<td>2¢ lb.</td>
<td>---</td>
<td>4.3</td>
</tr>
<tr>
<td>Beryl</td>
<td>1719</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Barite</td>
<td>67</td>
<td>$5 ton</td>
<td>$3 ton</td>
<td>n.a.</td>
</tr>
<tr>
<td>Titanium</td>
<td>302n</td>
<td>25% ad val</td>
<td>20% ad val</td>
<td>20.0</td>
</tr>
<tr>
<td>Iron ore</td>
<td>1700</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Potash</td>
<td>1745</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Asbestos</td>
<td>1616</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Rutile</td>
<td>1719</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Fluorspar, acid grade</td>
<td>207</td>
<td>$6.60 LT</td>
<td>$2.10 LT</td>
<td>16.0</td>
</tr>
<tr>
<td>Selenium</td>
<td>1758</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
<tr>
<td>Rare earths</td>
<td>1721</td>
<td>free</td>
<td>---</td>
<td>Free</td>
</tr>
</tbody>
</table>

1/ Import tax
n.a. - not available

SUMMARY:

The central consideration of a minerals and metals policy for the United States is the fact that the United States has not only grown up to its resource base, but has, in fact, outgrown its resource base. Currently, the United States is a heavy net importer of raw materials in the aggregate, and, informed "projections" are that this deficit will widen and that the United States will become increasingly dependent upon foreign sources of raw materials - all this in the face of the highest output in the history of our domestic mining industries.

A fundamental requisite of policy will be the need of an increasing flow of direct American investment, perhaps stimulated by governmental policy aimed at inducing a favorable climate for direct foreign investment here and abroad. This direct foreign investment is in harmony with the contemporary creditor status of the United States and the growing need for raw materials. It should aim at promoting a steady and adequate flow of low cost materials; encouraging a balanced growth in resource-rich nations; establishing a source of dollars for dollar-deficient nations; fostering multilateralism; and closing the enor-
rous "trade gap" between America and the free nations. In short, no policy directed at autarchy should be encouraged; rather the increasing importation of minerals by the United States, financed in part by direct United States investment abroad, and aided, in part, by growing complementary multilateralism, is a sound-long-run minerals policy for the United States.

Within the framework of this broader, long-run problem, there is the more immediate, short-run security problem of attempting to eliminate deficiencies of materials which would occur in a full-scale national emergency. Stockpiling is the main, and perhaps only feasible means for eliminating most of these deficiencies.

Each of the 76 items categorized as critical and strategic, and specified in the Stockpile Act, presents unique calculations. The factors of accessibility and a continuing supply - at low costs - are all important. Further calculations involving procurement domestically vis-a-vis abroad, and the type and combinations of devices to be implemented to bring about the adequate flow of material have to be made.

While materials may be stockpiled in either of five ways, the consensus is that the material should be stockpiled "in its highest homogeneous form," that is, in the most finished form practicable, short of the danger of obsolescence. Stockpiling should have in it no element of
a subsidy; and should be implemented independent of any "Buy American" considerations. The policy and the materials being stockpiled should be constantly reappraised and should be augmented by all the techniques necessary to insure a steady flow of materials.

Indirect and direct assistance have been used both domestically and abroad, by the government to induce a steady flow of critical materials. Of the indirect devices, implemented domestically only, the rapid tax amortization program is the most significant. Direct assistance, both home and abroad, took the form of Defense Materials Procurement Agency expansion and procurement contracts, in the form of open-purchase or floor-price agreements. The only recommendation to be made in this connection is that these programs should be continued whenever they are found to be feasible and in the national interest.

It is further recommended that the government assist indirectly in aiding direct American investment abroad by any or all of the four following techniques: effectuating comprehensive investment treaties; entering into special resource agreements; enlarging, possibly, the program of investment guarantees for the American investor against inconvertibility and expropriation (FOA had entered into 54 of these, as of September 30, 1953); "liberalizing" the tax structure for American investors abroad. Again, this
would be consistent with the need for stimulating the flow of American investment abroad.

Also, it is proposed that all tariffs on minerals and metals should be removed (as is the current practice in stockpile purchases), particularly the higher ad valorem rates on processed materials. At present the inconsistent and higher duties on metals countermand somewhat the low rates on minerals, and this should be corrected. The removal of tariff barriers could be done through special legislation independent of the Reciprocal Trade Agreements Act, or by individual unilateral actions.

Only four of the 31 materials comprising the minerals and metals component of the current mobilization base are judged by experts as "security" problems, that is, a significant portion of the supply of each comes from relatively unsafe areas. In three of these, manganese, mercury, and tungsten, the tariff rate is of negligible importance in "protecting" the domestic industry, the domestic industry being capable of supplying only a small portion of the market for these minerals. All four of these minerals, of course, are being stockpiled and are receiving direct or indirect aid from the government.

Only one mineral, fluorspar, was found to be both a security and a "displacement" problem. It is a security problem in that about half of the continuing supply comes
from relatively unsafe areas, and it is a "displacement" problem in that eliminating the tariff would have the effect of curtailing some domestic production in the United States.

To the over-all "displacement" problem, exclusive for the moment of security considerations, there are two disparate alternatives; "avoidance of injury" or "absorption of imports." The former is advocated generally by "protectionists" and could be accomplished through stronger implementation of the "escape clause" and the "peril point" provisions of the Reciprocal Trade Agreements program. Those in favor of the "absorption of imports" approach propose some sort of government aid to the displaced worker, firm, industry, or community to ease adjustment to increased imports caused by a liberalization of tariff policy.

In reference to a situation in which the materials provides both a security and a "displacement" problem, as with fluorspar, an intermediate policy is recommended. This would, in essence, attempt, by an unchanged tariff policy, to maintain a domestic industry and a steady flow of imports from "safe" areas abroad. It would attempt to keep unchanged the domestic post-war production pattern by means other than tariffs. The situation does not necessarily call for an increase in tariff duties, in fact, an increase in rates might have an adverse effect.
In short, the United States should discourage a policy of autarchy, and, rather, it should continue to encourage a steady flow of low cost raw materials throughout both the period of mobilization and the long-run development. It should seek, therefore, to implement all policies consistent with and conducive to this end; stockpiling deficient materials; stimulating foreign investment; granting aid both here and abroad to raw material producers, whenever feasible; lowering tariff barriers; and, generally, liberalizing its import policy.
A. The Chemicals Component

The chemicals component is vastly different in nature from the minerals component analyzed in the preceding chapter. Chemicals, in the main, use a manufacturing process; minerals are extractive industries. Chemicals constitute a declining cost industry; minerals are mainly subject to rising real costs. The chemical industry is dynamic and the fastest growing industry in America - with a rate of growth approximately two times as great as that of all industrial production. The minerals industries, while showing absolute increases, are declining relatively. And finally, as all this would suggest, the chemical industry is a large export industry; while the United States is a continuing "net importer" of minerals and metals. Thus, these two components are significantly different, suggesting therefore a different type of analysis and policy.
As indicated in Chapter 3, the chemical component in terms of number of items, 68, is the largest in the mobilization base. It comprises 27.8 per cent of all the items in the mobilization base. It ranks second only to the primary metals industries in the percentage of total costs of expansion projects covered by certificates of necessity as of September 30, 1954 - 10 per cent. This represents slightly less than $3 billion worth of expansion, approximately the same amount of expansion granted rapid tax write-off aid in minerals and metals. Of course, chemicals received no other aids, as did minerals and metals. These figures clearly indicate the importance of the chemical industry to the current defense posture.

The organic chemical industry, accounting for approximately 90 per cent of the total tonnage of chemicals in the United States, produced 27.5 billion pounds of organic chemicals in 1951. Forty-one per cent of this amount, 11.3 billion pounds, was devoted to defense purposes. This amount was only slightly less than the total World War II peak production of 15 billion pounds in 1944. The minimum ultimate capacity when expansion goals are fully completed (1955) will be 37 billion pounds a year, 2 1/2
times the World War II peak. These figures indicate clearly that not only is the chemical component a vital one in the contemporary defense buildup, but that it will become of increasing relative importance in any future all-out conflict.

Much of the tremendous growth of the past and of the projected growth of the future of the chemical industry - expected to be four times as large in 1975 as it was in 1950 - is due to the industry's emphasis upon research and continued heavy capital investment. The chemical industry accounts perennially for some 20 per cent of total industrial research and is easily the leader in this field. In 1953, the organic chemical industry employed 12,208 research personnel and spent $210 million on research.


2 "New military uses for organic chemicals arising in the Korean emergency included bulletproof vests, rockets, napalm bombs, jet fuels, and new wonder drugs such as penicillin and streptomycin." "Trade, Strength and Security," op. cit., p. 4.


The industry also ranks high in capital investment per production worker; in 1948, it had invested $16,882 per production worker as against $9,011 for the automobile industry and $8,066 for iron and steel products industry.\(^5\) Both of these factors weigh heavily when framing tariff policy for this industry, a subject which will come under analysis subsequently.

That the chemical industry of the United States, again using the synthetic chemical segment, is on a pronounced export basis is clearly indicated by the figures in Table VII. In 1951, the American industry exported 922,040,000 pounds as compared with the importation of 128,893,000 pounds. In dollar terms, exports were over $460 million, imports amounted to less than $39 million. The year 1952 showed some significant decreases from the peak year of the year before, but the pattern was roughly comparable. The United States at present is in the position of being the principal supplier to the world markets of such organic chemicals as medicinals (exports in 1952, $224.8 million; imports, $6.5 million), plastic and resin materials and organic agricultural chemicals. These three groups constituted nearly two-thirds of the United States exports of organic chemicals.\(^6\)


\(^6\) Ibid., p. 1597, and "Trade, Strength and Security, op. cit., pp. 154-5."
### TABLE VII
SYNTHETIC ORGANIC CHEMICALS:
UNITED STATES IMPORTS AND EXPORTS, 1947-1952

<table>
<thead>
<tr>
<th></th>
<th>pounds (thousands)</th>
<th>dollars (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>imports</td>
<td>exports</td>
</tr>
<tr>
<td>1947</td>
<td>24,405</td>
<td>691,465</td>
</tr>
<tr>
<td>1948</td>
<td>62,308</td>
<td>647,954</td>
</tr>
<tr>
<td>1949</td>
<td>58,156</td>
<td>679,944</td>
</tr>
<tr>
<td>1950</td>
<td>124,842</td>
<td>716,266</td>
</tr>
<tr>
<td>1951</td>
<td>128,893</td>
<td>922,040</td>
</tr>
<tr>
<td>1952</td>
<td>115,603</td>
<td>732,369</td>
</tr>
</tbody>
</table>


At the Torquay session, in 1950, of the General Agreement on Trade and Tariffs, many concessions were made on the tariff schedules pertaining to chemicals, and, as yet, it is too soon to discern the impact upon the domestic chemical industry. From what has been indicated above and from the consensus as to the domestic industry's ability to withstand foreign competition, it would appear that the chemical industry in the aggregate - exclusive for the moment of defense considerations - would not seriously be impaired by tariff reductions. The tariff paragraph number 1930 tariff rate and the reduced rate, if any for 48 of the 61 chemicals under analysis are shown in Table VIII. Where more than one rate exists, the additional data are shown. The table indicates, among other things, that 11 of the items are included in paragraphs 27 and 28, and eight items are on the Free List.
<table>
<thead>
<tr>
<th>Chemical</th>
<th>Tariff Paragraph</th>
<th>Full Rate</th>
<th>Reduced Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>27(b)</td>
<td>3 1/2¢/lb.+20%</td>
<td>---</td>
</tr>
<tr>
<td>Phtalic Anhydride</td>
<td>27(a)(1)</td>
<td>7¢/lb.+40%</td>
<td>3 1/2¢/lb.+20%</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>1641</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Aniline</td>
<td>27(a)</td>
<td>7¢/lb.+40%</td>
<td>3 1/2¢/lb.+25%</td>
</tr>
<tr>
<td>Chlorine</td>
<td>5</td>
<td>25%</td>
<td>12 1/2%</td>
</tr>
<tr>
<td>Hydrofluoric Acid</td>
<td>1601</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Napthalene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crude</td>
<td>1651</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>refined</td>
<td>27(a)(1)</td>
<td>7¢/lb.+40%</td>
<td>1 3/4¢/lb.+10%</td>
</tr>
<tr>
<td>Anthraquinone Vat Dyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(single strength bases)</td>
<td>27(a)(1)</td>
<td>7¢/lb.+40%</td>
<td>3 1/2¢/lb.+25%</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>18</td>
<td>1¢/lb.</td>
<td>---</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>solid</td>
<td>40</td>
<td>8¢/lb.</td>
<td>4¢/lb.</td>
</tr>
<tr>
<td>solution</td>
<td>40</td>
<td>1 3/4¢/lb.</td>
<td>7/8¢/lb.</td>
</tr>
<tr>
<td>DDT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl Chloride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quinoline</td>
<td>27(a)(1)</td>
<td>7¢/lb.+40%</td>
<td>3 1/2¢/lb.+20%</td>
</tr>
<tr>
<td>Resorcinol</td>
<td>27(a)(1)</td>
<td>7¢/lb.+40%</td>
<td>3 1/2¢/lb.+20%</td>
</tr>
<tr>
<td>Trichlorethylene</td>
<td>18</td>
<td>30%</td>
<td>7 1/2%</td>
</tr>
<tr>
<td>Iron oxide, yellow (synthetic)</td>
<td>73</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Maleic Anhydride</td>
<td>1 n.e.s.</td>
<td>25%</td>
<td>12 1/2%</td>
</tr>
<tr>
<td>Tariff Paragraph</td>
<td>Full Rate</td>
<td>Reduced Rate</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>Benzene Hexachloride (technical grade)</td>
<td>27(a)(3)(5) 7¢lb.+40%</td>
<td>3 1/2¢lb.+20%</td>
<td></td>
</tr>
<tr>
<td>Sodium Cyanide</td>
<td>1667</td>
<td>7¢lb.+40%</td>
<td>3 1/2¢lb.+20%</td>
</tr>
<tr>
<td>Titanium Dioxide Pigment</td>
<td>89</td>
<td>30%</td>
<td>15%</td>
</tr>
<tr>
<td>Perchlorethylene</td>
<td>5</td>
<td>25%</td>
<td>12 1/2%</td>
</tr>
<tr>
<td>Benzene Hexachloride (lindane) 99% or more gamma isomer content</td>
<td>27(a)(3)(5) 7¢lb.+40%</td>
<td>3 1/2¢lb.+20%</td>
<td></td>
</tr>
<tr>
<td>Methanol Synthetic</td>
<td>4</td>
<td>18¢ gal.</td>
<td>---</td>
</tr>
<tr>
<td>Calcium Carbide</td>
<td>16</td>
<td>1¢ lb.</td>
<td>1/2¢ lb.</td>
</tr>
<tr>
<td>Butadiene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene Oxide</td>
<td>2</td>
<td>6¢lb.+30%</td>
<td>1 1/2¢ lb.+ 7 1/2%</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>2</td>
<td>6¢lb.+30%</td>
<td>1 1/2¢ lb.+ 7 1/2%</td>
</tr>
<tr>
<td>Carbon Black</td>
<td>71</td>
<td>20%</td>
<td>12 1/2%</td>
</tr>
<tr>
<td>Glycerine crude refined</td>
<td>42</td>
<td>1¢lb.</td>
<td>0.4¢lb.</td>
</tr>
<tr>
<td>42</td>
<td>2¢lb.</td>
<td>1¢lb.</td>
<td></td>
</tr>
<tr>
<td>Sebacic Acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Chlorate</td>
<td>81</td>
<td>1 1/2¢lb.</td>
<td>3/4¢lb.</td>
</tr>
<tr>
<td>Methylene Chloride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithium Compound</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon, Activated (water purification and decolorizing grade)</td>
<td>69</td>
<td>45%</td>
<td>22 1/2%</td>
</tr>
<tr>
<td>Industrial Ethyl Alcohol</td>
<td>4</td>
<td>15¢ gal.</td>
<td>7 1/2¢ gal.</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>Styrene Monomer (including methyl styrenes)</td>
<td>28A</td>
<td>7¢lb.+45%</td>
<td>3 1/2¢lb.+22 1/2%</td>
</tr>
<tr>
<td>Soda Ash</td>
<td>81</td>
<td>1/4¢lb.</td>
<td>1/4¢lb. b/</td>
</tr>
<tr>
<td>Penicillin</td>
<td>5</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Phosphate Rock</td>
<td>1740</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Phosphatic Fertilizers</td>
<td>1627</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Phosphatic Feed Supplements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>1651</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Benzene</td>
<td>1651</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Acetone</td>
<td>3</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Adipic Acid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adiponitrile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hexamethylenedizmine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketone, Methyl Ethyl</td>
<td>3</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Ketone, Methyl Isobutyl</td>
<td>3</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Sodium Bichromate</td>
<td>81</td>
<td>1 3/4¢lb.</td>
<td>1 3/4¢lb. b/</td>
</tr>
<tr>
<td>Hexamethylenetramine</td>
<td>40</td>
<td>11¢lb.</td>
<td>5 1/2¢lb.</td>
</tr>
<tr>
<td>Octyl Alcohols</td>
<td>27(a)(3)(5)</td>
<td>7¢lb.+40¢</td>
<td>3 1/2¢lb.+20¢</td>
</tr>
<tr>
<td>Tariff Paragraph</td>
<td>Full Rate</td>
<td>Reduced Rate</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Pentaerythritol</td>
<td>5</td>
<td>25%</td>
<td>12 1/2%</td>
</tr>
<tr>
<td>Tetraethyl Lead</td>
<td>46</td>
<td>30%</td>
<td>15%</td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>1</td>
<td>1 3/8$lb.</td>
<td>1/2$ lb.</td>
</tr>
<tr>
<td>not over 65%</td>
<td>1</td>
<td>2$lb.</td>
<td>5/8$lb.</td>
</tr>
<tr>
<td>over 65%</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylchloride</td>
<td>37</td>
<td>15$lb.</td>
<td>7 1/2$lb.</td>
</tr>
<tr>
<td>Ethylene Dibromide</td>
<td>2</td>
<td>6$lb.+30%</td>
<td>3$lb.+15%</td>
</tr>
<tr>
<td>Sulphuric Acid</td>
<td>1601</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Alkylate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argon</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.e.s. - not elsewhere specified

b/ Bound against increase

While the study quoted earlier (Piquet) places the chemicals industry within the group comprising the "area of maximum import competition," the assumption is that for the numerous chemical items which would experience foreign competition, only a few would find imports a serious threat. This is so, because the further assumption is made that the domestic producers either enjoy a competitive advantage over their foreign rivals, or that an increasing or elastic demand or both exists for the product involved. Certainly, the two former points, that of competitive advantage and increasing demand seem to be valid for the domestic chemicals industry in the aggregate.

The few chemicals that might be imported in the event of tariff suspension comprise a relatively minor part of the huge chemical industry. In most industrial chemicals, the United States industry is able to hold its own against foreign competition and in many lines it is on a pronounced export basis.7

To indicate that the chemical industry in the aggregate is likely to withstand successfully any foreign competition, is not to answer the main question of this study, namely, which chemical items vital to the mobilization base are likely to be "displaced" by a liberalizing of the tariff duty? This is a more difficult problem upon which to get a definitive reply than is the similar question 7 "Staff Papers," op. cit., p. 308.
pertaining to minerals.

However, the problem seems to be less pressing than in the minerals and metals field because of the extreme interchangeability and interdependence characteristic of the chemical industry. That is, several different processes, and alternate abundant raw materials can be used to process all but a few of the many chemicals produced currently in the United States. A technologically efficient, research-conscious, and thriving industry should be able to produce all the chemicals necessary for modern warfare. This point, therefore, eases the critical characteristic of chemicals' requirements and undermines somewhat the argument put forth by the industry for continuing tariff barriers.

Specifically, then, of the 68 chemicals under analysis, only three would involve a "displacement" problem, according to "informed estimates" of the study cited earlier. There is a possibility that other chemical items may be affected, since the study only covers 80 per cent of the dutiable items in our tariff schedule. But no evidence seems to exist to indicate this possibility. The three items are acetic acid, chlorine and calcium carbide. (See

8 "Malone Hearings," op. cit., Part 10, p. 1573. "There are few of the 7,000 chemicals regularly produced in the United States that cannot be made from alternate raw materials and by several different processes.
Table VIII for respective Tariff Paragraph Numbers and ad valorem equivalent rates.) Canada is the principal supplier of all three, thus easing the "security" problem. A "moderate" to "substantial" increase in imports of all three could be expected by suspension of the duties; however, in the case of calcium carbide "the imports would continue to supply only a small part of domestic consumption."9 It is also significant to note that the expansion goals for all three items are closed.10 (See Appendix D, Chapter 3).

While it is too early to know definitely the impact of any tariff concessions on chemicals, the representatives of the organic chemical industry testified in mid-1953 that four chemicals were in danger of losing the domestic market to foreign competitors as a result of recent concessions.11

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9 Piquet, op. cit., pp. 80-81, 87-89.

10 Expansion goals for only 8 out of the 68 items in the chemicals component were "open" as of September 30, 1954, indicating that chemicals in the aggregate are no major mobilization production problem at the moment. An expansion goal which is "closed," however, may be as troublesome a problem as one which is "open" in that the former item, unless it is adequately stockpiled, needs to be maintained at its existing production level. A tariff suspension in this case which completely "displaced" domestic production could be disastrous.

