MEASURES FOR THE ALLEVIATION OF MATERIAL SCARCITY

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18 October 1953

COLONEL WING: Admiral Hague and gentlemen: In case a few of you may have remembered during this last couple of weeks interim, the Natural Resources unit of this course is still going on. We will try this morning to relieve you from stretching your memories any further and will try to wind up this Natural Resources unit.

You will remember that when this unit of the course started off, Captain Hayes mentioned that, although this was a very short unit, consisting of only six lectures and six discussions, it would not be the end of your consideration of problems of natural resources or raw materials. You have already been up against some problems of raw materials in your Tech Progress unit. In Requirements you will be dealing with raw materials as one of the major factors in the determination of requirements. In Procurement and in Production, raw materials will enter into the problems vitally. In the last two units of your course, dealing with measuring the economic potential for war of the various areas of the world and with economic mobilization problems, you will find that raw materials are a vital part of the considerations. Even after you leave here and during the rest of your careers a good many of you will be very much concerned with the problem of raw materials.

This morning, as the final talk in this series of lectures, the subject is Measures for the Alleviation of Material Scarcities.

During the past few weeks you have heard speakers, and you have held informal discussions, on the position and the problems of the United States, and to some extent the world's, position and problems in the field of raw materials to meet our increasing demands. You have done considerable reading and you have heard the views of speakers from the fields of industry, education, civil government, and the military. But all of these men have one thing in common. All of them are vitally concerned, and actively engaged, in the means of solving these problems of raw materials for our national security.

While viewpoints may have varied as to the relative importance of certain problems and as to methods of solution, I believe, in looking over the series of lectures, that four general areas of agreement can be drawn. First, that the United States' position in the field of national security will depend to a great extent on our ability to maintain a supply of the raw materials necessary to industrial production. Secondly, regardless of the optimistic or pessimistic estimates as to our future rate of industrial growth, the demand for these raw materials will continue

to rise substantially. Third, regardless of the variations in the estimates of the years of domestic mineral reserves, they are continuing to be further depleted; and the real cost of mineral recovery is rising every year. And the last of these general areas, as I think you will agree, is that in order to be successful in maintaining this broad base of raw materials supply that we need for our future national security, the United States will have to have aggressive and realistic minerals policies and actions, both economic and political, and both national and international.

The first thing I want to make clear is that basically, despite the fact that we have heard the cry of "Wolf," the United States has been favored with extraordinary mineral wealth to support our increasing industrial growth and to safeguard our national security. Elmer Pehrson, of the Bureau of Mines, a recognized minerals economist, has made the assumption in the recent past that no other area of the earth, of equal size, will ever surpass or even equal the quantity and variety of minerals found in the United States. However, he further states that there is ample evidence to reach the conclusion that our share of this mineral wealth of the world is shrinking, and will continue to decline.

Now, I do not mean by this that the United States is a "have not" nation. In fact, I don't like the term. It is usually used in a very broad sense. In talking about minerals and mineral position in general, we are actually rolling in wealth in some of the basic mineral commodities; but we are, and we always have been, poverty-stricken in some others. We have known that. But the matter of vital concern today is the fact that the increasing demands and the drain of the past few years are now beginning to show up in static or declining production rates, while the demands are continuing to skyrocket.

I would like to give some very brief examples of some of these demands. Of course, you are all familiar with the tremendous demand for minerals we have seen in this country during the past decade, both for war and for peace. Many of you have read some of the predictions of the demands in the period of 1970-1980 in the President's Materials Policy Commission report. But to me I have a feeling that 25 or 30 years is a pretty long time in this changing world to make predictions with any degree of accuracy.

In searching for a more recent and shorter-range projection, I came upon one in the July, 1953, issue of the Engineering and Mining Journal. I think that is the most interesting and most conservative. I call it most interesting because of the fact that it takes the period of 1953-1963, and that is a decade that will be concluded within the active service careers of most members of this audience. I call it conservative because it is based on a Federal Reserve Board estimate

of a 20 persent increase in industrial production during these ten years. Considering the fact that on the average, industrial production in the United States has increased approximately 3½ percent a year, I think a 20 percent estimate of the increase in the next ten years is quite conservative.

