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HEARING

ON

H.R. 1325 and H.R. 3385

TO AUTHORIZE THE DISPOSAL OF SILVER FROM THE
NATIONAL STOCKPILE

AND

H.R. 3384

TO AUTHORIZE THE DISPOSAL OF INDUSTRIAL DIAMOND
STONES FROM THE NATIONAL STOCKPILE AND THE SUPPLE-
MENTAL STOCKPILE

BEFORE THE

SEAPOWER AND STRATEGIC AND CRITICAL
MATERIALS SUBCOMMITTEE

OF THE

COMMITTEE ON ARMED SERVICES
HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

FIRST SESSION

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SEAPOWER AND STRATEGIC AND CRITICAL MATERIALS
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(II)

SEAPOWDER AND STRATEGIC AND CRITICAL MATERIALS SUBCOMMITTEE HEARING ON H.R. 1325 AND H.R. 3385, TO AUTHORIZE THE DISPOSAL OF SILVER FROM THE NATIONAL STOCKPILE, AND H.R. 3384, TO AUTHORIZE THE DISPOSAL OF INDUSTRIAL DIAMOND STONES FROM THE NATIONAL STOCKPILE AND THE SUPPLEMENTAL STOCKPILE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SEAPOWDER AND STRATEGIC AND
CRITICAL MATERIALS SUBCOMMITTEE,
Washington, D.C., July 25, 1979.

The subcommittee met, pursuant to notice, at 9 a.m. in room 2118, Rayburn House Office Building, Hon. Charles E. Bennett (chairman of the subcommittee) presiding.

Mr. BENNETT. The subcommittee will come to order.

The purpose of today's hearing is to consider three stockpile disposal bills. They are H.R. 1325, a bill to authorize the disposal of the entire inventory of silver, 139.5 million ounces, introduced by our colleague from Massachusetts, Mr. Silvio Conte; H.R. 3385, a bill to authorize the disposal of 15 million ounces of silver, a proposal submitted by the administration; and H.R. 3384, a bill to authorize the disposal of 1.5 million carats of industrial diamond stones, which is also an administration proposal.

These are the first disposal bills considered since the approval by the Congress of H.R. 2154, "the policy bill," which establishes the National Defense Stockpile Transaction Fund. Once this bill is signed into law by the President, we can proceed to restructure the stockpile by disposing of those materials determined by Congress to be in excess of defense requirements and acquiring those materials needed and in short supply. We will accomplish this objective through the special fund which requires that the proceeds from the sale of excess materials be used only for the acquisition of those materials to satisfy our defense requirements.

During this discussion it may be necessary to go into executive session if classified material is discussed. However, I would hope that our discussions regarding these disposals could be held in open session so that the public can know how policy is decided, what happens, how our objectives are established, and what criteria were used to formulate this policy. I know of no reason why we couldn't continue this hearing in open session.

[H.R. 1325, H.R. 3384, and H.R. 3385 are as follows:]

[H.R. 1325, 96th Cong., 1st sess.]

A BILL to authorize the disposal of silver from the national stockpile

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Administrator of General Services is hereby authorized to dispose of, by negotiation or otherwise, approximately one hundred and thirty-nine million five hundred thousand troy ounces of silver now held in the national stockpile established pursuant to the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98—98h-1). Such disposal may be made without regard to the requirements of section 3 of such Act, except that the time and method of such disposal shall be fixed with due regard to the protection of the United States against avoidable loss and the protection of producers, processors, and consumers of silver against avoidable disruption of the usual markets.

[H.R. 3384, 96th Cong., 1st sess.]

A BILL to authorize the disposal of industrial diamond stones from the national stockpile and the supplemental stockpile

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Administrator of General Services is hereby authorized to dispose of, by negotiation or otherwise, approximately one million five hundred thousand carats of industrial diamond stones now held in the national stockpile established pursuant to the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98—98h-1) and the supplemental stockpile established pursuant to section 104(b) of the Agricultural Trade Development and Assistance Act of 1954 (as in effect from September 21, 1959, through December 31, 1966). Such disposition may be made without regard to the requirements of section 3 of the Strategic and Critical Materials Stock Piling Act. The time and method of any disposal under this Act shall be fixed with due regard to the protection of the United States against avoidable loss and the protection of producers, processors, and consumers against avoidable disruption of their usual markets.

[H.R. 3385, 96th Cong., 1st sess.]

A BILL to authorize the disposal of silver from the national stockpile

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Administrator of General Services is hereby authorized to dispose of, by negotiation or otherwise, approximately fifteen million troy ounces of silver now held in the national stockpile established pursuant to the Strategic and Critical Materials Stock Piling Act (50 U.S.C. 98—98h-1). Such disposition may be made without regard to the requirements of section 3 of the Strategic and Critical Materials Stock Piling Act. The time and method of any disposal under this Act shall be fixed with due regard to the protection of the United States against avoidable loss and the protection of producers, processors, and consumers against avoidable disruption of their usual markets.

Mr. BENNETT. We have seven witnesses scheduled to testify on these bills today, and I suggest they summarize their statement and submit the complete statement for the record.

Our first witness is a member of the full committee and a former member of this subcommittee, our colleague from Georgia, Mr. Larry McDonald. He will be followed by our colleague from Massachusetts, Mr. Conte, and our colleague from Florida, Mr. Lehman.

Mr. McDonald, we welcome you here this morning, and you may proceed with your statement.

Mr. McDONALD. Thank you, Mr. Chairman.

Mr. Chairman, with your consent, I request that our colleague in the House, Mr. Lehman, proceed with his statement since he is here and available.

Mr. BENNETT. You may proceed first, if you want to do that, because there are other people on the other bills who are not here yet. So if it's acceptable to Dr. McDonald, we'll go to our colleague, Mr. William Lehman, from Florida. Thank you, Mr. McDonald.

Mr. LEHMAN. Thank you, Mr. Chairman, and thank you, Dr. McDonald.

I could summarize, but it's only two double-spaced pages.

Mr. BENNETT. Go ahead and read it.

STATEMENT OF HON. WILLIAM LEHMAN, A REPRESENTATIVE FROM FLORIDA

Mr. LEHMAN. The bill you are considering, H.R. 3384, would authorize the disposal of 1.5 million carats of industrial diamonds. I am testifying before you today to urge you to increase this authorization to a level of at least 4.5 million carats.

The Government of Israel has notified the Department of State that it wishes to purchase \$100 million worth of excess industrial diamonds. This dollar figure translates into approximately 3 to 4 million carats. Such a sale would be negotiated in a manner similar to the sale of 300,000 carats back in 1975 to the State of Israel.

On May 13, 1975, the United States-Israel Joint Committee for Investment and Trade issued a joint statement which recognized the development of a procedure "to provide for potential purchases by Israel directly from the excess stockpile administered by the General Services Administration."

The operating agreement for the 1975 sale of industrial diamond stones stated:

It is the policy of the United States * * * to make available to the Government of Israel, and through such agents as it may wish to designate to act for and on behalf of the Government of Israel, raw materials in the custody of the General Services Administration which are excess to stockpiling requirements of the United States when their disposal is authorized by law and when available for export.

This operating agreement provides for additional sales to be made at the discretion of the U.S. Government. The agreement will not expire until May 23, 1980, and it sets forth specific terms governing negotiations between the United States and Israel.

Our industrial diamonds are of particular interest to Israel because the diamond cutting and polishing industry is an essential part of that country's economy. Israel is one of the three main diamond exchange centers in the world. In 1977, polished diamonds accounted for nearly 39 percent of its total industrial exports. In 1978, the amount increased to 40 percent.

Mr. Chairman, increasing the authorization for the disposal of uncut diamonds will only preserve for us the option of granting the most recent Israeli request. If the requested sale is negotiated, your committee will still have the opportunity to review it as provided for in the "Strategic and Critical Materials Stock Piling Revision Act of 1979." In the committee's report on that legislation, the existing trade agreement between the United States and Israel was recognized as grounds for a legitimate exception to the disposal guidelines specified

by the legislation. The negotiated sales cannot take place, however, without the necessary disposal authorization of this committee.

This sale of excess industrial diamonds will not in any way damage the United States. We have no strategic need for the diamonds, and the proceeds from the sale can be used for the purpose of purchasing those commodities that we actually need for our stockpile. Just as important is the fact that we will be helping one of our allies. The sale of diamonds will not cost us anything, and the sale can be negotiated to insure that a fair market value is paid. That is the administration's responsibility. I am confident that the transaction will work to the benefit of both countries.

Mr. Chairman, I urge the subcommittee to help us keep our options open and authorize the disposal of an additional 3 million carats of industrial diamonds. For your further information, I am attaching to this testimony a copy of the letter which Ambassador Evron recently sent to the State Department concerning the possible sale of \$100 million worth of industrial diamonds.

[The following information was received for the record:]

EMBASSY OF ISRAEL,
Washington, D.C., July 17, 1979.

HON. RICHARD COOPER,
*Under Secretary of Economic Affairs,
Department of State, Washington, D.C.*

DEAR SECRETARY COOPER: Pursuant to the general understanding reached in the U.S.-Israel Committee for Investment and Trade Meeting in Jerusalem on October 30 and November 1, 1974, the Government of Israel wishes to explore the possibility of purchasing \$100 million worth of the excess of industrial diamond stones currently held by the United States strategic stockpile.

As you may know, the Government of Israel purchased a quantity of these stones in 1975 through its wholly owned Pituaich Diamond Research and Development Company. The Operating Agreement for that sale provides for additional sales at the option of your government through May of 1980.

The diamond industry is of paramount importance to Israel's economy. In 1977, polished diamonds represented nearly 39% of the total industrial export of the country and amounted to 1 billion U.S. dollars. In 1978, that figure increased to 1.32 billion U.S. dollars, representing 40% of total industrial exports. Moreover, the industry contributes significantly to the country's adverse balance of trade and employs close to 20,000 skilled individuals.

Israeli labor costs for cutting and polishing are lower than those of the two other major diamond industries, located in Belgium and the United States. Thus, the Israeli industry is able to justify the labor costs necessary to cut and polish both gem quality stones and industrial grade stones.

Israel has no diamond mines itself and is almost totally dependent on annual allocations from the World Diamond Cartel. The 14.5 million carat excess of industrial diamond stones currently held by the United States in its GSA stockpile represents the only major free market source of additional rough stones.

Thus, Israel must turn to the United States Government to request the opportunity to purchase another quantity of industrial stones from its stockpiled inventory, pursuant to the terms and conditions of the Operating Agreement, or such terms and conditions as the U.S. Government may require to ensure a fair and competitive price for the volume of stones sold.

The \$100 million worth of stones Israel is presently interested in purchasing is estimated to equal some three and one-half to four million carats. Any assistance you could provide to ensure that the amount authorized for disposal during your 1980 fiscal year is sufficient to allow your government the opportunity to meet this request during that period would be sincerely appreciated.

Thank you for your kind attention to this request.

Yours sincerely,

EPHRAIM EVRON, *Ambassador.*

Mr. LEHMAN. Thank you for your attention and for permitting me to speak to you on this issue this morning.

Mr. BENNETT. Thank you, Mr. Lehman.

No one has been more patient than you in waiting for the committee to confront this issue. You asked at the very beginning of this session of Congress that we bring this legislation out as promptly as we could. We waited for the disposal of the overall policy bill before taking action on these bills. Of course, that bill has not yet been signed into law, and no doubt it will be signed into law before this bill could be acted on.

I want to congratulate you on your perseverance in this, and congratulate you on your fine service in the Congress.

Mr. LEHMAN. Thank you, sir.

Mr. BENNETT. Does anybody have any questions they would like to ask of Mr. Lehman?

[No response.]

Mr. BENNETT. If there are no questions, we'll proceed.

Mr. LEHMAN. Again, I want to thank the chairman and the staff of the committee for all the help that they have given and the patience and consideration that they have been allowing us on this in order to work up to this point. Thank you, sir.

Mr. BENNETT. Thank you, Mr. Lehman.

I think at this time we will hear from Mr. McDonald. Do you still want to wait awhile, until Mr. Conte comes?

Mr. McDONALD. I think it would be very appropriate to now have the administration witnesses come forward on this diamond legislation.

Mr. BENNETT. I thought Mr. McDonald wanted to wait.

Mr. McDONALD. Go ahead, Mr. Chairman. I'll follow the administration witnesses.

Mr. BENNETT. If you don't mind doing that.

Mr. McDONALD. No, Mr. Chairman.

Mr. BENNETT. All right. This will get it all into one package.

Mr. MARKON. Good morning, Mr. Chairman.

I'm Roy Markon, Commissioner, Federal Property Resources Service, General Services Administration. I am accompanied by Mr. Cornell on my right and by Mr. Krueger from the Federal Preparedness Agency on my left. I am here today to testify on behalf of the Administrator, R. G. Freeman III, on pending disposal legislation, including H.R. 3384, H.R. 3385, and H.R. 1325.

Mr. Chairman, I do have a statement, and with your permission I will introduce it for the record and summarize in my remarks.

Mr. BENNETT. All right, sir.

WRITTEN STATEMENT OF ROY MARKON

Mr. Chairman, and members of the Subcommittee: I am Roy Markon, Commissioner, Federal Property Resources Service, General Services Administration. I am accompanied by Mr. R. A. Cornell, Assistant Commissioner for Stockpile Disposal, by Mr. R. F. Marilley of the Office of the General Counsel, and by Mr. Paul Krueger of the Federal Preparedness Agency. I am happy to be here today to testify on behalf of the Administrator, R. G. Freeman III, on pending disposal legislation, including H.R. 3384, H.R. 3385, and H.R. 1325.

These bills cover two commodities in the stockpile: silver and industrial diamond stones. The Director, Federal Preparedness Agency, has advised me

that under present planning for these commodities, the stockpile goals for national security purposes are: 5,559,000 carats of industrial diamond stones, and no silver. As of June 30, 1979, inventories of both these commodities exceeded these goals. The silver stockpile consists of 139,500,000 troy ounces, and there are 20,007,991 carats of industrial diamond stones in the inventory. Currently, GSA has no authorization to dispose of the stocks of either commodity that are excess to stockpile requirements.

GSA has never sold silver from the stockpile, but silver sales for the Department of the Treasury in the period from 1968 to November 1970 totaled 304.6 million troy ounces and brought proceeds of \$561.4 million, as against original acquisition costs of about \$392.9 million. Sales from the stockpile of industrial diamond stones under previous authorizations were completed with the sale of 270,114 carats in the period from July to September 1975. From 1968 to 1975, industrial diamond stone sales totaled 6,763,792 carats; the proceeds were \$60.8 million, whereas acquisition costs had been about \$75.1 million.

I would now like to comment on the three bills under consideration by the Subcommittee today. H.R. 3384 would authorize the disposal of 1.5 million carats of industrial diamond stones, and H.R. 3385 would authorize disposal of 15 million ounces of silver. In a message to the Congress on March 8, 1979, the Administrator submitted proposed legislation that included recommendation for the disposal of these commodities in the amounts set forth in the proposed bills. Mr. Chairman, the Administration supports these bills and the levels of disposals which they would authorize. Stockpile sales of such magnitudes for these commodities will be consistent with the Annual Materials Plan, prepared by the Director of the Federal Preparedness Agency, which includes a balanced program of acquisitions and disposals planned for the coming fiscal year. Our analysis indicates that sales at the rates specified in the Annual Materials Plan and in both H.R. 3384 and H.R. 3385 can be absorbed by the markets without disruption of these markets and without loss to the Government. If authorized, these disposals will provide the start to a balanced, long-term program for the restructuring of the stockpile to meet national defense needs as defined by the Federal Preparedness Agency.

The third bill, H.R. 1325, would authorize the disposal of 139.5 million ounces of silver from the stockpile—that is, disposal of the entire inventory, all of which is excess to the stockpile goal of zero. We support the intent of this bill to authorize the disposition of the quantity of silver that is excess to program needs. If Congress should authorize the disposal of 139.5 million ounces, we believe we could effectively manage the non-disruptive disposal of that amount. Such disposals, of course, would extend over a period of several years in order to avoid market disruption and at the same time protect the interest of the Government in receiving a fair return. Sales would be reduced or suspended during periods of significant relative price weakness. While the disposal of 139.5 million ounces exceeds the planning horizon of the Annual Materials Plan, the Office of Management and Budget advises us that our subsequent annual spending levels will be consistent with the projected revenues generated from the sale of excess materials. They will, however, insist that the sales projections be reasonable and that program increases be noninflationary and otherwise not disruptive to the economy.

Once again, Mr. Chairman, I thank you for giving GSA this opportunity to present its views of the proposed legislation. This concludes my prepared statement, and I would be pleased to respond to any questions you may wish to ask.

