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DECISION-MAKING IN GOVERNMENT: A CASE STUDY OF MATERIAL ALLOCATIONS UNDER CMP

12 December 1951

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Publication No. L52-68

INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

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CORRECTION OF BIOGRAPHY

INDUSTRIAL COLLEGE OF THE ARMED FORCES
Washington, D. C.

BIOGRAPHICAL SKETCH - VISITING LECTURER
12 December 1951

Dr. George A. Steiner, Director of Requirements Committee Staff, Office, Programs and Requirements, Defense Production Administration, was born in Norristown, Pennsylvania in 1912. He received a B.S. degree from Temple University in 1933, and M.A. from the University of Pennsylvania in 1934 and a Ph.D. from the University of Illinois in 1937. Since 1941 Dr. Steiner has held several positions in government agencies, both full time and as a consultant. During World War II he served as an officer, first in the Army and then in the Navy, being separated in February 1946. He is the author of numerous books, pamphlets and magazine articles, among the former being "Economic Problems of War" and "Wartime Industrial Statistics." For the past several years Dr. Steiner has been Professor of Economics at the University of Illinois, but for the last year has been on leave to the Defense Production Administration where he is now the Director of the Requirements Committee Staff.

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MR. HENKEL: General Vanaman and gentlemen: So far in our Requirements Course we have had lecturers discuss military requirements and some of the defense agencies where these requirements are developed or determined. But the picture on requirements is not complete until we learn about civilian requirements and how the military and civilian needs are correlated. Attempting to reconcile the differences between the military and the civilian demands is undoubtedly a bigger job in the present mobilization period than we had during the last war emergency.

Fortunately, we have with us today Dr. Steiner, who was with the War Production Board in the Controller Division during World War II. He is reliving these difficulties, probably with more emphasis, as Director of Requirements Committee Staff in the Office of Program and Requirements, Defense Production Administration (DPA). Dr. Steiner is a professor of economics in the University of Illinois. He is on a leave of absence and is assisting the DPA in requirements. He has also spoken to us on requirements several years ago. It certainly gives me great pleasure to present to you Dr. Steiner, who will discuss "Decision-Making in Government: A Case Study of Material Allocations Under CMP."

DR. STEINER: I feel like an old hand here. I must say that I didn't expect to be back so soon, particularly in this kind of position.

I have been asked to describe for you the functions of the Office of Program and Requirements of the Defense Production Administration in making those material allocation decisions which distribute materials under the Controlled Materials Plan (CMP). This function in bureaucratic nomenclature is called programming.

Programming is strategic in the Government's control of the economy in mobilization. Programming basically is a process whereby marginal uses for scarce resources are equated. It is a process which also embodies the methodology for accumulating the facts to make allocation decisions and, once policy is determined, the methodology for executing the decisions. In this light, programming may mean top policy decisions concerning the extent to which industrial expansion should be undertaken, or the level of private housing established, or the unit-level tried for the production of passenger automobiles, or the levels of production set for tire tube valves and in turn automobile, truck, and tractor tires. Programming

therefore is a problem of timing production and construction levels. Programming also means the analysis of specific programs (or requirements) for resources and a determination of how much of a given limited resource shall be used to meet a specific request. This is a problem of distribution of limited resources. Programming is, therefore, simultaneously a level as well as a distribution process.

One point ought to be made clear at the outset. The CMP sets up procedures for putting allocation, or programming, decisions into effect. It provides a tested set of rules and procedures for establishing quantitative and time-phased controls over the distribution of steel, copper, and aluminum, as well as other materials and products. It does not determine what share of the supplies of critical materials shall be allocated to meet military requirements, or the needs of defense-supporting industries or of the civilian economy. These program decisions which are put into effect through the CMP procedures are made independent of the CMP procedures.

These program decisions are the prime responsibility of the chairman of the Requirements Committee. In making these decisions he is assisted by the staff of the Office of Program and Requirements, DPA, and by the staffs of the National Production Authority (NPA) and of a number of other agencies. He is given particular counsel by the interagency Requirements Committee whose members represent the major functional areas of the economy.