Anyway, the prediction of the increased demand for a few of the metals during these ten years is: zinc, demand up 11 percent; copper, up 13 percent; lead, up 14 percent; total steel up 14 percent; alloy steels up 30 percent; and aluminum, up 90 percent.

This may not sound like a very great increase; but, when you realize that we have already become a net importer of all of these metals, or the ores for all these metals, the problem of our future supply becomes quite apparent.

I must admit that in considering only the next decade, I have minimized greatly the problem facing our national planners, both government and industrial. If you will remember the population pyramid used by Colonel Van Way in his opening lecture on manpower, you will remember that there was a quite narrow band in the 10-19-year age group. This next ten-year demand projection is based upon this relatively narrow group, and covers the period where they will be going to work, buying cars, getting married, and establishing their own homes. You will also remember the tremendously large number of people in the 1-10 year age group. I for one am glad that I do not have the job of trying to figure out how to meet the material demands when it gets to the point that they start going to work, buying cars, getting married, and demanding their own homes. Gentlemen, it is a tremendous problem.

But I think we all realize by this point in our course that the problem of meeting the material demands for an ever-increasing economic growth in the future is far too great a problem to take up in any one lecture or any one discussion. It is one of our major national problems. I think that can well be attested to when you look at the composition of the recent President's Materials Policy Commission that I mentioned; as well as when you look at Senator Malone's Committee on Internal and Insular Affairs, which has been holding hearings throughout the entire country to get data for congressional decisions as to what we can do to safeguard our resources position in the future for our national security. Then there is the Mid-Century Conference on Resources for the Future, to be held right here in Washington in December of this year. I think this is the first real conservation conference held since the early part of the century, the one held under Teddy Roosevelt. It is a major problem.

As I see it, there are really two major problems, both of them of vital interest to all of us. First, as parents and citizens of this

country, we are certainly interested in a continued economic growth and a continued high standard of living in this country for the future. But as government officials and military officers we are vitally concerned with the problems of materials to meet the demands of national security. And for the balance of this talk I am going to limit myself to considerations of the problems of national security. In fact, I will further limit the problem. I won't even consider our national security for, say, the next five billion years that man expects to live on this earth. I am not going to concern myself with talking about even the year 2023 which some have said is the period when our mineral fuels will be used up. I am going to consider the problems of national security for the immediate period, that is, right now and ten to twelve years from now. That is the period you and I will be working on this problem of national security.

I will try to cover three main points: first, the principal actions which have been taken during the Korean emergency to better our resources position for war mobilization. Then we will consider some of the actions which should constitute a continuing program to insure future supplies of raw materials to meet our national security needs. We will also take a look into some of the economic, technical, and political problems which affect the accomplishment of a realistic minerals policy and program.

Before reviewing some of these actions taken during the recent emergency, I think we should take a look at what the objectives of this emergency program were, what we were trying to accomplish. I believe the objectives of the recent emergency period can be very simply stated as follows: first, to meet current military needs; and, second, to prepare for full mobilization in case of all-out war.

You all remember that at the outset of the Korean action the United States, and pretty well the free world as a whole, was entirely unprepared to meet the demands for materials for production of the munitions of war needed then, and to expand the mobilization base, to build the working facilities needed. We found that the minerals industry in the United States was not geared to producing to meet our demand for those minerals for which we had thought we were pretty well off domestically.

Of course, we had realized with a rude shock during the last war, that there were many materials for which we were either entirely or partially dependent on other countries. But with the end of the war, and the cutting out of munitions production and the cut-back on contracts, the demands lessened. There was very little incentive for the continued growth or even the continued rate of production of these materials, either abroad or domestically.