STATEMENT OF ROY MARKON, COMMISSIONER, FEDERAL PROPERTY RESOURCES SERVICE, GENERAL SERVICES ADMINISTRATION

Mr. MARKON. My remarks are quite simple and quite direct.

The current goals for the stockpile for diamond stones and for silver are far less than amounts in the inventory. So we do have an excess. On diamond stones I'm advised that we have over 20 million carats in the inventory, and the requirements for the critical and strategic materials is 5.6 million, which leaves us 14.4 million excess carats of diamond stones.

The bill that we have submitted, the administration bill, provides for the disposition of 1.5 million carats. The reason for 1.5 million carats is that we estimate that we can dispose of this quantity of industrial diamond stones in the market over a period of 1 year's time without disruption of the market.

On silver, we have 139.5 million troy ounces. There is no requirement for silver in the stockpile. All of it is excess to our requirement, and the bill provides for 15 million troy ounces to be disposed of. The reason why it's 15 and not the entire amount is because we feel that we can dispose of this much, again without disruption of the market over a similar period of time.

The other bill before this committee provides for the disposition of the entire inventory of silver. We have no objection to this bill. We would market the silver over a longer period of time, and we would withhold sales or increase sales depending upon market conditions. This is essentially our position on the disposition bills.

Under the policy bill, we now have the means to restructure the stockpile. All of the proceeds from the sales will go into the stockpile, and we'll be in a position then to buy those products where we have shortages.

Mr. BENNETT. All right.

I think at this point in the hearing we might like to restrict our questions to the diamonds and come back to the silver so that we'll have a neat package in the report.

Mr. MARKON, how do you grade these diamonds?

Mr. MARKON. They are graded by experts, people who have years of experience in examining diamonds and looking at them. We have what we call industrial diamonds, and as an industrial diamond it has a particular value. But some of these stones have jewelry qualities, and as jewelry diamonds they have a much higher value. The process of grading or estimating diamond values is different for the higher quality stones than those that are just industrial diamond stones. We would look to the market to see what these particular stones are selling for, and we would arrive at an estimate of value for them.

Mr. BENNETT. Do you sell them in a great big lot without deciding which ones are of jewelry quality and give the advantage to the purchaser, or do you make a calculation before as to which ones might be of gem quality?

Mr. MARKON. They are examined and then are put in the lots, and the lots are available for examination to all the prospective bidders. So everybody has the same opportunity to look at the merchandise to be sold to determine in their own minds, or from their own experts, just exactly what is there. We do it for our purpose to determine what value we should get for the stones. It is a mix of the jewelry quality plus the industrial diamond quality. They would be mixed together. But from our analysis of a particular lot, we would have an idea what the whole batch is worth.

Mr. BENNETT. You speak as if this is a competitive situation with other people and Israel.

To what extent is Israel given an ideal situation here to acquire?

Mr. MARKON. Under the policy bill, Mr. Chairman, it is provided that all sales will be competitive and the sales of excess materials will

be for domestic consumption. If we propose to do anything else, such as develop a different marketing plan, the bill requires us to provide a report to the committee 30 days in advance of making any commitment.

At the present time we are proposing to sell the quantity specified in the pending legislation for domestic consumption on a competitive basis. If we should hear from the Department of State, or if there are reasons why we should negotiate with the Government of Israel, we would amend our marketing plan, and prepare that report, and come to this committee and explain to you just how we are going to make this disposition.

Mr. BENNETT. In the past, approximately what percentage of these diamonds have gone to foreign purchasers rather than U.S. purchasers?

Mr. MARKON. They're very difficult to trace. We would market them with the understanding that it would be all for domestic consumption. But it would be very difficult for us to put a trace on it to see that some diamonds did not actually go into foreign markets.

Mr. BENNETT. Were all the diamonds sold in the past sold competitively?

Mr. MARKON. No. There was a negotiated sale, as testified to by Congressman Lehman of Florida, with the Government of Israel. The other diamonds were sold competitively.

Mr. BENNETT. That was under the 1975 arrangement, wasn't it?

Mr. MARKON. Yes, sir.

Mr. BENNETT. All right.

Do you have any questions, Mr. Spence?

Mr. SPENCE. Thank you, Mr. Chairman.

You might have answered this while I was out.

What's the current status of our contractual agreement with Israel on diamonds?

Mr. MARKON. There is no pending obligation, whatever has happened is past. There was a proposal to sell, the deal was made, and those diamonds were sold to Israel. There is no further commitment on us to sell any more diamonds to Israel.

Mr. SPENCE. Thank you.

Mr. BENNETT. Does the staff have any questions about these diamonds?

Mr. MARSHALL. No.

Mr. BENNETT. We will proceed, then, to silver.

Dr. McDonald, you can testify from another spot if you want to, or you could sit at the witness table. If you don't mind, I'll let the other witnesses stay there.

Mr. McDONALD. Thank you, Mr. Chairman. I appreciate that. I appreciate their being here.

Mr. BENNETT. Mr. Conte is not here yet.

Mr. McDONALD. Mr. Chairman, it's a pleasure to testify today on H.R. 1325, H.R. 3384, and H.R. 3385 concerning the disposal of stock-pile items of up to 15 million ounces of silver and then up to 139.5 million ounces of silver, and 1.5 million carats of industrial diamond stones.

Mr. Chairman, I request that the full testimony be submitted for the record, and I will then summarize my statement.

Mr. BENNETT. Without objection, it will be put in the record at this point. If you will summarize it, that will be fine.

Mr. McDONALD. Thank you, Mr. Chairman.

STATEMENT OF HON. LARRY McDONALD, A REPRESENTATIVE FROM GEORGIA

Mr. McDONALD. Mr. Chairman, as a former member of this subcommittee for a period of 4 years, the 94th and 95th Congresses, I came to appreciate that the purpose of the stockpile was to provide for the military needs in time of national emergency and also for basic civilian needs. In addition, there is a desire that the stockpile reduce or eliminate a dependence upon foreign nations, particularly for the stockpile items.

A bit of past history is in order, I think, on the matter of silver because in World War II we used approximately 800 million ounces of silver in the war effort, and the Allied effort may have consumed in the range of 900 million ounces of silver.

Now admittedly, about half of that silver was used for the Manhattan project, to try to make in a very short time, high-quality electrical bars, so that sometimes the entire electrical bars were made out of silver, which I think we would feel today would be an inefficient process.

It's important to note, however, that while we may never have another Manhattan project, during the Vietnam war we had approximately twice the amount of silver usage as compared to the World War II effort because of the explosive use of silver in the intervening years, in part reflecting activities in the area of air reconnaissance.

Silver is a unique metal because it is absolutely essential for such things as X-rays, photography, and high-quality electrical items. Silver is also unique because it enjoys the peculiar distinction that the supply is inelastic to the price and the demand is inelastic to the price. It really does not make much difference what the price is going to be. You still must have silver for photography, X-rays, high-quality electronics. Admittedly, with rising prices, flatware of silver will probably give way to stainless steel, so an orderly growth in the market would be advisable to make that transition and also allow for mining investment to take care of increased demands.

A small amount of silver is used on any particular X-ray film or any photographic film or any particular electrical item, but that amount is essential. Industry has spent millions of dollars trying to find a substitute for silver in the critical areas and so far has been basically unsuccessful. There has been some initial success in the area of certain types of satellite photography, but that is a very limited area of avoiding silver use.

The world consumption of silver is running about twice the incoming, or newly mined, silver. This in the past has been made up partially by recovery and from aboveground stocks, especially such stocks as coming from the country of India, which had a very large

silver hoard, and also from silver-producing countries, such as Mexico and Peru.

Now there's a change, because this year India has shut off silver sales overseas. At the same time we find that the countries of both Mexico and Peru have increased the use of silver for internal coins. So the amount of silver that has been coming out of these two countries has shifted somewhat from just plain silver bullion for industrial use to silver coins.

There is another reason why the silver supply is inelastic to the price, relatively speaking: Because 75 percent of new silver does not come from silver mines. It comes as a byproduct of lead, copper, and zinc mining. So you must mine a considerable number of tons of those ores in order to be able to get a small amount of the valuable, but small, byproduct—the silver. Generally speaking, in a copper ore deposit silver tends to be on the outer part of the deposit, but the deeper you go in to get copper, or lead, or zinc, the less silver you have as the byproduct.

Just recently there was a Bureau of Mines study of the Department of the Interior, 1979, which came out this year, and on page 24 of that study it has some really startling figures, because it, I think, very conservatively estimated the new demand for silver between the year 1976 and the year 2000, and it used an annual increase figure of a 2.5-percent annual increase, which I think is unrealistically low. But taking their figures, when you find the explosive use of silver in so many different fields—in medicine, and in so many different areas, the exploding use of electronics, and videotapes, and so forth—2.5 is a very conservative figure, and I think many feel a low figure. But we'll take their figure. They show that during that time the world demand for silver during those coming years is 11.415 billion ounces; the world reserves during that period of time are 6.1 billion ounces, showing an amazing shortfall in silver supply from the year 1976 to the year 2000 of almost 6 billion ounces.

Now, if there's anybody in this Congress who believes that there is an oil shortage, then you absolutely will stay up nights, with sleepless nights, worrying about the coming silver shortage because it's probably the first of the major metals, the first of the major world elements, which we are going to run out of at the traditional price ranges. Now, there will always be silver, but not at \$1.29 an ounce, or not at \$2.50 an ounce, or not \$8 an ounce. Up until a very short time ago, as you know, the traditional price of silver was kept locked by U.S. policy at about \$1.29 an ounce, and in recent years it's moved up to \$2.50 an ounce, and now it's almost \$10 an ounce, as a result of the explosive increases this year.

Now, as to the legislative history of efforts to sell silver in the 94th and 95th Congresses, the Congress wisely rejected silver sales, in spite of administration proposals. However, there was a 13-year disposal by our Government of approximately 2 billion ounces, which up to that time was historically the world's largest hoard of silver that had been put together.

It's interesting that what we got for that silver sale, of course, was dollars, which during that period of time had depreciated by an amount of approximately 50 percent.

Mr. BENNETT. This did not come from the stockpile?

Mr. McDONALD. No, sir. This came from Treasury stocks and the stockpile, Treasury stocks as well as the stockpile, not just from the stockpile.

Mr. BENNETT. How much came from the stockpile?

Mr. McDONALD. I beg your pardon?

Mr. BENNETT. You stated your success in defeating the disposal of the silver. How did any of it get by you?

Mr. McDONALD. During the 94th and 95th Congresses, Mr. Chairman, there were no sales. The Congress wisely rejected silver sales in bills which were drawn up.

Mr. BENNETT. This was prior to that time?

Mr. McDONALD. During the past 13 years. Over the past 13 years there has been a disposal of 2 billion ounces, most of it coming from the Treasury, not from the strategic stockpile.

But it's interesting to note what we gained by that. We gained dollars, which have depreciated at approximately 50 percent. We gave up silver, which has appreciated approximately a little over five times in value. So we were able to gain paper dollars which the American people were the losers of and, of course, the gainers in this was the Silver Users Association.

Now, understandably, they are anxious to buy cheap silver, or as cheap a silver as possible. That's a very understandable purpose that they would have.

Now, in the bills before us, Mr. Conte's bill to dispose of the entire amount, I think Mr. Conte may or may not have a parochial interest in that regard, but this is sort of a regular annual effort by the gentleman from Massachusetts.

I think I'll address more particularly the effort of disposal of the 15 million ounces of silver, which is the administration bill.

The Comptroller General came out with a report on April 10, 1979, entitled "National Defense Requirements for a Silver Stockpile." It came out this year. I'll be referring to two reports: The Comptroller General's report and the Federal Preparedness Agency report, which also came out in April of this year, dealing with the overall issue of stockpiles.

Now, there are a number of obvious defects with the Comptroller General's report that really make it rather ludicrous because the bills before us today and the testimony by the administration witnesses have taken the view that we have a zero need for silver in the strategic stockpile.

Personally, based on past military experiences, I think that is on the face of it ludicrous. But we do have official reports so I think they have to be taken at more than just simply immediate dismissal.

The programed model was gained by inputs from the Departments of Commerce, Defense, State, and Interior. No input from experts in the private sector appeared in this report.

The second point is: The analysis was based primarily on data used to determine 1976 stockpile goals. The reason such an ancient base was employed as "goals for 1977 were not published because new Presidential guidance was expected." In addition, the GAO found inconsistencies with the Bureau of Mines supply estimates.

Now, with reference to the Federal Preparedness Agency report, speaking that we now suddenly have moved into a zero stockpile requirement, that Agency assumes that the 118 million ounces of silver in the exchange warehouses and the 20 million ounces of silver owned by industry would be the property of the United States in times of emergency. This means that we are accepting confiscation as a national policy to supplement stockpile needs. That brings up a moral issue that in our stockpile planning we are going to assume confiscation. That can also perhaps be met if we are willing to confiscate the flatware in the homes of America. If we are going to announce to our people that in time of emergency we are going to come in and confiscate all sterling silver flatware, we could probably also meet the emergency, but I'm not sure that we would like to adopt that certainly as an open policy.

Mr. BENNETT. They haven't suggested that, have they?

Mr. McDONALD. No; but they are assuming the confiscation of 118 million ounces in the commodity stores and the 20 million ounces owned by the industry. They are not confiscating it from private homes, but they don't seem to find any problem in listing it as a potential source from industry.

Mr. BENNETT. Don't overshock us. You've told us about one confiscation, and the other one isn't asked for. Don't build this up beyond what's being asked.

Mr. McDONALD. The reason why that's important, Mr. Chairman, is, No. 1, that assumes that those stores will be there, because anyone who's been watching the commodity markets this year knows that there's been a tremendous drive on silver, and we're currently at the point where, say, \$100 million could corner the market, and it's a very precarious situation.

Mr. BENNETT. What you're saying then is, having made the determination, that they would take it if they had to have it.

Mr. McDONALD. They may not have it.

Mr. BENNETT. In the event of a shortage, they may have to take it in a way which is even more shocking.

Mr. McDONALD. That's right, sir.

Also, the Federal Preparedness Agency refers to the availability of "29 million ounces in the U.S. Treasury stock for coinage and 7 million ounces for contracts with Government-furnished material provisions." That also assumes that these would be available if they would not be used, over time, for their intended purposes; and when it comes time they're needed, they may have already been used for the purposes for which they have been set aside.

The Federal Preparedness Agency says that "defense requirements for silver could be met by the U.S. production alone, with the remaining requirements filled by imports from Canada and Mexico."

Frankly, that's unbelievable.

The report makes a further comment that "defense wartime silver requirements averaged 38.4 million ounces per year, based on 1976 goals." If you look at the Vietnam war experience, and if you look at the World War II experience, that figure is not even in the right ballpark. First, in only 3 of the past 11 years has U.S. production exceeded 38.4 million ounces. Secondly, the presumption of total conversion of the U.S. production to defense requirements is also absurd be-

cause of the need in the private sector of X-rays and critical items throughout the industry and throughout the society. Third, the validity of the 38.4 million-ounce figure is, at best, highly questionable when you view the past historical needs in World War II, and Dr. William Schneider of the Hudson Institute in Senate subcommittee testimony of last year flatly stated "that the existing stockpile of silver should be doubled."

There is also reliance upon foreign imports of silver coming from Canada and Mexico to be considered sources. I think that part of the reason for the stockpile was to reduce dependence upon foreign sources.

It should be remembered that Peru is the second nation in the Western Hemisphere to be receiving large amounts of Soviet arms, the first being Cuba. Peru now has 300 to 500 T-54, T-55 tanks, SAM missile sites, SAM missiles, Czechoslovakian howitzers, and Soviet supersonic attack fighter jets, and certainly could not be counted upon in any showdown with Marxist powers.

The events of recent weeks and the tragedy of the pro-Marxist takeover of Nicaragua certainly rule out Central America and places Mexico's long-range reliability in considerable doubt. One year ago this might be considered a ridiculous statement, but 1 year before 1959 questioning Cuba as a major source of our nickel would have been viewed as a ridiculous statement.

The prestige of the United States is currently, and unfortunately, low. For example, the friendly nation of Costa Rica 2 weeks ago demanded that we remove the two helicopters that had been sent there for evacuation purposes to meet the demands by the Sandinistas in Costa Rica, a friendly nation. Costa Rica demanded that we make those removals, and we did so, removing unarmed helicopters that had been placed there simply for humanitarian evacuation purposes. And there is nothing to prevent, Mr. Chairman, Canada, Peru, and Mexico from forming a cartel in the silver business and placing us in exactly the same situation that the OPEC cartel now places us with regard to oil.

Mr. Chairman, I recommend that the disposal of silver be removed from the bill, from consideration. In the past I have opposed the sale of tin and diamonds, and have frankly stated that the diamonds should never have been placed in the strategic stockpile, and I'll make no statement on that. But tin and diamonds, frankly, pale in significance when compared to the tragedy of a silver disposal.