11 Testimony contained in one of the many appearances of the representative of the organic chemical group (claiming representation for 90 per cent of all chemical tonnage produced in the U.S.) before Congressional and other committees. See Trade Agreements Extension Act of 1953, Hearings Before the Committee on Ways and Means, 83rd Congress, 2nd session. First session H.R. 4294 a Bill To Extend the Authority of the President To Enter into Trade Agreements under section 350 of the Tariff Act of 1930, as amended, and for other purposes, Government Printing Office, Washington, D.C., 1953, pp. 235-238.
These four are phthalic anhydride, sodium perborate, epsom salts (magnesium sulfate), and medicinal alkaloids. Only one, phthalic anhydride, appears on the ODM list of expansion goals and evidence of the amount of adjustment expected as a result of tariff suspension is conflicting. According to Piquet, in 1951, domestic production amounted to $52,088,000; with imports, mainly from Germany, amounting to less than 1 per cent of total production, and with the domestic industry experiencing a slight export basis. The ad valorem equivalent on the item, classified in Paragraph 27a was 39 per cent.

Suspension of the duty would do little to stimulate imports. The material is in short supply throughout the world and demand exceeds the ability of producing countries to supply present requirements. Despite the specific duty equal to approximately 17 1/2 per cent (based on 1950 prices) plus an ad valorem rate of 20 per cent, the United States is importing all the phthalic anhydride it can obtain from foreign producers. By the same token foreign suppliers have, for the past two years, been shipping this product to the United States to the limit of their ability in order to obtain dollar exchange.\footnote{12 Piquet, op. cit., p. 93. No effort is attempted here to resolve these widely divergent viewpoints. It ought to be emphasized, however, that Piquet's "estimates" were made on the basis of the 1951 situation.}

Further analysis of the chemical industry's argument against further concessions on chemicals at the moment, reveals that it is not based on present injury to the entire
industry, but rather on anticipated injury - again on unsubstantiated evidence to date - to segments of the industry. These general arguments of expected injury and injury to segments of an industry will be examined in Chapter 7.

A further argument of the industry grows out of the fact that this industry received "infant industry" protection in the past, and should continue to receive it. Since 1922, it has enjoyed high tariff protection and, as the argument goes, its growth is imputed to this high degree of protection in the past. However, the chemical industry is now one of giant proportions, by its own admission. Further, the validity of the "infant industry" argument rests in the removal of this protection when the industry is firmly entrenched - as it is today.

A third argument, and one which cannot be pursued at length here, assumes that any lowering of trade barriers will result in the short run, in a "price effect" whereby the domestic chemical producer will lower his price to the point of covering average variable costs, if necessary, and thereby continue to survive domestically. This action would offset any gains which might have accrued to the foreign producer seeking to earn dollars. The chemical industry suggests that this is a potent argument and particularly germane to its industry since characteristic of the productive process of the industry as its reliance upon the output of many byproducts. Engaged in a competitive struggle,
the industry could consider its byproduct output as variable costs, and thereby lower the selling price of its byproducts to the point of covering "out-of-pocket" costs.

This argument, ignoring the possible benefits which might accrue to the consumer, and ignoring the possibility that this increased competition might induce technological advancement in domestic production, *inter alia*, opens up avenues too broad for detailed analysis here.¹³

There is one more unique aspect of tariffs on chemicals which warrants attention. This is the valuation formula contained in paragraphs 27 and 28 of the current tariff schedules, which requires customs officials to determine the American selling price and the "export value" of a chemical product which is found by the customs bureau to be "competitive" with any similar domestic product and to base the duty on the higher of the two. Initially, this was written into the Tariff Act of 1922 and was continued in

¹³ "...Dr. Piquet has omitted to consider for the short run that the initial effects of tariff reduction are almost all 'price effects.' As a result of a given tariff reduction, American industries expect a new lowered price situation for a commodity they produce and upon which the tariff has been reduced. Yet in the face of that reduction they will continue to retain the domestic market by reducing their prices. They will and are able to lower their prices as long as all of their 'out of pocket' costs are covered inside of the lowered price and some return upon overhead and 'sunk costs' is still to be won by continuing production at the new lowered price level." "Trade, Strength and Security," *op. cit.*, p. 126. All three arguments herein are contained in this volume and in "Trade Agreements Extension Act of 1953," *Hearing, op. cit.*, pp. 225-238.
the Tariff Act of 1930 to create the "infant industry" protection mentioned earlier. This valuation formula, in effect, amounts to an additional "protective" cushion. To illustrate, the foreign invoice value of the coal-tar chemicals imports entering the United States under these two paragraphs in 1953 was $12,300,000; but the dutiable value, according to Bureau of Census figures, was $18,570.00.\footnote{14}

This feature of the Tariff Act is anachronistic on two counts: first, it is inconsistent with general valuation procedure in the current Act; and secondly, as implied above, the chemical industry appears to be no longer in need of such "protective" devices. Use of the "export value" formula as the basis of assessment would be corrective of this situation and would move United States import policy toward more consistency and economic reality.\footnote{15}

Of the 427 rates on chemicals, then, in the tariff


\footnote{15} The bill referred to is H.R. 6584 passed by the House of Representatives in the second session of the 83rd Congress (1954) but no action was taken by the Senate. It has been reintroduced in the current 84th Congress, 1st session (1955). See "Trade, Strength and Security," op. cit., pp. 15-16, 83-95. These latter pages detail the history of this valuation formula.
schedule, 312 have been reduced and 11 rates have been bound against increases in recent concessions. Of the total of 116 tariff rates pertaining to organic chemicals, 90 have been reduced. Currently, then, the ad valorem equivalent on chemicals in the aggregate is 12.4 per cent. This is a 51 per cent decline from the ad valorem rate of 25.1 per cent prevailing prior to the Torquay concessions granted in 1950.

In brief, then, the chemicals component is undoubtedly of significant importance to our mobilization base, representing 28 per cent of the total number of items and 10 per cent of the expansion which has taken place under the rapid tax amortization program. Only eight of the 68 goals remained open as of September 30, 1954; testimony to the vigor of the chemical industry at present, and more significantly testimony that this component is less of a supply problem than the one analyzed in the previous chapter. There have been no "escape clause" or "peril point" cases pertaining to chemicals.

Furthermore, since the industry, by its own admission ranks extremely high in its ratio of capital investment per production worker, leads perennially in research investment, and is growing at an accelerated pace, its request for continuation of tariff aid is incongruous and inconsistent. In addition, the industry's facile interchangeability of processes and raw materials, and the projected increasing
demand for chemicals in the next 25 years, further undermines its arguments for high tariff barriers. A general liberalizing of the tariff barriers would probably have no significant impact upon the vigor of this industry in the aggregate, rather it might even stimulate it toward greater technological efficiency. Certainly, no tariff increases are warranted; and implementation of the "export value" assessment formula for items in paragraphs 27 and 28 would be consistent and feasible in view of the current situation.

Of the chemical items on ODM expansion goals list and for which "informed estimates" have been made, only four seem to present "displacement" problems, and only one of these four a "possible" security problem (only "possible" because the evidence conflicts as to whether tariff suspension would cause any significant domestic adjustment problem). The four are acetic acid, chlorine, calcium carbide, and phthalic anhydride. It is this latter one on which the evidence conflicts. The former three, which would give rise to "moderate" to "substantial" increases if tariff barriers were removed according to estimates, are supplied, in the main by Canada, and, of these, even after a removal of the duty of calcium carbide, the estimate is that imports would supply but an insignificant amount of total production. The evidence is strongly suggestive that no serious mobilization problem exists in the chemical component at present.
B. The Fuels Component

The analysis of the fuels component is limited mainly to one important item, oil, which is one of the three mineral fuels comprising the component. A significant aspect of the problem is the importation of oil as a mobilization policy and in general the complex international relations of the industry. Three of the seven expansion goals for oil — all closed as of September 30, 1954 — provide for foreign expansion (See Chapter 3, Appendix A). Also, there is, as indicated earlier, heavy and continuing American investment in petroleum abroad, both in the Western Hemisphere and in the Middle East. Protection of these interests was the central issue around which the only "peril point" overruling thus far in Reciprocal Trade Agreements history revolved. Furthermore, the United States as a virtual certainty will continue to consume more oil than it is capable of producing, using sound conservation methods, and will continue to be a "net importer" of petroleum in the foreseeable future.

The main problem, then, revolves around the issue of imports and import excise taxes. The petroleum and related products industry (the independent producers, more
specifically) sought both "escape clause" and "peril point" action in order to increase their share of the domestic market. The "escape clause" action was initiated in 1949 and dismissed by the Tariff Commission after preliminary inquiry. In the peril point case in 1952, the only one on record to date, the import tax was reduced in the Venezuela negotiation of that year despite the belief of the Tariff Commission that this might prove inimical to the domestic interests. The reasons for the decision by the President in overruling the Tariff Commission's recommended "peril points" were to aid American investors and to secure the availability of a source of foreign oil necessary to national defense. 16

In addition to these two actions, the independent petroleum producers (as contrasted with the very large firms having many subsidiaries here and abroad) have a long and persistent history of seeking protection through either tariff increases or the establishment of quotas. 17 Since the general consensus, even among the petroleum interests who seek protection, is that some imports are necessary,


17 For a capsule history of these innumerable appearances before the several committees of Congress see, Trade Agreements Extension, House Hearings, 84th Congress, 1st session (1955), op. cit., Part I, pp. 182-1291.
the more persistent argument is the request for import quotas. This request was partly successful when in 1955 a provision was included in the Act extending the Reciprocal Trade Agreements which permits the President to impose quotas on imports of oil and other items in the interests of national security. This provision was a substitute for a proposed quota system on oil.

The oil problem is also inextricably a part of the over-all minerals fuel problem. Therefore, the problems of the coal industry and the natural gas industry are involved and must figure very prominently in any mobilization policy. There is general agreement that to attempt to solve the national fuel problem by concentrating upon any one mineral fuel to the exclusion of, or discrimination against, the other mineral fuels is unwise. The problem, both for the long run and for immediate mobilization purposes, is the economic utilization in proper proportions of all mineral fuels.

Three features of this general problem can be briefly mentioned. The first involves the marketing techniques of the natural gas industry which are of current interest to policy-makers. There is ample evidence that of these three mineral fuels, natural gas is expected to show the largest long-trend growth and will make inroads particularly in the field of residential heating. It will become,
therefore, particularly competitive with the coal industry.\textsuperscript{18} It is clear, then, that marketing techniques which increase the share of the fuels-market for this industry, at the expense mainly of the coal industry, present problems both of a mobilization nature and of secular development.

Another feature, which warrants brief mentioning but cannot be completely analyzed, is the effect of oil imports upon the structure of the domestic industry in the long run. The oil industry has shown a trend toward more and more vertical integration, toward increasing "oligopilization" (even "cartelization," considering the significant foreign holdings of the American producers). There is no doubt that increasing imports will enhance the relative share of the market of the larger oil firms. Thus, while the mobilization effort and the long-run development may call for an increasing share of imports relative to domestic production, the impact of this upon the structure of the industry will present difficult legal and administrative problems. Also, another anti-trust problem arises, if

\textsuperscript{18} Projections are based upon those made by the Paley Commission and are shown in "Paley Report," \textit{op. cit.}, Volume 11, pp. 127-130. In the next 25 years (1950-1975), coal is expected to show a 56 per cent increase in consumption; petroleum 100 per cent increase; and, natural gas, 130 per cent increase. The increases in specific end-uses for all three fuels are also projected.
the large domestic producers attempt by "voluntary action" to limit oil imports.

The most pressing and perplexing feature of the general problem of fuels emerges when considering a mobilization oil import policy and its impact upon the coal industry. As an initial approach to this complex problem, a distinction can be made between long-run development and the short-run, mobilization period.

The central fact of the long-run problem is that the coal industry has been, is, and is going to continue to be a declining industry. Its share of the fuel market has been declining relative to that of petroleum and natural gas and this situation is likely to persist. In four markets the coal industry has seriously declined as a supplier of fuel (railroads, bunkering of foreign vessels, residential consumption, and exports) and there is little evidence that it can recapture any of these markets in the future - mainly because of the economics of conversion. Only in electric power utilities has this industry shown a gain. In short, conversions to residual fuel oil and natural gas are generally due to economies, convenience, ease of handling, and an uninterrupted source of supply.

\[19\text{ Ibid., and "Trade Agreements Extension," Hearing, 84th Congress, 1st session, op. cit., Part 2, pp. 1512-1517.}\]
In the longer-run period, however (beyond 1975), consumption of coal is expected to increase greatly. Present technology makes it possible to convert coal (and gas) into a liquid fuel. This will take a vast amount of investment, and will, of course, significantly alter the nature of the coal industry as it exists today. Thus, the increasing demand for petroleum, accompanied by the projected depletion of oil sources - with all the economic ramifications consequent to this shifting pattern - will eventually make coal and synthetic processes for producing liquid fuels highly essential. However, the significant point here is that this will result in a vastly different coal industry, and this probability should not be used as a current argument for "protecting" the coal industry as it exists today; instead a more positive approach of encouraging the introduction of this technology is needed.20

"The increasing demand for petroleum products, accompanying the depletion that will eventually result in a declining production of crude oil, directs attention to a number of other elements: foreign supplies of oil, extraction of oil from natural gas, oil shales and tar sands, and synthesis of oil from coal or agricultural wastes. The technical knowledge of these various processes is available today. The cost, either in dollars or materials, of installing them has not been justified because of the continuing availability of petroleum at relatively low cost. As the declining supply of petroleum at some future date increases the cost of oil, and as technological improvements reduce the cost of production from alternate sources, these other sources will come into use. Changing relationships in these costs make it impossible to say that any one of them will come into play when petroleum prices reach a certain level or at any specific time." "Paley Report," op. cit., Volume II, p. 68.
A long-run national coal policy, therefore, requires the implementation of positive measures such as the advancement of coal technology, large-scale investment in the application of such technology, and the extension of markets for coal on a more economic basis. Certainly, it does not include the negative approach of imposing artificial restrictions upon competing fuels. The problem from a mobilization point of view is the timing of the positive measures; either waiting for free market forces to bring about the changing pattern, or intervening and accelerating processes by subsidies where these are most economically feasible.

In brief, then, it is incontrovertible that the coal industry, is essential to a sound mobilization base (witness the three ODM expansion goals still "open") and that it will continue to be even more essential in the initial states of an all-out conflict, particularly if oil imports become less accessible. This, however, is a distinctly different question from that of oil imports in which the overwhelming evidence is, as pointed out above, that oil imports are not the cause of the declining coal industry. The cause is found in the free market forces which are bringing about a shift in the fuel consumption pattern. Any attempt, therefore, to disrupt this evolving pattern by imposing restrictions on oil imports is unwise and may not bring the necessary relief to the coal industry. Policy
should be directed toward easing the "adjustment" necessary in the coal industry, consistent with the needs of a sound mobilization base. Any aid directed toward maintaining a going-industry for mobilization purposes should implement the positive steps mentioned above. The negative approach of discriminating against residual fuel oil imports may involve the thwarting of a natural development in the growth of energy and fuel sources, and may, in fact, constitute economic retrogression.

The impact of increasing oil imports has more significance for the domestic oil industry than it does for the coal industry. That is, as indicated above, there seems to be no direct connection between oil imports and a declining coal industry, but it would appear that there is a point at which oil imports could conceivably encroach upon exploration and development within the domestic oil industry, and particularly on the part of the independent producers. This issue, too, is fraught with complexities. There is wide agreement that increasing oil imports are necessary, particularly of residual fuel oil, but there appears to be no evidence as to the rate of the increase necessary which would be consistent with the maintenance of an effective domestic oil industry.

A distinction must be made between crude oil and residual fuel oil. Crude oil is the basic raw material of the petroleum industry. The higher value end-products such
as gasoline, distillate fuel oil, and kerosene are distilled from crude oil; that which remains is residual or heavy fuel oil. This latter product is cheaper and domestic refiners, therefore, attempt to minimize the yield of residual fuel oil. It is this latter product which is showing the greater import gains relative to domestic consumption and which is of greater concern to both the coal industry and the domestic independent oil producers.

There is evidence that residual fuel oil imports should increase in the future for two reasons. One is the increasing demand for this product already referred to; the other is that domestic refiners, through improved technology, have been able to decrease the yield of residual fuel. With these two forces working in diverse directions, a gap in the supply of low cost residual fuel oil is likely to occur in the absence of increased imports.21

21 "In the eastern seaboard States, with their great ports and highly industrialized sections, there is far greater demand for this residual oil than can be supplied as byproduct from domestic refineries normally serving the area. It is to meet the eastern seaboard demand that residual imports are brought into this country....Since there is no economical way of meeting, from domestic sources, the full demand of American consumers for heavy fuel oil, the importation of heavy fuel oil has furnished the means for taking care of the marginal to 20 per cent of fuel oil demand." Effects of Foreign Oil Imports on Independent Domestic Producers, Hearings before the select committees on small business, House of Representatives, 81st Congress, second session pursuant to H Res. 22, A resolution creating a select committee to conduct a study and investigation of problems of small business, U.S. Government Printing Office, Washington, D.C., 1950 Part 3, pp. 993 and 995.
The share of the market which foreign oil now occupies is indicated below in Table IX. The ratio of the imports of both crude oil and residual oil to the domestic production of both, indicates a persistent and slightly increasing pattern. According to many experts this pattern will continue in the immediate future. The question still remains, however, at what point, if any, are imports likely to impede exploration and development of domestic production, and thereby jeopardize national security requirements?

A satisfactory answer to the above question is difficult. The growth of the domestic industry has been phenomenal and indications are that the market for petroleum will double over the next twenty years (1975). There is no apparent reason at present for the domestic industry not sharing in this increasing market. In 1953, the number of new oil wells drilled was 49,279 as against 26,356 in 1929; proven reserves of crude oil in 1953 were 29,044 million barrels as contrasted with 13,200 million in 1929; producing wells numbered 472,149 in 1953 as compared with 328,000 in 1929. In 1953, the United States industry produced 6,454,000 barrels of crude oil daily (with predictions of over 7 billion barrels daily in 1955, and a productive capacity of 9,105,000 barrels, the difference representing shut-in capacity) as compared with a daily production of
<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Supply (1000 bbls.)</th>
<th>Residual Imports (1000 bbls.)</th>
<th>Domestic Imports Supply (1000 bbls.)</th>
<th>Crude Imports (1000 bbls.)</th>
<th>Ratio of Imports to Domestic Consumption</th>
<th>Ratio of Total Imports to Com.Cons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>425,217</td>
<td>123,037</td>
<td>1,973,574</td>
<td>173,950</td>
<td>8.81</td>
<td>13.1</td>
</tr>
<tr>
<td>1951</td>
<td>469,377</td>
<td>121,969</td>
<td>2,247,711</td>
<td>177,356</td>
<td>7.89</td>
<td>12.0</td>
</tr>
<tr>
<td>1952</td>
<td>453,897</td>
<td>132,192</td>
<td>2,289,836</td>
<td>207,492</td>
<td>9.06</td>
<td>13.2</td>
</tr>
<tr>
<td>1953</td>
<td>449,979</td>
<td>139,589</td>
<td>2,359,998</td>
<td>233,212</td>
<td>9.88</td>
<td>13.7</td>
</tr>
<tr>
<td>1954*</td>
<td>346,358</td>
<td>106,507</td>
<td>1,927,743</td>
<td>194,859</td>
<td>10.11</td>
<td>13.7</td>
</tr>
<tr>
<td>1955</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.9**</td>
</tr>
</tbody>
</table>

* - Ten months (Jan.-Oct.)
** - Estimated

Source: "Trade Agreements Extension," Hearing, 84th Congress, 1st session, op. cit., p. 1271.
2,760,00 barrels in 1929. Gross revenue of the industry increased over five times during this period; from $3,505,000 daily in 1929, to $18,264,820 daily in 1953. Thus, in the face of a four-fold increase in imports during this period (295,000 barrels daily in 1929, when the United States was a "net exporter" to 1,058,000 barrels daily in 1953) the domestic industry has shown a 200 to 300 per cent growth, has more independent oil operation than ever (in absolute terms) and, using gross revenue figures only, is making five times as much money. It does not appear that the increasing imports have affected seriously the rate of development and exploration in the domestic industry. However, to repeat, the independent producers have shared relatively less in the growth of the domestic petroleum industry.

The issue of costs of production here and abroad is important. The industry has a high capital-labor ratio, higher even than the chemical industry. There is a tremendous capital investment per production worker in the industry which almost completely eliminates any labor-cost argument which the domestic industry might choose to advance. However, production costs constitute only 20 per cent of total costs, the other 80 per cent being equally divided between the costs of finding new supplies and the costs of development. Therefore, import policy is likely to affect.

investment in these two phases of the industry rather than in maintenance of current production. However, any diminution in these two phases will lead ultimately to decreased domestic production. Moreover, these exploration and development costs, already higher than in the Middle East, are expected to increase in the United States in the future, but opinion is divided as to the time and magnitude of the expected increases.\textsuperscript{23}

Mobilization needs in petroleum for the United States would appear to have been attained. The one million barrel reserve capacity has long since been exceeded; also, the goal of a million-barrel increase in modern refining capacity.\textsuperscript{24} The capability of producing 9,000,000 barrels daily, without economic waste, as indicated above, exceeds authoritative estimates made in 1950 that war emergency needs of this country would be approximately 8,000,000 barrels.\textsuperscript{25} While these estimates, of course, are subject

\textsuperscript{23} "All in all, the available evidence gives some support to the argument that discovery and development of oil in the United States are becoming more costly, but this conclusion is not clearly established." "Paley Report," op. cit., Volume III, p. 6.