Of course, we passed the Stockpiling Act in 1946 to take care of just such an emergency. The passing of the act was a very fine thing, but the passing of the act did not put one single pound of materials

in the stockpile. We had to have appropriations of money to buy them. And you well know that the hue and cry for economy and tax relief in the interim years did not provide very much money for putting materials in the stockpile.

I think we might group the actions taken during this emergency under three general headings, very basically: to increase the production of materials, to increase our inventory of materials on hand, and to prevent unnecessary waste of materials. Or, as I have it on the board here, to find new sources and increase mine production, to increase supplies and materials on hand and available, and to make more efficient use of materials.

There were many actions taken to try to accomplish these objectives. On the first one--to find new sources and increase mine production--some of the actions taken were in the form of tax benefits. There were procurement guarantees. There were several actions like this, which I won't go into discussing now, because there are a good many of them, quite complicated. I will be glad to take those up in the question period or in our discussion later this morning.

I think one of the most important and one of the most effective measures was the government loan program, called the "grubstake loan program." This has already produced such results that I think it is well worth reviewing for a moment.

Now, this grubstake loan program was set up to be administered by the Defense Minerals Exploration Administration within the Department of Interior, commonly referred to as DMEA. What it did was to agree, to contact, to pay a part of the exploration costs in the search for new domestic sources of strategic and critical materials. The Government's part of this cost would be 50 percent, 75 percent, or 90 percent, depending upon the degree of criticality of the material.

Between May, 1951, when the program started, and June of this year there were 500 contracts made, out of a total of a little less than 2,000 applications. As of June of this year, 127 of these 500 projects had been concluded.

Of those 127 I think it is quite interesting to know that 48 certificates of discovery have been issued. This means that in 48 of these properties there is sufficient evidence of minerals to call them discoveries and sources of materials. These involve new domestic sources for more than a dozen strategic and critical materials.

New ores have already been found on 120 of the 500 projects; and 48 of them, as I mentioned, have gone into production, are currently being operated, and have started making royalty repayments to the Government, to repay the loans.

But I don't think the success of this program can be measured entirely by the number going into production now or by the amount of loans repaid. There are a good many of these finds that will not go into immediate production. In fact, some of them probably won't even go into production during peacetime. But they will certainly provide some significant sources in the event of war, for strategic and critical materials domestically.

One other program designed for increasing new developments, is one called the general floor-price guarantees. You will probably run into them in the procurement part of your course. I just mention it now because it is somewhat different from the procurement negotiations in effect up to now. The Government has offered guaranteed floor prices for certain materials for production in the future. The main purpose in doing this is that the operators could start in developing these properties immediately without waiting the months sometimes necessary to conclude contract negotiations.

Those are the primary actions taken to find new sources and increase production.

There were other actions taken to increase the supplies of materials on hand and available. One of these actions--and I think it is a very important one in its results--was the International Materials Conference, commonly referred to as IMC.

The IMC was originally started in March, 1951, as a result of meetings between the United States, the United Kingdom, and France. These meetings were called because of two requirements. One was the scare buying, the greatly increased demand on materials, following the outbreak of the Korean War, whereby mineral prices started skyrocketing with the bidding by the using countries against each other. Not only was that so, but we couldn't get what we needed, because the producing centers were smart enough to realize that this bidding process would continue, and they held back on production and delivery so that prices would go up.

So, in order to try to get the market stabilized and production started on these materials, 28 free nations were invited to participate in IMC. They accepted and did participate. Briefly, seven commodity committees were set up. There were more than seven commodities involved, but many of these committees handled several commodities, such as the copper-lead-zinc committee, and the molybdenum-tungsten-nickel committee.

These commodity committees were made up of representatives of the using countries and of the producing countries. When they figured that the supply of a material available during the next quarter would not be nearly enough to meet the demands of the using nations, and consequently

they would be bidding against each other, they recommended allocations to the different countries for the ensuing quarter, depending upon the needs for military production and for essential civilian production. Incidentally, the United States got more than half of most of these allocations.