The Office of Program and Requirements is responsible for equating demands for materials with supplies of materials and recommending to the chairman of the Requirements Committee the way in which materials should be distributed among approved programs. The Staff is responsible for (1) determining military, defense supporting, and civilian requirements for materials in short supply; (2) determining the supplies of materials available to meet these requirements; (3) formulating plans for expanding supplies of these materials so that current shortages will be eased as rapidly as possible; and (4) making recommendations to the chairman of the Requirements Committee of the way materials should be distributed among programs in order to achieve the mobilization goals now before the Nation.

In doing this job the Office of Program and Requirements works with the Department of Agriculture, the Petroleum Administration for Defense, and all other claimant agencies in Washington, in translating their requirements for production, construction, and maintenance and repair into tons of steel, copper, and aluminum. These requirements are presented to DPA in uniform terms and time periods. They represent the material input required to build the schedules of military items laid down by the Department of Defense; to produce

petroleum and to refine, store, and transport petroleum products; to generate and transmit electric power; to build locomotives, freight cars, ships, and trucks; to produce machine tools, engines and turbines, electrical and electronic equipment; to repair and maintain existing plant and equipment, and so on.

The staff of the office reviews the methods used by all participating agencies in compiling their material requirements. This includes bills of materials and other devices employed in translating end items into contained steel, copper, and aluminum; the lead times allowed from raw material input to end-product delivery; the assurance that all needs are covered, without duplication or ommission, and so on.

Of great importance in this review is the evaluation of essentiality among requirements; the interconnections among requirements, such as the relationship between components and end items; and the deferrability of requirements.

On the supply side, the staff reviews the estimates prepared by the controlled materials divisions of the NPA of quantities of steel, copper, and aluminum that can be produced in a given time period. This review includes the study of producing and fabricating facilities, and the availability of alloying materials such as nickel, molybdenum, tungsten, chrome, tin, zinc, and chemicals. Where necessary and feasible, the staff prepares recommendations for expanding supply, changing product mix in a given material, and so on.

Finally, using all available information and the expert knowledge of the staffs of participating agencies, the Office of Program and Requirements analyzes supply-demand unbalances and prepares preliminary programming recommendations that move to the Program Adjustment Committee and from there to the Requirements Committee. These recommendations, as I noted previously, specify the amounts of steel, copper, and aluminum that each operating agency is permitted to distribute to individual manufacturers and contractors, or for export, in specified periods of time.

The Office of Program and Requirements works with government agencies. It does not deal directly with individual business concerns. That relationship is assigned to the agencies that are responsible for operations: the Department of Defense with respect to military prime contractors; the divisions of the NPA with respect to manufacturers of industrial equipment and consumers goods; the Maritime Commission with respect to the construction of ocean-going ships; the Federal Security Agency with respect to the construction of hospitals and schools, and so on.

The responsibility for allocating scarce materials is a serious one. In an economy as complex as ours, the job of deciding the quantities of materials necessary to assure the completion of defense production on schedule, of balancing machinery and equipment with the construction of new manufacturing facilities, of appraising relative urgencies and putting first things first, of assuring an output of components such as bearings and motors in quantities sufficient to meet production schedules for end products, is an assignment of the greatest difficulty.

It was recognized from the beginning of the present emergency that every operating agency was in a position to contribute to the decision-making process. And it was recognized as a prime requirement that their advice must be used in reaching decisions that always involve, for materials in short supply, giving more to some agencies at the cost of giving less to others.

The interagency Requirements Committee was established to advise the chairman of the Requirements Committee in making these decisions. The committee's membership covers every major functional area in the economy. It includes one adviser for each of the following areas: military requirements, agricultural production, mines and mining, public utilities, petroleum and gas, transportation, industrial production, construction, civilian economy, foreign policy, industrial manpower, and economic stabilization. The members of the Requirements Committee are top-level officials. The membership includes, for example, the Chairman of the Munitions Board, the Administrator of the Petroleum Administration for Defense; the Under Secretary of Commerce for Transportation; the Administrator of the Production and Marketing Administration in the Department of Agriculture, and so on.

The Requirements Committee is assisted in its work by its principal operating committee, the Program Adjustment Committee. The membership of this committee includes for the most part the alternates to the members of the Requirements Committee. In addition members of a number of claimant agencies that do not have direct representation on the Requirements Committee are included.