\textsuperscript{24} "Trade Agreements Extension," Hearing, 84th Congress, 1st session, op. cit., p. 1359.

\textsuperscript{25} "Effects of Foreign Oil Imports on Independent Domestic Producers," Hearings, op. cit., Unnumbered Volume, p. 140.
to constant re-evaluations, the petroleum industry appears at present to be capable of making an extended mobilization effort.

In view of the growth of the industry, of an anticipated increasing demand, of an industry capable of a strong mobilization contribution, and of inconclusive evidence about rising costs, the question may now be raised as to the effects of a complete removal of the import tax on oil imports. One estimate is that there is no danger of oil imports flooding the United States because increasing world demand will raise the world price of oil, and although a rise in domestic costs is expected, a major segment of the domestic market is likely to remain with domestic producers.26

Another informed estimate makes a distinction between imports of crude oil and residual oil imports.

Suspension of the import-excise tax would have little or no effect upon imports. Imports of crude petroleum are supplemental to domestic output which does not fully supply domestic consumption. The volume of imports depends primarily upon the level of domestic production and consumption, the level of foreign production, and the availability of tankers. Several American companies have substantial

26"In short, the price of imported oil to the United States is likely to bear a much closer relationship to the production costs of marginal domestic crude output and synthetic oil than to the actual production cost of foreign oil. "Paley Report," op. cit., Volume I, p. 109."
interests in foreign companies and the volume of imports from those companies is largely dependent upon company policy.

Consumption of residual fuel oil in the United States is in excess of domestic production and is likely to continue at about the current level. Inasmuch as domestic refiners are gradually increasing their yield of gasoline and distillate fuel oil at the expense of residual fuel oil, the trend toward larger imports of residual fuel oil will continue regardless of the import-excise tax. Suspension of the tax, therefore, would have little or no effect upon imports. A substantial part of the imports normally enter free of tax for use as supplies for vessels, into bond, or for the use of the government.27

The recommendations, then, for implementing national mobilization policy for this component are five-fold. First, the program should consider all three mineral fuels and the shifting consumption pattern among them. Any attempt to establish policy by focusing aid upon one mineral fuel to the exclusion of the others is unwise. Any attempt to protect one industry at the expense of the other industries involved, is distinctly a negative approach, and will impede both the mobilization structure and the long-run growth in the American economy.

Secondly, with reference only to oil, efforts should be directed toward the maintenance of a strong domestic petroleum industry, augmented by a policy which would en-

courage the flow of necessary and supplemental oil imports. Machinery for implementing this policy domesticaly already exists, namely, depletion and amortization tax benefits, and these benefits should be continued.\textsuperscript{28} In addition, provision for making exploration and development costs fully deductible for tax purposes could be provided.

The third recommendation pertains to the stockpiling of petroleum. While it is not economically feasible to engage in massive stockpiling of petroleum, the policy should include the accumulation of such inventories as would be necessary in the initial stages of an all-out conflict. Stockpiling, in theory, can be obtained in either of two ways; finding additional reserves and then "sterilizing" them, or alternatively, expanding working reserves at high levels relative to production. The reserve - production ratio could be changed from 1 to 12, or 13, as at present, to 1 to 16, or 18. In any event, from the evidence mentioned above of the current high shut-in capacity and the attainment of the mobilization reserve goals, it would appear that steps in this direction have already been made.

The fourth recommendation involves technology, both

\footnote{\textsuperscript{28} The entire component under analysis is comprised of 14 items (7 for oil, 3 for coal and coke, 3 for natural gas) and had received 27.6 per cent of total amortization write-offs, as of September 30, 1954, amounting to almost $8 billion worth of expansion. (See Appendix B, Chapter 3).}
from within the petroleum industry and exogenous to the industry. Emphasis in the former case should be upon the production of synthetic fuels from oil shale and coal. The technology for such production already exists. It would merely be a matter of the timing of government policy as to when it chose to subsidize the production commercially. Ultimately, of course, rising costs in natural oil production will make synthetic production commercially feasible through "natural" market forces. Technology outside the industry involves atomic energy development in order to produce electricity, and solar energy development in heating homes. Every encouragement should be given to these two unconventional sources of energy as well as to technology in the use of the minerals fuels.

The Fifth and final recommendation centers around import policy and the import excise tax. There is almost universal agreement that oil imports are necessary. This is particularly true when an increasing market is considered, when the absolute necessity of supplying American offshore requirements both in peacetime and in times of national emergency is taken into account, and when consideration is given to the estimate that refining technology will tend to diminish the yield of residual fuel oil for domestic consumption. In addition, informed estimates indicate that no great influx of oil can be expected if the
current import-excise tax is suspended. The tax is one-fourth cent per gallon on imports up to 5 per cent of the quantity of crude oil processed in the United States during the preceding year, with additional imports subject to a tax of one-half cent per gallon (on heavier and residual fuel oil the tax has been reduced to one-eighth cent per gallon effective October, 1952, as per the Supplementary Trade Agreement with Venezuela). The evidence is overwhelming that this tax should be removed.

This, however, does not mean that consideration should not be given to the establishment of an import quota. The evidence here is more difficult to evaluate. There is no solid grounds for establishing as a criterion the ratio of imports to domestic production in any given year, as has been continually suggested, for to do so would be to create an inflexible quota and to disregard the estimates of experts regarding the need for an increasing amount of oil imports relative to domestic production.\textsuperscript{29} All that can be offered here is the recommendation that a quota, if necessary, be established which will be flexible and which will be consistent with mobilization needs, the offshore program,

\textsuperscript{29} It will be recalled that an intermediate program was recommended for fluorspar based upon the criterion of a ratio of domestic production relative to imports in a given year. The situation, however, is not comparable to the oil problem, in that, in fluorspar a genuine "displacement" might occur upon removal of the tariff. The data are not suggestive of this in the oil situation.
a constant flow of imports from abroad, and an increasing importation of oil for the growing American economy. Machinery for implementing this flexible quota has been provided in the "compromise" amendment to the trade agreements extension act of 1955 (H.R.1). This amendment empowers the President to establish unilaterally a quota on oil and other commodities in the interests of national security.

Summary:

Under analysis in this chapter were two of the most significant components in the current mobilization base, the chemicals and fuels components. Both industries fortunately, are dynamic and growing and the market for is projected for an increase over the next twenty-five years. This is particularly true of the chemical market which is expected to increase four-fold in this period; petroleum is expected to have a 100 per cent market increase.

Both industries are in "favorable" cost positions currently. The chemical industry is apparently experiencing long-run decreasing costs because of its vigorous emphasis upon research and technology. The petroleum industry is expected to show increasing costs in exploration and
development - the major components of their total costs - in the future, but the time and magnitude of such increases is a subject of disagreement. Both industries use heavy capital investment in relation to production workers, thereby invalidating any claim for tariff protection on a purely cost-of-labor basis. The chemical industry is a "net export" industry with favorable prospects of remaining so. The United States, since 1948, has become a "net importer" of oil products, and this situation is expected to continue in the future - particularly, residual oil imports.

While the chemical industry has not sought "escape clause" or "peril point" action under present trade laws, it has continually voiced objection to any further removal of tariffs on chemical products. Along with essentiality to defense, the industry has based its argument upon anticipated injury, and upon continuation of protection which, historically, has been granted it under the "infant industry" concept and to which the industry imputes its considerable rate of growth. It has also asked for continuation of the American selling price method of valuation of many chemical items in Paragraphs 27 and 28, which, in effect, provides more "protection." The present ad valorem equivalent on chemical items is 12.4 per cent. This "low" rate is the result of many concessions made on chemical imports since 1950.

Excluding mobilization considerations there is no
ground for granting the chemical industry increased protection; rather, the obverse is called for. In view of the industry's tremendous present and "expected" rate of growth, its "net export" status, the projected increasing demand for its products, and its extreme flexibility inherent in its ability to interchange processes and raw materials in the production of over 7,000 chemicals, there is no cause for continuing tariff barriers on chemical items, and clearly, there is no cause for increasing these barriers. Also, in the interests of both internal consistency in American tariff valuation procedure, and in the larger trade interests, the valuation formula for Paragraphs 27 and 28 of the American tariff should be the "export value" method.

Focusing upon the mobilization issue only, four of the 68 items on the ODM expansion goals list would appear to present "displacement" problems if tariff barriers were completely removed. Three of these items, however, are supplied mainly by Canada thereby easing the "security" problem, and in one of these three (calcium carbide) the estimate is that imports would supply but an insignificant amount of total United States production. The other "displacement" item, phthalic anhydride, comes mainly from Germany, but there is disagreement as to the extent of displacement which would occur upon complete removal of the
tariff. Consequently, because of the vigor of this indus-
try and its ability to adapt productive processes easily, it
would appear that tariff liberalizations would not seriously
jeopardize the chemical industry's mobilization performance.

Unlike the chemical industry, the petroleum (and re-
lated products) industry has sought both "escape clause"
and "peril point" relief. The "escape clause" action was
initiated by the smaller, independent petroleum producers
in 1949, and dismissed after a preliminary hearing by the
Tariff Commission. In the Venezuela Trade Agreement nego-
tiations in 1952, as in all trade negotiations, "peril
points" on oil duties were established by the Tariff Commiss-
ion, but these were overruled by the President on the
grounds of protecting and encouraging American investment
abroad, and of the necessity of oil imports to the national
defense of the United States. This is the only peril-point
overruling to date. The decision also points up the impor-
tance of American investment abroad, two-thirds of which is
in petroleum.

It was also indicated that a fuels policy should embrace
all three mineral fuels: oil, natural gas, and coal; and
that to attempt to frame policy by emphasizing only one of
these, is unwise. The coal industry presents the most
pressing and complex problem within the fuel component. The
coal industry is a declining industry and there is little or no
possibility of it regaining certain markets. Therefore, for both mobilization purposes and for long-run development, positive steps should be implemented to aid this industry by the advancement of coal technology, large-scale investment in such technology, and the extension of markets for coal on a sound economic basis. In the interim, "adjustment" policies, such as those generally suggested for "displaced" industries, might be implemented. The negative approach of erecting tariff or quota barriers against oil imports should be avoided. This would be a futile policy, providing no relief for the coal industry and distorting the future pattern of fuel consumption.

Although the importation of crude oil and residual oil is increasing relative to domestic production, it is the latter which is showing the greater increase. However, the increasing demand for residual fuel oil among the eastern seaboard of the United States and a decreasing supply domestically because domestic refiners attempt to minimize the yield of this product, clearly indicate a need for a relative increase in the importation of residual fuel oil. This is true both for mobilization purposes and for long-run development.

The positive program for the fuels component involved five recommendations. First, policy should require the utilization of all three mineral fuels in proper proportions.
Second, in order to continue a high-level domestic petroleum industry, depletion and amortization tax benefits should be offered whenever consistent with mobilization and long-run development. Third, while large-scale stockpiling of oil is not called for, policy should provide for a reservoir of shut-in capacity; or an increasing reserve ratio relative to producing wells. Four, technology in the use of coal and shale should be continued and should be accelerated whenever economic conditions warrant. Atomic power and solar heat technology should also be encouraged. And fifth, since all indications are that increasing oil imports are necessary both for a prolonged period of national defense, and for a viable domestic economy, the import tax should be removed. If it is found that removal of the tax imperils exploration and development activities of the domestic industry, an import quota ought to be established. However, this quota should be flexible and should be consistent with both the growing need for imports and the national defense needs.
CHAPTER VI

MOBILIZATION POLICY FOR THE PRECISION INDUSTRIES, ELECTRICAL EQUIPMENT INDUSTRY, AND TRANSPORTATION INDUSTRIES

Introduction:

The diversity of the three components of the mobilization program under analysis in this chapter is readily apparent. The first, that of precision industries - and here the domestic jeweled-watch industry will serve as a "case study" or "model" - exhibits all the issues inherent in maintaining domestic industries for mobilization purposes, when such industries are subject to competition from abroad. This latter point raises the issue of an import policy or other alternative policies consistent with mobilization requirements. The second, that of the electrical equipment industry, involves entirely different issues. The implementation of the "Buy American" Act, in the main, is the focal point of this controversy. The third and last of the components, that of transportation, raises still other issues. Here, shipbuilding will be the center of analysis since it presents the issue of outright government
subsidies.

With reference to the first component, it may be argued that the domestic jeweled-watch industry is not truly representative of a precision industry, or that it is not in fact a precision industry at all. It may be further argued that it has not been a continuing part of the mobilization base, but that only very recently has it been declared "essential" to the defense effort. Both of these points are true, and the truth contained in these arguments serves to substantiate two concepts made throughout this analysis, namely, that no component is essentially homogeneous, and that therefore no one item within the component can necessarily be "representative," and secondly, that the mobilization base is constantly subject to reevaluations, and therefore, new industries may enter the defense structure. This is precisely the interpretation which must be placed upon the ODM's recent decision concerning the "essentiality" of the domestic horological industry.

There is no need to justify inclusion in this analysis of the domestic jeweled-watch industry. It has been at the core of the defense "essentiality" argument since World War II. The industry has initiated two "escape clause" actions and as a result of the second action was granted tariff "relief" by the President in 1954. The President's decision was based upon a recommendation of the Tariff Commission.
Also the domestic horological industry has been granted many government defense contracts and has turned out many defense items both during and after the Korean War. It has enjoyed prosperous years in the aggregate since the Korean War; and has recently begun diversification on a wide scale. For these reasons and others, the industry presents an interesting example in mobilization economics, and further, presents the possibility of studying alternative lines of action by government policy makers.

A. The Precision Industries

The domestic horological industry is composed of four segments: (1) jeweled-watch manufacturers; (2) pin-lever watch manufacturers; (3) clock manufacturers; and (4) manufacturers of component timers. While the four segments represent a cohesive manufacturing unit, and while all four are capable of, and are currently, producing needed end-items for the military, it is the jeweled-watch manufacturing segment which is of importance to this analysis. It is this segment which has experienced intense and continuing competition from Swiss jeweled-watch makers and about which is raised the issue as to the "essentiality" of the precision skills involved. This part of the industry has been the prime-mover in seeking tariff "relief." The subsequent
analysis, therefore, applies mainly to it.¹

The four domestic jeweled-watch producers are: the Bulova Watch Company, the Elgin National Watch Company, the Hamilton Watch Company, and the Waltham Watch Company. The first three of these companies are also importers of Swiss watch movements and producers of many, diversified products. Also involved in import policy are some 50 domestic importers of watch movements, among which are three prominent importers; the Gruen Watch Company, Benrus Watch Company, and Longine-Wittnauer. The function of this latter group of companies is purely the assembling and casing of imported watch movements and, thus, their interests in import policy are in direct opposition to that segment of the domestic horological industry which relies chiefly on the domestic production of jeweled watch movements.

¹ Just as there is no necessary homogeneity within components, there is no absolute homogeneity within any of the four segments of this industry. That is, overlapping of the productive functions performed by each is a probability, i.e., the domestic jeweled-watch producers have in the past several years imported movements and parts from Switzerland, and have tried other "diversification" methods. However, the four segments together, acting as the domestic horological industry, have put forth a cohesive argument when seeking tariff "relief," and when claiming "essentiality." See Essentiality To The National Defense Of the Domestic Horological Industry, Hearings before the Preparedness Subcommittee No. 6 of the Committee on Armed Services, United States Senate, 83rd Congress, 2nd session, on the Essentiality to the National Defense of the Domestic Horological Industry, U.S. Government Printing Office, Washington, D.C., 1954, pp. 139-151, and "Trade Agreements Extension," House Hearings (1955), op. cit., pp. 2069-2083.
It is incontrovertible that the domestic horological industry contributed many end-items to the military in World War II, the Korean War, and is currently contributing to the mobilization base. The end-items include mechanical time fuses, proximity fuses, mechanical devices for guided missiles, rear-fitting devices and similar arming devices. During the Korean War alone, the industry produced over 19 million artillery and rocket fuses under direct military contract, over 160 million fuze and instrument parts on a subcontract basis as well as a legion of other small, precision mechanisms.\(^2\) Despite all this, companies outside the horological industry produced more of these end-items during World War II and, at present, non-horological companies possess 88 percent of all contracts in the military fuze program.\(^3\) Thus, while the domestic horological industry constitutes "highly desirable capacity" for the manufacture of military fuzes and similar precision arming devices, it is by no means unique in this regard. It follows, then, that the production of mechanical time fuses, per se does not

\(^2\) "Essentiality (of the Domestic Horological Industry)," Hearings, \textit{op. cit.}, pp. 46-47.

\(^3\) \textit{Ibid.}, p. 39. Some of the non-horological companies engaged, either currently or in the past, in the fuze program are: Eastman Kodak Company; National Cash Register Company; Bendix Aviation Corporation; and The Underwood Corporation. See "Trade Agreements Extension," House Hearings, (1955) \textit{op. cit.}, p. 355.
involve unique mobilization skills. A Department of Defense statement in late 1952 indicates that "The production of mechanical time fuses does not in all cases involve the same skills as required for watches and timing devices and therefore does not necessarily maintain the basic skills of the industry."\(^4\)

A further note on the military fuze program illustrates a point made earlier, namely the dynamics of military technology, for there has been a shift in emphasis from mechanical time fuses to proximity fuses. Whereas the requirements formerly called for a ratio of three time fuses to two proximity fuses, the ratio has since been reversed.\(^5\) This, therefore, has called for skills outside the horological industry, particularly in the electronics and allied products industry, as well as for skills within the watch industry. On the other hand, certain technological developments within the pin-lever (non-jewel) watch segment of the industry have reduced the requirements of the Armed Forces for the products of the jeweled-watch segment.\(^6\) There is, however, some evidence that the jeweled-watch segment is making some strides toward closing this technological "gap," when in the recent "diversification" programs of two of the

\(^4\) "Essentiality (of the Domestic Horological Industry), Hearings, op. cit., p. 40.

\(^5\) Ibid., pp. 160-161.

\(^6\) Ibid., p. 33.
domestic producers (Elgin National and Hamilton Watch Company), they entered into the miniature electronics field.\textsuperscript{7} This presents the interesting development of military technology leading to further technological development and "diversification" within an industry.

While the analysis above is centered upon the military fuse program and seemed to indicate that, in the first instance, many industries other than the watch industry are capable of this type of production, and secondly, that mobilization technology now requires the production of proximity fuses - production not necessarily unique to the watch industry - there still remains the question of the requirements for jeweled-watch movements and timing devices. For only the domestic jeweled-watch industry is capable of turning out these products at present. Thus, if there is an "essential" need for jeweled-timing devices alone, the further question of how to maintain the cadre of skilled workers necessary to turn out these requirements in the event of full mobilization arises.\textsuperscript{8}

\begin{itemize}
\item \textsuperscript{7} "Trade Agreements Extension," House Hearings (1955), \textit{op. cit.}, p. 2475.
\item \textsuperscript{8} "One final point with respect to the maintenance of skills is worth mentioning when imports are tending to crowd an industry whose skills or specialized facilities are important to defense, the policy maker is faced with a dilemma. He can never be quite sure whether the import competition will stimulate the domestic industry to greater efficiency and lower costs or whether it will tend to shrink the industry in size and strength. In the case of watches, for example, there is some risk that if Swiss imports had been excluded, our industry would have been slower in matching the Swiss development of shock-proof and rust-proof jeweled watch movements." "Staff Papers," \textit{op. cit.}, p. 221.
\end{itemize}
The question, then, of the "essentiality" of the domestic jeweled-watch industry hinges upon the requirements of the military for jeweled-timing devices. This particular question was the subject of an interdepartmental committee report submitted to the President on January 8, 1953; it was further the subject of a hearing before a preparedness subcommittee of the Armed Services Committee, United States Senate in 1954 (cited earlier). Although the question was not directly at issue in the Tariff Commission "escape Clause" decision in 1954 - the central issue was "serious injury" or "threatened injury" because, in the main, the Trade Agreements Act did not then authorize tariff "relief" on the grounds of defense essentiality - and although the President in accepting the Tariff Commission's recommendation was not empowered to cite defense "essentiality" as his explicit reason, the President again asked for an interdepartmental review of the entire watch issue. The only facts which emerge clearly from these continuing interdepartmental studies are the indecisiveness of the conclusions, the emphasizing of principles of mobilization in precision industries, and the essential need for continually reviewing the mobilization base.