In addition, I urge that silver be classified as soon as possible as a strategic metal. The assessment of our silver supply needs by the GAO and the Federal Preparedness Agency in times of national emergency were prepared on a foundation of sand. Instead of disposal of our present stockpile, we should increase our current supply anywhere from 225 to 250 million ounces above the current 139.5 million ounces. I have proposed legislation that calls for the purchase of approximately 50 million ounces, or one-fifth of the needed amount, and as of this date that bill has 68 cosponsors in the House.

Thank you, Mr. Chairman. I am ready now to answer questions.

I ask unanimous consent that the testimony of Mr. Scott Dial, a silver analyst, be placed in the record to follow mine.

Mr. BENNETT. Without objection, it will so be.

Dr. McDonald, you have indicated that we should buy more silver, rather than sell from our stockpile.

What information or facts do you have which substantiate this conclusion other than what you've given, since your views are in direct opposition to the Federal Preparedness Agency, which agency has the responsibility to establish stockpile goals? Is there anything else you would like to add as to the need of acquiring more silver rather than disposing of what we have?

Mr. McDONALD. Yes, Mr. Chairman. I'll be glad to submit for the record three pages of justification for that, justification which was prepared by Paul Sarnoff, who is the leading silver analyst for the Conte Metals Continental Grain.

Mr. BENNETT. Without objection, it will be included in the record.

WRITTEN STATEMENT OF HON. LARRY McDONALD

Thank you, Mr. Chairman.

It is a pleasure to testify today on H.R. 1325, H.R. 3384, and H.R. 3385, bills concerning the disposal of the stockpile items from 15 million ounces to 139.5 million ounces of silver, and 1.5 million carats of industrial diamond stones.

As you know, in the 94th and 95th Congresses I served on this subcommittee; but, changes in full committee rules prohibit my being on this subcommittee and the Research and Development Subcommittee simultaneously.

Over the period of the 94th and 95th Congresses, this body has wisely rejected the disposal of silver from the strategic stockpile. In spite of this recent legislative history, both H.R. 1325 and H.R. 3385 call for a silver sale. My testimony is in opposition to the proposed sale of silver.

The strategic stockpile was established to insure that our economy will have available the necessary raw materials to support military and basic civilian requirements during periods of war, national emergency, and when required for the common defense.

Additionally, the stockpile is to decrease and prevent whenever possible a dangerous dependence of the United States upon foreign nations for supplies of the stockpile materials in times of national emergency.

Until now, silver has been viewed as a necessary part of our strategic stockpile. The judgments of various administrations has caused the amount on the stockpile to vary widely and it now stands at 139.5 troy ounces.

Silver is an unusual metal; it is essential for X-rays, photography, and in special electrical applications. Millions of dollars have been spent by industry in an effort to find suitable substitutes without any notable success.

Silver is also unusual in that the demand is basically inelastic to the price; additionally, the supply is also essentially inelastic to price. Regardless of price, silver is the element of choice in photography, X-rays, and high quality electrical instruments. Only a small quantity is used in any film or manufactured item and the cost of silver is a minor portion of the total cost. The supply remains rather steady despite rising silver prices because about 75 percent comes as a small but valuable byproduct of the mining of the base metals of lead, zinc, and copper.

In World War II the United States and its allies used 900 million ounces of silver. Perhaps half that amount was used in the Manhattan Project and may not be needed again. The U.S. wartime demand for silver during the Vietnam War was more than double the demand during the 6 years of World War II. This, in part, reflects the great increase in the usages of silver including such areas as air reconnaissance.

In peacetime we are consuming silver at approximately twice the rate new silver is being mined. The deficit is being supplied from shrinking above ground stocks and from recovery in industry.

Until this year one source of above ground stocks has been India, but that country has moved to curtail its overseas sales. The silver exporting countries of Peru and Mexico have recently moved to divert increasing amounts of new silver to coinage production, thus further limiting the available silver for military and civilian needs.

One final point on the future supplies of silver may be gained from reviewing the 1979 Bureau of Mines (U.S. Department of the Interior) study entitled "Mineral Trends and Forecasts." On page 24 we find that the world demand for silver from 1976 to the year 2000 is estimated at 11.416 billion troy ounces. (This is a conservative estimate since it assumes a low figure of 2.5 percent annual increase.) The world reserves to meet this demand are 6.1 billion troy ounces or a massive deficit of almost 6 billion troy ounces. Another way of viewing this would be the notation that the coming silver deficit to the year 2000 is about 6½ times that used by the allies in World War II.

If you are concerned about an oil shortage, you will absolutely lose sleep over the silver shortage. Incredibly, today we are considering the sale of 15 million troy ounces of silver from an inadequate stockpile level. In the past, I have likened this to selling the last of the family jewelry in order to make another down payment on the sports car.

Fortunately in recent Congresses, the legislative body has had the wisdom to reject proposals for silver sales from the stockpile. The metal to be sold has only gained value while the dollars to be gained have lost value.

Over the past 13 years, however, our government did dispose of almost 2 billion ounces for dollars that have depreciated more than 50 percent in purchasing power from time of their receipt. During that same time, the metal sold by the government has appreciated over fivefold. The beneficiary of this has been the Silver Users Association who are always anxious to buy the last of the cheap silver; the loser, of course, has been the American people.

Now, with the bill before us today, we are to assume that we suddenly have a zero need for silver in the strategic stockpile. This is completely ludicrous. It is, however, based on an April 10, 1979 report by the Comptroller General and therefore, deserves a more detailed analysis than simple rejection with ridicule.

There are a number of obvious defects that are listed as follows:

(1) The programmed model was gained with inputs from Departments of Commerce, Defense, State, and Interior. No input from experts in the private sector appeared in this report.

(2) The analysis was based primarily on data used to determine 1976 stockpile goals. The reason such an ancient base was employed was "goals for 1977 were not published because new presidential guidance was expected." In addition, the GAO found inconsistencies with the Bureau of Mines supply estimates.

Also in April, 1979, the Federal Preparedness Agency submitted its Stockpile Reports to the Congress. Here again, there are a number of questionable areas that deserve comment:

(1) The Federal Preparedness Agency (FPA) assumes that the 118 million ounces in exchange warehouses and the 20 million ounces owned by industry in 1976 would be the property of the U.S. Government in times of emergency. This assumes that we now have accepted confiscation of private property as means of meeting our stockpile needs. This also rather stupidly assumes that those mentioned stocks will be standing still awaiting confiscation. Anyone watching the commodities market in recent months has noted the heavy drive on silver—a metal that could now be cornered with as little as \$100 million dollars.

(2) The FPA also refers to the availability of "29 million ounces in the U.S. Treasury stock for coinage and 7 million ounces for contracts with government furnished material provisions." The above government sources would only be available if they were not used, over time, for their intended purposes, which is most unlikely.

(3) The FPA states that "defense requirements for silver could be met by the U.S. Production alone, with the remaining requirements filled by imports from Canada and Mexico."

The statement is unbelievable. The report makes a further comment, "... defense wartime silver requirements averaged 38.4 million ounces per year, based on 1976 goals." First, in only 3 of the past 11 years has U.S. production exceeded 38.4 million ounces. Second, the presumption of total conversion of the U.S. production to defense requirements is absurd. Third, the validity of the 38.4 million ounce figure is, at best, highly questionable. (The U.S. and its allies used 900 million ounces in World War II and testimony from Dr. William Schneider from the Hudson Institute to the Senate Subcommittee on Military Construction and Stockpiles in March of 1978 flatly stated, " * * * that the existing stockpile of silver should be doubled * * * ")

(4) There is reliance upon foreign imports to supplement our silver needs. Canada, Peru, and Mexico are considered as sources. It should be remembered that one of the reasons for the stockpile in the first place was "to decrease and prevent whenever possible a dangerous dependence of the United States upon foreign nations for supplies of these materials in times of national emergency."

Additionally, it should be remembered that Peru is the second nation in the **Western Hemisphere to receive large amounts of Soviet-made weapons**. It cannot be counted upon in case of a war against Marxist forces.

The events of recent weeks and the tragedy of the pro-Marxist takeover of Nicaragua rules out Central America and places Mexico's long-range reliability in considerable doubt. One year ago this would not be questioned, but it should be now. (Cuba as a reliable source of nickel was not questioned before 1959.)

Prestige of the United States is currently low. Friendly Costa Rica recently demanded removal of U.S. evacuation helicopters bowing to demands by Sandinistas. It is foolish to expect the cooperation of other nations to the same extent that they did in World War II.

Finally on this point, there is nothing to prevent these nations (Canada, Peru, and Mexico) from forming a cartel to do business with the United States in the same manner that OPEC nations have done in the past when it comes to oil. I do not need to add that the Congress is currently trying to gain a release from the OPEC stranglehold.

Mr. Chairman, I recommend that the disposal of silver be removed from the bill. In the past I have opposed the sale of tin and the diamonds should never have been in the stockpile in the first place. Tin and diamonds pale into insignificance when compared to the tragedy of a silver disposal.

In addition, I would urge that silver be classified as soon as possible as a strategic metal. The assessment of our silver supply needs by GAO and FPA in times of national emergency was prepared on a foundation of sand. Instead of disposal of our present stockpile, we should increase our current supply anywhere from 225 to 250 million ounces (above the current 139.5 million ounces). I have proposed legislation that calls for the purchase of approximately 50 million ounces or one-fifth of the needed amount. As of this date that bill has 68 cosponsors.

Thank you, Mr. Chairman, and I am now ready to answer questions.

WRITTEN STATEMENT OF SCOTT D. DIAL, SILVER SPECIALIST AND CHAIRMAN OF SILVER COMMITTEE OF THE INTERNATIONAL PRECIOUS METALS INSTITUTE

Mr. Chairman: I do appreciate being permitted to address the committee today. My focus will be on silver, specifically Bill H.R. 1324 and H.R. 3385. By way of brief resume, silver has also been the focus of my family's energies for three generations. I am Chairman of the Silver Committee of the International Precious Metals Institute and I am Silver Specialist with Clayton Brokerage Company.

The Strategic Stockpile was established to insure that our economy would have available the necessary raw materials to support military and basic civilian requirements during periods of war, national emergency, and when required for the common defense. As such, annually, for 15 years, legislation introduced calling for the sale of silver, has been seen as being wholly inconsistent with the very purpose of the stockpile. Sale of silver, has had, over the years, numerous opponents. In fact, Mr. Chairman, during last year's hearing on similar legislation, you may recall that Mr. Harry O'Neill of Opinion Research Corporation testified that 77 percent of the American people opposed the sale of any stockpiled silver.

Statistics, presented annually, in opposition to silver sales have long documented that silver is an absolutely critical material for both the economy and the national defense of our country. Furthermore, no effective substitute has ever been found and, worldwide, the supply of silver is dangerously limited. I will not, here, go into the specific numbers, associated with the above facts as they have been an, essentially, undisputed part of the record for years.

I wish to bring before the committee today new evidence. Early this year the U.S. Bureau of Mines released a study entitled Mineral Trends and Forecasts. This quite detailed document projects and compares current assumed supplies of various minerals with projected demand for those minerals to the year 2000.

From the supply standpoint, the study lists both the "reserves" and "resources" of each mineral. The widely used, working definition of these two terms is that

the reserves of a mineral are all that are probably available while the resources of a mineral are all that are possibly available. In short, the total possible supply of any mineral, is taken as being far greater than just the probable supply.

In the case of silver the study lists in Table 7-A that the total world cumulative demand will be twice as great as the probable supply by the year 2000. On the other hand Table 7-B lists that when considering all the possible supplies of silver, twice the amount demanded will be available. Thus, only when we move from the realm of the probable to that of the possible will the world have sufficient supplies of silver. Of course, such logic applies to most problems.

Admittedly, though, anything is possible. Unfortunately the mere, possible existence of silver supplies means nothing; it must be produced. As is well known approximately 75 percent of all silver produced comes as a byproduct of copper, lead and zinc production. Therefore production of silver is primarily dependent upon the production and thus the price of copper, lead and zinc. As I previously stated the Bureau of Mines indicates that by the year 2000 possible silver supplies will twice exceed demand. Yet for the three base metals, possible supplies will exceed demand by 7.7 times for copper, 2.4 times for lead and 8.3 times for zinc. These qualitative facts have a chilling quantitative side.

Currently it takes approximately 1,500 tons of combined copper, lead and zinc production to yield 1 ton of silver. This ratio has held quite constant throughout this decade. The Bureau of Mines report indicates probable total supplies of the base metals as being 305 million tons while probable supplies of silver are given as 209 tons. Simple division thus indicates that by the year 2000 it will take 3,850,000 tons of base metal production to produce the same 1 ton silver. And if we use figures for possible supplies of each metal, the figure becomes 5,700,000 to 1. Put another way, the silver component of the production mix will decline by a factor of 2,580 to 3,800 times! Given the relative overabundance of base metals compared to silver, this indicates that it would be the height of irrationality to produce millions of unneeded tons of copper, lead and zinc for the resultant ton of silver. We are running out of both silver and the incentive to produce it.

The above facts bring up a frightening spectre. Given the critical need for and declining supply of silver, the incentive for someone to "corner" or squeeze this market seems too tempting. In fact Mr. Henry Jarecki, Chairman of Moccatta Metals Corporation, one of the world's largest precious metals dealers in a speech to the Silver User's Association in mid-January said, "Supplies are so small and the annual shortfall so large * * * that a substantial portion could be held in very few hands. There is then a danger of a squeeze, by which is meant so great a concentration of ownership in a few hands that the owners can dictate the price * * *" And Mr. Jarecki went further to indicate that the total net cost to do so would be only about \$100 million. Mr. Chairman, with billions of dollars pouring out of this country to purchase just oil, in which we have a lower percentage import dependency than silver, there is thus opportunity to go along with motive for the commission of a silver squeeze.

As mind boggling as are the above facts, even more mind boggling is the presence of any bill to sell silver. The remainder of my remarks will be directed at the culprits and their argument behind the Sell Silver Movement.

Currently, there is really only one argument made in support of silver sales. Without denying our costly dependence upon foreign silver, it is said that those foreign sources of silver are friendly ones, and we need not fear disruption of supply. The argument is both chauvinistic and spurious. In the first case it is absurd to believe that the mineral wealth of any foreign, sovereign nation is at the beck and call of the United States. Particularly, as was reported in Metals Week of June 18th, "The export and monetary policies of Peru and Mexico will prevent mining companies from putting all their production on the market. Like Mexico, Peru's Central Bank has been buying large quantities of the country's output to mint as coins and to increase its silver reserves." Silver is thus being remonetarized and therefore is being increasingly withheld from export. In any case, history is replete with the failure of the argument, most notably with our prior, almost total dependence upon Cuba for nickel.

But it is the spurious aspect of the argument that is most amazing. To harken back to the very purpose of the stockpile it is obvious that stockpiled materials must exist in processed form, in this country for immediate use in the event of crisis; not in the ground in the raw state, in a foreign, sovereign nation. The argument citing assured foreign availability of silver is a gross dismissal of the

very essence of the Strategic and Critical Materials Stockpiling Act, and would call for an abrogation of our government's responsibility as cited under the act.

Now for the culprits; there are two. As has been well documented at numerous times over the years two groups have striven every year to sell our silver: The Silver Users Association and the government itself. The motives of the two are regularly reported as being, in the case of the S.U.A., the chance to buy the last, cheap silver; while in the case of government, the desire is to augment the budget. In short, these two old trading partners would like to get together again for, as you may recall, America's silver user's were the primary purchasers of the billions of ounces of Treasury silver sold in years past. While these motives are understandable the result has become insidious as the following chain of events indicates.

The MX missile has been roundly presented as being absolutely vital to America's defense in the coming years. Its production will apparently commence shortly. In 1976 Mr. Vincent Tolino of the Defense Logistics Agency, Department of Defense, was widely quoted when he announced that the Air Force, charged with overseeing the MX program, had requested 160 million ounces of silver. This of course would have been for use in the batteries for the launch system; specifically, a silver/zinc battery was originally to have been used. Last year, suddenly, the designated battery became the Lithium Hydroxide battery. You may recall, Mr. Chairman, that in my testimony last year I announced that the Lithium Hydroxide battery had been banned by the Canadian Transport Authority as it had been found to have an alarming tendency to blow up! Since then the Lithium Hydroxide battery has been dropped from consideration in the MX program.

But now, the battery of preference appears to be the Lithium Thione Chloride battery. I am no battery expert, Mr. Chairman, so I called some battery experts last week regarding this new battery. I learned the following: (1) The volatile element in the ill-fated Lithium Hydroxide battery is Lithium Sulfur Dioxide. It is the same volatile element in the Lithium Thione Chloride battery; (2) Regarding the effectiveness of the new battery I received the following representative reply from Dr. Jack Brown of Westinghouse, " * * * conjectural at best."