Perhaps the best way to explain how allocation decisions are reached under the CMP is to describe the making of the program determinations for the first quarter 1952. The document which has been distributed to you explains the many problems faced in the first quarter programming operation, the way in which they were resolved, and the reasons why one course of action was taken over another. I shall quickly highlight the more detailed document and then stand ready for whatever questions you choose to send my way.

Program determinations are not reached lightly. First quarter program evaluation began in June and extended through to the tenth of October. If you could see the appeals still in my desk you would say the process is still continuing; and it is. Throughout this period the staff of the Office of Program and Requirements met with every one of the approximately sixty claimant agencies and NPA industry divisions. For many claimant agencies a number of meetings took place. At these meetings the programs of the claimant agencies were thoroughly explored, related to one another, and weighed one with another.

Preliminary recommendations were made by the staff of the Office of Program and Requirements, assisted by the staffs of the three controlled materials divisions of the NPA, to the Program Adjustment Committee. This committee went over the recommendations with a fine-tooth comb, heard appeals of various claimant agencies, and then made its recommendations to the Requirements Committee. The Requirements Committee then reviewed the recommendations, made whatever adjustments it considered necessary, and so advised the chairman of the Requirements Committee. The chairman then announced the program determinations for the quarter.

An operation such as this is faced with extraordinary problems. The following are a few of the major problems encountered:

First, and of overriding significance, was the demand-supply imbalance which became evident when requirements stated by claimant agencies were aggregated and matched against available supplies. Requirements for carbon steel were 156 percent of supply; for alloy steel, 159 percent of supply; for brass mill products, 175 percent of supply; and for aluminum, 177 percent of supply. Within the carbon steel total, structural shape demand was 205 percent of supply and plate demand was 180 percent of supply.

Much has been said about the inflation of these requirements. There was water in them, as we discovered. But we also discovered two significant facts--first, the great bulk of the requirements were bona fide; second, given an unlimited supply of controlled materials any one of the areas could have used the great bulk of the materials stated or required in the first quarter. Such rates of consumption might not have continued forever, given unlimited materials, but I think they could have been reached after the water was squeezed out of requirements.

Second, a major problem arose in the first quarter from the military programs. These program requirements not only showed a tremendous jump from fourth quarter levels but were large in their magnitude. Thus, alloy steel requirements were 44 percent of the supply of that material; and aluminum demand was 45 percent of the supply of that

material. These were direct requirements and did not include the indirect requirements for scarce materials needed in the production of components for military end items.

Both these factors meant that a serious reduction in requirements of nonmilitary claimant agencies had to take place. The cutback was severe not only in terms of stated requirements but in relation to material allotment levels of the fourth quarter 1951. The mere arithmetic of demand-supply imbalance demanded that in the case of structure steel, for example, all claimant agencies on the average could be allotted only one-half their request. But, because of the size and urgency of military demand, nonmilitary claimant agencies had to receive, on the average, less than one-half their requested structural steel.

Given the availability of materials, the needs for satisfying the military and Atomic Energy Commission claims, the requirements of claimant agencies went through a long evolution of squeezing. In this process, all sorts of policies had to be decided, and a vast amount of analytical energy expended, before total demand was equated with total supply.

Outstanding problems centered about the level of consumers' goods production and the level of passenger car production. Against the massive demands for steel, copper, and aluminum in defense and defense-related areas, a reduction of consumers' goods production to zero could not have equated aggregate demand and supply. Anyway, considerations of employment, the health of the economy, and producer problems are relevant in setting the level of output in these areas. Another problem centered on construction. Here all sorts of problems arose, typical of which were determinations of essentiality, appropriate time-phasing of material demands, and relationships of components production to finished facilities as, for example, engine and turbine production to generating station construction. Other problems arose concerning the level of exports, increasing the supply of controlled materials, the threat of power loss in the Northwest to aluminum output; the calculation of quantities of material likely to flow for maintenance, repair, and operating supplies, and so on.

Focused on the decision-making process, of course, were all sorts of considerations. But out of the process, and within general mobilization objectives, a number of basic policy considerations evolved. It seems worth-while to state the basic policies which the detailed program decisions of the first quarter sought to reflect. These were:

First, that the real needs of the Department of Defense and the Atomic Energy Commission should be met. This does not mean that the stated requirements of the military necessarily should be met in full.