More specifically, however, it is clear that the Defense Department rejected the idea that the jeweled-watch segment of the domestic horological industry requires special treatment. They based their decision upon the "nominal" or
reduced requirements for jeweled-watch movements by the military in general (along with a changed distribution of these watches in the services); certain technological developments in the pin-lever (non-jewel) watch segment which substantially reduced the requirements of the Armed Services for jeweled-watch movements; the mobilization requirements for a three-year period which was well within the potential of the four companies to produce within a year's time (productive potential, as of late 1952); and the fact that for both jeweled watches and non-jeweled watches, it is possible to import the equivalent products, duty paid, for less than the procurement costs of domestic products. For all these reasons, the Defense Department concluded that the domestic jeweled-watch industry needed no special governmental consideration.9

The commerce Department, on the other hand, dissents

9 "Nevertheless, we (the Defense Department) did not feel that special treatment should be extended the jeweled watch industry in preference to the rest of the horological industry." "Essentiaity (of the Domestic Horological Industry)," Hearings, op. cit., p. 39. See also Ibid., pp. 33-40. It is to be underscored here that this is the considered opinion of the author about the Defense Department's conclusions in this matter. Because of the fact that a Defense Department report on this matter was "classified," and, therefore, not released for a considerable period of time, and, to the further fact that many statements, quoted out of context from the report, tend to convey the opposite viewpoint, it must be stated that, at best, the "conclusions" are garbled, vague, and far from definitive. Evidence other than that in this controversial report tends to substantiate the position taken in this chapter, however.
from the position of the Defense Department, basing its argument upon the important role played by the industry both in World War II and in the Korean War in the production of military funds; the need for larger requirements than the estimates of the Defense Department of jeweled time pieces during a full mobilization; and the need, therefore, for maintaining jeweled-watch making skills. It argued that these skills can be acquired only after long training periods and that the number of skilled workers expanded only slowly, and hence, that the skills can be retained only through the continuing production of precision jeweled timing mechanism. Also, it mentioned the inaccessibility of jeweled time pieces in the event of all-out war and the costs involved in transferring production from the horological industry to firms outside the industry. For these reasons, among others, the Commerce Department recommended special treatment for the domestic jeweled-watch industry.10

10 "The (Defense Department) report further states that all other current or planned military production for this industry cannot be considered unique because companies outside of the industry have produced, or are producing, the same or similar parts. No detailed assessment has apparently been made, however, of the current absorption and probable absorption during full mobilization within this industry of both prime and subcontract work on military end items. It would appear that such an evaluation of the contribution of this industry to the Defense Department program, would be necessary in determining the time, consumption, cost, and dislocation engendered by the transfer of this work to companies outside the jeweled-watch industry." Ibid., p. 48.
There is no reason for attempting to resolve these differences here, since a decision made in mid-1954 by the Director of the Office of Defense Mobilization established a minimum mobilization goal of 2,000,000 jeweled-watch movement units for the domestic industry, and an interagency committee was established to recommend alternative approaches for accomplishing this goal.\(^{11}\) Granted that the minimum number of units is a valid defense necessity (and by the terms of reference of this study decisions by the ODM are accepted as data), this is an economically feasible approach. It is far more effective than the tariff "relief" which was granted in July, 1954.

The tariff issues can be best be examined by referring to the two "escape clause" actions initiated by the domestic watch manufacturers, both jeweled and non-jeweled. In both instances, tariff relief was recommended by the Tariff Commission in a decision of 4-2. Three commissioners based their decision on "serious injury" to the domestic industry and one commissioner, "threat of serious injury" to the domestic industry. The remaining two commissioners, finding neither threatened or actual injury, recommended no tariff relief. In the first case initiated in 1951, the President (in 1952) rejected the Tariff Commission's recommendations, but in the second action (initiated in 1953)\(^{11}\) "Trade Agreements Extension," House Hearings (1955), \textit{op. cit.}, p. 363.
he upheld the Tariff Commission's recommendations (June, 1954). Accordingly, the tariff on watches, watch movements and parts was increased 50 percent.¹²

It should be noted, however, that the recommendations of the Tariff Commission and the Presidential decision upholding the recommendation was based upon "serious injury" and not upon "essentiality." The Presidential decision granting tariff relief in 1954 strongly implied that this action would help strengthen the domestic jeweled-watch industry's potential for defense, but this statement should not be interpreted to mean that "essentiality" was the reason for the decision. All of this emphasizes the point that the Trade Agreements Extension Act at that time did not empower either the Tariff Commission or the President to base tariff decisions upon an industry's "essentiality" to the national defense.

The "escape clause" actions brought to the fore at least two issues worth consideration here and which will receive further elaboration in the next chapter in a larger context. These are the "share doctrine" and the definition of the scope of an industry when considering "serious injury." The "share doctrine" considers a decline in the

share of domestic producers in the home market relative to imported products (along with other unfavorable conditions for domestic producers) as the key criterion for recommending tariff relief. This was the position of three commissioners in the first "escape clause" action. The commissioner who found "threatened injury," but not actual injury, did not accept this thesis. He pointed to other "unfavorable" indications such as increasing imports of types of movements not made in the United States (self-winding), the change of some domestic firms from domestic production to imported movements and dependence upon military contracts to maintain domestic employment and profits. Also, the President did not accept the "share doctrine" thesis when, in a letter rejecting the Commission's recommendations, he wrote:

Serious injury, by any definition, means a loss to someone. Declining production, lower employment, lower wages, lower returns or losses in capital invested - any of those things might indicate some degree of injury. But the share doctrine goes much further. In fact, it finds that serious injury exists when the domestic industry fails to gain something it never had, even though the industry may be prospering by all of the customary standards of levels of production, profits, wages and employment.

13 Ibid., p. 330.

The "share doctrine," then, raises the more fundamental question as to whether this is a valid justification for a finding of "serious" of "threatened" injury to an industry by the Tariff Commission. There is always the possibility of an expanding market for the product at issue, and thus, the increasing consumption can change the pattern existing between domestic and foreign producers without necessarily causing or threatening to cause "serious injury" to the domestic producers. To this larger issue, attention will be directed in the following chapter.

The more immediate question is whether the "share doctrine" is valid when considering the domestic horological industry. First of all, the "projection" made by the study, cited previously, categorizes the long-run demand for watches as an increasing one. Also, the evidence tabulated below in Table X seems to bear out this contention. However, it is the shifting pattern within this increasing market which is of significance. The domestic firms appear to be experiencing an increasing market in the higher-value, more-than-17 jewel watch field (a specific duty of $10.75 on each of these movements creates a "prohibitive" barrier to imports) and they have, in fact, increased their output of these higher-value, higher-jeweled watches by 50 percent over pre-war output. In the 2-to 17-jewel watch market, the

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import-assemblers have gained considerably in the expanding market, many of these increasing imports being additive or supplementary rather than directly competitive (i.e., watches not usually made in the United States such as the self-winding type). Sales promotion by this latter group also aided in expanding the total market both for domestic producers and import-assemblers. It is clear, therefore, that both groups are sharing in the increasing total market for jeweled-watches.

The figures below, which are not segregated so as to reflect this shifting pattern, do indicate two further points. They indicate an over-all declining market for pin-level watches, and in the main, this is accounted for by the diminishing demand for pocket watches. While the pattern is not clear here, it would indicate some gains made by the importers relative to domestic producers within this declining market - a more valid example of the "share doctrine" thesis. The other point is that it is clear that total production for the jeweled-watch manufacturers exceeds the minimum mobilization expansion goal of 2,000,000 units established recently by the Office of Defense Mobilization.16

16 It ought to be underscored here that the ODM decision based on "essentiality" was made exclusive of the tariff "relief" decision based upon "threatened or actual injury." The latter decision, however, was cited as being capable of aiding in the establishment of the former objective.
### TABLE X

**Watches: United States Production and Imports for Consumption, Annual 1946-1953 and January - September, 1954**

(in thousands of units)

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Production</th>
<th>U.S. Imports for Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jeweled-lever</td>
<td>Pin lever</td>
</tr>
<tr>
<td>1946</td>
<td>1,720</td>
<td>4,931</td>
</tr>
<tr>
<td>1947</td>
<td>2,364</td>
<td>9,194</td>
</tr>
<tr>
<td>1948</td>
<td>3,018</td>
<td>11,302</td>
</tr>
<tr>
<td>1949</td>
<td>2,793</td>
<td>6,289</td>
</tr>
<tr>
<td>1950</td>
<td>2,480</td>
<td>7,265</td>
</tr>
<tr>
<td>1951/1</td>
<td>3,162</td>
<td>8,326</td>
</tr>
<tr>
<td>1952/2</td>
<td>2,433</td>
<td>6,053</td>
</tr>
<tr>
<td>1953/3</td>
<td>2,365</td>
<td>6,031</td>
</tr>
<tr>
<td>1954/4</td>
<td>1,700/2</td>
<td>3,845/4</td>
</tr>
</tbody>
</table>

1/ Import data are preliminary
2/ Except for the production of jeweled-lever, data are for January-September
3/ Partly estimated


The issue of defining the scope of an industry is also important in the horological industry's "escape clause" actions. Should tariff "relief" be granted when only one segment of an industry is suffering "threatened or actual injury" while the over-all industry situation is profitable? The domestic industry, by its own admission, has shown a continuing profit position since World War II (exclusive of one domestic company, Waltham Watch, which raises a question of a totally different nature) and in 1953, the year of its second "escape clause" action, it experienced
its best year on record.\footnote{17} Its profit position emanated from the "diversification" program; the receipt of heavy military orders; the policy of importing watch movements; and the increasing sales in the higher-jeweled, higher-value watch market. In view of this profit position there seems to be little justification for the "tariff relief" granted to the domestic producers in mid-1954.

The tariff "relief" granted the domestic horological industry in mid-1954 was perhaps the most significant invoking of the "escape clause" to date, and the only one of major significance to fall within the terms of reference of this study.\footnote{18} The decision to increase the tariff approximately 50 percent raised the duties on the items involved to the rates prevailing in the 1930 Tariff Act. Since there are 184 dutiable items in paragraphs 367 and 368 of the Tariff Act of 1930, it is difficult to generalize

\begin{footnotes}
\item[17] "Trade Agreements Extension," House Hearings, \textit{op. cit.}, pp. 89-90, 179.
\item[18] There have been other instances where the President has upheld the Tariff Commission's recommendations for "escape clause relief," but these are not significant on two counts. First, none of the items involved are remotely connected with national defense; second, the dollar value of the imports do not approach a significant amount. See, Kravis, "The Trade Agreements Escape Clause," \textit{op. cit.}, pp. 323-325 and \textit{Investigations under the "escape Clause" of Trade Agreements} outcome of current status of applications filed with the United States Tariff Commission for investigation under the "escape clause" of Trade Agreements, as of May 12, 1955, Third Edition, United States Tariff Commission, Washington, D.C., May, 1955.
\end{footnotes}
about the many duties involved.\textsuperscript{19}

Generally, the items involved in paragraph 367 are watches and watch movements, watch parts, watch cases, and jewel bearings. The duties on watch movements are specific, varying inversely with the width of the movement and directly with the number of jewels (with supplementary specific duties added for special kinds of watches, e.g., self-winding). Watch parts and watch cases are generally subject to compound rates. Jewel bearings are subject to an ad valorem duty of 10 percent and this item is currently bound against an increase. Most of the rates contained in paragraph 367 were reduced in the trade agreement with Switzerland in 1935; thus, the recent increase reversed a trade situation of long standing and restored rates generally to their 1930 level. A watch movement of 2 to 17 jewels, in general, now bears a duty of $2.50 per movement, amounting currently to an ad valorem equivalent of over 40 percent.\textsuperscript{20}

Generally, the items involved in paragraph 368 relate to clocks and clockwork mechanisms, and the rates on many of these items had only recently been reduced (effective September, 1951). The reduction was generally the full


\textsuperscript{20} "Operation of the Trade Agreements Program, Sixth Report, \textit{op. cit.}, pp. 140-141.
50 percent and therefore the more recent increase restores these rates to approximately their original 1930 level.

One further comment concerning the customs policy on imported watch movements needs to be made here. This relates to the recent decision of the Bureau of Customs to consider imported watch movements which are specially engineered to facilitate up-jeweling and re-manufacturing within the United States as subject to higher duties on the grounds that any special device for up-jeweling is in effect a "substitution" for actual jewels. This decision, a reinterpretation of section 367 (1) of the Tariff Act of 1930 which reads - "For the purposes of this paragraph and paragraph 368 the term "jewel" includes substitutes for jewels" - appears to reverse a customs classification in existence for 25 years. It is beyond the scope of this analysis to assess the impact and the ramifications of this decision.


22 There is the impact upon the import-assemblers, upon the employment and income levels of this group of firms (which has a sizeable number of employees relative to the domestic producers); the impact upon the sales promotion efforts of this group with its attendant effects upon the aggregate watch market; the issue of the higher price of jeweled watches to the consumer and the possibility of delaying technological progress within the domestic industry as a result of its being "shielded" from aggressive competition; the impact upon the Swiss economy which earns a significant portion of its dollars by its jeweled-watch sales and which in turn imports a great variety of American goods
However, the question of economic justification for a tariff increase still remains. Excluding mobilization considerations for the moment, it is difficult to justify tariff "relief" for this industry on any grounds. By its own admission it has experienced profitable years since World War II. It has engaged in wide "diversification" programs, becoming, in effect, a multi-product industry. It has been able to show profits on the importation of jeweled-watch movements. It has a virtual "monopoly" on the increasing, higher-value and higher-jeweled watch sector of the market. It is receiving and has continued to receive large government contracts. On purely economic grounds it is difficult to reconcile tariff "relief" and the profit-record of the industry.

The mobilization issue, however, hinges upon theessentiality to national defense of the jeweled-watch part of the industry. In this connection a recent decision was rendered by ODM to preserve the skills in this industry by establishing a minimum productive potential of 2,000,000 units as a mobilization base, and a committee was established to seek methods whereby this goal can be established and maintained. It is highly questionable that the recent tariff increase was the most practical method of achieving this. Leaving aside the fact that the domestic industry and normally more from than it exports to the United States; and the question of alienating a friendly nation and inviting retaliation.
already enjoyed a market of over 2,000,000 jeweled-watch movements without tariff "relief," there is no guarantee that the 50 percent increase granted will necessarily preserve this portion of the domestic market for the domestic producers. It is also profoundly disruptive of the Reciprocal Trade Program and a highly questionable method of achieving a mobilization goal. This suggests an examination of other alternatives.

Alternatives To Tariff "Relief":

The alternatives fall into three categories. The first is the intraindustry method of continuing its "diversification" program. The "diversification" program should not only seek the production of new products but also the development of technological progress in jeweled-watch production. This, of course, is the most satisfactory alternative.

The other two alternatives are mainly government initiated. One is the continuation of the granting of defense contracts to this industry, provided economic efficiency and a sound policy toward the preservation of skills
is maintained by the firms involved. Outright subsidies should be resorted to in order to preserve the minimum cadre of skilled workers. The other - and this should be used only when the minimum of skilled workers is achieved and any productive potential in excess of this is unable to compete in a "free market" or in the event this industry and its skills were reevaluated and declared not to be essential to national defense - is the payment of "adjustment subsidies" by either the federal government alone, or the federal government in conjunction with the states involved. It could be paid to either the firms, the workers, or the communities affected.

Diversification, already labeled the most preferable form of adjustment to import competition in general, has occurred appreciably in the domestic jeweled-watch industry. Some of this, of course, has been stimulated by import competition, some by government contracts, and some for a complex of reasons. Both Hamilton and Elgin National, as one hedge against imports, have instituted an import program. Bulova, of course, was originally an importer-assembler and today engages in both importing and manufacturing operations. The watch movements are imported from Switzerland and assembled and cased domestically. Also, all the companies in the industry have embarked upon the production of the more-than-17 jewel movement and now specialize heavily in this area.
Moreover, since World War II Elgin National has bought plants which turn out "emblems and decorative parts for automobiles and household appliances, men's jewelry, watch accessories, compacts and similar items." The Hamilton Watch Company, too, has turned to diversified products. And, perhaps most significantly of all, both of these companies have this year entered the field of miniature electronics and automation (Elgin National has a government contract in this field of operations). Considering these points alone - the production of many products other than watches, the entrance into the miniature electronics field, the importation and casing of jeweled-watch movements, and shift in production emphasis to the higher-jewel watches - a considerably diversified base of operations already exists in the domestic watch industry. The industry should continue this "trend" as an alternative to seeking tariff "relief."

In addition to the contracts mentioned above, and the ones granted to the domestic horological industry for the production of both proximity and time fuses and other contracts (analysis of which are beyond the scope of this

^23 "Staff Papers," op. cit, p. 500. The discussion (ibid., pp. 397-401) cites the city of Elgin, Illinois as an exemplar of satisfactory community "diversification" as a hedge against import competition.

^24 "Trade Agreements Extension," House Hearings (1955) op. cit., p. 2475. See also Ibid., pp. 89-90.
study), the government owns and operates the Frankford Arsenal in Philadelphia, Pennsylvania. At this plant government research and production are devoted solely to the manufacture of mechanical time fuses.\textsuperscript{25} The first recommendation, then, for government sponsored contracts or subsidies, is for it to continue along these lines and use economic criteria in the granting of contracts in the continuation of its own research and production in this area.

Both Elgin and Bulova have ordnance contracts for the production of jewel bearings. Jewel bearings are on the stockpile list (See Chapter 3, Appendix C), and therefore, can properly be considered a part of the precision industries component under analysis. Certainly, jewel-bearing production, now heavily financed by the government, can be considered an important segment of the domestic jeweled-watch industry and, in fact, the entire program is an interesting example of a government-financed pilot plant and a prototype production line.

Bulova, under government aegis, has established a pilot plant at Rolla, North Dakota for the production of jewel bearings. This particular plant draws upon the local Indian residents for its reservoir of skilled labor. Currently, there are 150 production workers capable of producing from 3 1/2 to 5 million jewel bearings per year. While this is only a fraction of the estimated need of 75

\textsuperscript{25} "Essentiality (of the Domestic Horological Industry)", Hearings, \textit{op. cit.}, p. 193.
million for all-out mobilization, and, while the costs are approximately five times that of imported jewel bearings, this particular pilot plant operation may be justified purely on the grounds of defense essentiality.\textsuperscript{26}

Augmenting this pilot plant program is a prototype production line established by Elgin National, again under government sponsorship. This production line of 125 machines of 26 types and operated by 100 workers, is expected to produce 7 1/2 million jewel bearings per year. The emphasis here is upon the refinement of the machinery per se.\textsuperscript{27} This suggests, of course, that once the refinement of the machinery proves technically feasible, the machinery can be stockpiled for mobilization purposes. All in all, it would appear that research along these lines is justified and should be continued, contingent, of course, upon improved efficiency.

A general comment may be added here concerning the

\textsuperscript{26} Supplementing production alone, of course, are two other alternatives, stockpiling and the attempt to find substitutes for this item. The question of stockpiling is an unsettled one in this instance. While the original costs are not high, the persistent danger of obsolescence exists because of the difficulty of projecting the future requirements for the various shapes, sizes and varieties. Thus stockpiling, alone, is not particularly feasible.

\textsuperscript{27} Ibid., p. 214.
training and preservation of cadre of skilled workers in the precision industries, and specifically in watchmaking and jewel-bearing production. The significant feature from a policy point of view may well be the creation and maintenance of skilled workers in this mobilization component rather than the production of end-items. There is evidence of an attempt to create such a body of workers skilled in precision operations in the ordnance programs discussed above.

A technique for this kind of experiment emerged from the training of lens grinders in World War II. The work was broken down into 14 distinct operations each of which could be handled by even inexperienced workers, with only the few critical operations remaining to be handled by more experienced workers. As new workers entered the operations, they were taught only the critical operations. Thus, lens grinder teams were being readied in a matter of a few weeks, whereas formerly several years were required to train workers.²⁸ Pilot-line and prototype production line operations, as are in operation in jewel-bearing production, then, can serve as training grounds for the creation and maintenance of a cadre of highly skilled workers. This, in turn, raises the general levels of skills in an industrial economy, a point stressed previously as being of far more

significance for mobilization purposes than mere tariff "protection."

Remainder of The Precision Industries Component:

In addition to the domestic watch industry, there are seven items in the precision industries component under analysis in this chapter. These seven items account for only 2.9 percent of all the items in the mobilization base and have received only 2 percent of all rapid tax amortization benefits to date. (See Appendix C, Chapter 3.) These figures, seemingly insignificant, are not accurate indices of this component's indispensibility to the mobilization base. In fact, it may be more definitively stated that there appears to be no question of the "essentiality" of these industries and the skills involved therein.

Although this component is heterogeneous the heterogeneity is not a deterring factor when concentrating upon the import problems involved because the hundreds of items in the component are grouped into four tariff paragraphs. None of these industries has instituted "escape clause" action, and, in fact, some of the industries involved disclaim the need for tariff protection.29 Some of the indus-

tries have hundreds of small firms producing a vast range of items. Some enjoy an export market (e.g., the machine tool industry). In short, this component in the aggregate has not yet experienced serious competition from imported products. However, since potential "displacement" is a possibility given significant tariff removals on some of the products involved (e.g., optical instrument glass and scientific instruments), and since these industries rely heavily upon labor content in relation to capital per production worker, the specific question becomes again whether to insulate them completely from foreign competition by means of the imposition of prohibitive tariffs, or to attempt by some of the alternative methods mentioned above to encourage the maintenance of technologically efficient industries.