However, as soon as any materials reached the point of where, not that there was a plentiful supply of it, but where the supply was sufficient so that there would not be wide-open, throughout-the-world bidding for it, it was taken out from under allocation and went into the regular free market. The last of these to come out from under allocation was nickel. A little over two weeks ago, the 30th of September of this year, the last commodity, nickel, went out from under allocation.

I think, however, that we can draw one valuable lesson from the workings of these committees. That is that the free nations of the world can work together for common security purposes without having to have written treaties or laws forcing compliance. There wasn't one single thing written. There was no treaty. There were no articles drawn up saying that any country had to agree to abide by the recommended allocations. Yet I have not heard of a single instance during the entire run of this operation where both the using and the producing nations did not abide by the recommended allocations.

The primary result of this was to stabilize world prices of minerals. It also increased production. It stabilized prices because the producing countries very soon found out that the using countries were not going to bid against each other. So the producing countries started producing all they could and delivering it at the agreed-upon prices. And I for one certainly think that at least the framework of the IMC should be retained, to be put into operation in a future emergency whenever it is needed, because it was very successful.

One other program to take care of this "increase supplies and materials on hand" was not really passed during the emergency. I am talking about the Stockpiling Act of 1946. However, I think we can term it an emergency program, because it really got its impetus and start out of the Korean emergency.

The stockpile, as most of you know, has 75 strategic and critical materials listed now. The last is selenium, which was added just a few months ago. I might briefly mention how the objectives of the stockpile are reached.

The objectives are very complicated; but, basically, as you know, the stockpile is figured up to take care of a five-year war. For each material we take what is estimated to be the military requirements for military production, what is taken to be the requirements of the material

for essential civilian production during this period, add them together; and those are our requirements for the five-year war period. Then we take what is figured will be the domestic production of that material, and what will be the foreign production that will be definitely and strategically available to us during that time, that we can get our hands on, add those together; and that is our production for the period. Very simply, the difference between the production of the material and the requirements for the material become the stockpile objective.

From what I have mentioned so far you can readily see that these stockpile objectives require constant review. The requirements have to be reviewed, because the military requirements are constantly changing. They change because of new weapon development and new strategic considerations. They also change because of the fact, as I will mention a little later, production trends change. So in the light of whether production as a whole goes up or down, or whether requirements go up or down, we review the program.

The stockpile objectives in dollar figures--and that is about the only way you can talk about the total stockpile, you can't talk about so many pounds of this and so many yards of that; the common denominator is dollars--the objectives now are valued at 7.2 billion dollars. On hand on June 30th of this year there were 4.2 billion dollars. On order for future delivery there were another 1.5 billion dollars. That means that on hand and on order for delivery as of last June 30th there were 79 percent of our stockpile objectives.

Now, I don't know how you feel about it, but when I think of a stockpile objective of 7 billion dollars worth of critical materials, it doesn't sound like very much in these days when we are talking about a 300 billion dollars plus economy, GNP. So 7 billion might not sound like very much. But in looking to see how much industrial production 7 billion dollars worth of materials would support, I tried to find some recent figures.

The last I could find were the total figures for the United States in 1949. I found that the total value of all metallic minerals produced in the United States in 1949 was 3 billion dollars. Of course, included in these 3 billion dollars worth of minerals, a very large part of it in fact, was iron ore, which is not included in the stockpile.

Well, when you figure the size of our economy in 1949, and remember that only 3 billion dollars worth of metallic minerals were produced in this country to support it, I think we can readily see that 7.2 billion dollars worth of materials will support a tremendous lot of industrial production.

The last point about the stockpile that I want to mention is that, of course, the dollar figure of materials on hand does not really give

you a true indication of how effective the stockpile would be today. The true measure of the stockpile is, How much is it in balance? Do we have all that we need in one thing and nothing of what we need in another? Without those things, maybe we can't use all of these. Maybe the stockpile is only 50 percent in balance. In order that you may examine that in your discussion period, at 10:30, we will have available for each of you a chart that gives the percent of each material in the stockpile as of June 30th.