Rather, the policy was to insure that the material demands of the military should be met to the extent that they were related to available facilities and components and were appropriately scheduled.

Second, that strategic programs should be supported, particularly those with long lead times, such as the power expansion program.

Third, that less essential construction should be deferred to the maximum extent, in order to free structural steel for those construction projects that must move forward currently as rapidly as possible. This is a short-run policy. Many other projects considered to be deferrable in the first quarter were not for this reason to be considered less essential in the long run.

Fourth, that the civilian economy should be maintained at the highest possible levels consistent with the foregoing considerations. In addition the policy was firm that the levels of materials made available for the civilian economy should be high enough to avoid the creation of large pools of unemployed. Material shortages reflected in the program determinations leave some producers of civilian goods at production levels under the break-even point and create some unemployment. The policy was established, however, to minimize to the fullest possible extent such burdens.

Fifth, that program determinations should be directed toward supporting production of industrial equipment at levels sufficiently high to correlate with the industrial expansion program, the real needs of industry, the properly time-phased requirements of the military, and the support of other essential programs in the economy. The policy was not one of supporting industrial equipment production at levels reflecting the ability of industry to consume materials. Broadly, production of industrial equipment was supported at a 1950 base rate with upward adjustments for increased military and industrial demands for more essential machinery items, and with a downward adjustment for deferrable production and the possibility of conservation in the use of scarce materials. Obviously, this general policy affects different machinery items in different ways.

Sixth, that the program determinations should be directed toward supporting essential component production at levels in balance with end-product production and construction schedules.

Finally, that program determinations should reflect a policy of conserving materials to the maximum extent possible without jeopardizing defense production or the maintenance of the civilian economy.

This then is a highly condensed account, and in light of the real drama of the process, perhaps a dull account of the programming operation. It is hard to picture the spirit of the operation within the

frame of a condensed factual account such as this. But I can assure you that all of us connected with the process recognize the extreme significance that it has to this Nation.

MR. HENKEL: Dr. Steiner is ready for questions.

QUESTION: You made some reference to the problems of the machine-tool industry. Would you care to say how the DPA handles the problems of that industry?

DR. STEINER: I am really not too well equipped to speak of the machine-tool program in detail because what DPA does is to establish a level of material input into machine tools which it considers sufficient to meet the needs for certain types of machine tools in ammunition plants, in military end-item plants, in steel plants, and so forth.

For example, in the first quarter the DPA said that it seemed appropriate to provide for machine-tool production at a level of 500 percent over actual production in the first half of 1950. Now, NPA's Metal Working and Equipment Division gets that total and then it distributes scarce materials to individual manufacturers. The Metal Working and Equipment Division therefore should distribute that material to those areas where machine tools are most critical and should reduce the quantity of materials going into machine tools in less critical areas. By that I mean simply that machine tools for producing civilian items ought to be of less urgency in the distribution of material than machine tools for, let us say, a shell billet plant.

QUESTION: When you have a requirement for critical materials in the order of 150 percent, it occurs to me that sometimes the ability of that producer to use those requirements is in question. To use 150 percent would require an increase in the labor force of about 30 percent. We have about 6 percent available. By a shift in industry, it might be possible to get another 8 percent. I wonder if such rule-of-thumb criteria are used against requirements in justification for the materials.

DR. STEINER: Only in aggregate terms. This is one of these businesses where aggregates are necessarily broad. You have to get into detail. I will give you two illustrations.

What you say in the aggregate undoubtedly is true and that is what I meant when I said that all industries just couldn't chew up these requirements over an extended period of time. Some might in one quarter or two quarters; but given unlimited supplies of steel, copper, and aluminum, these requirements wouldn't set the actual production level.

As an example, when we aggregated the total requirements submitted for military construction, industrial expansion, and all other construction in the United States, we found that, if my memory serves me correctly, the amount of material would have supported a construction level of something like 45 billion dollars. This sum is about a third above the 1950 rate and the rate permitted in the first quarter of the 1952 program determination.

Now, quite obviously, if all that material had been made available to the construction industry, there would have been a severe shortage of labor, there would have been insufficient cement, there would have been insufficient plywood, gypsum board, tiles, and things of that sort.