The most troublesome of the seven items, considering import policy alone, would appear to be those items in tariff paragraph 227 and 228, and specifically listed on ODM expansion goals lists as optical glass and scientific instruments. Optical glass, paragraph 227, is used for such military items as lenses in gun sights, range finders, fire control equipment, periscopes, binoculars, and cameras. Scientific instruments, paragraph 228, include such military items as telescopes, microscopes, and prism binoculars. The import classes in these two paragraphs have, for the most part, duties of 50 percent ad valorem (See Table XI).
Despite this duty, the domestic industries are experiencing increasing competition from producers abroad, and any reduction in these duties would probably result in a "substantial" increase in imports.\textsuperscript{30} While the ratio of imports to aggregate domestic production is less than 20 percent in the case of optical glass, a "substantial" displacement is a probability if tariff reductions are made. Germany and the United Kingdom are expected to increase their share of the domestic market. For optical instruments, the import ratio is even lower, but tariff suspensions would lead to a "substantial" increase in imports from Japan and Germany.\textsuperscript{31}

Projections for the other items tabulated in Table XI have not been made. Generally, the ad valorem equivalents are lower, having been reduced the full 50 percent in the GATT negotiations. Also, these items are not particularly troublesome from an import policy point of view; some, in fact, possessing an export market. The items listed below are one part of the several classes in each of the paragraphs shown.

The government has already instituted many policies for this component. It has issued certificates of necessity so that firms could receive rapid tax write-offs for


\textsuperscript{31} Ibid.
TABLE XI

TARIFF RATES ON SELECTED PRECISION-MANUFACTURED ARTICLES

<table>
<thead>
<tr>
<th></th>
<th>1930 rate</th>
<th>GATT rate</th>
<th>Tariff Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical Glass</td>
<td>50% ad val</td>
<td>17 1/2 - 50%</td>
<td>227</td>
</tr>
<tr>
<td>Scientific Instruments</td>
<td>20 - 60%</td>
<td>17 1/2 - 50%</td>
<td>228</td>
</tr>
<tr>
<td>Metal-cutting Tools</td>
<td>60%</td>
<td>30%</td>
<td>352</td>
</tr>
<tr>
<td>Dies, Jigs, Fixtures</td>
<td>50%</td>
<td>25%</td>
<td>352</td>
</tr>
<tr>
<td>Metalworking Equipment</td>
<td>30 - 40%</td>
<td>15 - 20%</td>
<td>372</td>
</tr>
<tr>
<td>Machine Tools</td>
<td>30 - 40%</td>
<td>15 - 20%</td>
<td>372</td>
</tr>
<tr>
<td>Screw Machine Products,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precision</td>
<td>30%</td>
<td>15%</td>
<td>372</td>
</tr>
</tbody>
</table>

Source: Schedula A, op. cit.

expansion purposes. A necessary concomitant of this program has been the procurement of the many end-items produced under this expansion program. Stockpiling, particularly of machine tools, has taken place. Caution must be exercised here, as well as elsewhere in the stockpiling program, to allow for a deterioration and obsolescence because of changing military technology. The replacement and modernization of these stockpiled items could give the industries involved an assured demand, and a preservation of the skills involved; defense officials would also be assured of a ready supply of modern machine tools. The leasing of these tools and the provision of equipment and plant facilities to the machine tool industry has been instituted by the government.32

Thus, along with these policies already in existence, the government can implement some or all of the alternatives outlined above. The government (and the industries involved) can encourage "diversification" and technological progress. Special tax privileges may be offered if necessary. Stockpiling, preferably in pilot plants, should be continued. The creation of a team of skilled workers, as outlined above and as particularly applicable to lens-grinder training, can be experimented with. And finally, exposure to foreign competition, in cases only where "displacement" will not prove disastrous, might be viewed as a desirable alternative. In any event, the mere imposition of higher and higher tariff walls, is no panacea.33

B. Electrical Equipment Component

The electrical equipment or products industry, by any definition, is gigantic. It is a rapidly growing, dynamic, multi-product industry and is currently experiencing a huge export market. It is, therefore, in little need of tariff

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33 "Moreover, with respect to microscopes, cameras, and various similar products, there are indications that the constant exposure of the United States market to foreign innovations may be needed if we are to maintain the quality of our products abreas of those manufactured abroad." "Staff Papers," op. cit., p. 223.
protection and it seeks none. In this respect, this component is vastly different from the precision industry component analyzed above.

However, there is a particular segment of the industry which is of special importance for this study, namely, the segment which produces and services electric power generating equipment. Abundant low-cost power is vital to an industrial economy and is even more vital during an all-out war. Thus, this component, along with the minerals fuel component analyzed earlier, virtually completes the study of energy potential for mobilization purposes. Also, this segment of the industry presents an issue for policy makers because it has a high labor content - producing, in the main, custom-built equipment. Thus, it becomes intensely competitive with foreign producers who enjoy the advantage of lower labor costs. In this instance, however, it is not the tariff which is directly at issue but rather government procurement policies, or more specifically, the "Buy American" Act.\(^{34}\)

\(^{34}\) The other segment of the industry is, in the main, a mass-production or low labor content segment, producing electrical appliances (e.g., refrigerators). This segment constitutes by far the most important part of the industry from the viewpoint of producing items of higher value, etc., and it is precisely this section of the industry which enjoys a large export market, and consequently, does not seek tariff "protection." While this segment, through wartime conversion, would be highly desirable productive potential for mobilization purposes, it is not of immediate concern here.
All tariff rates on electrical equipment and apparatus with a few minor exceptions, have been reduced since 1930 by 50 percent or more under the Reciprocal Trade Agreements Act. Under the 1930 rates, the duties ranged from 20 to 40 percent. The present reduced rates range from 12 1/2 to 17 1/2 percent. The duties on 9 of the 12 items under analysis are shown in Table XII.

TABLE XII

<table>
<thead>
<tr>
<th>TARIFF RATES ON SELECTED ELECTRICAL EQUIPMENT ARTICLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930 Rate</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Turbines, Hydraulic</td>
</tr>
<tr>
<td>Turbines, Steam</td>
</tr>
<tr>
<td>Boilers, Steam</td>
</tr>
<tr>
<td>Generators, Waterwheel Driven</td>
</tr>
<tr>
<td>Transformers, Distribution</td>
</tr>
<tr>
<td>High Voltage Switchgear</td>
</tr>
<tr>
<td>Sensitive Electric Switches</td>
</tr>
<tr>
<td>Electronic Products, Military*</td>
</tr>
<tr>
<td>Mechanical Power Transmission Equipment (except gears)*</td>
</tr>
<tr>
<td>Condensers</td>
</tr>
<tr>
<td>Air Preheaters, Regenerative</td>
</tr>
<tr>
<td>Electrical Connectors</td>
</tr>
</tbody>
</table>

b/ Bound against increase
* ODM classification which is not truly comparable to Bureau of Census (Tariff) classification

Source: Schedule A, op. cit.

Note: All items listed in table are as listed on ODM expansion goals list and may not be comparable to Schedule A listings. The three items without duties do not appear to be classified for import purposes.
This component includes 12 items, constituting 4.9 percent of the total number of items in the mobilization base. It has also received a 4 percent share of the total amount of the tax amortization program as of September, 1954. The tax benefits are granted to the public utilities installing the equipment.

In the years since World War II (1946-1955) the heavy electrical goods industry produced and put in service equipment which doubled the World War II electrical power generating capacity. It installed more equipment in this nine year period than in the previous 70 years. The anticipated capacity in 1955 is 135 million kilowatts as contrasted with the 1946-capacity of 63 million. A new expansion goal, with a target date of 1958 and a capacity of 150,000,000 kilowatts was established in April, 1955; another example of a re-evaluated mobilization goals.\(^\text{35}\) From 1946 to 1955 the number of establishments in the industry increased from slightly less than 2,000 firms to well over 4,000. Employment, too, more than doubled and the industry now employs over 1,200,000 wage and salaried workers; approximately 7 percent of the total employment in all manufacturing industry.\(^\text{36}\) Thus, the industry in the aggregate and the specific segment vital to mobilization, namely, the electri-


cal power generating equipment segment, have shown a tremendous growth since World War II; a fact of significance in the present analysis.

Some of these "growth" figures are tabulated below in Table XIII. These figures indicate, inter alia, that the electrical machinery industry grosses several billion dollars annually in sales, and since World War II has exported over 5 percent of its total output, amounting to several hundred millions of dollars. These, of course, are aggregate figures reflecting the exportation of the mass-produced electrical appliance items of the industry. The imports, on the other hand, have hardly exceeded one tenth of one percent of domestic production or consumption during this period.

Imports, then, are not of major significance for the analysis and a change in tariff policy is not an issue. Rather, it is the implementation of the "Buy American" Act in the procurement of electrical power generating equipment abroad. This Act is a complex piece of legislation and has been subject to many changes in policy and administration since its passage in 1933. The most recent of these changes was announced in an Executive Order in January, 1955. This change "liberalized" the act in favor of foreign exporters, in that the margin of differential in costs between foreign producers and domestic producers was lowered from 25 percent to 10 percent "under normal circumstances," that
TABLE XIII

ELECTRICAL MACHINERY INDUSTRY: TOTAL UNITED STATES SALES, EXPORTS AND IMPORTS FOR CONSUMPTION OF ELECTRICAL MACHINERY AND APPARATUS

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Sales</th>
<th>Exports</th>
<th>Exports %</th>
<th>U.S. Imports for consumption</th>
<th>Imports % of Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1946</td>
<td>$8,369*</td>
<td>$312.9</td>
<td>5.3*</td>
<td>$ 5.3*</td>
<td>0.05</td>
</tr>
<tr>
<td>1947</td>
<td>8,369*</td>
<td>573.9</td>
<td>5.3*</td>
<td>5.3*</td>
<td>0.05</td>
</tr>
<tr>
<td>1948</td>
<td>8,369*</td>
<td>499.8</td>
<td>5.3*</td>
<td>5.3*</td>
<td>0.05</td>
</tr>
<tr>
<td>1949</td>
<td>8,369*</td>
<td>451.5</td>
<td>5.3*</td>
<td>5.3*</td>
<td>0.05</td>
</tr>
<tr>
<td>1950</td>
<td>8,369*</td>
<td>388.2</td>
<td>5.3*</td>
<td>5.3*</td>
<td>0.05</td>
</tr>
<tr>
<td>1951</td>
<td>12,170</td>
<td>536.6</td>
<td>4.4</td>
<td>18.8</td>
<td>0.12</td>
</tr>
<tr>
<td>1952</td>
<td>13,740</td>
<td>616.4</td>
<td>4.5</td>
<td>27.4</td>
<td>0.13</td>
</tr>
<tr>
<td>1953</td>
<td>17,000**</td>
<td>800.0**</td>
<td>5.5**</td>
<td>50.0**</td>
<td>0.03**</td>
</tr>
</tbody>
</table>

* Average for 1946-1950


Therefore, unless prices quoted by foreign producers were lower than this differential, government contracts are awarded to domestic producers.37

It is not proposed to go into the complexities of this legislation.38 The important point is to center analysis on


38 Aside from the frequent executive changes in the implementation of the act, such as lowering or raising the differential allowed between domestic and foreign producers, each executive department concerned with procurement uses its own particular formula in arriving at the differential.
the two criteria in the act which are of consequence in the procurement of electrical equipment from overseas sources. The two criteria are "unreasonable cost" and "inconsistent with the public interest." The first of these refers to an excessive differential in the bids submitted by domestic producers vis-a-vis foreign producers, and inasmuch as this is established by the Executive (now 10 percent) and individually administered by the head of each department concerned with procurement, there does not seem to be significant disagreement as to the criterion of "unreasonable cost." It would appear that the margin currently allowed constitutes an "unreasonable cost" differential.

The more pressing problem, however, is what constitutes procurement policy "inconsistent with the public interest." The domestic producers' contention is that any purchasing of electrical power generating equipment, since this equipment is vital to national defense, is incon-

G.S.A. and the Interior Department apply the differential to the cost of the foreign product less duty, while the Defense Department and the Atomic Energy Commission include the duty in estimating the differential. The latter situation offers an additional "cushion" to the domestic producer in submitting a bid. See, "Malone Hearings," Part 10, op. cit., pp. 1129-1140, also "Bell Report," op. cit., p. 57.

39 This particular criterion is nowhere defined in the Act. For the Defense Department's working rules in this regard, see, "Malone Hearings," Part 10, op. cit., pp. 1135-1137.
sistent with the public interest. They buttress their argument with contentions that it is costly in terms of time and money to service and replace parts of equipment manufactured abroad. The parts are not easily interchangeable since equipment manufactured abroad is of a different engineering standard and nature from domestically produced equipment. Their estimate is that it takes from one to four months longer to furnish parts for equipment manufactured abroad.40

In order to assess properly the domestic industry's contentions, it is necessary to ascertain the extent to which foreign producers have been able to install equipment here and from which areas most of this equipment has come. There is no evidence of any serious inroad by foreign producers even though procurement from foreign sources seems to have increased in recent years, as shown in Table XIV. In fact, foreign producers have less than two percent of the domestic market, and in view of the tremendous current potential, this does not appear to be alarming.41 Secondly, the principal suppliers are the United Kingdom and Switzerland. This ameliorates the problem of the replacement of parts, inasmuch as Canadian workers, familiar with the engineering standards and specifications of United Kingdom power generating equipment, constitute a cadre of skilled workers for


41 Ibid., p. 2458.
mobilization purposes. There is the further possibility of the stockpiling of parts, a stipulation which can be made when entering into a contract, either with a domestic or foreign producer. There appears, then, no cause for alarm over government procurement of heavy electrical power generating equipment to date. The contracts awarded for the years 1950-1953 are shown in Table XIV.

TABLE XIV
HEAVY ELECTRICAL EQUIPMENT: CONTRACT AWARDS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>$1,517,000</td>
<td>$155,000</td>
<td>91</td>
<td>9</td>
</tr>
<tr>
<td>1951</td>
<td>10,269,000</td>
<td>2,374,000</td>
<td>81</td>
<td>19</td>
</tr>
<tr>
<td>1952</td>
<td>11,085,000</td>
<td>6,843,000</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>1953</td>
<td>16,089,000</td>
<td>10,058,000</td>
<td>62</td>
<td>38</td>
</tr>
</tbody>
</table>


Note: The data compiled above were originally assembled and made available by a United States manufacturer. See Ibid.

What has been discussed above is not to be construed as a general analysis of the "Buy American Act. However, there is evidence that the government could possibly save up to $100 million annually through lower prices, and increase customs revenue by approximately the same amount,

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42 Ibid., p. 2458.
if this procurement principle were eliminated. In fact, in a 15 month period the Defense Department by disregarding the then existing 25 percent differential realized a savings to the Department of $716,000 and increased tariff revenue by an additional $400,000.43

C. The Transportation Component

The delineation earlier of a transportation component excluded air and truck transportation. This was done in the interests of manageability. Therefore, what remains of this component is the nine items previously listed - five of which involve rail transportation, and four ocean shipping. These nine items account for 3.7 percent of all items in the mobilization base and have received slightly over 15.1 percent of the total dollar value of certificates of necessity issued as of September, 1954.

This component from a mobilization point of view, involves only a few fundamental considerations. The first of these is that wartime expansion of transportation facilities requires enormous quantities of resources and involves considerable lead-time. Because of this, except

for ocean shipping, transportation is given a low priority for manpower and materials. The increased load caused by wartime conditions has to be handled, in the main, by the existent facilities. In any event, this was the precedent established in World War II and appears to be the blueprint for any future national defense crises.  

This low priority, however, is applicable only to rail transportation. Ocean shipping warrants, and has been receiving, special governmental treatment. The problem here is to have on hand in the initial stages of a conflict a large and balanced fleet of merchant vessels; a vigorous shipbuilding industry capable of rapid expansion; and plans to control the shipping and shipbuilding industries. It is uneconomic to construct and maintain, in peacetime, all the shipping needs for a full war emergency. Rather, policy should be directed toward creating and maintaining an adequate shipbuilding industry capable of expansion.

With the problem thus limited to the maintenance of an active shipbuilding industry, the alternatives are limited to a few variations on one basic policy, subsidization. Since it normally costs the government about 50 percent more to operate vessels under the American flag than under a foreign flag, and since construction costs, composed significantly of labor costs, are 50 to 100 percent higher in

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American shipyards than in foreign yards, the United States Maritime Commission has in the past resorted to, and continues to subsidize both the shipbuilding interests and the shipper. The methods by which the government provides this aid are fourfold: tax amortization benefits; "progress payments"; trade-in-and-build program; and "offshore procurement."

The first method, that of rapid tax amortization, has already been commented on adequately throughout this study. The second method, that of "progress payments" involves a technique whereby the government reimburses a contractor in advance of the delivery of any goods. The payment is for costs incurred in connection with work in progress; this technique is almost exclusively unique to the shipbuilding industry. The third method is a technique, administered by the Maritime Commission, whereby the government offers to private United States tanker operators inducements to acquire new vessels. The government purchases existing serviceable vessels with the understanding that the private contractor will undertake to construct new tankers meeting specified engineering requirements. In addition, the government "mothballs" and places in reserve the purchased vessels. The fourth technique, also amply referred to

45 Ibid., pp. 262-263.
46 Ibid., p. 342.
earlier, involves the placing of contracts for shipbuilding with foreign manufacturers. This reduces procurement costs considerably and lessens the problems associated with the replacement of spare parts in American-built vessels by foreign builders. 48

In brief, then, this component relies upon the simple expedient of government subsidy for its construction and maintenance for mobilization purposes. It is further unique in its extreme compactness; in that it poses no tariff problems; 49 and that, save for ocean shipping, it poses no immediate expansion problems. Since the maintenance of a nucleus merchant marine fleet under the American flag and a nucleus shipbuilding industry capable of expansion has been a merchant marine policy for years, the recommendation is that these policies be continued. The various existing subsidization plans should, also, be continued.


49 The American Cargo Preference Policy - A system whereby 50 percent of American aid goods must be shipped in American vessels - constitutes another undesirable form of aid to the industry." In shipping as in trade, the policy of the United States should be to eliminate discrimination by other countries and to avoid such measures as cargo preference by the United States," Ibid., pp. 56-57.
Summary:

While there is very little in common among the three components of mobilization in the preceding analysis, there is one area in which all three exhibit similarity, namely, the high-labor content of the end-item. This is particularly true of the precision industries where it is clear that the productive process entails a large amount of manual labor per unit of capital. This is also true of that segment of the heavy electrical equipment industry in which end-products - mainly electrical power generating equipment - are custom made and embody a high-labor content. The shipbuilding industry, upon which analysis of the transportation component centered, also entails heavy labor costs relative to the use of capital. Because, therefore, of the high-labor content of many of the vital end-items of these industries, they face intense foreign competition, where comparable labor costs are considerably lower. However, here the similarity ends. Only in the precision industries is import policy an important issue. In the other two components, it is not import policy which is of concern but rather procurement policy. Specifically, in the heavy electrical equipment industry, the "Buy American" Act is an issue; in
shipbuilding, it is a matter of subsidization policy.

The domestic horological industry, composed of four segments, served as a "model" for the analysis of the precision industries component. While the four segments of the industry act as a cohesive group in seeking special government treatment, it is the jeweled-watch segment which is of special onterest in the analysis. The "essentiality" of the industry rests almost exclusively upon this segment alone, and all the tariff issues inherent in maintaining precision industries for mobilization purposes come to rest in an analysis of this segment. Perhaps, the central point in this chapter is that the domestic horological industry presents a "case study" of the possibility of implementing a series of alternative policies with the aim of creating and maintaining a cadre of skilled workers in a mobilization program without resorting to tariffs as a shelter from intense foreign competition.

The jeweled-watch segment of the industry is composed of four companies, three of which also assemble and case imported watch movements, and are engaged in the production of many other items. The fifty import-assemblers, on the other hand, rely solely on the importation of Swiss watch movements. Quite naturally, then, these two groups are in direct opposition in regard to import policy; the latter group seeking "low" tariff barriers, the former seeking "higher" tariff barriers.
It is undeniable that the domestic horological industry has produced during and since World War II, and is continuing to produce several million precision end-items and parts. These items, in the main, are mechanical and proximity fuses. It is equally undeniable that some important non-horological firms have produced more of these same items than the jeweled-watch industry. In fact, firms outside the industry now hold 88 percent of the contracts for the production of these items. Therefore, the production of military fuses is not unique to the productive potential of the horological industry.

The question of "essentiality" of this industry, therefore, narrows down to the mobilization requirements of jeweled watch movements and time-devices, production of which is unique to the jeweled-watch industry. The evidence here, is that military requirements of these items is "nominal" and well within the existing potential of the industry. Further, technological improvements within the pin-lever (non-jewel) segment has aided in fulfilling the smaller requirements for jeweled timing devices. In the mid-1954, the Director of the Office of Defense Mobilization, exclusive of the tariff issues involved, established a mobilization goal for this industry of a minimum of 2,000,000 units. A committee was established to recommend methods whereby this goal could be established and maintained.

The tariff issue, however, centers around the concept
of "serious or threatened injury," and not upon essentiality." This is so mainly because the Trade Agreement Extension Act does not empower the Tariff Commission or the President to decide tariff issues on the ground of defense essentiality. In the two "escape clause" actions instigated by the industry, the Tariff Commission (4-2 decision) found "actual or threatened injury" and recommended tariff "relief" for the industry. In mid-1954 the President upheld the finding of the second hearing and a 50 percent increase in the duty on watches, watch movements, watch parts and clocks was put into effect.

The "share doctrine" which was involved in this case raises the question of whether tariff "relief" should be automatically granted to protect the domestic industry's historical share of the market. There is evidence that the jeweled-watch market is an expanding one and that both the domestic producers and the import-assemblers are sharing in this increasing market. Under these conditions "actual or threatened injury" to the domestic industry is difficult to establish. Moreover, the domestic industry, by its own admission, has enjoyed increasingly profitable years since World War II. Thus, on economic grounds, it is difficult to justify the tariff relief granted this industry in mid-1954.