There was one more category of emergency actions designed to achieve the maximum quantity of munitions production, and that was to stop wasting material; or, in other words, to produce a greater amount of munitions end items from the materials available by making most effective use of materials. I think a very significant accomplishment toward this end is now well in the beginning. It is commonly termed the Department of Defense Conservation Program. Under it all the services are entering into the program of making design and engineering changes to use less of the very critical materials in the end items.

They made a review of the consolidated reports by the services in the Department of Defense for the calendar year 1952, and the estimated savings from this program in three materials is as follows: chromium, saved approximately 2 million pounds; nickel, nearly 10 million pounds, copper, approximately 14 million pounds.

I realize that 14 million pounds of copper is only 7,000 tons of copper, and 7,000 tons sounds like only a drop in the bucket when you think that last year we used a million and a half tons. But we must remember two things: First, this program is only really in its beginning; and, second, the military take of the materials we produced in this last year is almost insignificant compared to the civilian take. If we so design our end items that we can produce some of them with less materials, I think the result will be tremendous come a war, when the military take is the lion's share of these materials.

I am sorry to say that I have not seen any evidence of such a broad program in civilian production. I don't know of any way you can force it in civilian production. Of course, during the emergency period we can. We can control the allocation of materials. But, except in an emergency, in a free enterprise system there is no way you can make them conserve materials.

Probably the one bright light of salvation will be the plain old economic device of higher prices for the scarcer materials. I was talking with one industrialist the other day and he told me he thought a quite significant move was made recently this year by the lifting of the price ceilings on materials. He said that at 24½-cents, industry used all the copper it could get its hands on; but when it

rose to 32 cents a pound shortly after the lifting of the price ceiling, the industry started scratching its head and tried to find ways to use less copper in the finished product. Maybe that will be the answer.

These, then, gentlemen, are the primary actions to accomplish the emergency results; and I think we have accomplished them to a fair degree of satisfaction. We certainly have increased the domestic production of minerals. We have found new and larger sources, foreign sources, of minerals. Our stockpile is in far better shape than it was at the beginning of the emergency.

But we certainly shouldn't let our accomplishments to date give us any false sense of complacency or security. We cannot attain a real position of security, or even maintain our present position, unless we devise some continuing good minerals policy and programs to maintain and better our position for the future.

This then, brings us to the last two points that I mentioned I wanted to cover; and that is, some of the things that should be contained in a future minerals policy, and some of the economic, political, and technical problems that affect the formulation of a realistic minerals policy. I think these two points, however, are so interrelated that I won't try to separate them. I will discuss them as one.

In determining what is necessary for a realistic minerals policy, we must lay out the objectives for our policy. We had the objectives for an emergency program, but in a continuing policy one new objective must be added. It is one of the major overriding objectives. That is, we must prepare to meet materials demands for full normal industrial production in peacetime.

Now, I realize immediately that as military men we are not directly concerned with the requirements of materials for full normal industrial production. That is not our problem. But, nevertheless, it does vitally concern us, because the success we have in meeting, or the country has in meeting, these full requirements for full normal industrial production in the future, is the thing that will set the pattern for how well off we will be in our ability to meet the requirements for military programs and mobilization readiness come a war in the future. For that reason we are interested in it.

In figuring just what we need to meet these objectives, we must bear three very important facts in mind. One is that of all the minerals required for industrial production in this country, we must import virtually our entire supply of about one-third of these minerals. We must import part of our supply of another third. That means that we can only hope to be self-sufficient in approximately one-third of the materials necessary.

I think also we must accept the fact that this trend in declining self-sufficiency domestically will continue. Our increasing population, our increasing standard of living, the tremendous increase in requirements for materials for new weapons for security, and our political position in the world today, all combine to make demand grow faster than domestic supply.

One more thing we must remember on this also in our policy, and that is that too much dependence on imports could be a major hazard in an emergency. There is not nearly as much security in a supply of materials overseas as there is in a supply of materials at home, where we can get them.