I then phoned Norton Air Force Base in California which is charged with various technical developments for the MX program to see if perhaps the whole generation of Lithium batteries had been scrapped. I was told that the Lithium Chloride battery was still preferred and that silver based batteries were not being considered because of, " * * * stockpile considerations." Stockpile considerations?!

It was widely reported last year, Mr. Chairman, that Senator McClure had written Defense Secretary Harold Brown to request that the Department of Defense consider a silver based battery for the MX. Secretary Brown wrote back and said that the Department of Defense was not considering any silver based battery. This is most remarkable in view of the fact that silver based batteries represent a long proven technology and testimony last year documented that such batteries were, simply, the best available. How can the government have in the space of three years dropped the best available battery system for one that may blow up?! The answer to that question lies outside my realm I'm sure. But, Mr. Chairman, various silver battery manufacturers told me just last week that, in their opinion, the Silver User's Association has convinced the government, informally of course, to abandon silver based batteries.

Given the long relationship between the S.U.A. and the government, and the fact that no battery manufacturers are members of the S.U.A., I find this whole situation, as I said, insidious. In any case, someone, somewhere, has apparently blackballed silver based batteries for use in the MX missile and what we are now left with is, " * * * conjectural at best." Mr. Chairman, if the MX missile is indeed vital to America's, my, future defense, I am frankly scared to death.

In summation, silver is vital to this nation. It is metal without substitute. The world is running out of silver and the incentive to produce it is dwindling. As a result the incentive and opportunity for someone to corner the available supply now is distressingly tempting. And yet, we have here a bill to sell silver. Every year we have a bill to sell silver; a bill opposed by the great majority of Americans; a bill defeated every year. Only the government and the Silver User's Association push for the sale of silver. Their argument of the assured availability of foreign supply is chauvinistic, it is spurious. And now, someone's behind the scenes maneuvering has worked to imperil a vital component of our nation's defense. This bill, S1397, must be vigorously opposed.

I am happy to note though that Congressman Larry McDonald has just introduced a bill, HR4665, calling for the purchase of substantial quantities of silver for the stockpile. It is my fervent hope that this is the beginning of a rational policy for the government devoid of past entanglements.

My thanks to you, Mr. Chairman.

Mr. McDONALD. He and the basic silver analysts of industry, of the private sector, view it as outright folly to even consider the possibility of sales; and the general consensus is that we are woefully inadequate.

But there is nothing really new about the Government coming down here to sell silver; nothing new about the silver users saying it's great to sell silver. The silver users naturally would like to buy cheap silver.

The Government in the past has enjoyed selling off the last of the family jewelry to make another downpayment on a sports car.

I'm very pleased that the bill which the chairman sponsored to be sure that the money goes into a revolving fund and is used to acquire items for the strategic stockpile is moving forward, and I hope that it becomes law, and I strongly support it, Mr. Chairman.

I do not believe that we should be selling off strategic items simply to make the deficit not look so bad, which has been the case in the past.

I have pointed to the deficiencies, some of the major deficiencies, in these two reports, but the Government estimates in the past have been, frankly, all over the place with regard to estimates of what the strategic stockpile should be. All I can say is when you look at the Bureau of Mines study coming out of the Department of the Interior showing a 6 billion ounce shortfall in the world supply, it really boggles the mind. It amazes me.

But I will submit for the record the three pages.

Mr. BENNETT. Thank you very much.

[The following information was received for the record:]

ANALYSIS OF CURRENT AND PROJECTED U.S. SILVER REQUIREMENTS

PART I.—INTRODUCTION

For more than a handful of years the civilian sector has increased its demand for silver metal. To meet this demand we have become increasingly dependent on imports. For 1979 it is anticipated that U.S. silver demand will approximate 162 million troy ounces, while domestic production is projected at about 43 million. This will obviously create a deficit in supply/demand of 119 million oz. for 1979. Some of the supply for this demand will come from: (1) coin melt, (2) scrap recycling, but in the main the silver deficit will be supplied by imports from friendly nations such as Canada, Peru and Mexico. Canada annually produces approximately 43 million oz., Peru about 42 million and Mexico 56 million, or a possible total from these three nations alone of 143 million oz. Since the United States produces only 43 million oz., it is obvious that our dependency upon these nations is of a rather permanent affair. And, there is nothing to prevent these nations from some day forming a cartel (especially Mexico and Peru which together produce almost 100 million oz.) to do business with the United States in the same manner that the OPEC nations have done in the past when it comes to oil.

Naturally, the production of Mexico and Peru, for example, is not entirely sold to the United States, some production may be used internally for coinage or for sale to other countries. Therefore in times of national emergency here, there is no guarantee that we can fully rely upon a silver pipeline from these nations to meet both military and civilian requirements.

That is why it behooves the managers of our government's destiny to make certain that we have sufficient amounts of silver on hand to meet emergency needs.

PART II.—ANALYSIS OF THE COMPTROLLER GENERAL'S REPORT

The Comptroller General reported to the Subcommittee on Military Construction and Stockpiles Committee on Armed Services of the U.S. Senate on April 10, 1979. A copy of this report is appended. This report is based upon a report prepared by the Federal Preparedness Agency (FPA) which programmed its model with inputs from the following government departments: Commerce, Defense, State and Interior. No input from experts in the private sector appeared in this report. Obviously any report drawn on the basis of computerized modelling techniques is only as good as the inputs. Because of the absence of input from private industry, the entire report suffers from a credibility gap. The second fallacy in the report is that the analysis was based primarily on data used to determine 1976 stockpile goals. The reason such an ancient base was employed was "goals for 1977 were not published because new presidential guidance was expected". In addition the GAO found inconsistencies with Bureau of Mines supply estimates and the FPA assumed that the 118 million oz. in exchange warehouses and the 20 million oz. owned by industry in 1976 would be the property of the U.S. government in times of emergency.

From the evidence in the report, current stockpile policy involves supporting a defense force of 5 million men for three years of combat. On Page 5 of the enclosed report, the FPA admits "silver is very important to any war effort. Its essentiality in photography and electrical applications require that the United States insure its availability in case of national emergencies."

I ask you sincerely how can the formulators of such a report and the managers of the stockpile do anything but consider silver a strategic material?

In addition to being a strategic material, supply of this metal is not as determined by the FPA "the available supply of silver even under wartime conditions, has been determined as more than adequate to supply all the requirements of the United States."

Since the purpose of the national stockpile is also to provide "basic materials necessary to support defense and essential civilian needs in times of national emergency" I put it to you bluntly that elimination of the present 139.5 million oz. in the stockpile would directly defy the purpose of the bill itself.

Instead, I sincerely recommend that the legislators of our country propose a bill to increase the current stockpile to a level commensurate with the purpose of the stockpile bill so that both defense and civilian needs in times of emergency would be adequately protected.

I do not want to go into great detail as to the methodology of the FPA report. Instead, here is my own scenario of what would be feasible.

1. Silver should be classified as soon as possible as a strategic metal.
2. It should be recognized by the people who work for the U.S. government that in time of war 76 percent of the current civilian uses of silver have military applications. Therefore, 123 million out of the current 162 million oz. available for civilian use would have to be funneled for military purposes. A 3-year reserve using this parameter would approximate 369.4 million oz. Thus, if we consider our current stockpile of 139.5 million oz. as a reserve, we would still need an additional 229.9 million oz. which would have to be purchased in the marketplace. Obviously if the U.S. produces only 43 million oz. a year, we would only have on hand 129 million oz. from production for the 3-year-period. And it is quite obvious that if we had no silver in our stockpile at all in time of emergency, we would be required to purchase almost three times the amount currently in the stockpile in order to be adequately protected.

3. The FPA report analyzes peacetime silver demand (Page 24) as increasing 2.5% annually through the year 2000. I think that even conservative economists would suggest that the U.S. will grow in silver demand at least 3% annually. But realities are entirely different than assumptions, mathematically or otherwise. In this regard the suggestions of the FPA that there are "widely used" substitutes for silver as in Page 27 of the report in connection with substituting lithium thionyl chloride for silver in MX missile system batteries, would not give the military the kind of dependability and service that could be derived from the real thing. I am, of course, unaware of the cost of lithium thionyl chloride especially in comparison with the cost of using silver. I think a fair method of assessment of a need for any metal should be based on the proposed applications of the metal and not on projections of substitutes which may or may not be satisfactory.

4. Finally, I wish to point out that dependence upon a supply of material like silver from any nation in time of our national emergency could be adversely affected by: (a) transportation difficulties; (b) labor conditions; (c) price considerations; (d) other considerations including the willingness of the other nations to do business with us.

PART III.—CONCLUSION

In light of the foregoing, I submit that the assessment of our silver supply needs in time of national emergency was prepared on a foundation of sand; that silver should be considered as soon as possible a strategic material; that instead of disposing of our present stockpile, legislation should be introduced to purchase anywhere from 225 to 250 million oz. of .999 metal as soon as possible.

Finally, I wish to assure you that I will be happy to help in any way possible to prevent any further errors of stockpile mismanagement such as have occurred in the past.

PAUL SARNOFF.

Mr. BENNETT. Mr. Stratton, do you have any questions?

Mr. STRATTON. Thank you, Mr. Chairman.

I think the gentleman from Georgia has made a very important statement, and I must say that I share his feeling. In fact, in view of what's happening these days, I would personally feel that we ought not dispose of anything in the stockpile, as the gentleman from Georgia indicates. Every time we pick up the paper or turn on the radio, the dollar has plunged further, and the value in gold has gone up. Therefore, if we hang onto anything, even Susan Anthony dollars, for a bit of time, they're going to be worth more than paper dollars at the end of the period.

Could you explain in a little bit more detail, Mr. McDonald, the reason why silver is important for our defense? You mentioned X-rays.

Mr. McDONALD. Yes, Mr. Stratton. Medical use is obviously in the area of X-rays. It's simply that you cannot find a replacement. In the massive increase of aerial reconnaissance, the tremendous increase of sophisticated electronics there is no real good substitute for, as an electrical conductor, gaining the reliability of silver.

I did not go into the issue of a backup battery for such things as the MX missile because the testimony of Mr. Dial does go into that issue in detail. Frankly, we have been——

Mr. STRATTON. A silver cadmium battery, something of that kind?

Mr. McDONALD. Yes. A silver/zinc, or a silver-type battery, is a backup battery.

The Defense Department had had a spokesman in some years in the recent past who stated a very large amount of silver would be needed as a backup battery. However, the Department of Defense in recent years has suggested some type of lithium hydroxide batteries or a lithium battery; first a lithium hydroxide, and now I think another type of lithium battery.

The problem is that those batteries have a tendency to explode, and they are rather unreliable. In fact, Canada has discontinued the consideration or usage of them because of that tendency to explode. But that is gone into in some detail by Mr. Scott Dial.

But simply because of the traditional needs of silver in areas of photography necessary for the military, in the areas of X-rays, in areas of high-quality electronics, you cannot find a reasonable substitute for silver; and when you look at the large amount that was used

in World War II, and when you look at during the Vietnam war we used approximately twice the amount of silver, slightly over twice the amount of silver, that we used during the World War II period, and that's in the Government report, I believe, by the Comptroller General, and to be suggesting that now we can sell this off, and that perhaps if push comes to shove, we'll be able to gain that by the confiscation route in part or from questionable allies to the south, in view of recent developments, I think this is just whistling past the graveyard of all experience over the last decade.

Mr. STRATTON. Where does the estimate come that we are going to require 11 billion ounces by the year 2000? Does that come from the Bureau of Mines?

Mr. McDONALD. That comes from the Bureau of Mines, the Department of Interior report of 1979, on page 24, Mr. Stratton. It states that the world primary demand is 11.415 billion ounces. The world supply during that same period is 6.1 billion ounces.

I know of no other item that has such a shortfall between now and the year 2000.

Mr. STRATTON. And this is based simply on the regular commercial demands increasing by a reasonable factor?

Mr. McDONALD. That is by a factor of 2.5 increase per year, which I think many analysts would say is an unreasonably conservative figure. Three would be a very bottom level conservative figure. But taking the figure 2.5, in all fairness, and Mr. Dial's testimony goes into this point so I did not dwell on it in my testimony, but this deals with the probable reserves, with the probable supply.

On page 25 it deals with the possible, all possible, areas, and that demand is met by all possible reserves. That includes the best possible circumstances. But I would like to point out that 75 percent of new silver comes as a byproduct of other mining.

Mr. STRATTON. You point out that the last time that we sold silver we got in return for it dollar bills, and that since that time the value of the dollar bills has gone down and the value of the silver that we disposed of has gone up. Right?

Mr. McDONALD. Yes, Mr. Stratton, by a factor of about 5.

Mr. STRATTON. I think that's a very important point. You said that you favored the idea at least—and we still haven't gotten to that point—of putting the money that we receive from these disposals into some kind of a revolving fund for the purchase of other metals that are in short supply and that we require.

But wouldn't it be equally true that if we sold this silver and said that we were going to use the money to buy—I don't know what else is in short supply, titanium, or something or other—that we would also suffer a loss during the time period between the time we disposed of that metal and the time that we decided to dip into the revolving fund to get some other metal? Is that right?

Mr. McDONALD. Absolutely, Mr. Stratton. The price of silver has gone up probably \$3 to \$3½ dollars per ounce since the first of this year.

Mr. STRATTON. While I've been sitting here listening to your testimony, it occurred to me that perhaps one of the flaws in the otherwise fine legislation that we passed earlier this year revising our

stockpile procedures—God knows, they were bad enough, so any revision would be helpful—is that perhaps we should not set up a revolving fund, but perhaps we ought to, every time we dispose of some particular item, say exactly what we're going to get to replace it and have a time limit in which we procure it.

Mr. McDONALD. I would agree absolutely with the gentleman from New York. But what we have is an improvement over what we had been doing.

Mr. STRATTON. Mr. Chairman, is there any such requirement in the case of the silver? What are we getting rid of it for, and then we're doing to let the dollars that we get in return for it sit around and deteriorate?

Mr. BENNETT. It is not my request that we dispose of the silver. It's the administration's request, and they have already testified.

Mr. STRATTON. Are we proceeding on an administration request, or are we proceeding on the bill introduced by my colleague, the gentleman from Massachusetts?

Mr. BENNETT. We have two bills before us, one to dispose of a certain amount and another to dispose of all of it, and Dr. McDonald has testified in opposition to both bills.

Mr. STRATTON. Whose idea is it to get rid of it? Is it the administration's idea?

Mr. BENNETT. Yes, certainly. I've never introduced a bill in all my years in Congress to dispose of anything from the stockpile.

Mr. STRATTON. What is more valuable than silver, Mr. Markon, that we ought to get in return for disposing of the silver?

Mr. MARKON. If you're speaking of value in terms of dollars, there is—

Mr. STRATTON. I'm not talking in terms of dollars. That's just the point; we're not interested in dollars; we're interested in a metal that is in short supply and vital to our national defense.

That's the whole fallacy of your operation, that every time you dispose of it, all you want are dollars; and every time we turn around, the dollar is worth less, and less, and less.

We are in short supply, as I indicated at an earlier hearing, in 14 out of the 16 vital, critical strategic minerals; and if we dispose of any of these, we ought to be getting something that we are in greater need of, and getting it right away and not let the money sit around in the Treasury where it deteriorates in value.

Mr. MARKON. The money will not sit around in the Treasury. It will go into the revolving fund.

Mr. STRATTON. How long does it sit in the revolving fund? Every day it loses a certain amount in value.

Mr. MARKON. We have in this year's authorization a request for \$177 million to buy critical materials.

Mr. STRATTON. Yes. But what are you going to get for the silver? It seems to me you ought to come in here and say, "This silver is great, and Mr. McDonald is absolutely correct, but there is another metal which is in even shorter supply and even more vital, which we have to get immediately because if we don't, they won't be mining it any more in Rhodesia," or something of that sort.

Mr. MARKON. There are 18 other metals and materials that are more critical to our needs than silver, and of these 18 materials we would

propose to buy some of that for the restructuring of the stockpile, as provided in the Policy Act.

Mr. STRATTON. Mr. Chairman, until they come in and tell us what is more valuable, I'm going to oppose these disposals, particularly disposals of metals of this kind.

Mr. Chairman, I wonder if I could request, or if I could ask whether the staff has picked up that report featured on the front page of the New York Times the other day that said that the GAO found that we were being bilked by millions of dollars.

Mr. MARSHALL. Here it is.

Mr. STRATTON. I don't want the newspaper story. I mean, have we received the report?

Mr. MARSHALL. That's all there was in the newspaper.