There are many areas in the economy that are perfectly capable of chewing up terrific quantities of material, aside from the broad labor problem. One is the laying of wide-diameter pipe. Contractors usually just dig a big hole and put in the pipe. The tonnages are tremendous. Another is in the area of copper wiring in the communications equipment area. In the defense electric power area we can run terrific quantities of copper wire very easily without running into any bottlenecks such as labor and things of that sort. In the railroad program you can lay tremendous quantities of rail without running into the labor problem.

The point that I am trying to make is this: You can pick up big chunks in the aggregate in terms of the feasibility of labor and so forth, but eventually someone must get down to a very specific program. He must get down to the Petroleum Administration for Defense program for laying gas lines. He must get down to it pretty carefully in the railroad equipment program, and so forth.

QUESTION: Along with the requirements I wonder if it would be feasible to have the manufacturer tell you in a statement where the labor is coming from, just as a vehicle.

DR. STEINER: Let me put it this way: I don't think that for any one claimant agency, if it got all the material it asked for, there would be that problem. If they all could get all the material they want, there would be a problem; but, that is impossible. At this time the exigencies of the material situation are far greater in determining what is done than problems of labor.

QUESTION: Last night Dr. Keyserling, in arguing for the expansion of the military, made the point that in an economy such as this, where we are now spending at the rate of approximately 45 billion dollars per year for the military, that can increase by the end of 1952 to 75 billion dollars a year, and still we can have an increase in the

civilian consumption of 22 billion dollars, which is more than we ever had, and at the same time can have an expansion of production of 20 billion. I am wondering, is there any conflict in what he says and what you are saying?

DR. STEINER: There apparently is. Dr. Keyserling is a real protagonist that I don't want to take on at this point. But I thoroughly disagree with him on this point.

My reaction is comparable to the reaction of the captain's question here--that playing around with gross national product can lead to some very unreal conclusions about the feasibility of programs in the economy. I draw your attention to the impact of the military program and the defense-supporting program, the first quarter program determination, the document that you have in your hand. I don't want to go into this in detail, but I point to this: In the first quarter of 1952 the direct defense requirements for brass mill products were 40 percent of the supply. We do not know precisely what the requirements were for the production of the components going into the military end items. I can tell you this, however, that the NPA industry divisions estimated, when they submitted their second quarter requirements, that there was needed 22 percent of the total requirements to produce the components of military end items. I think those totals were inflated. But suppose they were inflated by 50 percent, you still get a total well over 50 percent of the brass mill supply for just the military.

Let me draw your attention to some other big brass mill users in the United States. You have the general component area. You have the scientific and technical area for industrial uses. You have the production of all the defense-related areas--the Defense Electric Power Administration, for example. What good is it to build a lot of industrial plants and a lot of military end-product plants if you do not have the electricity to run the plants?

When you take the direct and indirect military requirements and add to them the direct and indirect requirements for defense-supporting items, in brass mill copper, you get a total that approximates 50 or 65 percent of the total allocations made. If you cut out civilian production altogether, you still wouldn't have enough material to satisfy the needs of all the other areas.

In other words, what I am really trying to say is this: That given the current level of military requirements, without any further increase, extended over four or five quarters, it is inconceivable to me how, in the light of the fact that the possibility of increasing the supply of copper is not too good, we can have a civilian boom on top of an industrial boom on top of the high level of military requirements that we have today.

QUESTION: I am wondering if in determining the allocation of materials between military and civilian you get adequate guidance from the National Security Council. Has the National Security Council made any decision that, say, 60 percent will go to civilian and 40 percent to the military in a certain quarter? Or just what guidance do you get, and how is it worked out?

DR. STEINER: That is a very difficult question. I know of no such document by the National Security Council as to the level of civilian production. In many ways the level of civilian production is residual, but it is a protected residual.

In the actual process of balancing, there is a continuous adjusting of the levels of one program with another. So in some respect the amount of materials available for the production of consumer durable goods, like automobiles, is residual in the sense that you try to develop the really essential needs. That is, the essential needs in all the areas for which materials are claimed by the military as well as by the Defense Electric Power Administration program, the program of the Petroleum Administration for Defense, the Department of Agriculture, the Fuels Administration, and so forth; also find out what is left for consumer areas.