Independent of the tariff issue, however, is the problem of maintaining a productive potential capable of produc-
ing a minimum of 2,000,000 units, established by the ODM in mid-1954. Three lines of action were suggested. The first, and most preferable, is a recommendation that the industry continue to pursue vigorously its "diversification" program, particularly in those areas which embody technological progress, i.e., electronics and automation. Tax benefits by the government would be offered in this area to encourage the industry. Secondly, the government should continue to extend contracts to the industry, particularly with the view toward creating and establishing a cadre of skilled precision workers. The pilot plant operation of Bulova and the prototype production line of Elgin National, both of which are directed toward improvement in the production of jewel bearings are cases in point. The government can also engage in the stockpiling of these end-items and the machines necessary for the production of the end-items. Furthermore, it could ease adjustment to import competition by the payment of "adjustment subsidies" to the firms, workers or communities effected. And finally, when segments of the industry are no longer "vital" from a mobilization viewpoint, either because of lagging technology or the dynamism of changing military technology and when this segment is unable to compete in the "free market," then no special treatment is warranted. Particularly, the simple expedient of establishing tariff barriers should be avoided.
The extension of these lines of action was suggested for the remainder of the precision industry component. While some of the remaining items are multi-product industries and enjoy export markets, two of the items, optical glass and scientific instruments would suffer "substantial" displacements if the duties on these items were to be removed. The government has already established three lines of action: rapid tax amortization benefits have been extended; stockpiling of some of the items (e.g., machine tools) has been undertaken; and, the leasing of tools and the provision of equipment to these industries have been instituted recently. It is recommended that these lines of action, and others, be continued.

In analyzing the heavy electrical equipment industry, a distinction was made between the mass-production electrical appliance segment and the custom-built electrical power generating equipment segment. While both segments are experiencing expanding markets, the former enjoys a substantial export market. It is also of less immediate importance to the current defense structure (its facilities would, of course, be converted in the event of all-out conflict). The latter segment is of more pressing significance to the mobilization effort, and because of its high-labor content experiences competition from foreign manufacturers. It is not tariff policy which is directly at issue, however; rather, it is "Buy American" policy.
There is no evidence that government procurement from manufacturers abroad has seriously jeopardized the mobilization potential of the electrical power generating industry, or that it has been "inconsistent with the public interest." The recommendation was offered that no special aid, aside from rapid tax amortization benefits, be given this industry. Particularly, there should be no increase in the existing ten percent cost differential in the "Buy American" Act.

The final component analyzed was transportation. Because expansion of this component during an all-out war is extremely costly in terms of resources and time, this component generally receives a low priority for expansion. The heavier wartime load is handled by the existing facilities. The exception to this generalization is ocean shipping. Here, the policy is to maintain both a shipping and a shipbuild industry capable of expansion. Since the labor costs in both cases are considerably higher than foreign industries, differential subsidies are granted domestic industries. Continuation of these various subsidy plans, augmented wherever feasible by "offshore procurement," is recommended.
CHAPTER VII

NATIONAL DEFENSE AND THE TARIFF

Introduction:

Dispersed throughout this study are many diverse references to tariff and import policy. In this chapter an attempt will be made to pull together these references and to analyze more closely the issues involved. The ultimate end is to arrive at specific recommendations concerning the implementation of tariff policy when the question of national defense is directly at issue. As indicated previously the crux of the problem resides in the fact that there has not been to date any single agency empowered to decide an issue involving both defense "essentiality" and tariff policy, nor has there been in existence any administrative procedure for resolving this issue.

To arrive at some clear-cut recommendations will necessitate analyzing tariff issues in a context larger than purely the area of national defense. However, this section is not intended as a general review of American tariff policy. The analysis will be concentrated upon the
general tariff issues raised earlier, and specifically, upon the "escape clause" and "peril point" actions of those industries which constitute a part of the mobilization base. Thus, larger issues will be raised only as an aid in augmenting the main analysis of the tariff and national defense.

There is no intent in the subsequent analysis to over-emphasize the importance of tariff policy in the international economic relation of the United States. No claim is made that a general "liberalizing" of the American tariff structure will necessarily establish equilibrium in world trade, or alleviate the "dollar gap." As indicated earlier, in the extremely unlikely event of gradual but complete removal of all import duties, the estimates are

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1 Charges such as this are frequently made against those who propose general trade liberalization. "First the current agitation over the American tariff has become a major obstacle to formulating an effective foreign economic policy. In their anxiety to sell the American public a liberal trade viewpoint, the low-tariff advocates have made our tariff policy a virtual scapegoat for the world's economic troubles, despite the fact that these difficulties are not caused by our tariff, nor could they be solved or even appreciably eased by any conceivable tariff action we might take in present world conditions. In fact the tariff issue seems to have become a sentimental symbol which is invoked in nostalgic yearning for an age that has gone and as a substitute for thinking up the harsher realities of a world we cannot escape. If liberal world trade advocates persist in making tariff reduction the cornerstone of their dream castle, they invite a disillusionment which will stimulate the forces of economic nationalism, both in this country and abroad." Samuel Loubell, Revolution in World Trade, Quoted in "Trade Agreements Extension, Hearings (1955), op. cit., p. 2036.
that this action would fall far short of closing the "dollar gap." Rather, advocacy of trade liberalization is based upon consistency and continuity of policy, and, more importantly, upon the national interest instead of the interests of special groups. That is, in view of the continuing creditor status of the United States, a continuing world trade imbalance, America's growing dependence upon foreign sources of supply, it is logically consistent and it is in the national interest for the United States to encourage the importation of more foreign products whenever feasible and consistent with national security. This has been the policy of the United States with a few exceptions and some Congressional uncertainty, since the passage of the Reciprocal Trade Agreements Act in 1934.\(^2\)

However, to indicate that tariff policy is of no consequence is an understatement in the other direction. As has been indicated throughout this study, it is a continuing source of public controversy and a constant area of disagreement among policy makers. This is particularly true when tariff policy becomes compounded with the defense "essentiality" issue, one of the two remaining valid justi-


\(^3\) Both the "Bell Report" and the "Randall Report" advocated a trade policy in the national interest. In the former, see pp. 1-6; in the latter, Commission On Foreign Economic Policy, Washington D.C., 1954, see p. 2. For advocacy of consistency and continuity, see, Ibid., p. 76.
fications for tariff barriers.\textsuperscript{4} Oftentimes defense "essentiality" claims are, at best, dubious - as in the domestic watch industry situation - and are merely attempts to influence policy makers to grant unwarranted tariff "relief."

In brief, the tariff continues to be a source of important controversy, especially with reference to efforts of the United States to develop a family of free nations.\textsuperscript{5}

A consistent and continuing liberalized import policy in the national interest is merely one phase of a sound foreign economic policy. It should be supplemented by a customs simplification policy; the encouragement of direct private American investment abroad; a sound procurement policy, both "offshore" and domestic (the latter under the

\textsuperscript{4} The other valid justification is the so-called "infant industry" argument. "There are two reasons for maintaining protective duties in certain fields of manufacture which may be sound. The first is to meet defense requirements of the United States, though in many such cases it might be desirable to reply on devices other than a tariff. Where the defense of the United States and the free world depends upon assured supplies from American producers, the countries of the free world would undoubtedly agree that economic considerations must be secondary. A protective tariff can also be justified by the transitory high costs of a new industry. But such protection is desirable only for a new industry which can soon be adjusted to United States methods of production, and should be temporary. In a country like the United States, with enormous facilities for undertaking new industries, need for such protection should be rare."

\"Bell Report,\" op. cit., p. 18.

\textsuperscript{5} "No other single field (tariff rates, tariff policy and customs administration) produced such directly divergent statements of alleged fact, so many shades of opinion, or such diversity of recommendation."

\"Randall Report, op. cit.\" p. 43.
"Buy American" and "Stockpile" Acts); in short, all those policies outlined earlier as being in harmony with the existing fabric of international relations. In a defense "essential" industry, however, there are alternative lines of action - not merely tariff aid - as have been indicated throughout the study. In fact, of these alternatives tariff aid is usually not the most effective action. Furthermore, it is of more significance to encourage a high technological level of productive efficiency and the cadre of skilled workers which this would entail, than to maintain merely an existing level of productive efficiency. Restrictive tariff barriers rarely, if ever, encourage technological progress.

The lowering of tariff barriers, then, can be justified on the grounds of consistency, continuity, and the national interest. This policy, however, is merely a single aspect of a sound, balanced economic foreign policy. When attempting the creation and maintenance of a vital domestic industry, alternative lines of action, other than tariff policy, should generally be resorted to. These alternatives should aim at the creation of a cadre of highly skilled workers and the furtherance of technological progress.

There are several approaches provided by existing legislation which industries (or segments thereof) can
avail themselves of in seeking tariff protection. By the terms of reference of this study, only two, the "escape clause" and "peril point" provisions need be of concern here. Some of the other legislative approaches include the "equalization of costs" clause of the Tariff Act of 1930 (section 336); the anti-dumping act of 1931; section 22 of the Agricultural Adjustment Act which is designed to impose either import fees or quotas on agricultural products, the importation of which are in conflict with the domestic parity program; and section 8 of the Trade Agreements Extension Act which is similarly designed to "protect" domestic perishable agricultural products. While these provisions are of consequence in the larger framework of general trade policy, they are not within the province of this study.6

The "escape clause" and "peril point" provisions became an integral part of the Trade Agreements Extension Act of 1951 and are provisos in the current Trade Agreements Extension Act of 1955. While there had been experience with

6 For a general discussion of these and other tariff "relief" provisions see, "Malone Hearings," Part 10, op. cit., pp. 1141-1155 and "Operation of the Trade Agreements Program," Sixth Report, op. cit., p. 168. While these legislative provisos are of less significance than "escape clause" actions, they are of general significance, i.e., section 336 of the Tariff Act of 1930 (the "equalization of costs" provision) is the authority under which general Congressional tariff hearing are held; and any stringent implementation of these provisions could emasculate our current trade policy.
both these techniques prior to 1951, the "escape clause" procedure became mandatory in that year and the "peril point" provision has been continually renewed since 1951, so that currently both provisions are the major techniques which can be used when requesting tariff "relief," that is, in avoiding certain reductions in duties, or in raising the current level of duties.

The "escape clause" provision, sections 6 and 7 of the trade Agreements Extension Act of 1951, and amended in the 1955 act, is by far the more important of the two because this is the proviso by which an industry (or segment thereof) can institute action if imports of a product on which a tariff concession has been granted "causes or threatens serious injury" to the domestic producers of "like or directly competitive products" (section 6a). It is the criteria of this particular section and the interpretation thereof by the Tariff Commission which are the subject of wide disagreements.7 Section 7 prescribes the

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7 Section 6(a) of the Trade Agreements Extension Act of 1951, June 6, 1951, 19 U.S.C. 1363-1364 reads as follows: "No reduction in any rate of duty, or binding of any existing customs or excise treatment, or other concession hereafter proclaimed under section 350 of the Tariff Act of 1930, as amended, shall be permitted to continue in effect when the product on which the concession has been granted, is, as a result, in whole or in part, of the duty or other customs treatment reflecting such concession, being imported into the United States in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products. (See, "Malone Hearings, Part 10,
procedure for investigating "actual" or "threatened" injury. It directs the Tariff Commission to make an investigation to determine whether there is ground for invoking the "escape clause." This recommendation must be submitted to the President within 9 months and the President must accept or reject the recommendation within 60 days. If he rejects the Commission's findings, he must submit a written explanation to the Congress. To date, there have been 60 "escape clause" provisos, section 8 of the Trade Agreements Extension Act, and Executive Order 10401. The former concerns perishable agricultural commodities; the latter "directs the Tariff Commission to..."
clause" hearings. In 16 of these actions the Tariff Commission recommended in favor of escape action and sent reports to the President (the Commission was evenly divided in 3 of these 16). The President invoked escape action in only 5 of these 16 cases - watches, movements, and parts (2nd investigation), being the most significant to date. He rejected the recommendations in 10 cases and requested further study by the Commission in one case.9

The "peril point" provision, section 3 of the Trade Agreements Extension Act of 1951, is less controversial, in that the Tariff Commission, prior to trade negotiations, is directed to determine, after investigation and public hearings, the limits to which tariff concessions on items involved may be made without causing or threatening serious review developments with regard to products on which trade agreement concessions have been modified or withdrawn under the escape-clause procedure, and to make periodic reports to the President concerning such developments." See, "Operation of the Trade Agreements Program, Sixth Report, op. cit., p. 129.

9 "Investigation Under the 'Escape Clause' of Trade Agreements," Third Edition, op. cit., pp. 6-9. In the cases involving the five following items the President upheld the Tariff Commission's recommendation for relief: women's fur felt hats and hat bodies; hatter's fur; dried figs; alsike clover seed; watches, movements and parts (2nd investigation). In the following ten he rejected the recommendation: garlic, watches, movements and parts (1st investigation); tobacco pipes and bowls; scissors and shears; groundfish fillets; lead and zinc; handmade blown glassware; spring clothes pins; screen-printed silk scarves; and wood screws. President requested further study by the Tariff Commission in the bicycle "relief" action.
injury to domestic industry. All this is done prior to any negotiations and the report is submitted to the President, who, again may reject and thereby overrule the Commission's findings. To date there has been but one overruling (i.e. Venezuela concessions in 1952) which was discussed in connection with the analysis of the petroleum question.

It is clear that any "loose construction" of the criteria in sections 6 and 7, or any imposition of restrictive limits ("high" peril points) under section 3, by the Tariff Commission, without Presidential rejection or overruling can, in effect, emasculate any liberal trade program. A revision of these criteria which results in broadening the possible interpretations and, therefore, opening the way for the possibility of more restrictive trade practices, may also seriously hamper the effectiveness of a reciprocal trade program. Such a revision has been effectuated by the amendments, cited above, to the 1955 Act. Analysis of these problems, both in the larger context of general trade policy and in the mobilization issues involved, will be undertaken immediately following a reference to changes in legislation concerning imports and national defense.

Recently, both in the 1954 Trade Agreement Extension Act and the 1955 Act, amendments involving concessions on items vital to national defense have been added. In the 1955
Act, amendments involving concessions on items vital to national defense have been added. The 1955 amendment empowers the President to establish unilaterally quotas or other import restrictions on specific items when the importation of such items threatens national security. He may do this after he has directed a defense agency to make a study and recommendations. This amendment, subsection (b) of Section 2 of the Trade Agreements Extension Act of 1951, reads as follows:

(b) In order to further the policy and purpose of this section, whenever the Director of the Office of Defense Mobilization has reason to believe that any article is being imported into the United States in such quantities as to threaten to impair the national security, he shall so advise the President, and if the President agrees that there is reason for such belief, the President shall cause an immediate investigation to be made to determine the facts. If, on the basis of such investigation, and the report to him of the findings and recommendations made in connection therewith, the President finds that the article is being imported into the United States in such quantities as to threaten to impair the national security, he shall take such action as he deems necessary to adjust the imports of such article to a level that will not threaten to impair the national security.10

10 Subsection (b) of Section 2 of the Trade Agreements Extension Act of 1951, as amended by Public Law 86, 84th Congress, 1st session, Chapter 169, H.R.1, op. cit.
Both this amendment and the 1954 amendment, known as the Symington Amendment,\textsuperscript{11} appear to be the first significant approach toward a unified policy for tariff action when the issue of national defense is involved. Experience with these provisos, however, thus far has obviously been limited and, thus, no extensive analysis is possible.

Specific Tariff-National Defense Issues:

Interpretation of the language of the "escape clause," particularly the broadened version contained in the 1955 Trade Agreements Extension Act, will be the key-determinant in the negation or the strengthening of the reciprocal trade program. The issue of "absorption of imports" as opposed to "avoidance of injury" can be largely resolved in favor of the latter by a "protectionist" interpretation of the criteria of the "escape clause" by the Tariff Commission. Therefore, the issue as to whether

\textsuperscript{11} The Symington Amendment provided expressly that: "No action shall be taken pursuant to such section 350 to decrease the duty on any article if the President finds that such reduction would threaten domestic production needed for projected national defense requirements." Public Law 464, July 1, 1954, 83rd Congress, 2nd Session. See, "Trade Agreements Extension," House Hearings, (1955) op. cit., p. 848.
the "escape clause" is compatible with a policy of encouraging the expansion of imports remains one of continuing controversy.\(^{12}\)

With reference to the mobilization base, of the 60 "escape clause" actions to date, seven decisions have involved defense items as defined in this study and are presented in Table XV. The table also presents the dollar value of imports in 1953, the ratio of imports to the United States production (based on 1951 import and production figures), and the duty on each item.

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\(^{12}\) The "Bell Report" appears to take the position that an "escape clause" is incompatible with a policy of increasing imports. "So long as the import policy of the United States is based on the concept that imports cannot come into the country if they threaten injury to a domestic industry producing the same or directly competitive products, there is little scope for increasing imports." "Bell Report, op. cit., p. 63.

The "Randall Report" appears to advocate a different approach, one which would amend the provisions so that the President could overrule Tariff Commission findings which he deems not to be in the national interest. "The escape clause and the peril point provisions should be retained. However, the statute should be amended expressly to spell out the fact that the President is authorized to disregard findings whenever he finds that the national interest of the United States requires it." "Randall Report," op. cit., p. 51.
<table>
<thead>
<tr>
<th>Imports in 1953 ($1,000)</th>
<th>Ratio, Imports to U.S. production</th>
<th>Current Tariff Rate</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crude Petroleum and Petroleum Products</td>
<td>761,584</td>
<td>26</td>
<td>1/4c gal.</td>
</tr>
<tr>
<td>2. Aluminum and Alloys</td>
<td>174,175</td>
<td>20</td>
<td>1 1/2c lb.</td>
</tr>
<tr>
<td>3. Lead</td>
<td>See #6</td>
<td>27</td>
<td>3/4c lb.</td>
</tr>
<tr>
<td>4. Watches, Movements and Parts (1st inv.)</td>
<td>See #7</td>
<td>95</td>
<td>40% ad val</td>
</tr>
<tr>
<td>5. Fluorspar, Acid grade</td>
<td>8,778</td>
<td>28</td>
<td>$2.10 ton</td>
</tr>
<tr>
<td>6. Lead and Zinc</td>
<td>210,277</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Watches, Movements and Parts (2nd inv.)</td>
<td>72,255</td>
<td>95</td>
<td>40% ad val</td>
</tr>
</tbody>
</table>

Total, above imports 1,227,069
Total, U.S. Imports for Consumption 11,000,000

The above data indicate that six defense items are included in the seven "escape clause" actions; watches was the subject of two investigations. The other five items are; petroleum, aluminum, lead, zinc and fluorspar (acid grade). The imports of these six items constitute a significant portion of the aggregate imports for consumption; over 10 percent of the annual imports based upon 1953 figures. Therefore, any change of tariff duties which would be restrictive in nature for the six items involved would create a serious disruptive impact on the reciprocal trade program. It would aggravate the dollar position of many of the principal supplier countries and undoubtedly, would interrupt the flow of many of these commodities into the United States. This, in turn, would lead to higher costs for the commodities involved.

In addition, restrictive trade practices could cause serious mobilization problems, in that, at least four of these commodities - petroleum, lead, zinc, and fluorspar - are additive or supplementary to the American resource base, rather than directly competitive with domestic industries.\textsuperscript{13} It is, therefore important to examine import

\textsuperscript{13} The other two items, aluminum and watches, cause less serious mobilization problems. The imports of the former are not excessive in relation to domestic production, and, therefore, do not create a serious tariff problem. The estimate is that suspension of the existing duty (11 to 15 percent ad valorem equivalent) "probably would have only 'slight' effect upon the volume of imports"
policy for these four items which will aid in strengthening the mobilization structure.

To do this necessitates analyzing the seven decisions by the Tariff Commission tabulated in Table XV. In three of these cases the application for "relief" was dismissed by the Tariff Commission after preliminary inquiry, and one application was withdrawn at the request of the applicant. Since no report was issued in these four cases, no analysis is possible. Apparently, there was no justification for a change in tariff policy.

In the three remaining cases, however, two of which involved the watch industry, the Tariff Commission recommended "relief." Only in the second domestic watch industry investigation, in mid-1954, was the Commission's recommendation accepted by the President. (This, as mentioned previously, is the most significant upholding of the Tariff Commission, in terms of dollar value of imports, since the inception of "escape clause" procedures in April, 1948, (and the cases will be analyzed later). Here it is (Piquet, op. cit., p. 182). Whether the domestic jeweled watch industry is vital to the mobilization base is questionable. Within the terms of reference of this study, the assumption was accepted that a minimum productive potential was necessary for mobilization purposes, and alternatives other than tariff "relief" were suggested for maintaining this minimum mobilization potential.
necessary to analyze the one remaining "relief" recommendation by the Tariff Commission, that concerning lead and zinc in mid-1954 - and to add references to fluorspar, a situation somewhat comparable to lead and zinc. In addition, a slightly different criterion emerges from the petroleum "peril point" overruling in 1952, and, therefore, a reference to this case completes an examination of all the issues involved to date in import policy of defense items.