Mr. STRATTON. I know, but you go to the people who wrote the report, the people who look after the thing. This was done by the GSA, wasn't it? It's the GSA that's being criticized. Where's the report of the auditors that said, "You've lost billions of dollars over the last 10 years, the way you've handled this stuff"?

Mr. MARKON. These are internal audits. Some of these refer to transactions that have occurred; some refer to proposals. One of the big items in this reporter's report is lithium. We haven't sold any lithium. There was a proposal to sell, and they were criticizing the proposal. So they said, "If you go through with this plan, you would lose a number of dollars." But we scrapped the plan. We went on the market competitively with lithium. So there was no loss or—

Mr. STRATTON. I'm not asking for a lot of explanations. I think we ought to be supplied with the audits so that we can look at them and find out what's true, rather than have you explain. We ought to get something specifically on these plans.

Mr. MARKON. We'll be glad to provide it.

Mr. BENNETT. He wasn't here when all this debacle took place anyway.

Mr. MARKON. This goes back in years.

Mr. BENNETT. He doesn't feel guilty about it at all.

Mr. STRATTON. I'm not blaming Mr. Markon.

Mr. BENNETT. I think he was as ignorant as you that there was something wrong.

Mr. STRATTON. Obviously, if we're going to turn this silver over to the same operation that has already lost us hundreds of millions or tens of millions of dollars in the past, I think we ought to look at this twice before we buy a used car from this particular operator.

Mr. BENNETT. I would like to have that audit if you can get it.

Mr. MARKON. I'll be glad to provide the audit. But, as I said earlier, your fine piece of legislation, the Stockpile Policy Act, provides that all sales will be competitive; and if we intend to go into a negotiated sale, we will be required to submit a report to the Armed Services Committees of the House and Senate 30 days before we make any commitment. So we will advertise to you on all of our proposed negotiations or any transaction that is different from a fully competitive sale so what has happened in the past under your present requirements under the new bill would not be possible.

We'll be glad to supply you with the audits mentioned in this article.

Mr. BENNETT. Thank you very much. I would like to see that.

[The following questions were submitted to the witness to be answered for the record:]

Mr. BENNETT. Does all the silver in the stockpile meet stockpile specifications? Mr. MARKON. All of the silver held in the stockpile meets stockpile specifications. The specifications call for 999 fine silver in bars of 1,000 troy ounces nominal weight.

Mr. BENNETT. What is the purity for this silver?

Mr. MARKON. The purity percent for the stockpile silver is 99.9 percent.

Mr. BENNETT. What is the difference in grade or purity between that in the stockpile and the commercial silver?

Mr. MARKON. Stockpile and commercial silver are identical in grade and purity. For example, the specification for tenderable silver on the Commodity Exchange Inc. (COMEX) is 999 fine; the COMEX accepts bars of 1,000 troy ounces.

Mr. BENNETT. Mr. Markon, will the entire receipts from the sale of the silver go into the special fund, or will a certain amount be returned to the Treasury?

Mr. MARKON. All of the receipts from the sale of silver will be covered into the fund except for \$1.292929292 for each troy ounce which will be returned to the Treasury. For the 15 million troy ounces authorized for disposal by H.R. 3385, the amount returned to the Treasury will be \$19,393,939.

Mr. BENNETT. Why will it be returned to Treasury in view of the language in the policy bill, H.R. 2154?

Mr. MARKON. The return to the Treasury of the \$1.292929292 for each troy ounce of silver is required under the provisions of Public Law 91-607, 84 STAT. 1769, 31 U.S.C. s 405 a-1 (December 31, 1970). H.R. 2154 does not provide for the repeal of this requirement and the return of the said amount remains obligatory.

Mr. BENNETT. Would you explain why the objective for silver is 0 when the requirement for the 3-year period 1980-82 for the three tiers, Department of Defense, Essential Civilian and General Civilian, is 547,890,000 ounces.

Also explain why it is 0 when the DOD requirement for the three years is 141,315,000 ounces.

Would it not be more logical to retain in the stockpile the amount needed to meet defense needs for the 3 years?

Mr. MARKON. Silver will be available to meet all wartime requirements. Domestic primary and secondary production and imports from reliable resources are sufficient to meet DOD and EC requirements, GC requirements can be met from other imports. The zero stockpile goal for silver does not mean the wartime requirements are zero. The silver goal is zero because the estimated supply is adequate to meet anticipated wartime demand. Wartime requirements will be met by supplies available to the United States during the national emergency, that is, domestic production and imports from reliable sources.

The United States produces during peacetime about 85 million ounces of silver annually, of which about 35 million ounces are primary production. About two-thirds of domestic primary silver production is a byproduct of other mining operations. Silver is mainly a byproduct or a coproduct of copper, lead and zinc mining. During wartime domestic copper, lead and zinc production should expand to peak capacity; as a consequence we can expect slightly higher levels of domestic silver production.

The 3-year primary and secondary wartime silver supply from domestic sources is estimated to be in excess of 250 million troy ounces. Coupled with imports from reliable sources, the over 100 million troy ounces from domestic sources excess to DOD requirements satisfy the EC tier; the residual from reliable import sources and all other imports satisfy the GC tier.

Mr. BENNETT. Mr. Markon, during hearings on the disposal of industrial diamonds and silver in August and September of 1976, the Subcommittee was provided with information regarding the requirements for the three tiers: Department of Defense, Essential Civilian, and General Civilian. For the year 1980 the requirements for diamonds were DOD 156,000 carats; EC 653,000; and GC 1,076,000 for a total requirement of 1,885,000 carats.

According to a 1978 stockpile study, this requirement has increased substantially. This study reflects the 1980 requirement for DOD as 260,140 carats; EC 1,468,820 carats; and GC 1,243,120 carats for a total of 2,972,000 carats, an increase of 1,087,000 carats from the figures presented in 1976.

The same applies to silver. The 1978 study reflects requirements for 1980 to be 39,412 ounces for DOD; 117,338,270 ounces for EC; and 32,037,630 ounces for GC for a total requirement of 188,788,050 ounces. This is a reduction of 26,220,950 ounces since 1976.

What has changed since our last hearings in 1976 to cause this 1,087,080 increase in requirements for diamonds and a reduction of 26,220,950 ounces for silver for 1980?

To pursue the question further, also explain why there is an increase in the requirement for diamond from 6,158,000 carats for the period 1978-80, to 8,478,510 carats for the period 1980-82 and a decrease in silver requirements for the 1978-80 period from 636,333,000 ounces to 547,890,270 ounces for the 1980-82 period.

Mr. MARKON. With regard to industrial diamonds, the increase in requirements reflects more refined consumption data than was available at the time of the 1976 study. Recalculation of requirement estimates based on these consumption data significantly increased the total.

With regard to silver the reduction in wartime requirements reflects a different treatment of the luxury uses of silver. The wartime requirements for silver derived during the 1976 study factored in silver consumption estimates for jewelry and silverware. Subsequent calculations of wartime requirements have excluded these estimates.

Mr. BENNETT. Mr. Markon, of all the items in the stockpile considered excess to our defense requirements, why did you select these two commodities for disposal over all others?

Mr. MARKON. Of the total excess requiring authorization for disposal, tin represents approximately 58 percent of total value. H.R. 595 which provides authorization for the disposal of 35,000 long tons of tin was passed by the House of Representatives on April 3, 1979, and is being considered by the Senate Armed Services Committee. Of the excess apart from tin, industrial diamonds and silver comprise about 75 percent of total value.

Consequently the restructuring of the stockpile in keeping with the standards and guidelines of H.R. 2154 will in principal part be financed initially by receipts generated from the sale of tin, silver and diamonds.

Mr. BENNETT. Mr. Markon, what method of sale will be used to dispose of these commodities?

Mr. MARKON. Excess diamonds, silver and tin will be sold by the formal advertising or competitive negotiation procedures in accordance with the guidelines of H.R. 2154.

Mr. BENNETT. What did it cost to acquire the diamonds and silver, and what are the estimated proceeds from the sales?

Mr. MARKON. The cost of acquiring the current total industrial diamond stones inventory was \$222.1 million or an average of \$11.11 per carat. The diamond inventory is currently valued at \$355.2 million or \$17.752 per carat. The 5.6 million carats currently held against the material goal are valued at \$182.2 million or \$32.78 per carat. The 14.5 million carats excess to the goal are valued at \$172.9 million or \$11.97 per carat. The 1.5 million carats to be authorized by H.R. 3385 will yield receipts of about \$18.0 million.

The cost to acquire the silver inventory will be \$180.4 million. This amount reflects the repayment obligations to the Treasury. The silver inventory is currently valued at \$1.3 billion or \$9.56 per troy ounce. On this basis the 15 million troy ounces of silver to be authorized by H.R. 3385 would generate \$143.4 million in receipts for the Government. Deducting the \$19.4 million returned to the Treasury, this reflects a return of \$124.0 million to the transaction fund.

Mr. BENNETT. Mr. Markon, the New York Times recently contained an article entitled "Sales from Defense Stockpiles called mismanaged by Auditors." The article stated that the sale of surplus minerals from the U.S. Defense Stockpiles has been badly managed, that tens of million of dollars in revenue have been lost.

Would you please comment on this very serious allegation?

Mr. MARKON. The New York Times article relates to program reviews made by GSA internal auditors. The auditors. The auditors' major criticisms have

focused on lithium disposal contract negotiations, titanium acquisitions and long term disposal contracts that were consummated several years ago under a previous administration.

The negotiations for lithium hydroxide monohydrate disposals with the domestic lithium producers were completed prior to 1975. The contracts formulated on the basis of the negotiations were not executed because the Department of Justice refused to concur on the grounds that the Department of Justice refused to concur on the grounds that the buyback arrangement strengthened the duopolistic nature of the industry. The Department of Justice then recommended that GSA join one or more potential producers of primary lithium to the arrangement in order to broaden the competitive base of the industry. An additional company became a party to the negotiations in 1976. Later negotiations focused on the terms related to the third company.

In 1977 GSA internal auditors raised questions concerning the price terms in the proposed contracts and the surplus status of the material. Because of the auditors' questions and advice, we have received confirmation from all Government agencies who may have an interest in the property that the property is surplus to their needs and we have abandoned plans to negotiate the sale of the commodity.

Present sales of lithium are being conducted by the formal advertising method. Disposing of the 80 million pounds of lithium declared excess by the Department of Energy is a difficult task under present market conditions. Our solicitations and invitations for competitive bids have been disappointing and the offers received have been so far less than our estimates of value that we have not been able to accept any bids.

Lithium is not a stockpile commodity. It is excess personal property of the Department of Energy and is being sold according to the usual procedures for personal property disposal under the Federal Property and Administrative Services Act of 1949, as amended (FPAS). Under the provisions of the FPAS all negotiated sales in which the value exceeds \$1,000 must be reported to the House and Senate Committees on Government Operations. Under the law we cannot negotiate a sale of this surplus commodity without notification to Congress of our proposals.

The titanium contracts were executed in 1972 under the Defense Production Act of 1950, as amended. These contracts contained a provision whereby the domestic titanium producers could repurchase the titanium at the contract purchase price if the Government had no further need for the material. Subsequent to the execution of the contracts, the price of titanium increased significantly. The repurchase provision consequently provided a profitable position for the producers. After the stockpile titanium goal was raised, the titanium was no longer available for disposal because contract clauses cancelled the contractors' right to purchase. The titanium was then transferred to the Strategic Stockpile in order to offset part of the titanium goal deficit. Consequently, no further repurchase of this material by the industry can take place without the lowering of the goal and the enactment of disposal authorization. Less than 10 percent of the titanium was repurchased under the contractual arrangements. The contractual arrangements are terminated and will not be repeated.

Concerning the long term contracts, the general criticism by the internal GSA auditors was that these contracts contained inadequate protection of the Government's interest with regard to upward movements of price. Some of the long term contracts examined by the auditors contained no price escalation clause; others contained price escalation clauses which returned only a portion of the increases to the Government. It is to be noted that the contracts were negotiated during periods of relative price stability, but deliveries and payments under the contracts took place during periods of rapid upward price movements. Present procedures and policies discourage the use of long term arrangements. While we must honor the legitimate contractual obligations of the Government, we will continue to explore methods to accelerate the termination of the present contracts.

Mr. BENNETT. Are there any further questions? Mr. Stratton, do you have further questions?

Mr. STRATTON. No. Thank you.

Mr. BENNETT. Mr. Spence.

Mr. SPENCE. Thank you, Mr. Chairman.

I would like to ask Mr. Markon: How do you determine the stockpile objectives for these various items—silver, for instance?

Mr. MARKON. I have with me Mr. Paul Krueger from the Federal Preparedness Agency. That Agency, under interagency arrangements, makes the determination, and they advise me, and I propose the disposal plans. So if you don't mind, I'll have Mr. Krueger give you a brief rundown on that.

Mr. SPENCE. If you will, I think it would be of interest to know how you arrive at that.

Mr. KRUEGER. Very briefly, we get information from a number of agencies, including the Department of Defense, and calculate, estimate, what the economy would look like during wartime, and then calculate for each material the requirements necessary to support a wartime economy. Once having calculated the requirements, we estimate what the available supply would be, and in doing this we make different levels of assumptions, depending upon how critical these requirements are to the war effort. For those things most directly involved with the Department of Defense and their material needs, we consider only those supplies which are available from the United States and other contiguous areas which we consider highly politically stable and economically stable.

For other types of requirements in the wartime which are not quite as critical as the direct and indirect defense needs, we'll relax those assumptions a bit and assume that supplies are available from other areas.

Now, if we were to go into detail on this and talk about these things on a country-by-country basis we would have to go into closed session.

Mr. SPENCE. I understand that, and I think that I can see, too, that you would go to different departments and agencies, specifically the Department of Defense, in an effort to determine what they need, or would need, in a time of an emergency.

Mr. KRUEGER. Yes. The Department of Defense estimates that during normal times they consume directly 6 million ounces of silver a year. Most of the silver goes into electrical applications. In particular, if we talk about batteries, for missile systems, and not only current system but proposed systems, we find that the annual requirements, even during wartime, are less than one-half of a million ounces; and this is not assuming that batteries are replaced with either lithium hydroxide or lithium thionyl chloride.

Mr. SPENCE. Looking at this, the Defense requirements for 3 years, for 1978 through 1980, will be 141 million ounces.

Mr. KRUEGER. This is our estimate.

I was talking about two things. First of all, the direct purchases by Defense of silver during peacetime are only 6 million ounces. What I was going to say is when we get into a wartime situation, particularly where you have a lot of photo reconnaissance, as Congressman McDonald mentioned, the Defense requirements for silver escalate considerably. So we're going from maybe 6 million ounces per year to something over 30 million ounces a year, almost 40 million ounces a year.

Mr. SPENCE. How do we say that we have a zero requirement, then?

Mr. KRUEGER. In the United States from direct mine production we mine and refine almost 40 million ounces of silver a year. In addition to that, we produce through secondary recovery techniques another 40 million ounces. So from the continental United States we recover some 80 million ounces of silver a year. In addition to that, from Canada and Mexico we can and we have been receiving on an annual basis another 56 million ounces a year. So if we just look at contiguous sources of silver we're talking about over 130 million ounces a year, compared to, in this case, direct and indirect defense needs of, let's say, 40 million ounces on the outside.

Mr. SPENCE. I also see here—if I can interrupt you—where our essential civilian requirements for 3 years will be about 339 million and general civilian requirements about 67½ million, totaling about 548 million, the requirement for 3 years; and even if you count all these sources that you're talking about plus our domestic production, will it amount to that?

Mr. KRUEGER. Over 3 years we estimate that offsetting that 500 some odd million ounces the available supply will be over 600 million ounces.

Mr. SPENCE. If everything goes along as we hope and plan, if all the neighbors remain friendly—and it has been pointed out that we can't depend on, it looks like, anything in the world any more from the standpoint of friendly allies, and I can understand why: Because they get in trouble when they associate with us.

Mr. KRUEGER. All of our most critical needs can be met from resources located on the North American continent if we expand our horizons to include sources such as Canada.

Mr. SPENCE. Would you have to confiscate, as Dr. McDonald suggested?

Mr. KRUEGER. I think if the GAO report is carefully read, and if our reports are read, what we say is that we do not, in fact, assume that these sources are available to us. But in an emergency, if everything doesn't go right, that perhaps these would be, and would provide an additional hedge over and above what we've already calculated. But we do not assume that we would confiscate these sources, and we do not assume they could be available.

What we are saying is that for all of our critical needs we have more than enough silver available domestically; for all of the needs in the essential civilian tier, as defined there, we can meet those requirements from the contiguous areas of the United States, and that would be Canada and Mexico; and it's only when we get to the general industrial needs that we may be forced to rely on slightly more distant sources of silver.