But there is a limit to how far consumer durable goods production can be cut. The reason is that materials are not the only consideration essential to the establishment of the level of consumer durable goods production. There are other relevant and really significant problems. For one, the consumer durable goods are not all produced for civilians. There is a military need for some consumer type items. In addition to that there is a very real problem of tying the increase of military contracts into the employment that would be eliminated by further reduction in the quantities of materials allowed to go into the consumer durable goods production. Large pools of unemployment cannot be created. In addition there are problems of general economic stabilization. There are also problems of producer stability.

The level of consumer durable goods output is determined by a congeries of factors. The level of material allotment, hence production, is really not a residual, but a protected minimum. If materials become easier, the minimum level must rise. But no matter how tight materials there is a floor beyond which it cannot fall.

QUESTION: Who determines what controlled materials can be sent for aid to foreign countries? How is the priority determined for shipments to foreign countries, if any, compared with the general priorities for the defense establishment?

DR. STEINER: The Defense Production Administration determines the quantity of materials to be allotted in the foreign area. That material goes down to the Office of International Trade (OIT) and the Economic

Cooperation Administration (ECA). They both are claimant agencies. OIT and ECA submit their requirements as one claimant agency. Their requirements are evaluated just as the requirements of any other claimant agency are evaluated.

They submit their requirements to DPA in terms of materials needed to support military installations abroad, to produce military end items abroad, to support production of basic strategic material resources abroad, and to support essential civilian requirements abroad. Those requirements are evaluated in detail. They too are determined within the context of the material situation in the United States, what can be satisfied from abroad, and just what ought to be shipped from the United States to foreign countries.

Quite obviously, we not only have a very real interest in some of the end items to be produced of this material but also a real interest in the economies of some of the nations abroad. The process of evaluation is a process of taking the requirements project by project, item by item, and trying to come to an evaluation of essentiality in terms of the whole context of the domestic material situation, other urgent demands, and the foreign policy of the United States. In this way a decision is made.

The point is this: There is no formula for coming to so much steel for OIT and ECA, or so much steel for consumer durable goods. There is no formula by which you can do that; I wish that there were. If there were, I don't think I would be here.

QUESTION: Doctor, it is clear that the Requirements Committee has two specific types of authority in this problem of program determination. One is program determination itself, that is, approval of the phased end-product deliveries. The second is the allocation of controlled materials for the period within which there is program identification. I believe that the only thing that the claimant agencies have been doing has been allocating the controlled materials which they have been given. Does ECA intend in the future to move in or assert its authority in the field of actual end-item delivery, or are they going to continue to leave that to the good judgment of the claimant agency?

DR. STEINER: I am not quite sure I understand your question. Let me say this: When the Requirements Committee reviews the recommendations of the Program Adjustment Committee, makes whatever adjustments it considers essential, and makes a recommendation to the chairman that a given claimant agency should get "X" quantity of steel, let us say, there is inherent in that the establishment of a program level. In other words if a claimant agency gets a given quantity of material, quite obviously it will determine within that level the production of programs within that claimant agency.

The claimant agency in turn can take the material and can move it into different programs, if that is what you mean. In other words, in the first quarter the program determination for a given NPA division was in the aggregate. Now, the NPA division could take that material and give it, and had to give it, to a wide variety of product codes or industries. It had flexibility in determining how much went into each one of those product codes. There were some areas, however, where the Requirements Committee did set a unit end-item level, such as passenger automobiles and railroad cars.

From another point of view the Requirements Committee is now engaged in setting what may be called long-range production goals in given areas. The committee is in the process of discussing goals and trying to come to tentative conclusions. When conclusions are reached, quite obviously they will be woven tightly into the quarterly programming operation. Does that answer the question?

QUESTION: Well, no. I wanted to know to what extent the ECA may move in the future into the actual allocations of the material. It is quite possible that it intends to pass on the unit production as a whole.

DR. STEINER: I wouldn't necessarily say that, because claimant agencies must be given flexibility in the way in which they divide their material.

The DPA cannot superimpose its knowledge on the expert knowledge of the claimant agency in all the detail in which it makes allocations to consumers. So the problem of how far the DPA Requirements Committee goes in specifying the detail in which allotments should be distributed to consumers will depend a great deal upon a particular situation.

To my knowledge there is no feeling that program determination in the future will cover every program and every detail associated with the distribution of materials.