Bearing those three basic facts in mind, I think, then, we can quickly run down some of the things that must be done for an adequate and realistic minerals policy. First, I think it is very evident now that we must maintain a strong domestic mining industry. Also we must attain and maintain adequate foreign sources for the materials which we do not have at all and those of which we do not have enough. Third, we must continue to make more effective use of the materials by several devices, such as more complete mine recovery; getting over the process of leaving 30, 40, 50 percent of the minerals in the ground when we abandon a mine. We must develop better methods of using lower-grade ores. We must make more complete secondary or scrap recovery. We must design our end items to require a smaller amount of critical or scarce materials. We must have better metallurgical research into ways of using more abundant materials. If we ever develop a way in which we can use silica, for example, I don't think we would have to worry about our material situation.

Now, these objectives are brief, and I think they would be accepted by practically all segments of our population--by government, by industry, and by the consuming public. But when you try to determine how and to what degree each should be put into formulating a materials policy, that is where you run into areas of problems and disagreements.

For example, how is a stronger domestic mining industry to be maintained? As you know, traditionally the industry has been a "feast or famine" industry. High production forces down prices. The traditional fear of the mining man is not primarily how much material is in the ground for him to continue to mine, but the traditional fear of the mining man is overproduction. He will do anything under the sun to try to keep from reaching a state of overproduction, because overproduction knocks the bottom out of prices and mines have to close.

So there the problem becomes. What should or can the Government do to stabilize the minerals market? Several ideas have been advanced, and you can argue the pros and cons all day. For example, should a

minerals commodity credit corporation be set up? Should a parity formula be devised, such as helped to build up a strong agricultural industry in this country? Some people have demanded that the stockpile be used as a sort of economic prop or control, expanding control over and above the purely security requirements, to supply some materials during periods of high demand, and to help maintain the minerals industry during periods of high production and low demand. Those are some things that have been advocated to maintain it.

Then, other than direct government participation, there are other actions which the Government could take to induce more private capital into industry, such as revisions of the tax laws in the way of an increased depletion allowance. If you want to discuss that further, we will do it in the discussion period later. As you know, the oil and gas people are allowed a 27½ percent depletion in tax returns. The metallic minerals industry is allowed 15 percent. The metallic minerals industry has for a long time claimed that they should be also given the advantage of this 27½ percent depletion allowance.

There is a lot of argument by the opponents and the proponents as to what effect it would have. I don't know. But there is one thing I do know, and that is that during the recent years the amount of money going into exploration and development of oil and gas in this country has been tremendous compared to the amount of money going into the development of metallic minerals.

Then there is another thing suggested, and that is a three-year moratorium on taxes for new mines, such as Canada gives. I don't know just what the effect of this would be, but I do know that Canada's minerals development has increased by leaps and bounds.

Some people advocate a revision of the mining laws. I am not going into an explanation of the mining laws here at this time. But, very basically, the mining laws of 1875 allow a 20-acre claim or patent in any one discovery. The Minerals Leasing Act of 1920, however, allows the leasing of a tract up to 2,560 acres for exploration and development. That is for gas, oil, and some of the non-metallic minerals.

I think one good example probably of the effect of this can be gotten by the fact that from 1875 through the early part of this century the number of patents issued on mines under the mining law ran between 97 and 22 annually. In comparison to this, in 1921, the first year of operation under the Minerals Leasing Act, there were 190 leases issued. By 1951 the annual rate was 15,000 leases issued. Evidently there is some difference in the attractiveness of the two.

Then there is the tariff and import quota protection of the domestic mining industry. There has been a lot of call for that. I won't get into a discussion of it. There is a problem there.

The question of tariffs also brings up my second point, and that is the necessity of attaining and maintaining adequate foreign sources of materials. When we try to develop foreign sources during this period of high demand, we say we ought to import all we can, and tariffs seem very silly at that time. However, when we come to the point where our domestic supplies are sufficient and where our own mining companies are over-producing, we try to protect them and tariffs seem very attractive.