Mr. SPENCE. Without belaboring the point—and I can see your point, too—if we have all these things happen as we hope they will, but we have money in the bank right now, we have some silver. It's not as if we don't have any and we have to try to buy it. So it seems to me that we should try to keep a little of what we have as money in the bank and not get rid of this much.

Mr. KRUEGER. We have a current inventory of almost 140 million ounces of silver. What the administration has proposed to do is to sell 15 million ounces of silver. If situations change and over the years we

find that in fact we may be a little more dependent upon silver, we haven't spent everything in the bank.

Mr. BENNETT. Mr. Spence, I hate to do this, but soon we'll have to go to the floor. Mr. Conte has been here for some time. So I'm going to interrupt you, if you don't mind, and then come back to the administration witnesses.

Mr. McDONALD, do you have any further closing statement to make?

Mr. McDONALD. Yes; just a couple of items, a couple of things to observe.

Mr. Chairman, the administration has stated that there are 18 other items more valuable than silver for the strategic stockpile. That assumes that one accepts their reports, and I believe a careful review of my presentation shows that their reports are in error in a number of specific areas.

Page 26 of the Comptroller General's report, Mr. Spence, points out that during the Vietnam conflict—and that was a rather limited war, by no means a global or a half-global war—we used $11\frac{1}{4}$ billion ounces, and in World War II we used about 800 million or 900 million ounces, and we have no idea if we would face another type of a major project, such as the Manhattan project, for example, or the charged particle beam.

I asked the Treasury Department to submit how much silver would be needed in a matter of barter with a quasi-friendly nation, a nation that was only going to let us have, say, cobalt, or some critical item that we must have, but would not accept paper dollars, because, as I just pointed out, the very friendly country of Costa Rica just recently kicked us in the face and told us to get our evacuation helicopters out, and they stated that while gold and silver are no longer used in international trade, that now everybody knows that international trade is backed up by the dollar, which is backed up by our economy. Now, that might be very well and good during the initial period of the SDR's and during the Smithsonian agreement, but I think most people know that those who have the gold make the rules, and that is especially true in the case of wartime periods. The assumption that everybody is going to love us and want our dollars I think is woefully inadequate.

But I do refer you to page 26, to the administration figures of what we're going to need.

If we sell silver now at roughly \$10 an ounce, I am confident that within 3 or 4 years we will be back buying it at between \$20 and \$40 an ounce.

Mr. BENNETT. Of course, there is one thread here that I think almost everyone would agree on, and I think this committee would certainly like to see, if we are going to sell silver that we acquire something else promptly, and that was the purpose of that stockpile change legislation. If there's going to be a delay in not having other things come up, we are going to take the loss that Mr. Stratton has referred to. Of course, this is not the Treasury Department, but anyway we hate to see the losses. If we have a delay in purchasing expensive materials after we sell something like silver, there is a great loss to the strength of America in value, on the shelf at least.

Thank you very much, Mr. McDonald.

Mr. McDONALD. Mr. Chairman, just one brief addition.

I would like to refer the committee to the July 9, 1979, edition of the Wall Street Journal, the commodities section, pointing out that the European nations are now moving on two separate fronts to secure strategic materials, at a time when we speak of disposing of things that the rest of the world considers very valuable. I think we may be caught quite short as a result of the actions of other nations.

Mr. BENNETT. All right.

At this time we'll have Mr. Conte come forward, and the administration witnesses can stay where they are, if that suits Mr. Conte all right, and his assistant can sit with him if he wants to.

We'll now hear from you, Mr. Conte. I'm sorry we had the delay, but that's the way we proceed.

STATEMENT OF HON. SILVIO O. CONTE, A REPRESENTATIVE FROM MASSACHUSETTS

Mr. CONTE. Let me first say in answer to my good friend, Mr. Stratton, why do we want to get rid of this? It's costing us \$355,000 in interest a day just to keep this silver, which we don't need; and we're not keeping silver in the stockpile for economic reasons like a bunch of squirrels. Otherwise we'd be doing that with a lot of commodities because of the dollar dropping down. People will be burying guns. Guns are going up, just like silver. I own 45 guns, and they've all gone up tremendously in the last 10 or 15 years. That's a ridiculous argument.

Let me first express my appreciation to you, Mr. Bennett, and your committee for hearing the bill that I introduced on the release of silver, and I appreciate your giving me the opportunity to express my views.

Like you, Mr. Chairman, I have become quite familiar with the topic of silver in the stockpile. For more than 6 years I have had a bill to obtain a release of the silver which has been surplus. I should emphasize in the beginning that I have never quarreled over the amount of silver that's required in the stockpile for defense purposes. What I have tried to do, however, is once the silver in the stockpile has been declared surplus in accordance with the provisions of the Strategic and Critical Materials Stock Piling Act, then, and only then, have I introduced a bill to permit the Congress to carry out its role in the process to return the very valuable metal to the market.

As the members of this subcommittee know, three different administrations have declared a large portion of the silver in the stockpile to be surplus to our defense requirements. The current administration has again set a stockpile objective of zero, resulting in the full 139.5 million ounces being surplus. My bill, of course, would authorize the disposal of the entire amount, in keeping with the provisions of the Stock Piling Act.

Our own Comptroller General, in a review of the silver stockpile, has confirmed that the system used by the Federal Preparedness Agency is reasonable and has validated that a zero stockpile for silver is appropriate. The report of the GAO goes even further when it states that, and I quote: "... defense tier requirements could be met by U.S. production alone."

Of course, the mere authorization of the entire amount for disposal would not mean a dumping of the silver on the market, for the same Stock Piling Act provides protection of the producers, the users, and consumers in the marketplace. The General Service Administration would fulfill this latter requirement while protecting, at the same time, the Government's interest to insure against any avoidable loss. GSA has a proven track record in these disposals which has been accepted by the users and the producers alike.

Because of the purpose and provisions of the Stock Piling Act, Mr. Chairman, there need not be any detailed justification for disposing of silver or any other material, once the procedures are followed by the Federal Preparedness Agency and the material declared surplus. I can think of a number of reasons, however, why we should get on with this matter and approve the release of all or at least a portion of the surplus silver. I, of course, favor the authority for the release of the entire amount, to eliminate the time-consuming requirement for a repeat of these hearings at a later date. At the bare minimum, the authority sought by the administration to release 15 million ounces should be approved.

In my role, Mr. Chairman, as ranking minority member of the Appropriations Committee, I am very much aware of the need for high priority materials to be added to the stockpile. Now that the excellent bill, H.R. 2154, that you and this committee developed to improve the administration of the stockpile, is about to become law, money from the sale of silver will be available to make these important purchases.

Likewise, Mr. Chairman, I think you and members of this committee are well aware of the high costs connected with the maintenance of items in the stockpile. In our efforts to reduce the cost of running the Government, there can be no excuse for keeping material which no longer is needed for defense purposes.

I don't want to get into any lengthy discussion of the amount of silver needed for defense purposes. However, in a review of the history of silver in the stockpile, I believe it is evident that since the Government quit using silver in coins, there has been no reason to provide silver for emergencies. As stated in the GAO report, we produce enough silver to meet our defense needs. Other silver in this country comes from scrap recovery. Then, even if we do get in trouble with our neighbors, we do get it, as was mentioned, from Mexico and Canada; and I hope that the situation isn't that bad with our neighbors to the north, and I hope they don't read some of this transcript.

With the price of silver around \$9 per ounce and interest rates at their current levels, it should be pointed out that the cost of the taxpayer for keeping surplus silver runs at \$350,000 per day. I think this is unconscionable, and I think it's a waste of money.

Sale of silver at competitive auction would bring revenue to the Government and provide money for the purchase of high priority items. The value of the silver is \$1.2 billion, and these sales, too, would reduce our import requirements for silver. This, in turn, helps our balance of payments.

Making Government silver available to the market would certainly be in the interests of the consumers of products which use silver: Photography, electrical products, silverware, and jewelry. The latter

usage, Mr. Chairman, is quite high in my district and other parts of the Northeast. Manufacturers who use silver have seen prices rise from the \$5.40 average of last year to \$7.59 so far this year. Currently, the price is \$9 an ounce, and the market is volatile. This volatility makes for very, very difficult operating conditions which eventually lead to poor sales and lesser employment. The release of surplus silver could contribute to better conditions for a sounder economy.

In summary, Mr. Chairman, let me urge the committee to give favorable consideration to H.R. 1325, to grant release authority of the entire amount of silver that's in surplus, and if, in the wisdom of this committee, it is felt that the annual release authority is more prudent, then I urge your approval of H.R. 3385 to release 15 million ounces of silver as requested by the administration. The latter amount would be about 11 percent of the stockpile, leaving for now about 124 million ounces of silver in the stockpile. The sale of the smaller amount at current prices would realize about \$135 million in revenue to buy these precious metals, which I understand are classified and may be one of the reasons the answer hasn't been given here today what those metals are.

Mr. BENNETT. Thank you very much for your fine testimony.

I don't have any questions to ask. We do have a vote on the floor. Of course, we can come back if Mr. Conte can come back, but I urge you to be brief with your questions of him so that he won't have to come back. Mr. Stratton.

Mr. STRATTON. Thank you, Mr. Chairman.

Mr. Conte, do I interpret your desire to get rid of this is primarily the cost of storing it in the stockpile?

Mr. CONTE. That's one of the reasons.

Mr. STRATTON. Would you feel similarly with respect to the effort now underway, which Congress overwhelmingly approved, to set up a strategic stockpile for oil in the various salt domes around the country? We're facing an oil crisis. I'm sure you recognize, as I do, that it's not phony; it's real. We're putting aside oil so that we might have it for the use of the Navy and for other defense purposes in the event that we have another embargo. Would you complain about the cost of maintaining that stockpile of oil if it's vital to our defense?

Mr. CONTE. Of course not. I am saying here that you've got enough silver for defense and during time of war, and we've got enough oil, and I want enough oil for defense for a time of war. You're comparing apples and oranges here. All I'm saying to you is that we don't need this silver, that we've got plenty of silver for a time of war. Let's get rid of it, and use that money to buy strategic metals, which you well know, and can't be mentioned here.

Mr. STRATTON. If it is valuable, then I don't think we can complain about the rental.

Do I understand that you say that you don't know how much silver we have to have, but the GSA—

Mr. CONTE. No; I did not say that. I said that I am not going to quibble with you on how much silver we have. We have the experts here.

Mr. STRATTON. All right. The expert tells us that our requirement is zero.

Does that in your mind represent a reasonable interpretation of the role that silver plays in an industrial economy, zero?

Mr. CONTE. Based upon production of 40 million ounces, based upon recovery and everything else, yes; that's absolutely right.

Thank you, Mr. Chairman.

Mr. BENNETT. Does anybody else have any questions? [No response.]

I believe the second bell has rung. We'll come back and dispose of the rest of the material afterward.

[Whereupon, the subcommittee was in recess from 10:18 a.m. until 10:45 a.m.]

Mr. BENNETT. The subcommittee will come to order.

Our next witness will be Mr. Dale Church, Deputy Under Secretary for Acquisition Policy, Office of the Under Secretary for Research and Engineering, Department of Defense.

Mr. Church, you may proceed.

STATEMENT OF DALE W. CHURCH, DEPUTY UNDER SECRETARY FOR ACQUISITION POLICY, OFFICE OF THE UNDER SECRETARY FOR RESEARCH AND ENGINEERING, DEPARTMENT OF DEFENSE

Mr. CHURCH. Mr. Chairman, I have a statement for the record which I did present to you, so I won't take your time to read through that statement.

Fundamentally, I would just like to reiterate our strong support for the bill, which is now, I think, in the final hours before its signature by the President, which you did such a fine job of putting together and which provides the basis for this hearing today. We in the Defense Department are indeed encouraged by that bill and by the procedures which you've set out to vote the disposal of excess materials, as we're discussing here today as well as acquiring the much-needed list of some 18 materials that, hopefully, the funds that would be gained by the sale of these few million ounces of silver would provide to us to, again, acquire things that we badly do need.

We have supplied our inputs to the group which looks at the annual materials plan and, indeed, we do support the statement that the need for a stockpile for war use is zero.

In the area of diamonds, which has also already been discussed, and I'll just make mention of it, we indeed also support the annual materials plan, which states that about 51½ million carats of diamonds are needed for defense uses.

That concludes my remarks, and I am prepared to answer questions with respect to what the defense needs are.

Mr. BENNETT. Thank you, Mr. Church.

Your entire statement will be put in the record, without objection.

WRITTEN STATEMENT OF DALE W. CHURCH

Mr. Chairman and members of the subcommittee, I appreciate this opportunity to appear before you in connection with your deliberations on legislation to authorize disposal of silver and industrial diamonds from the national stockpile of strategic and critical materials.

The provisions of the bills under consideration today, H.R. 1325, H.R. 3384 and H.R. 3385, relate primarily to the functions of the Federal Preparedness Agency which is responsible for the policy management of the national stock-

pile and the federal property resources service of the General Services Administration which handles the acquisition and sales of excess stockpile materials. We defer to these agencies with respect to the amounts of excess silver and diamonds which can be sold without undue market disruption and loss to the government.

However, I would like to reconfirm our support for the present stockpile planning process and guidance which evolved from a very extensive interagency study of stockpiles policies and assumptions completed in 1976. The study effort, as you may recall, included full participation by the Office of the Secretary of Defense and the organization of the Joint Chiefs of Staff. As described during the very useful subcommittee hearings last February on H.R. 2154, planning guidance generally calls for stockpiling those materials for which we are dependent upon foreign sources of supply in quantities sufficient to meet U.S. national security requirements during a major war assuming large-scale industrial mobilization, and providing at the same time for a broad range of essential civilian needs to insure a viable industrial base.

As a result of this study an annual materials plan was established which calls for annual reviews of changes in national security planning and product and market considerations as they affect stockpiling. The Defense Department participates in this review addressing with other agencies stockpile management issues such as the impact of changing defense requirements on usage of materials, the international economic and political impacts of stockpile transactions, and new materials requirements.

Also as part of this process, the DOD periodically provides the Federal Preparedness Agency with estimated wartime defense budget expenditure patterns, estimates of shipping losses, and information on scenario characteristics. The FPA combines these data with many other factors such as civilian austerity, material consumption, substitution, and political reliability of exporting countries. Said simply, after all these factors are applied, where estimated wartime demand for an individual material exceed wartime supply, a stockpile inventory goal is established.

In the case of silver, available supply during wartime greatly exceeds wartime demand and no inventory goal has been established. With respect to industrial diamond stones, not all of the postulated wartime industrial needs can be met through available supply and an inventory goal of 5.5 million carats has been established. As you know there are over 20 million carats of industrial diamond stones and 139 million troy ounces of silver in the stockpile today.

Mr. Chairman, the Defense Department has confidence in the adequacy and accuracy of the techniques and procedures used to calculate inventory objectives and to acquire and dispose of materials in an efficient manner. The overall management of the national stockpile has been greatly improved as a result of the interagency study and implementation of the annual materials plan.

Mr. Chairman, that concludes my statement, I will be pleased to respond to any questions the subcommittee may have.

Mr. BENNETT. Mrs. Byron, do you have any questions you would like to ask?

Mrs. BYRON. No.

Mr. BENNETT. I will submit some questions for the record for you to answer for the record.

[The following questions were submitted to the witness to be answered for the record:]

Proposed answers to supplemental questions for the record, provided August 1, 1979, by the Staff of the House Subcommittee on Seapower and Strategic and Critical Materials of the Committee on Armed Services.

Question. What is the DOD Requirement for silver and industrial diamond stones for the three-year period 1980-82?

Question. By what process did the DOD determine how much silver and diamond stones will be needed for our defense requirements for a three-year period?

Question. What weapon system requires the largest amount of silver?

Question. How does the DOD determine how much silver we will need for a three-year war?

Question. What method is used to calculate this requirement?

Answer. The Federal Emergency Management Agency is the federal agency responsible for the operation and management of the stockpile. Through membership on the Annual Materials Plan Steering Committee, the Defense Department and other federal agencies work with the Federal Emergency Management Agency in reviewing changes in national security planning and product and market conditions as they affect stockpiling. The intent of this ongoing interagency effort is to develop an Annual Materials Plan which promotes improved coordination and material acquisition and disposal decisions with regard to the national stockpile.

The Department of Defense generally does not buy raw materials but procures weapon systems which contain strategic and critical materials in various processed shapes and forms. As such, the Department does not develop requirements for strategic and critical materials but relies on the Federal Emergency Management Agency's calculation of strategic and critical materials goals to account for defense wartime needs. To assist in this effort, the Department of Defense provides the Federal Emergency Management Agency with defense budget expenditure patterns; estimates of shipping losses; and information on scenario characteristics. The Federal Emergency Management Agency combines this data with many factors (e.g., Gross National Product, interest rates, civilian austerity, consumption shifts from durable to nondurable goods, investment shifts from housing to plant equipment, substitutions, material consumption patterns, transportation losses, political reliability of exporting countries, etc.) to calculate stockpile requirements, supply and goals for individual materials.