QUESTION: Since 1945 certain agencies in the Government have been charged with unbalanced requirements determination. Most of this information that you spoke about has been available for years. Yet, as I say, the requirements are probably not very much in balance. I would like to know, first, what is being done to meet these criticisms; merely allocating the material is not any real solution. Second, what is being done to utilize the experience that was gained in the past?

DR. STEINER: As to your first question, I would like to agree with you that the problem of production is not merely a matter of the allocation of materials. There are a lot of other problems associated with it--component problems and things of that sort.

So far as the other question is concerned, we are all cognizant of the fact that there is a wealth of information in Washington growing out of World War II experience and the experience after World War II. To the extent that this information can be useful, it is being used.

QUESTION: What agency is charged with seeing that the components to make an end item are all being made? For instance, a D-52 jet airplane is no good without a jet engine to go into it. But nobody seems to be paying attention to what materiel is being made; everybody is thinking about the dollars. But somebody has to see that all the components are available. Who does it and what are they doing?

DR. STEINER: The DPA, NPA, and Department of Defense are all responsible and are aided by the material allocation system, the priority system, and if the need arises the use of directives.

COMMENT: They are building facilities to build engines, but the materials are not being made available to them.

DR. STEINER: You are in an area that I am not competent to speak about except from general knowledge. But I will say this in answer to your first question: To my knowledge materials have been granted for the production of aircraft to the full extent of the real needs that have been evolved in the aircraft program. What I am talking about here is the essential steel, copper, and aluminum. When you talk about nickel, columbium metal, and things like that, you do have a bottleneck there. I recognize that, if that is what you mean.

QUESTION: What agency is responsible for seeing that those materials are made available?

DR. STEINER: Oh, I see what you mean. Well, it is the DPA and the NPA working closely together in trying to get an expansion of the materials in short supply. There are a lot of other committees, people, and agencies involved in trying to increase material supplies, all the way from international agreements in the allocation of the world copper supply to international pricing problems. They are not only trying to increase the supply of copper, but nickel, zinc, and things of that sort.

Quite obviously, the DPA is vitally interested in increasing these supplies, because the more the supply is increased, the easier the material situation will become.

QUESTION: Doctor, it has been stated here previously that ECA has allotted materials to producers who were not able to chew up the stuff as fast as it was received. Would you comment on what you have found in your review of the requirements for this first quarter of 1952 as to the imbalance between military requirements and the available facilities and the feasible production schedules? Is there any water in there?

DR. STEINER: It is true that the requirement for some programs of the military for the first quarter was subsequently reduced to get the material inputs more in line with production schedules. The ability to chew up the materials grows out of the availability at the plants of machine tools, other kinds of tools, and things of that sort. The military itself is continually evaluating programs in an effort to try to develop requirements that really reflect the ability of a given plant to chew up the material.

That problem is not quite so easy to solve as it may sound. You develop a bill of materials to produce a tank. Then you have the problem of relating it to schedules of a plant, which in turn are dependent upon machine tools in general, or just one machine tool, or some kind of electrical fitting or pump or something of that sort.

But to answer your question directly: In the first quarter the original military requirements were pared down considerably for some programs to get them more in line with the appropriate schedules of the end items.

QUESTION: In making up your future or forward quarters, do you require the claimant agencies to reveal how much inventory they have on hand of these materials due to a lack of meeting schedules in some previous quarter? It seems to me that this would help. How do you control the accumulation of inventory beyond normal needs?

DR. STEINER: There are two ways. One is that every manufacturing plant in the United States submits a report form to NPA on which it gives its inventory. So you can determine all the inventories in manufacturing plants in the United States by looking at that form. Unfortunately, the form is not as current as it should be to be of maximum use. In addition there are certain types of inventory regulations prohibiting the accumulation of inventory beyond normal needs.

QUESTION: Has DPA ever undertaken to this day to set the program levels of the military production programs?

DR. STEINER: DPA up to the present time has not established production levels for the military. It is a process, as I said, of evaluation of those requirements in terms of ability to chew up materials, for appropriate time-phasing, of inventory, and things of that sort.

COMMENT: There is one problem that appears to be of particular interest, that is the problem of setting a level for the components and everything that is involved. If you just reduce the material requirements, it may be that later you will run up against other bottlenecks on components.