I don't know how friendly we are going to keep some of these underdeveloped countries if we start sloping off on our demands or reduce purchasing of their materials simply to protect ourselves, by high tariffs or import quotas. I don't know whether those materials are going to be readily available to us, comes a war in the future, if this is our policy. We must remember that foreign supplies will remain indispensable to our national security from now on in the future. And yet I agree it is going to require a very intelligent and aggressive policy to maintain this balance of demand and supply between the domestic and foreign sources.

The last thing I mentioned--making more efficient use of our materials--really comes down to the problem of technological development. As you are already in the tech progress part of your course, I won't get into any discussion of this. You will run into it later.

There is only one question I want to ask here on it. That is, To what extent should the Government either actively go into or subsidize research in the fields of exploration and metallurgy? There is a lot of argument on that point.

Gentlemen, I have been talking quite a while. That, briefly, is some of the actions and some of the programs having to do with the formulation of a realistic minerals policy.

I realize I have not given you the answers to them, and for a very good reason, I don't know the answers. But I don't think I stand alone in this. I don't think anyone else in this country has come up with the final answers. It is to get the answers to these problems that the executive and congressional branches of the Government and industry and private organizations are holding meetings throughout the country today. Very prominent people are giving their time to these meetings in search of answers to these problems.

But I do feel that we can achieve our security position and maintain our security position if we have the wisdom to maintain a strong domestic mining industry and also deal realistically with the other raw materials-producing nations. To the extent that we solve these problems, to that extent will we be successful in maintaining an adequate resources base for our national security.

Thank you, gentlemen.

QUESTION: In the stockpiling program who does what for whom? I understand that the Interdepartmental Stockpiling Committee apparently decides the stockpile objectives. Then it is administered by the General Services Administration. My question is, How does the General Services Administration administer it when it is not sure what the objectives are?

COLONEL WING: Of course, as you know, the Department of Defense is no longer, since the 30th of June, responsible for the stockpile objectives. When the Munitions Board was abolished, the stockpiling responsibility was transferred over to the Office of Defense Mobilization, ODM. It is now in ODM, situated under an Assistant Director for Materials.

The Interdepartmental Stockpiling Committee that you mentioned went out of existence at the same time. There will undoubtedly be a new Interdepartmental Committee set up. But the last I heard from ODM, a few weeks ago, they had not yet set up such a committee.

As far as General Services Administration is concerned, they have two responsibilities now. One is to purchase the materials, and the other is the storage and handling of the materials.

The purchasing of the materials was not GSA's function until a short time ago. It was the function of the Defense Minerals Procurement Agency. Many people are confusing that with the General Services Administration because of the fact that for a time Jess Larson wore two hats and headed both of the agencies. From what I have heard, that has gone into GSA. They procure and purchase the materials for the stockpile, and they have to be responsible for handling and storing them.

When the stockpile act first went into effect, I believe the Treasury Department had the responsibility for handling and storing materials. When GSA was set up, this was set up as one of their functions. I am not quite exact on this. I am speaking generally. One of their functions was responsibility for maintaining all government buildings, warehouses, and so forth throughout the United States and the territories, except for certain ones kept out by the military services. That is why the handling and storage of the stockpiled materials come under GSA that are primarily their responsibility.

QUESTION: You predicted that the use of aluminum in the next ten years would increase 90 percent. That is quite amazing to me. To what do you attribute that sudden increase in the use of aluminum? How are we reacting to it in our stockpile objectives, if at all, in our purchase of foreign sources of materials, like bauxite and such?

COLONEL WING: It is quite a remarkable increase in the use of any material, or the demand for any material, during such a short period of time. However, to meet that increase in the use of aluminum during past years, the increase in our production capacity for aluminum, even during these few years of the emergency period, has been tremendous.

There are several reasons for that projection of the increasing demand for aluminum. One, of course, is the very big increase during the emergency period for our stockpile, and the demand in the national security field, that is, in the field of armament, not only in the amounts of aluminum used in the aircraft industry, but the demand for aluminum has gone on to the ground forces, as well as the Air Forces and the Navy. One aim is to make practically everything that they design now in the way of jeeps, tanks, guns, whatever you want, that they design for air transport, out of aluminum. That is one of the big demands for aluminum as far as the military services are concerned.