The lead and zinc "escape clause" action was initiated in September, 1953, and the Tariff Commission's unanimous decision recommending "relief" was sent to the President in May, 1954. The President rejected the recommendation in August, 1954.14 (An earlier "escape clause" action concerning lead alone was instituted in 1951 but was dismissed by the Tariff Commission after preliminary inquiry.)15 The President's decision not to increase the tariff reinforced the "minority" position of two commissioners who questioned the validity of tariff "relief." (they did not oppose relief; the decision was unanimous). These two commissioners suggested the intermediate policy, proposed previously in this study.


15 Ibid., p. 15.
This intermediate policy is based on the proposition that lead and zinc are additive to domestic supply rather than competitive with or disruptive of domestic industries. It is a policy of not changing the tariff rate which would permit the continuation of "going industries" in the United States, but augmented, if necessary, by some of the domestic "support" programs outlined earlier and by the continuation of the encouragement of lead and zinc industries in the two main supplier countries of Canada and Mexico. This latter point is significant in the event of full mobilization since, in an emergency situation, the United States would depend more heavily upon these sources of supply. The intermediate policy, in short, was intended to maintain domestic production at levels that generally prevailed in post-war years (approximately 75 percent of the production of both minerals is domestic in origin; 25 percent is supplied from abroad), and concomitantly, to be as slightly disruptive as possible of the existing trade policies regarding these two commodities. Moreover, a further favorable by-product of this policy is that it "protects" the interests of Americans who have direct foreign investments in lead and zinc; 55 percent of the imports of the former and 25 percent of the latter are attributable to this source.\textsuperscript{16} It is recommended, there-

\textsuperscript{16} "Staff Papers," op. cit., p. 236.
fore, that an intermediate policy be continued in this specific case and, in general, in all situations where a domestic industry is essential to national security but imports are essential as supplements to the resource base.17

Fluorspar, while generally similar to lead and zinc in that the importation of this raw material is, in the main, additive to domestic supply, presents, however, some different problems. In the first instance, the current duty of $2.10 per ton on fluorspar containing 97 percent or more calcium fluoride, (and of $8.40 per ton on fluorspar containing less than 97 percent calcium fluoride) is of apparent importance in its importation. The estimate is that a "substantial" increase in imports, up to 100 percent of annual imports, would result if the duty were removed completely. The increase would come at the expense of the curtailment of production of some of the domestic "captive" mines. While there would not be an important increase in consumption, an increasing share of the domestic market would be possessed by foreign producers who now hold about 25 percent of the market.18 Secondly, unlike lead and zinc, some of the main supplier countries are

17 For a further discussion of this intermediate policy, see, "Lead and Zinc Industries," op. cit., pp. 91-97, and Chapter 4 of this study.

outside the confines of the Western Hemisphere, thereby aggravating any displacement problem when taking national defense considerations into account.

Despite these differences as compared with the lead and zinc situation, an intermediate policy of attempting to maintain domestic production at current levels and using alternatives other than tariff increases, if necessary, and attempting to maintain a supplementary importation of low-cost fluorspar is recommended. To accomplish this, maintaining the duty at its present level might be sound policy. An increase in the duty, however, as requested in the "escape clause" action initiated by the industry in October, 1953, but later withdrawn at its own request, might be disruptive of this objective, and is therefore to be rejected as a policy measure.

A situation, however, where an intermediate policy is not recommended is that of petroleum and petroleum products. First, there is an expanding domestic market for petroleum products and the "projection" is that this market is likely to increase 100 percent over the next twenty years. Thus, while foreign producers are likely to increase both relatively and absolutely their share of this increasing market,

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domestic suppliers are also likely to make major absolute increases. There is no clear evidence that the increasing rate of imports is encroaching upon domestic exploration and development efforts and thus no "displacement" is expected to occur. Implementation of an intermediate policy implies the existence of a "margin," a margin which would establish a desirable ratio between domestic and foreign production. Any such arbitrary action would be inconsistent with the needs of the United States both for mobilization purposes and for long-range industrial growth.

This, however, does not rule out the possibility of flexible quota provisions. Under the 1955 Trade Agreements Extension Act, the President has been empowered to act unilaterally in this regard after a study and recommendation by the Office of Defense Mobilization; the recommendation being to the effect that continuing imports is threatening to impair the national security. This particular point does not appear to have been reached in the situation of oil imports; nevertheless, this proviso, properly interpreted, appears to be an adequate safeguard and is therefore to be considered a desirable policy measure.

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20 Independent petroleum producers are apt to share less in the expanding market for domestic producers but, this, as pointed out in Chapter 4, presents problems legal in nature and, therefore, beyond the scope of this study.
Adequate attention has already been given to the "peril point" decision in the 1952-Venezuela negotiations concerning oil imports. In that decision, the only one to date in which the President overruled the "peril points" established by the Tariff Commission by granting additional concessions to Venezuela on this commodity. The President cited national defense needs and the protection of American investors abroad as reasons for lowering the duty below the established "peril points." This particular decision indicates that the Executive can go beyond the scope of the criteria outlined in the Trade Agreements Act in both "escape clause" and "peril point" decisions. This decision in 1952 appears to be a desirable policy measure when national defense is at issue.


22 "The broader considerations of foreign economic policy, such as the adverse effects of the withdrawal of concessions on relations with friendly nations, are beyond the scope of the Commission's terms of reference in the (Trade Agreements Extension) Act, but there is nothing in the law to prevent the President from taking them into account. Both President Truman and President Eisenhower have taken these factors into account in dealing with the cases in which the Commission recommended the use of the escape clause. However, none of the Presidential rejections of such recommendations was made solely on the basis of considerations that were outside of the jurisdiction of the Commission." Kravis, "The Trade Agreements Escape Clause," op. cit., pp. 335-336.

23 There was also an "escape Clause" action initiated by the petroleum and petroleum products industry in February 1949, but the application was dismissed (4-2 decision)
In four of the six items involved, then, (lead, zinc, fluorspar, and oil) there are some precedents to follow in establishing mobilization policy when it is interwoven with import policy. Generally an intermediate policy is recommended as being least disruptive and most conducive to both maintenance of domestic production and a steady flow of necessary, additive imports. Oil differs moderately in that a relative increase in imports in relation to domestic production is perhaps the most preferable policy. This intermediate policy in general is perhaps a reflection of the growing and continuing need of the importation of supplementary raw materials and of the general rising real costs situation in domestic production of raw materials.

Of the other two commodities under analysis, aluminum and watches, the former presents no tariff precedents in that, the "escape clause" initiated by a segment of this industry in March, 1950 was dismissed unanimously after preliminary inquiry by the Tariff Commission. However, as indicated earlier, the tariff is of slight over-all importance in this case. The other commodity, watches, present general and "unique" tariff issues in its "escape clause" actions.

Ibid.
In the analysis of the domestic watch industry's two "escape clause" actions in the preceding chapter, the conclusion was reached that the tariff "relief" granted this industry in mid-1954 was unjustified. The finding of the four tariff commissioners of threatened or actual injury was based upon the "share doctrine," and injury to a segment of the industry rather than economic failure of the entire industry. The first concept, that of the "share doctrine" implies that any relative gain in the share of the domestic market by foreign producers is automatically a valid justification for recommending tariff "relief" for the industry affected. The second concept implies that injury to any segment of an industry, even though the industry as a whole is thriving, as was the situation in the in the watch industry cases, is a valid reason for requesting invocation of "escape clause" action. Examination of these two concepts is in order at this point.

Automatic invocation of escape action merely on the grounds of the "share doctrine" thesis may emasculate any effective trade policy, and certainly would be at cross-purposes with a trade program in the national interest. This is particularly true when the doctrine is applied in an expanding market situation, as in jeweled watches, and when the imports are mainly additive or supplementary, as in the case of oil and many minerals. To apply this
doctrine automatically in the case of a stable or declining market is an attempt to maintain a probable unnatural division of the market, and, at least, in the declining market situation, it is a disguised technique for providing unwarranted protection and avoidance of adjustment by the domestic industries. Moreover, if this doctrine was followed during a serious recession in the domestic economy—most markets would be contracting—it would probably lead to the withdrawal of the more significant United States tariff concessions. Thus, in the larger framework of foreign economic policy, rigid application of the doctrine should be avoided.

Narrowing the criteria of injury to a "domestic industry producing like or directly competitive products" to include only a segment of the industry (or one product of a multi-product industry), as has been effectuated by the amendment to the 1955 Trade Agreements Extension Act, cited above, is an undesirable measure. Rigid application of this doctrine means that one product of a multi-product industry coming into competition with foreign producers must maintain a profitable position. Any decline in one segment of an industry, even though the aggregate position of the industry is favorable, automatically invokes "escape clause" action. A further imponderable is the issue of cost determination of a single item in a multi-product firm or
industry. It is clear that it would be a difficult if not impossible task for the Tariff Commission to ascertain the costs of the single item at issue when the problem of comparative costs between the domestic producer and the foreign producer arises. Experience with this new narrowed criterion for serious injury is limited, but it is clear that any stringent application for this principle will result in nullifying a reciprocal trade program in the national interest. Outright abandonment of this principle, or, at least, wise administration of it is recommended.

There are other aspects of interpretations of this "escape clause" proviso, such as the base period to be used in judging increased imports, whether an absolute increase in imports should be the determinant for relief or whether a relative increase is a more valid criterion, but a detailed analysis is beyond the scope of this study.\textsuperscript{25} Clearly, any interpretation by the Tariff Commission of these points which is favorable toward "protection" of domestic industries at the expense of restricting the flow of imports is a narrowing of the purview of the "escape clause" amendment and, consequently, a crippling of an effective trade policy.

\textsuperscript{25} For a thorough going discussion of the interpretations of this amendment in the first 50 cases initiated in years 1948-1953, see, Kravis, "The Trade Agreements Escape Clause," \textit{op. cit.}, pp. 319-338.
The above discussion of the interpretation of the criteria of the "escape clause" obviously embraces general trade policy, and, is therefore more inclusive that policy involving purely mobilization issues. However, the recommendations put forth are suggested for those industries which use defense "essentiality" as a reason for tariff "relief," when these industries are not vital to the defense of the United States and, when, in fact, these industries can be aided by other measures. Intermingling defense "essentiality" with tariff issues, when the validity of the former issue is clearly in doubt, obstructs implementation of the reciprocal trade program. It should, therefore, be avoided whenever possible. This point is illustrated in the following exaggerated claims of defense "essentiality" of certain industries.

Extreme 'Essentiality' Claims:

It will be recalled that in the first chapter three methods of investigation of the tariff and national defense issue are mentioned. The first of these is to study the tariff hearings of Congress and the Committee for Reciprocity Information since 1950. Since a large number of industries is involved, it was decided to forego this exhaustive
method in favor of two other methods. They involve begin­ning with the list of industries, or end-items, which appear on ODM expansion goal lists and analyzing the tar­iff issues in these industries; and augmenting this method with a more detailed study of the "escape clause" and "peril point" decisions concerning defense items. However, as illustrative material indicating the possible use of defense "essentiality" some brief comments concerning the extravagant claims made before the Congress in the 1955 hearings on the Trade Agreements Extension Act by several industries are pertinent.

None of these claims has yet come before the Tariff Commission for a formal hearing, but the hearing of the Senate Finance and House Ways and Means Committees are filled with statements of defense "essentiality" on the part of trade association representatives. Some of the industries involved are manufacturers of lace, lead pencils, underwear; work gloves, women's handbags, and tuna-fish. The statements require no explanations.

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26 All statements are from "Trade Agreements Extension," House Hearings (1955), op. cit., and Trade Agreements Extension, Hearings Before the Committee on Finance, United States Senate, 84th Congress, First Session on H.R.1 An Act to Extend the Authority of the President to Enter Into Trade Agreements Under Section 350 of the Tar­iff Act of 1930, as amended, and For Other Purposes, United States Government Printing Office, Washington, D.C., 1955, 4 Parts.
Lace manufacturers: (Schiffli Lace and Embroidery Manufacturers Association)

.... we are considered a defense industry by the Government, and during the Second World War the Schiffli embroidery industry produced all the insignias and shoulder patches for the United States Armed Forces and most of the Allied forces. These insignias and patches are vital during time of war and necessary for the morale of our fighting men. No industry so necessary to our military effort should be allowed to be extinguished. (Senate hearings, p. 367).

Lead pencils: (Lead Pencil Manufacturers Association, Inc.)

Black and colored pencils are indispensable operating supplies for every branch of the Armed Forces and are essential to the maintenance of practically all functions and operations of cooperative life and business. .... The wood-cased pencil is a product which meets all of the standards of essentiality laid down by the War Manpower Commission in World War II except that it is not directly utilized for combat purposes. In a large measure, it is almost like a machine tool: neither is used directly in combat, but both are essential to the manufacture of combat materials. Actually, hugh quantities of pencils go into combat areas along with other small but indispensable items. (House hearings, p. 2049).

Underwear: (Underwear Institute)

We accept clothing as usual - but - if you stop and think a moment, you will realize that no matter what guns, ammunition, and leadership you give an army , it cant fight without clothing. As an historic example: After we had suffered our reverses in the Battle of the Bulge of World War II - General Eisenhower and his people called upon our industry for the delivery of 67 million undershirts in 3 months. (Senate hearings, p. 1649)
Work gloves: (Work Glove Institute, Inc.)

The demand for work gloves by the armed services during World War II was considerable. Our industry kept pace with this demand, shipping to the military over two million dozen pairs of work gloves. The industry continues to fulfill the peacetime needs of the various military branches. (Senate hearings, p. 1651).

Women's handbags: (International Handbag, Luggage, Belt and Novelty Workers Union)

... we cannot emphasize too strongly that our trade is an essential trade and the products of our manufacture are necessaries, not a luxuries. The Armed Forces of the United States, during the last two recent wars equipped the Women's auxiliary branches of our military establishments with handbags as part and parcel of their standard equipment, having found said containers indispensable. (Senate hearings, pp. 1472-3).

Tunafish: (American Tunaboat Association)

We cannot belabor the point at great length that national security depends upon the tuna industry. Nevertheless, it is a component part. This is not a matter of speculation - it is a matter of record. During World War II the United States Navy and other military units took by far the greater portion of our fleet and used it with great advantage, particularly in the South Pacific area. The Navy thought so highly of these vessels that it built 30 of them itself and later resold the majority of these to the tuna fleet where these vessels now operate. (House hearings, p. 1223.)

It would serve no educational or analytical purpose to quote these statement ad infinitum. Many more exist both from the same industries and from many other indus-
tries. The points established that most of these claims are extravagant, if not ridiculous. However, government agencies must be prepared to cope with them. This lends to the first of two general recommendations.

General Recommendations:

Throughout this study it was indicated that the crux of the problem of implementing mobilization policy, when it impinges upon tariff policy, is that no single agency has been legally empowered to decide this issue, and therefore, no administrative procedure existed for resolving the issue. The Tariff Commission has never been empowered in the past to go beyond the criteria mentioned in the "escape clause," provision which have nothing whatsoever to do with defense "essentiality" when deciding a tariff "relief" issue. And while the President can go beyond these limited criteria and can take into account larger issues of foreign policy, he has rarely done so. The Defense officials, with ODM as the main agency involved, are empowered to decide which industries and skills are "essential," but

there is reluctance by these policy makers to enter into tariff problems.\textsuperscript{28} When the two problems are interwoven, no single agency is capable of resolving the problem. Thus, the first of two general recommendations is that, whenever possible, the two issues be clearly separated and the decision of defense "essentiality" be made by a special defense agency established for this purpose, or by the existing ODM. The second recommendation involves the decision-making within the existing machinery of the reciprocal trade program. As indicated earlier, there have been two recent amendments to the Trade Agreements Extension Act which clearly are movements in this direction.

The first recommendation, that of granting an agency complete authority to decide "essentiality," exclusive of tariff considerations, is preferable for many reasons. This method emphasizes the defense question to the exclusion of other issues, and the defense question is a problem of greater magnitude than the other issues involved. Also, the agency, through its experts, can make a more thorough and impartial investigation of all the defense issues, and thereby quickly disregard such extravagant claims as cited above. Furthermore, this agency could investigate the alternative possibilities, commented on

\textsuperscript{28} "Essentiality to the National Defense of the Domestic Horological Industry," Hearings, \textit{op. cit.}, p. 40.
throughout this study, as possible methods for aiding the "essential" industry, thus avoiding use of the reciprocal trade program for this objective. And finally, this procedure could clearly earmark the costs involved and could easily be handled within the Defense budget. It lends itself to easy budgetary management and to the possibility, as in tariff "adjustment" payments, of lowering or eliminating the program when the costs are no longer justified. Thus, possibly through an amendment to the Defense Production Act of 1950 a new agency could be created; or the authority of the ADM could be spelled out more clearly to effectuate this recommendation.

The recommendation does not preclude concurrent tariff "relief" being granted by the Tariff Commission under the "actual or threatened injury" criterion of the "escape clause", nor does it preclude Presidential action in the national interest. It stipulates that the issue of defense "essentiality" be clearly investigated and decide upon exclusive of the objectives of the reciprocal trade program. Thus, the intermediate policy, previously examined, of maintaining the status quo in import policy so as to encourage a continuous flow of imports and at the same time "protect" a given level of domestic productivity, particularly when any lowering of the duty will cause "displacement" in the domestic industry, is not incompatible with this recommendation.
The recommendation for handling these two issues, defense essentiality and tariff policy within the existing framework of the Trade Agreements Extension Act is less desirable. The current Trade Agreements Extension Act contains two amendments for policy making when national defense is at issue, the "Symington Amendment" of 1954 and Section 7(b) of the Trade Agreements Extension Act of 1955. The latter amendment designates the ODM as the agency to make the investigation and report to the President as to a product's "essentiality" to national security. Wise administration of this provision involves, therefore, the use of this amendment only when "essential" products are, in fact, at issue. The President, to reiterate, is not required to abide by the criteria specified in the Act, but rather can take into account issues in the national interest. Therefore, while there has been no experience with the two amendments Presidential discretion and wise administration can ameliorate the harmful possibilities opened up by the new provisions.

As a supplementary recommendation, once an article has been declared "essential" to the national defense, it could then be placed on an "extraordinary" List in the Tariff Schedule. Importation of the articles on this list could be limited or prohibited by quotas or other restric-

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29 See footnotes 10 and 11, this chapter.
tions, or by exceptionally high tariff rates. Again, only "essential" items should be placed on this list, and these items should be removed immediately upon determination that the article is no longer of consequence to the defense structure.

Recommendations Concerning Adjustment to Injury:

There are two broad approaches to trade policy, "absorption of imports" or "avoidance of injury." The argument throughout this study has advocated the former approach except in those cases where increased imports would impair national security. In some other cases, increased imports may cause "displacement" of the domestic firms, As has been indicated earlier, the estimated amount of "displacement" which would occur in the event of complete removal of all tariff rates would be relatively slight, perhaps no more than normally occurs because of technological change. However, some comment is essential

30 "Bell Report," op. cit., pp. 1 and 44.

31 The total number of workers who would be "displaced" is estimated at 405,000 out of 61,000,000 (using 1951 figures). See, "Staff Papers," op. cit., p. 380 and Piquet, op. cit., p. 49.
concerning methods of aiding "displaced" firms and workers as well as adversely affected communities.

The most preferable form of adjustment by firms or industries is (as in the domestic jeweled-watch industry) "diversification." The firms could adjust to import competition by diversifying their line of products. In addition diversification can be encouraged by such government aids as continuation of the carry-back and carry-forward provisions of the tax law, by loans or guarantees by the government to aid in conversion to other products, and by a "technical assistance program" whereby the services of professional marketing and engineering experts could be provided by government funds.32

Community diversification is also a hedge against import competition and should be encouraged particularly in "import sensitive" communities. The above measure of tax aid, government loans or guarantees, and government-sponsored technical assistance programs could all be implemented to encourage community diversification. Firms engaged in export trade should be encouraged to locate in these communities. And, finally, cooperation among the three levels of government, the community, the state and the federal government, will aid in alleviating the prob-

lems created by one-industry communities.33

The above governmental aids involve subsidies and should be resorted to only when genuine "diversification" is being encouraged as an alternative adjustment to tariffs on imports. Both increased imports and diversification are in the national interest, thus subsidies to encourage these programs are warranted. Subsidies are also justified to ease adjustment involving the complete withdrawal of capital from an industry unable to compete with foreign producers. All subsidies, whether for "diversification" or "withdrawal" purposes, should be revised downward over a period of years rather than be of a permanent nature, and should be terminated when the adjustment is completed. Since both tariff protection and subsidies tend to impede technological change, the continual granting of the latter as well as the former, should be discouraged.

Finally, aid to the displaced worker could be granted. In a diversified community and in a plant attempting product-diversification, the adjustment problem for the worker is considerably eased. In cases where adjustment is more difficult, special retraining allowances and special moving allowances could be provided from federal funds. These could be granted in addition to regular

unemployment compensation. While "adjustment" of the firm, community, or worker to "displacement" caused by increased imports is not a simple program, it should be attempted whenever feasible.

Other Legislation:

An underlying theme of this study has been adherence to the least-cost principle. Of course, the least-cost principle should be subordinated to national defense needs when increasing imports will displace essential domestic production. However, rigid application of the "Buy American" Act, whether in conjunction with the "Stockpile" Act or in other procurement activities, is at cross-purposes with the least-cost principle. In the interests of consistency in foreign economic policy, all three policies - tariff, stockpiling, and general procurement - should be in harmony with each other.