DR. STEINER: Why use materials that must inevitably stay idle in inventory if they can't be chewed up? We had, for example, up to the present time, as you know, a problem on shell billets. There is a case where, unless we lick it in the first quarter, some material will lie idle. But there was no reduction growing out of that possibility.

My only point is this: Obviously if you have a plant that is producing an end item and it gets the materials to produce that end item, material would lie idle if the plant did not have all the machine tools needed to produce that item.

QUESTION: To return to the question on the difference between what is allotted and what the producers can chew up, it would seem to me that the basic difficulty there lies in a difference between what the producers tell the military they can use and what they tell you. If that is so, what would be your recommendation on how to get the two in balance before they came up to the military?

DR. STEINER: The producers give their requirements to the military for items which the military may allocate to them. The Munitions Board and the services determine the extent to which plants can really chew up the materials requested. That is a part of the requirements evaluation process.

QUESTION: How do you determine it, then?

DR. STEINER: Well, it is done with DPA personnel in conjunction with the personnel in the Munitions Board. If you develop a requirement for 400,000 tons of steel for the tank program, for example, and then find out that the producers can't chew up that much material, what is the point in allocating 400,000 tons?

QUESTION: Dr. Steiner, if you are going to review the requirements for materials submitted to you by the military, you must have some knowledge of the plans, the factors, the assumptions, and the methods by which the requirements were computed. Do you get all that at the present, or do you just have the figures submitted to you by the Munitions Board? If so, how can you tell if the requirements are excessive, full of water, or anything else? Do the three services participate in reaching this decision? If so, to what extent do they participate?

DR. STEINER: Yes. The military services submit their requirements. Then we meet with the military representatives and go over these requirements in as much detail as we can; beyond that the problem is one of individual knowledge.

Don't forget that we have on the staff of the DPA the chairman of the Production Executive Committee, who is vitally interested in the aircraft production program and knows a great deal about it. There is also on the staff Mr. Clay Bedford, of the Office of Defense Mobilization, who has a vital interest in and knows a good deal about the tank program.

I think that one thing might be helpful in this connection. The Munitions Board, when it sends requirements to DPA, is faced with an extremely tight time schedule in the collecting of requirements. I am sure you will agree with me, if you have had any experience in doing this kind of job, that the first collection of requirements requires a lot of scrutiny. So the Munitions Board to the extent that it has the time available scrutinizes very carefully requirements before they are sent to DPA.

If they had more time, another month or so, the chances are that the requirements figures would be different. But the Board does not have that time. It examines the requirements as submitted and tries to get them realistic.

COMMENT: I get the idea that the defense agencies spend about four times as much time reviewing requirements as the departments have had to compute them. So, obviously, if you have four times the time in which to review them, you are certain to find all manner of mistakes. The detail into which you go in computing requirements is directly proportional to the availability of personnel and time. Therefore, you must accept certain broad factors and you must have some say in the people who are computing these things and the assumptions they made.

DR. STEINER: Obviously, we must have that.

The requirements as submitted by the Munitions Board in the first quarter were not very much reduced. It seemed to be implied in one of the questions that the requirements were reduced terrifically; they were not. They were reduced in the tank program and they were reduced in several other programs. They were reduced in light of new factors that were developed after the submission of the requirements.

So far as water is concerned, you can see after the facts things that have happened. I am not pointing my finger at requirements as such; but in the fourth quarter we have learned, for example, that only about half of the shell steel tickets allotted actually have reached the mills. We have heard that only about half of the shell billet tickets that were issued for the first quarter have hit the mills. If they are not issued pretty quickly, we are going to lose our lead time. That is a point on the other side of the picture.

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I think you will agree that the development of military requirements is a very difficult task. But I think it also is essential to do whatever can be done by way of reviewing those requirements in the light of whatever facilities are available before the allotments are made, because, if you can detect a 10 percent saving in the military requirement for brass or aluminum, you gain a great deal not only for the military itself in terms of a lot of material for components that eventually go into military items but for the economy as a whole.

MR. HENKEL: Dr. Steiner, we wish we had more time to go on with this discussion. On behalf of the faculty and the students I thank you for an excellent discussion.

(26 Feb 1952--750)S/sgh

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