As far as increasing the demands of civilian production is concerned, there are two large demands. One, of course, has been in the increasing use of aluminum as a substitute for copper in some of the electrical uses, such as transmission lines. As I understand it, some of them are being put in of aluminum. Also for motor windings. True, it takes an entirely different design, because a winding or line of aluminum, to carry the same amount of current, must be much larger. You can't just take copper out of one place and put aluminum in. But it is increasing the demand, because the bauxite resources look more favorable than the copper resourses, that is, of known deposits.

One of the major uses of aluminum and one of the most rapidly growing uses of aluminum is in construction. Structural forms for buildings, girders, are being made of aluminum to get strength minus weight.

I haven't gone into this enough to give you all of the requirements. If you are interested in a current paper on that subject, Volume 2 of the Paley Report is one place where you can get a pretty good breakdown as to where aluminum will be used, where the really big increased demands will be in the future.

As far as what we have been doing about it in our program for expansion, our program of expansion during the last couple of years has not met the desired goal. I believe the goal was set at 1953, the end of 1953. It has been moved forward now to the end of 1954.

There are several reasons for this. One is, as you know, that the increased demand for aluminum has caused a tremendously increased demand for electric power. The second thing is that to make aluminum from some of our new sources of bauxite takes a different plant and a little different process of manufacturing requiring new plants. The goal for expansion in aluminum, however, is still the goal. It has been moved forward a little bit.

We are stockpiling aluminum. We are stockpiling bauxite. I believe that the emphasis is entirely on the stockpiling of aluminum rather than bauxite, because of the fact that, with the tremendous amount of electrical energy needed to produce aluminum, if we stockpile aluminum in our war stockpile rather than bauxite, we not only stockpile the material, but we have also stockpiled millions of kilowatt hours of electrical energy, which is needed for other factors of munitions production during wartime.

QUESTION: I would like to refer to your last new objective that you added--"to meet materials demand for full normal industrial production." I presume that by "normal" you mean peacetime?

COLONEL WING: Correct.

QUESTION: My question is, Why must the Government get into that? Why should it have that as one of its objectives? Why couldn't the private enterprise system handle that very nicely without the Government? The practice of this present Administration seems to be to withdraw from any interfence with private industry rather than going more into it.

COLONEL WING: The Government has that as an objective, and it is only right that it should have it as its objective. I don't say that the Government should provide the material, that it should go into the mining business. But it certainly is an objective of the Government to see that business fosters our having sources of material available, so that industrial production will not stop and the mines have to close down, our economic development cease, and our standard of living go down.

Also certain sections of the Government, the Defense Department, for example, are interested in that because of the fact that if you don't have sufficient materials to keep industry going, you are not going to have this industry available in the event of war comes along and we need tremendous amounts of military production.

As I said, the Government has several things at stake in that. For example, I don't believe that it is wrong to say that the Government has a definite responsibility to business and all the people of the country--in fact, we are the Government, when it comes right down to it--to look for better living conditions and more security for the people of the country. That is one of their responsibilities, what they are elected for.

If we are going to have foreign sources of these materials, I believe that it certainly is a part of the Government's foreign

economic program to help foster friendly relations and help foster a climate whereby we can have a development of these foreign sources for materials.

I believe it is the responsibility of the Government to help foster and help protect industries and business in this country that are going to be of benefit in the long run to the majority of the people.

As I said, we as military people and the Government itself should not be in the business of operating mines and providing these materials; but the Government certainly should foster the best climate it can for private industry to go ahead and develop this, and help us grow quickly, and help them be available for national security.

Maybe someone else can do better. That is the best short answer I can give to it.

Gentlemen, it is ten o'clock. We will have a discussion period at ten thirty. So I don't think there is any use of continuing this any longer in here. Thank you very much.