The "Buy American" Act has been commented upon specifically in two contexts in this study, in the purchase of heavy electrical equipment (preceding chapter) and in the purchasing of raw materials and minerals for stockpiling.

\[^{34}\text{Ibid.}, \text{pp.} 391-397.\]
purposes (Chapter 4). In the former instance it was found that while foreign producers were able to underbid American producers of custom-built electrical generating equipment in some cases, and, while it is granted that this equipment is essential to our defense structure, there appears to be no reason to abandon sound procurement principles. The foreign producers have supplied only two percent of this expanding market and the replacement of parts of foreign-produced equipment does not appear to be an insurmountable problem. Thus, it was recommended that foreign producers be allowed to enter the domestic market whenever there exists a greater price differential than the currently stipulated 10 percent of the Executive Order based on the "Buy American" Act. No strong evidence exists that this differential should be raised either in this specific situation or in general.35

In connection with procurement of raw materials and minerals for stockpiling purposes, it was stated earlier that the "Buy American" Act is "incongrous, unnecessary, and harmful."36 It is incongrous because this procurement principle conflicts with the objective of the "Stockpile"

35 "There is no doubt that in many cases domestic bids would be lowered to meet foreign competition if it were established Government practice to buy from the cheapest source." "Bell Report," op. cit., p. 58.

36 "Paley Report," Volume 1, op. cit., p. 164, and Chapter 4, this study.
Act which is to obtain a continuing flow of low-cost raw materials. It is unnecessary because there are innumerable methods of supporting domestic mining industries without resorting to rigid "Buy American" practices. It is harmful to American interests because this is a costlier way of obtaining needed raw materials and it is disruptive of our larger foreign interests. Again, rigid adherence to "Buy American" principles, particularly as it impinges upon the stockpiling program, is not in the national interest of the United States.

Finally, as indicated earlier, it is estimated that elimination of the "Buy American" procurement practice, would save the United States government approximately $100,000,000 annually through lower prices, and this would be supplemented by an increase in customs receipts of approximately the same amount. Thus, despite the recent downward revision of the allowable differential from 25 percent to 10 percent, it must be concluded that the "Buy American" Act is costly to the American government; that it constitutes a "super-tariff" for a selected group of American producers; that it is at cross-purposes with American foreign interests; and that is discriminatory against foreign producers. Repeal of this Act is, therefore, recommended.

With reference to the "Stockpile Act" alone, it is recommended that stockpiling of raw materials and minerals necessary to a balanced resource base for mobilization and growth purposes be continued. The Act should not be administered to provide an operating subsidy for domestic mining firms. It should not be used as a counter-cyclical scheme, but it should be administered to cause as little disruption or "normal" market procedures as possible. Withdrawals from the stockpile should also be made as orderly as possible. In short, a continuing flow of low-cost needed raw materials and minerals, consonant with our changing needs and requirements, should be the intent of the administration of this Act.

The brief outline of the above two legislative statutes is intended to supplement the more detailed tariff analysis of this study. Since the objectives of all three policies impinge upon each other and upon the issues inherent in national defense and foreign economic policy in general, the aim is to recommend that all three be consistent with each other and with the national interests of the United States.
Summary:

The crux of the national defense and tariff problem lies in the fact that these two distinct and seemingly incompatible issues are entangled in policy-making procedure. The incompatibility arises in that the objective of an import policy in the national interest is the absorption of imports, while the objective of national defense is the protection of vital domestic industries. The problem is further compounded when it is recognized that, in the past, no administrative machinery or no single agency existed for making policy when the two issues arise. That is, the Tariff Commission is not empowered by statute to grant "relief" on the grounds of defense "essentiality," and defense officials are reluctant to enter into tariff disputes when an essential industry is at issue. Recent amendments to the Trade Agreements Extension Acts of 1954 and 1955 are initial movements in the direction of administering mobilization issues within the machinery of the reciprocal trade program. No administrative experience of these two amendments exists as yet, however, so conclusions as to the effectiveness of this method must be deferred.

In the foregoing analysis, no general tariff review
is attempted, only those aspects are included which supplement an understanding of the mobilization problem. Also, no argument is made that complete trade liberalization, or unilateral action of the United States alone, will close the "dollar gap" or restore equilibrium in world trade. This is recognized to be a problem of much larger dimensions. Rather the argument for general trade liberalization is based upon consistency and continuity of policy in the national interest.

Of the several approaches which industries, or segments thereof, may avail themselves for seeking tariff "relief," two are of importance for analysis, the "escape clause" and "peril point" provisions. Interpretations of the criteria of the former provision are the sources of continuing disagreement among policy makers. The latter provision directs the Tariff Commission to determine, prior to trade negotiations, the limits on tariff concessions to be made on the items involved. This provision is less controversial and there has been but one overruling by the President to date, that in 1952 on concessions granted to Venezuela in the importation of petroleum products. Perhaps, such decisions should have been made more frequently.

In addition to these two provisos, two recent amendments have been added to the Trade Agreements Extension Act which may prove to be of more importance in the future.
These are the amendments which attempt to define, within the machinery of the trade agreements program, criteria for resolving the administration of industries vital to national defense. The 1954 amendment empowers the President to act unilaterally when "domestic production needed for projected national defense requirements" is threatened by imports from abroad. The 1955 amendment directs a defense agency, under Presidential initiative, to investigate whether imports of an article "threatens to impair the national security." Upon a finding and recommendation that such imports do threaten to impair national security, the President may take action to adjust imports to such a level as to deter the threat. The two amendments are initial movements in the direction of administering mobilization issues within the trade agreements extension program. There has been no experience with the amendments to date, but it is clear that prudent administration is necessary if a liberal trade program is to continue.

Six mobilization commodities have been involved in seven of the sixty "escape clause" actions to date (the watch industry has initiated two actions). From these cases the intermediate policy recommended for lead and zinc and the "peril point" overruling by the President in 1952 in the concessions on petroleum imports from Venezuela provide desirable measures for import policy concerning
mobilization items. They recognize the need of the continuous flow of these raw materials for mobilization and growth purposes while at the same time acknowledging the need for maintenance of some domestic production. A by-product advantage of these policies particularly in the petroleum situation, is the protection of direct American investment abroad. Thus, an import policy which eases the flow of petroleum products into the United States, and, which continues a steady flow of lead and zinc, without seriously displacing domestic production, is recommended. This policy can be generalized to all raw materials which are supplementary to domestic production rather than directly competitive with it.

The domestic jeweled-watch industry "escape clause" actions presented many tariff questions. The two prominent issues are the "share doctrine," and injury to a segment of an industry. The question arises whether, in general, and specifically in the watch industry case, "relief" should be granted a domestic industry which is showing absolute gains in the domestic market, but suffering a relative decline to foreign producers - particularly in an expanding market - and whether "relief" should be granted when the entire industry is experiencing a profit status, but one segment of the industry is declining. Clearly, any interpretation of these criteria of the "escape clause"
which narrows the scope of this provision and thereby
initiates the possibility of more restrictive trade prac­tices, impedes the reciprocal trade program. In any event,
the tariff "relief" granted the domestic watch industry in
mid-1954 was not justified on economic grounds. Other
alternatives, as outlined in this study, should have been
resorted to.

Extravagant "essentiality" claims before the Congress
by the trade association representatives of such indus­tries as the manufacturers of lace, lead pencils, under­wear, work gloves, women's handbags, and tunafish are
examples of the frequent misuse of the "essentiality" argu­ment and of the compounding of this issue with import
policy. Two general recommendations for handling situ­ations of this kind are offered.

The first general recommendation is to divorce, in­ssofar as possible, the two issues. This would involve the
establishment of a separate defense agency (or the broad­ening of the functions of the existing ODM) to determine
the expense essentiality of an industry and to recommend
alternative lines of action for maintaining the industry,
exclusive of tariff considerations. This method would
have the advantages of disentangling the extraneous issues
involved from the more important consideration, that of
national security; of studying the issues more closely
and more expertly; of lending itself to a consideration of
a variety of specific aids and thereby not disrupt the reciprocal trade program; and of easy and more appropriate budgetary management. It does not preclude either concurrent tariff "relief," or final Presidential action.

The other general recommendation concerns a method of implementing policy within the machinery of the Trade Agreements Extension Act. The 1954 and 1955 amendments to the Act provide the legal basis for such action. No experience with the two amendments exists. However, it is clear that these amendments can figure prominently in future trade policy. Therefore, it is recommended that the two amendments, along with another 1955 amendment which considerably narrowed the scope of the "escape clause" provision, be used sparingly and, only when "essential" items are at issue. Wise administration and prudent Presidential action can aid in harmonizing the intent of these amendments with an expanding reciprocal trade program.

A more specific recommendation involves suggestions about adjustment to increase imports by workers, firms, or communities. Over-all adjustment is not expected to be of major proportions. The most preferable type of adjustment is "diversification" by firms and communities. This could be undertaken by the firms or communities themselves, or it can be aided by government direction and funds. Special tax considerations, loans or guarantees, and "techni-
cal assistance programs" can be offered by the federal government. The worker, too, can be aided beyond unem­ployment compensation by special retraining and moving allowances. All idemnification payments by the government, whether for withdrawal or conversion purposes, should be of a nature whereby the payments are scaled down annually and ultimately eliminated; and these payments should be offered with a view toward genuine "adjustment" and absorption of imports.

With reference to the impact of the "Buy American" Act and the "Stockpile" Act upon import policy in particular and on over-all foreign economic policy in general, the two policies should be administered so as to be consistent with one another. Also, they should be consistent with American trade policy, and with the larger global interests of the United States. The basic recommendation is not to use these legislative statutes to provide a "super-tariff" or a hidden subsidy.

To date there appears to be no insurmountable prob­lem of providing an expanding reciprocal trade program consistent with national security. The evidence presented indicates that very few items are troublesome and that policies encouraging both the expansion of imports and the maintenance of essential domestic production are possible, and are currently being implemented. It is important that
tariff policy be directed toward the creation of more technologically efficient industries and the creation of a cadre of highly-skilled workers, rather than the "protection" of existing technology and skills. And finally, a sound tariff policy should be supplemented by a customs simplification program, the encouragement of direct private investment abroad, and sound procurement policies.
The construction of a United States mobilization base, initiated with the passage of the Defense Production Act in September, 1950, creates problems of economic significance for the American economy and the economies of the "free world." This mobilization base or "high plateau of preparedness" is unprecedented in American history in that its maintenance is intended for a prolonged "cold war" period. Various governmental measures, such as a rapid tax amortization program, stockpiling and import policy were instituted for constructing this productive potential.

An underlying hypothesis of the study is the principle that the defense structure should be created and maintained as economically as possible, that is on a least-cost basis. Consequently, the United States should avoid a policy of autarchy since this is generally a costlier method of achieving a "defense posture" than a policy of increasing imports. Furthermore, a policy of increasing world trade is consistent with the larger interests and long-run economic development of the United States. Any substantial departure from this policy would be disruptive politically and economically in terms of current conditions and of long-run economic growth.
The construction and maintenance of a mobilization base requires constant re-evaluations. Exogenous factors, such as a shift in the scale and location of an all-out war, and endogenous factors, such as a change in technology or the "factorial mix," create dynamic conditions. It is important that governmental measures be flexible so as to keep pace with and, further, stimulate technological progress.

As of September 30, 1954, the mobilization base was comprised of 245 expansion goals as listed by the Office of Defense Mobilization. Expansion goals do not necessarily imply the construction of new facilities; conversion and increased utilization of existing facilities are also considered. The main device for achieving expansion goals is the rapid tax amortization program. When minerals and raw materials are involved, various "support" programs are used in addition to tax inducements. Occasionally for some manufactured goods, tariff support has been used.

The seven major components of the mobilization base chosen for analysis are: minerals and metals; chemicals; fuels; precision manufacturing; heavy electrical equipment; transportation; and miscellaneous. Each of these is heterogeneous and each requires special policies. All are of basic importance in a modern industrial economy.
The minerals and metals component is of special significance to both a viable industrial economy and to a mobilization effort. The military "take" of raw materials is greater in full mobilization than in peacetime and, in addition, the United States is experiencing increasing real costs and a growing deficiency in the supply of domestic minerals. Continuing and increasing reliance upon foreign imports is necessary. Therefore, measures for encouraging a steady flow of low-cost raw materials is recommended. The removal of all tariff barriers, particularly the higher ad valorem rates on metals, and the encouragement of direct foreign investment are recommended. Stockpiling should be continued, but the stockpiling program should not be used either as a counter-cyclical measure or as a subsidization scheme for sub-marginal domestic mining firms. Rapid tax amortization benefits augmented by the various "support" programs, both here and abroad, should be continued. And finally, "the search for substitutes and the careful use of scarce materials are desirable alternatives. The main objective of policy should be the continuous flow of low-cost raw materials, both for mobilization purposes and the long-run development of the American economy.

The chemical component, the largest in number of items in the mobilization base, is quite different from the minerals and metals component. It is gigantic, rapidly-
growing, characterized by decreasing cost, an export industry and apparently capable of fulfilling its current mobilization goals. It, therefore, requires no special aid other than the tax amortization benefits it is receiving. Above all, it is no longer in need of the "infant industry" tariff protection which it seeks - careful estimates indicate that removal of tariff barriers will cause no serious "displacement" problems. The recommendation is that any change in import policy pertaining to chemicals be directed toward the liberalizing tariff duties rather than increasing restrictiveness.

In the analysis of the fuels component, detailed examination is centered upon petroleum and petroleum products. However, any fuels policy, either for mobilization or industrial growth, must take into consideration all mineral fuels, notably natural gas and coal. A policy directed toward the increasing importation of petroleum and petroleum products, supplemented by the encouragement of technological improvements domestically, particularly in the production of synthetic fuels from oil shale and coal, is recommended. Such a policy recognizes America's growing need for increasing amounts of petroleum products and has the advantage of protecting a vast portion of direct American investment abroad. Any policy involving discrimination against any of the mineral fuels is unwise.
The watch industry is used as a "case study" in the analysis of the precision industries component. While there is some dispute as to the defense "essentiality" of this industry, a recent Office of Defense Mobilization policy was announced which established a minimum mobilization productive potential of two million units. Exclusive of this action, the industry was granted tariff "relief" in mid-1954, the most significant invoking of the "escape clause" in terms of dollar value of imports to date. The conclusion was that since the domestic jeweled-watch industry is experiencing an over-all profit position and a expanding market domestically, in absolute terms, the tariff "relief" was not justified on economic grounds. On the other hand, desirable alternative methods of assistance exist and are in operation for the precision industries in general and for the watch industry in particular. The first choice of methods is industry diversification. Continuation of the pilot-plant and prototype production line operations in jewel-bearing production; of the granting of ordnance contracts; of the stockpiling and leasing of end-items; and of rapid tax amortization benefits, is recommended. All these programs should be directed toward the establishment of a cadre of highly-skilled workers and the encouragement of technological advance. Since tariff barriers generally run counter to this aim, they are not
recommended for the precision industries component, except where serious "displacement" is likely to occur.

The heavy electrical equipment component presents a unique mobilization problem in that procurement policy under the "Buy American" Act is an issue. The heavy electrical equipment industry is, in the main, a relatively high-labor content industry and therefore, experiences foreign competition in its bids for government contracts. The argument is that procurement of foreign-built electrical generating equipment is not "in the public interest," particularly for mobilization purposes, because the replacement of parts presents a difficult problem. The problem is not serious when it is recognized that foreign-built equipment comprises only two percent of an expanding market and that the possibility of stockpiling parts exists. These considerations and the fact that the heavy electrical equipment industry is currently capable of meeting full mobilization requirements lead to the conclusion that there should be no increase in discrimination against foreign bidders in the procurement of heavy electrical equipment. In fact, outright abandonment of the existing ten percent cost differential allowed currently under "Buy American" policy, might be a desirable measure.

The transportation component is given a low priority for expansion during full mobilization by military authorities because of the tremendous cost in resources and time.
Shipbuilding is an exception to this principle. In this instance policy is directed toward creating and maintaining an adequate shipbuilding industry capable of expansion. To overcome the considerably higher costs of building and operating a domestic merchant fleet, the recommendation is made to continue the various subsidy payments to both the shipbuilding and the shipping industries. No cargo preference, however, on American aid-goods shipped abroad is warranted.

One of the main areas of the analysis is import policy. No argument is made that trade liberalization will necessarily eliminate the "dollar gap" or alleviate world trade imbalance. Rather, the argument for trade liberalization in general and for defense purposes as well, is based upon consistency, continuity, and the national interest. Consistency means that a trade liberalization policy is consonant with the creditor status of the United States and with its increasing dependence upon the importation of raw materials. Continuity means the extension of the reciprocal trade program, a program in operation for over twenty years. The national interest means the consideration of all groups within the United States as opposed to the narrower interests of special groups.

Two of the main technique available to domestic industries, or segments thereof, for seeking tariff protection are the "escape clause" and "peril point" provisions of the
Trade Agreements Extension Act. Thus, to emphasize the import issues when defense items are involved, two desirable precedents were studied and recommended. The first is the intermediate policy suggested for the lead and zinc industries. This concept, arising from the "escape clause" action of 1954, recognizes the need for the continuation of both domestic production and imports of these raw materials. Continuation of the existing tariff rate, but no increase, is recommended to effectuate this objective. The intermediate policy can be extended to all situations where both a continuing flow of low-cost imports and a certain level of domestic production are desired. The other desirable precedent arises from the only "peril point" overruling by the President to date. This involved lowering the duties on petroleum products from Venezuela below the "points" established by the Tariff Commission prior to the negotiations. This decision recognizes the need for the continuing importation of petroleum products, both for mobilization purposes and long-range growth, and protects American investment abroad.

Two general recommendations are offered concerning import policy when the question of "essentiality" is directly at issue. The first of these is to establish an agency empowered to decide the issue of defense "essentiality" purely on its merits and exclusive of the reciprocal trade
program. This is a desirable policy in that it disentangles the two issues: emphasizes the more important issue, defense; disposes quickly of extravagant "essentiality" claims; opens the way for investigation of alternatives other than tariff "relief"; and places approximately the costs in the Defense budget.

The other recommendation is to implement policy within the framework of the Trade Agreements Extension Act. Recent amendments in 1954 and 1955 to the Act are initial moves in this direction. The President may now act unilaterally, after investigation by a defense agency, to establish import quotas or other trade barriers on commodities, the importation of which "threaten to impair the national security." While these amendments, along with the recent narrowing of the criteria in the "escape clause" provision, widen considerably the area for restrictive trade practices, prudent and infrequent use of them can encourage an expanding trade program. Widespread and unwise use of these broadened provisos may emasculate an effective trade policy, and, therefore, is to be discouraged.

Two other policies which should be harmonized with a liberalized import policy are the "Buy American" and "Stockpile" policies. The former is generally incongruous in that it is at cross-purposes with the least-cost principle in procurement; it is "unnecessary" in that there are other and more desirable techniques for aiding domestic producers,
if necessary; and it is "harmful" in that it is discriminatory against foreign producers, and disruptive to our larger interests. While the lowering of the cost-differential allowed to exist between domestic and foreign producers to ten percent, as announced recently, is a step in the right direction, outright repeal of the Act is to be desired.

Stockpiling should also be accomplished on a least-cost basis. It should not be discriminatory against foreign producers, should contain no element of subsidy in favor of domestic sub-marginal producers, and should not be used as a counter-cyclical measure. All three policies - import, procurement and stockpiling - since they have but one objective, namely, the strengthening of the American economy, should be consistent with one another and within the larger framework of foreign economic policy.

While it is not within the purview of the study to investigate the effectiveness of the administration of the mobilization base to date, no serious mobilization deficiencies appear to exist in the components analyzed. Further, America's short-run mobilization goals and long-run growth objectives seem to be capable of integration within the objectives of the free world or within America's larger global interests. The evidence is strong that continuing emphasis upon expanding trade, supplemented by
other desirable measures on a case-by-case basis, will aid both in strengthening America's defense structure and its viable economy as an important support in the free world. The central point is the encouragement of the creation of a cadre of highly-skilled workers and of higher levels of technological efficiency. Imposition of trade barriers, for whatever reasons, will rarely, if ever, aid in achieving this objective.
Glossary of Abbreviations of Governmental and International Organizations and Agencies

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<tr>
<td>AEC</td>
<td>Atomic Energy Commission</td>
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<td>Defense Materials Exploration Administration</td>
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<td>Defense Materials Procurement Agency</td>
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<td>Economic Cooperation Administration</td>
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<td>European Recovery Program</td>
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<td>Foreign Operations Administration</td>
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<td>General Services Administration</td>
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<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
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<td>MDAP</td>
<td>Mutual Defense Assistance Program</td>
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<td>MSA</td>
<td>Mutual Security Administration</td>
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<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<td>NPA</td>
<td>National Production Authority</td>
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<td>Office of Defense Mobilization</td>
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<td>RFC</td>
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<td>Technical Cooperation Agency</td>
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PERIODICAL LITERATURE:


MISCELLANEOUS:


My full name is Thomas Joseph Leary. I was born in Somerville, Massachusetts, February 4, 1926. I received my secondary education in the public schools of that city. My undergraduate training was obtained at Northeastern University, Boston, Massachusetts, from which I received the degree Bachelor of Arts in 1951. I received the degree Master of Arts from The Ohio State University in 1952. While in residence at The Ohio State University I served as graduate assistant and teaching assistance in the Department of Economics. I held the position Research Fellow in Economics during 1954-1955 while completing the requirements for the degree Doctor of Philosophy.