On occasion, however, the Department of Defense does provide the Federal Emergency Management Agency with peacetime and/or mobilization requirements for special commodities. These are usually materials used uniquely by Department of Defense contractors in the production of military equipment. Examples of special materials for which the Department of Defense has provided the Federal Emergency Management Agency with commodity requirements include manganese dioxide used in dry cell batteries employed by ground troops in field communication equipment; tungsten used to make tungsten carbide for use in armor piercing projectiles; and titanium metal sponge for use in titanium mill products for aircraft and missiles; in addition to beryllium, natural rubber and cordage fibers. Irrespective of the type of information the Department of Defense provides the Federal Emergency Management Agency (i.e., expenditure patterns vs. material requirements) the Department works closely with the Federal Emergency Management Agency in developing stockpile goals through its participation on the Annual Materials Plan Steering Committee. The current Annual Materials Plan indicates defense requirements for a three-year period for silver and industrial diamond stones total 115,089,900 troy ounces and 504,400 carats, respectively.

Question. Describe what procedures were used to arrive at a zero objective (goal) for silver.

Answer. In response to this question, we would refer to a United States General Accounting Office report, entitled "National Defense Requirements for a Silver Stockpile" dated April 10, 1979. In the report, the General Accounting Office concluded (a) the methodology used by the Federal Emergency Management Agency to determine stockpile goals is a reasonable approach and (b) the 139.5 million troy ounces of silver presently in the national stockpile are not required because the probable wartime supply exceeds projected United States requirements. We concur with the General Accounting Office in this assessment.

Question. What is the largest defense use of silver?

Answer. The single largest defense use of silver is for batteries. Other defense uses for silver include photographic fixer solutions, brazing alloys, dental fillings, military insignia and electroplating chemicals.

Question. Is there any substitute for silver in this defense stockpile?

Answer. Stockpile policy does not permit the substitution of one stockpile material for another.

Question. How long does it take to build a new nuclear submarine or an intercontinental ballistic missile?

Question. Would the requirement for silver be reflected in stockpile goals? If not, explain.

Question. How much silver goes into each new submarine and intercontinental ballistic missile?

Answer. An approximation of the time which elapses between the start of construction through delivery of a nuclear submarine and an intercontinental ballistic missile is six years and two years, respectively. An estimate of the total amount of silver required by the MX Missile System is 150,000 troy ounces. An estimate of the total amount of silver required by the Trident Missile Program from 1980-82 is 400,000 troy ounces. The requirement for silver by these systems would not be reflected in stockpile goals. Strategic and critical materials are stockpiled to meet projected requirements for the first three years of a conventional war. The silver requirements of nuclear weapons are not reflected in stockpile goals. The short time frames associated with nuclear war would not allow enough time to build additional systems once the war had begun. Such systems would, therefore, have to be in place prior to the war, and the silver required to build them must come from the Department of Defense Precious Metals Recovery Program and the open market. If construction of a nuclear weapon systems was in progress at the beginning of a national emergency, a decision would be made at that time whether or not to use stockpiled materials to complete the system. It may be seen, however, the amount of silver reported above for any such system is small compared to the overall three year defense requirement for silver of 115 million troy ounces.

Mr. BENNETT. We are trying to move along because the House is in session. So I will call the next witness.

The next witness is Werner Grosshans, Associate Director, Logistics and Communications Division, General Accounting Office.

We have to move expeditiously because the House is in session, and they're going to get to the DOD bill soon, and I just feel that I have to be there.

Yes, Mr. Grosshans.

Mr. GROSSHANS. Mr. Chairman, I think you have a prepared statement that we furnished previously. I could recap it.

Mr. BENNETT. It will be put in the record at this point, without objection. If you would just brief it down for us.

WRITTEN STATEMENT OF WERNER GROSSHANS

Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to appear before your Subcommittee and discuss our April 10, 1979, report entitled "National Defense Objectives for a Silver Stockpile." This report was requested by the Chairman, Subcommittee on Military Construction and Stockpiles, Committee on Armed Services, United States Senate. Our examination of the national defense requirements for a silver stockpile included:

- Review of the legislative history authorizing the stockpiling program.
- Analysis of the defense requirement for the present silver stockpile and agency inputs used by the Federal Preparedness Agency (FPA) in arriving at the current silver goal.
- Review of the modeling technique used by FPA to determine the stockpile goal for silver, including a sensitivity analysis of selected inputs to the model.
- Conversations with officials of FPA, and the Departments of Commerce, Defense, Interior, and State regarding their role in stockpile goal formulation.

We analyzed the requirement for a silver stockpile primarily on the basis of relationships presented in data used to determine 1976 stockpile goals. Goals for 1977 were not published because new stockpile guidance was expected from the President. Because of delays experienced in 1978, new goals were to be published in early 1979. The new goals are not yet available.

Today, we would like to quickly recap the legislation authorizing the stockpile and how silver was introduced to it. We will then highlight the major findings in our report which concluded that presently the 139.5 million troy ounces of silver included in the stockpile are not required because the probable wartime supply exceeds projected U.S. requirements.

STOCKPILE LEGISLATION

To prevent what could be a dangerous and costly dependence on foreign supply sources during periods of crisis,

the United States stockpiles 93 strategic and critical materials at 117 locations throughout the country. The current stockpile was estimated to be worth \$9.4 billion as of September 30, 1978; \$0.8 billion of which was silver.

The first major Government program to stockpile strategic and critical materials was authorized and initiated under the Strategic and Critical Materials Stock Piling Act of 1939.

The Government has also stockpiled materials under two other acts: the Defense Production Act of 1950 and the Agricultural Trade Development and Assistance Act of 1954.

STOCKPILE POLICY CHANGES

Numerous changes have occurred in U.S. defense preparedness assumptions since World War II which have affected stockpile policy and caused changes in the types and amounts of materials stockpiled. These assumptions pertained to the duration of conflict and the number of men that would be involved. In effect, they reduced the quantities of materials required for the stockpile and much was sold as excess.

In March 1975 your Subcommittee voted to authorize no further disposals of stockpile material until a new policy study was conducted and the planning period was increased to 3 years from the existing 1-year period. In response to your action, a reevaluation of stockpile policy and goals was made by an Interagency Committee, and the results submitted to the President.

President Ford's policy decision and new stockpile goals were announced on October 1, 1976. The new policy called for a stockpile capable of supporting U.S. defense requirements for the first 3 years of a major war, assuming large-scale industrial mobilization. It also provided for the support of a wide range of basic economic needs to insure the health, welfare, morale, and productivity of the civilian sector during wartime. Quantities to be stockpiled represented the estimated material needs for the first 3 years of a war over and above those which could be provided from domestic production and reliable imports.

In 1977 President Carter reaffirmed the 1976 policy and its underlying assumptions.

SILVER

The present stockpile of silver totals 139.5 million troy ounces. This silver was transferred to the national stockpile from the Treasury in June 1968. There are 49.4 million troy ounces kept at West Point, New York, and 90.1 million troy ounces kept at San Francisco, California. The General Services Administration's Federal Preparedness Agency, which is responsible for planning, programing, and reporting on the stockpile, has determined that no stockpile goal exists for the silver, and would like to dispose of it through phased sales.

DETERMINING STOCKPILE GOALS

In 1973, FPA implemented a new methodology using a computer-modeling technique to estimate the Nation's wartime strategic and critical materials requirements. The model takes into consideration many complex interactions that occur in the economy and can be thought of as an analytical device for simultaneously interrelating and quantifying the results of many judgmental inputs concerning a wartime economy. The basic modeling technique used is widely accepted by academic researchers and corporate planners alike. The FPA modifies the model based on "inputs" from the Departments of Commerce, Defense, State, and Interior. Inputs are estimates based on both data showing what past experience has been and expert judgment as to what a future situation could be in a time of war or nearness to war. The inputs are vital to the model and the stockpile goals can vary as a result of changes in them.

Through these inputs, FPA tries to be sure that model results will closely reflect the many complex interrelations present in a wartime economy. Although these inputs are subjective, their credibility is enhanced through independent formulation by the separate agencies involved and final review and approval by the Interagency Stockpile Goal Review Committee. Projections of wartime supply are computed separately from the model. However, a similar process of agency input and review is followed.

FPA has incorporated in its requirements model a structure whereby wartime estimates of supplies and materials requirements are broken down by defense, essential civilian, and general civilian tiers. National security priorities can therefore be taken into account by giving greater priority to meeting defense rather than essential civilian needs for strategic and critical materials and lesser priority to general civilian needs. Although the total stockpile requirement is considered important, the most reliable sources of supply are designated for defense and less reliable sources are designated for the essential civilian and general civilian needs.

The most important segment of FPA's modeling technique is determining what the estimated gross industrial dollar output (production) will be for 109 major categories of industrial sectors for each of the three tiers in each of the first three war years. These estimates are then multiplied by forecasts of corresponding material consumption ratios to obtain strategic and critical materials requirements by each industrial sector, which are then added to obtain the total materials requirements for each tier in each year of the 3-year planning period.

The FPA model's estimates of wartime gross industrial output by sector reflect the level of the economy's mobilization effort required to support a given war scenario. The war scenario is reflected by estimates for 30 major categories of defense expenditures which are supplied directly by the Department of Defense (DOD) and put into the FPA model.

DOD provides estimates to represent two different war scenarios. Each scenario differs in terms of participants, war fronts, and type of war to be waged. The intensity of economic mobilization required to support a given war scenario consists of two major components:

- An "unconstrained" economic scenario.
- An economic scenario altered by Government mobilization planning policy.

I will discuss defense requirements in more detail in a moment.

Strengths of the FPA methodology

FPA's modeling methodology recognizes the complexity of

the economy and the many interactions between its economic sectors. The model is also flexible because it allows for several adjustments to be made to better quantify expert judgment regarding the war's probable impact on the economy and the effects of Government policy to influence economic mobilization. FPA's methodology also attempts to quantify the recognition that different sectors of the economy have different priorities during wartime for claims on strategic and critical materials.

FPA's tests of the accuracy of the model's peacetime requirements estimates showed that most were within ± 25 percent of what the past actual requirements were for the items tested. Specific results for silver showed the model understated total peacetime silver requirements by about 3 to 10 percent. Determining requirements under wartime assumptions is a much more speculative process and associated error rates are likely to be greater. However, FPA officials believe that wartime estimates for silver would be accurate within ± 10 percent.

We determined that the FPA model's estimates of wartime silver requirements are sensitive to three major areas of inputs to the model: (1) wartime economic mobilization scenarios (2) choice of war scenario options, and (3) various values for wartime planning factor parameters which reflect different levels of policy, risk, and substitution of materials. Our estimates were made by calculations apart from FPA's computer hardware. Time constraints and resource limitations of FPA personnel precluded running the FPA model for the specific purpose of determining silver requirements sensitivities. However, our estimates are based on sound methodology and they compare favorably with results FPA previously obtained in actual computer runs where the stockpile dollar volume sensitivity was tested for all materials.

Limitations of the FPA methodology

Modeling techniques such as FPA's are recognized as the best analytical tool the current state of the art has to offer

for long-range economic projections. However, there are inherent shortcomings in their use. For instance, assumptions made in such models reflect a type of relationship which is not always present in the real world. However, these types of assumptions must be made because of shortcomings in available data that is necessary for input to the model. The same limitations apply to the key assumptions made in the FPA model because the detail, content, and availability of updated published data is limited.

For example, much of the internal structure of FPA's model is currently based on data that reflects the 1967 industrial technology. Because gathering this data is a complex and resource-consuming task which cannot be undertaken very frequently, published data reflecting the 1972 economy will not be available to FPA until mid-1979.

Although modeling techniques have their limitations, it is widely recognized that they often represent the best analytical tools available for making economic projections which, because of their complexity, cannot be approached using other techniques. The general technique used by FPA is widely accepted and used by academic researchers and corporate planners alike. FPA continues to refine the methodology used in the model and updates it with the latest data as soon as it becomes available--although substantial timelags still exist before this data can be obtained from published sources.

In our opinion, the methodology FPA used to determine stockpile goals is a reasonable approach representing a variation of the generally accepted state-of-the-art for this type of economic analysis.

WARTIME REQUIREMENTS FOR SILVER

As I mentioned earlier, wartime estimates of materials requirements for stockpile planning are divided into defense, essential civilian, and general civilian tiers. Stockpile goals for the three tiers total 636.3 million troy ounces with a projected 3-year supply of 771.1 million troy ounces. (See appendix I for details.)

Defense uses of silver include batteries, brazing alloy,

X-ray and photographic film, and medical uses. Silver is very important to any war effort. Its essentiality in photography and electrical applications requires that the United States ensure its availability in case of national emergencies.

Defense silver usage for the 3 fiscal years, 1976, 1977, and 1978, was approximately 4.7, 3.2, and 2.7 million troy ounces, respectively. The single largest defense use of silver during the period was in batteries, accounting for over 7 million troy ounces of the approximate 10.6 million troy ounces used. The Navy was the single largest defense user of silver, accounting for about 5.9 million troy ounces of the approximate 10.6 million troy ounce total. The defense silver requirement would of course be much higher under a projected wartime situation.

The defense wartime silver requirement, based on the 1976 goals, averages about 38.4 million troy ounces a year; an increase of 34.9 million troy ounces a year over peacetime consumption. The total 3-year defense requirement of 115.1 million troy ounces is more than offset by 478.1 million troy ounces of projected supply, of which 324 million troy ounces is from U.S. domestic production alone.

The total 3-year essential civilian and general civilian wartime silver requirement, based on the 1976 goals, is 521.2 million troy ounces. The projected 3-year supply is 656 million troy ounces including supply excess to defense wartime needs. All essential civilian requirements and part of the general civilian requirements could be met from domestic production and expected wartime supply from Canada and Mexico. The remaining silver requirement could be more than filled by other supplier countries.

Past wartime experience has shown that the United States was able to meet its wartime silver requirements from domestic production and imports. Available data shows that silver supply actually exceeded wartime demand during World War II and the Korean conflict. During the Vietnam era, domestic production and import levels were unaffected and remained at peacetime levels. During this period, the Treasury was selling off large

amounts of silver and industry's increased wartime need for silver was easily filled from these sales. Consumption figures were also higher during this period because no wartime austerity measures were imposed on the civilian population.

POSSIBLE ADDITIONAL SILVER SOURCES NOT
INCLUDED IN FPA'S SUPPLY PROJECTIONS

The FPA uses only projections of domestic production and expected import levels from foreign suppliers to determine the silver supply available to meet the needs of the wartime economy. However, additional sources of silver do in fact exist and have, in the past, supplied silver to meet the needs of the United States. For instance, some nations supplying silver to the United States are thought to have silver stocks of their own.

Also, according to FPA and various silver experts, there are several other sources of silver on hand that could be used, if needed in a national emergency. DOD silver stocks to be provided to contractors as Government-furnished material amounted to about 7 million troy ounces at the end of 1978. The Treasury retained approximately 39 million troy ounces for coinage. Approximately 138 million troy ounces were held in industry, Commodity Exchange, and Chicago Board of Trade stocks at the end of 1978. The peacetime economy of the United States has occasionally depended on these stocks to meet fluctuations in its demand and export needs. As I mentioned earlier, the increased demand for silver during the Vietnam conflict from 1964 to 1972 was met by Treasury silver sales to industry. The Strategic Stockpile of silver was not affected.

Another less feasible source of silver would include silver bullion, jewelry, tableware, and coins privately held by U.S. citizens.

CONCLUSIONS

In conclusion, we believe the methodology used by FPA to determine the 1976 stockpile goal for silver is a reasonable approach and represents a variation of the generally accepted state-of-the-art for this type of economic analysis. Using this methodology, FPA in 1976 determined that there was no requirement to stockpile silver. Our work indicates that an excess of silver supply exists over projected wartime requirements.

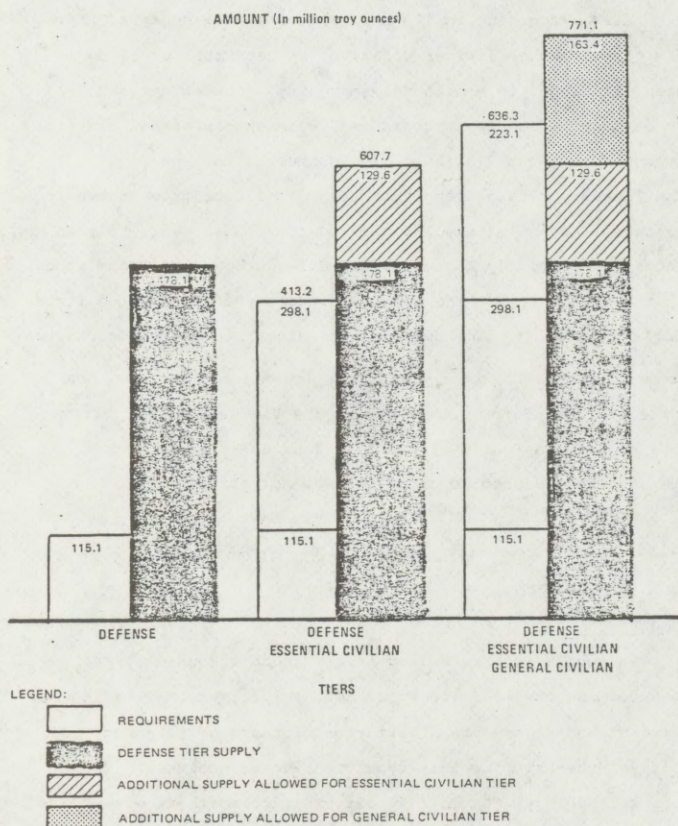
Although it is possible that changes in projected silver requirements and supply relationships could occur in the distant future, no such occurrences are foreseen at this time. Therefore, we agree with FPA that 139.5 million troy ounces of silver currently stored in the stockpile are not needed to support estimated national defense requirements.

Mr. Chairman, that concludes my statement. We will be happy to answer any questions you might have.

APPENDIX I

APPENDIX I

SILVER SUPPLY AND REQUIREMENTS—1976 GOALS (ADJUSTED)



NOTES: ALL THREE YEARS OF SUPPLY AND REQUIREMENTS ARE INCLUDED FOR EACH TIER. THE DEFENSE TIER IS SUPPLIED BY THE UNITED STATES, CANADA, AND MEXICO. UNITED STATES PRODUCTION ALONE ACCOUNTS FOR ABOUT 324 MILLION TROY OUNCES OF THIS EXPECTED SUPPLY.

**STATEMENT OF WERNER GROSSHANS, ASSOCIATE DIRECTOR,
LOGISTICS AND COMMUNICATIONS DIVISION, GENERAL AC-
COUNTING OFFICE**

Mr. GROSSHANS. I could just briefly recap the background.

On that particular statement, of course, the request came from the chairman of the Subcommittee on Military Construction and Stockpiles, Committee on Armed Services in the Senate, and basically what we did under that particular examination was to test the following areas:

We reviewed the legislative history authorizing the stockpiling program.

We analyzed the defense requirement for the present silver stockpile and also looked at the agency inputs that were prepared for the Federal Preparedness Agency in arriving at their stockpile goals for silver.

We reviewed the modeling techniques that FPA used and generally concluded that they presented the best available state of the art.

Mr. BENNETT. Let me ask you one question.

How do you assure yourself of not overlooking a change in the political atmosphere in a particular country? I don't want to name a country, but that does concern me some. Mr. McDonald made a good point about it.

Mr. GROSSHANS. That was a good point that was raised.

Let me just point out that that's one of the factors that the Department of State addresses, and this is one of the inputs that the FPA gets from the Department of State. There are several factors that are considered in that input. It considers a country's political orientation toward the United States and there are certain values assigned to that, each of these factors, and there are subcomponents under that that are needed.

The second major factor is the ability to sustain materials industry exports in wartime by that specific country, the dependability of the labor force, the materials and related industries in that specific country, and the vulnerability to sabotage of the materials industry.

So really, from the standpoint of a particular country's leanings, which was discussed earlier, as well as their sustainability, this is taken into account and is reviewed periodically, and that input could well mean that in 1 year when these goals are computed a country like Peru—I don't want to mention any specific ones, but that was mentioned earlier—could be considered, for example, for one of the tiers, and in the next year, based on changes that do occur, that country may no longer be considered as a viable source of supply. So there are different changes to the model.

Basically, we also discussed our views with members and officials of the Departments of Commerce, Defense, Interior, and State, and based on the analyses that we performed with respect to silver, we are of the firm opinion that the FPA conclusion is adequate.

I might just add, the point that was made this morning may be a very valid one. Whether or not we retain silver in the stockpile I think is a policy determination.

What we addressed in our report is really a question of is there a valid defense need for this particular mineral, and the conclusion in

this particular case is no. Now, that doesn't mean that we should get rid of all of it or that we may not want to hang onto it because it may appreciate faster than it costs is to retain it. Our position simply is this: Based on the methodology that was used, which we believe is fairly sound, the requirement for silver did not show up in any one of the tiers. As you know, we have the defense tier, the essential civilian, and the general civilian tier.

Now, after you go through all of these computations the bottom line is that silver is one of those items right now that we seem to be in fairly good shape on. That doesn't mean by the year 2000, as Mr. McDonald mentioned, that we may not need some. By contrast, then, we would have to take a look at what are some of the other materials. I think Mr. Church mentioned there are some 18 materials now that have a shortfall in that first tier, which is the defense tier.

Now, looking strictly at this from a leveling standpoint, I think it makes a lot of sense to say, "OK, we'll take some of this money from the silver sales and buy some of these materials that you, Mr. Chairman, mentioned that we critically need." That seems to be a higher priority, and that's basically what we're trying to point out.

I might just add one other point. With respect to higher priority needs, one could also look beyond the critical stockpile needs. One could also look at what are the defense needs for war reserve materials because these types of materials have a higher priority than even stockpile needs because they have to be there to carry us through a certain period of time when the war starts.

But we know, based on a lot of work that we've done in the General Accounting Office that there are large shortfalls in some of those materials, so again, even though under your bill these moneys could not be used for that purpose, that would be another priority need than seems to be higher than what we have right now for silver.

Basically, I think most of the points that we have in the testimony have been addressed this morning.

The question of what are the requirements for silver, I think we pointed out in our report and in the testimony that for 1976, 1977, and 1978, for example, the defense needs for silver amounted to 4.7 million, 3.2 million, and 2.7 million troy ounces respectively for those years. The single largest defense use of silver during the period was in batteries. This accounted for about 7 million troy ounces of the 10.6 million total for the 3 years. The single biggest user was the Navy, with about 5.9 million troy ounces.

Based on the input that DOD provides FPA for the war years, the computation then would have amounted to roughly the peacetime use, as I pointed out, was something like 4.7 million, 3.2 million, and 2.7 million ounces. Considering the war years consumption for the same period would have amounted, based on the model, to about 38.4 million troy ounces per year, or roughly about 115 million troy ounces for the 3-year period for that defense tier.

As pointed out this morning, we do have sufficient capability, mining capability, to satisfy this defense tier. The recycling of silver, as pointed out, amounts to about 47 million troy ounces a year in addition to the mining capability. Therefore, really from a standpoint of U.S. resource capability, that would amount to about 86.1 million

ounces a year, as contrasted to the strict defense needs of about 38.4 million.

In addition to that, of course, the imports from Canada, from Mexico and Peru, primarily the first two, amount to about 90 million ounces a year.

Mr. BENNETT. You've been referring to the report by the Comptroller General entitled "National Defense Requirements for a Silver Stockpile"?

Mr. GROSSHANS. That is correct.

Mr. BENNETT. Without objection, I'm requesting that the entire report be put into our record. It's not too lengthy, and this is a very controversial subject. So without objection, that entire report will be put in.

[The following information was received for the record:]

THE UNDER SECRETARY OF DEFENSE,
Washington, D.C., May 23, 1979.

HON. ELMER B. STAATS,
Comptroller General of the United States,
Washington, D.C.

DEAR MR. STAATS: This is in reference to your report, entitled "National Defense Requirements for a Silver Stockpile" (OSD Case No. 5141) dated April 10, 1979.

We agree with (a) your finding that the methodology the Federal Preparedness Agency (FPA) uses to determine stockpile goals is a reasonable approach and (b) your reaffirmation of FPA's conclusion that the 139.5 million troy ounces of silver presently in the Strategic and Critical Materials Stockpile are not required because the probable wartime supply exceeds projected U.S. requirements.

However, we would like to take this opportunity to correct an inaccuracy in the data presented on page 27, paragraph 3 of the report, which states:

"(The MX) System silver requirements are now estimated to be about 1 million troy ounces maximum."

This statement does not reflect information assembled by the Defense Industrial Resources Support Office at the request of the staff of the Materials Management Branch, Logistics and Communications Division, GAO concerning the use of silver and lithium in the MX Missile. The requested information, transmitted to the GAO staff on February 23, 1979, provided an estimate of 150,000 troy ounces as the total silver requirement for the MX Missile System.

Your interest in the methodology employed by the Federal Preparedness Agency in developing stockpile goals and the participation of the DOD in this planning process is much appreciated.

Sincerely,

GERALD P. DINNEEN,
Principal Deputy.

REPORT BY THE
Comptroller General
OF THE UNITED STATES

National Defense Requirements For A Silver Stockpile

The strategic and critical materials stockpile prevents a dangerous and costly dependence on foreign supplies during a national emergency. Presently, the 139.5 million troy ounces of silver included in the stockpile are not required because the probable wartime supply exceeds projected U.S. requirements.

This report describes the methodology the Federal Preparedness Agency used to determine U.S. needs for silver. The report was requested by the Subcommittee on Military Construction and Stockpiles, Senate Committee on Armed Services.



LCD-79-410
APRIL 10, 1979



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-125067

The Honorable Gary Hart
Chairman, Subcommittee on Military
Construction and Stockpiles
Committee on Armed Services
United States Senate

Dear Mr. Chairman:

This report describes the methodology the Federal Preparedness Agency used to determine U.S. needs for silver. Our report was prepared pursuant to your May 25, 1978, request which was cosigned by Senators Strom Thurmond and Jesse Helms and former Senator Paul Hatfield.

You requested that we:

- Examine the current administration's calculations together with underlying assumptions that define the U.S. requirements for silver during a period of national emergency.
- Assess the validity of silver sources available to the United States during a period of national emergency, including validating the quantities of silver available from these sources.
- Show whether or not the United States needs a silver stockpile for national defense purposes, and if so, what size it should be.
- Make an analysis of historical supply and demand statistics, particularly for the World War II and Korean conflict period and relate the analysis to current projections.
- Evaluate projected reserves, production, and consumption data to see if there is a future need for the silver stockpile.

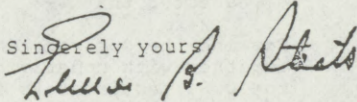
B-125067

- Evaluate the most sensitive parameters used to compute stockpile requirements, such as worldwide resources and production, import and export expectations, and gross national product without tracing the logic of the Federal Preparedness Agency's requirements model.
- Attempt to obtain data on specific defense needs, such as photographic materials, that can be directly related to silver.

You requested that we not question basic stockpile policy--for instance, whether or not a 3-year contingency was realistic or acquisition priorities were proper.

As arranged with your office, copies of this report are being sent to the cosigners of your May 25, 1978, letter and to the Chairmen, House Committees on Appropriations, on Armed Services, and on Government Operations; the Senate Committees on Appropriations, on Armed Services, and on Governmental Affairs; the Director, Office of Management and Budget; the Administrator of General Services; and the Secretaries of Commerce, Defense, State, and the Interior. Copies will also be available to other interested parties who request them.

Sincerely yours,



Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT
TO THE SUBCOMMITTEE ON MILITARY
CONSTRUCTION AND STOCKPILES
COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

NATIONAL DEFENSE REQUIRE-
MENTS FOR A SILVER STOCKPILE

D I G E S T

The United States stockpiles 93 commodities having strategic and critical importance to the national defense. This prevents a dangerous and costly dependence on foreign supply sources during a national emergency. To determine stockpile policy and goals for these commodities, the General Services Administration's Federal Preparedness Agency uses a mathematical "model" to estimate what the requirements of the Nation's wartime economy will be. The basic modeling technique used is widely accepted by academic researchers and corporate planners alike.

The Federal Preparedness Agency modifies the model based on "inputs" from the Departments of Commerce, Defense, State, and the Interior. Inputs are estimates based on both data showing what past experience has been and expert judgment as to what a future situation could be in a time of war or nearness to war. The inputs are vital to the model and the stockpile goals can vary as a result of changes in them.

Through these inputs the Federal Preparedness Agency tries to be sure that model results will more closely reflect the many complex interrelations present in a wartime economy. Although these inputs are subjective, their credibility is enhanced through independent formulation by the separate agencies involved and final review and approval by the Inter-agency Stockpile Goal Review Committee. Projections of wartime supply are computed separately from the model. However, a like process of agency input and review is followed. The methodology the Federal Preparedness Agency used to determine stockpile goals is, in GAO's opinion, a reasonable approach representing a variation of the generally accepted state of the art for this type of economic analysis.

On the basis of the above methodology, in 1976 the Federal Preparedness Agency determined that the Nation's silver stockpile (139.5 million troy ounces) exceeds national defense requirements.

The General Services Administration has requested congressional approval for the phased sale of this inventory. The current worth of the silver stockpile is estimated at \$0.8 billion as of September 1978.

GAO's analysis of the silver stockpile requirement was primarily on the basis of data used to determine the 1976 stockpile goals. Goals for 1977 were not published because new Presidential stockpile guidance was expected. Additional delays experienced in 1978 deferred the new goal publication until 1979,

and figures for the 1979 goals were not yet available.

GAO found inconsistency in the development of Bureau of Mines silver supply estimates. Although the inconsistency substantially lowered silver supply projections, current information indicates that the silver supply exceeds the projected wartime requirements.

According to the Federal Preparedness Agency and various silver authorities, there are several other feasible sources of silver in addition to imports and U.S. production which could be drawn on, if required, in a national emergency. These added sources are not considered by the Federal Preparedness Agency in its supply projections and include about

- 39 million troy ounces in the Treasury stocks for coinage,
- 7 million troy ounces in Defense Department stocks for contracts with Government-furnished material provisions,
- 118 million troy ounces in the Commodity Exchange and Chicago Board of Trade warehouses, and
- 20 million troy ounces held by industry.

While GAO did not verify that all these sources could be used, undoubtedly sizable quantities could be diverted for defense uses in emergencies.

New stockpile goals are presently under agency review and official figures are expected to be published in early 1979. These new goals will reflect the Federal Preparedness Agency's use of an enhanced model. The 1979 goals for silver will also reflect lower Bureau of Mines estimates for silver supply. However, Federal Preparedness Agency officials state that the new study has again shown a wartime silver supply exceeding projected wartime requirements, and the stockpile goal for silver remaining at zero. Although it is possible that changes in projected silver requirements and supply relationships could occur in the distant future, no such occurrences are foreseen at this time.

The report was discussed with agency officials and they generally agreed with its contents. Their comments were considered in preparing the report.

CHAPTER 1INTRODUCTION

The United States cannot produce certain strategic and critical materials ^{1/} in sufficient amounts to support U.S. military and basic civilian requirements during periods of national emergency. It is partially or, in some cases, totally dependent upon foreign sources for many of these materials.

To prevent what could be a dangerous and costly dependence on foreign supply sources during periods of crisis, the United States stockpiles 93 strategic and critical materials at 117 locations throughout the country. The current stockpile is estimated to be worth \$9.4 billion as of September 30, 1978; \$0.8 billion of which is silver.

STOCKPILE LEGISLATION

The first major Government program to stockpile strategic and critical materials was authorized and initiated under the Strategic and Critical Materials Stock Piling Act of 1939, as amended in 1946 (50 U.S.C. 98 et seq.). Materials were procured under this act to support U.S. industrial and military needs during an emergency. Most acquisitions were made in the 1950s.

The Government has also acquired stockpile materials under two other acts. Section 303 of the Defense Production Act of 1950, as amended (50 U.S.C. App. 2093) authorized the Government purchase of metals and minerals to stimulate defense-related expansion of production capacity. Section 104(b) of the Agricultural Trade Development and Assistance Act of 1954 (68 Stat. 454, 456) authorized the acquisition of strategic and critical materials with foreign currencies obtained from the sale of surplus food commodities. This provision was subsequently eliminated under section 2 of the Food for Peace Act of 1966 (80 Stat. 1526).

STOCKPILE POLICY CHANGES

Numerous changes have occurred in U.S. defense preparedness assumptions since World War II which have affected stockpile policy and caused changes in the types and amounts of materials stockpiled. Initially, the types and amounts of materials stockpiled were to support the United States in a 5-year conflict requiring 10 million men. In 1958 these assumptions were changed to reflect planning for a 3-year conflict involving 5 million men. In April 1973 under the Nixon administration, the length of conflict was further reduced to 1 year. Other assumptions were that foreign imports would remain available from all but Communist and combatant countries and that U.S. defense needs could be met through increased civilian austerity and the use of substitute materials. In effect, the 1958 and 1973 changes reduced the quantities of materials required for the stockpile and many were sold as excess.

In March 1975 the Subcommittee on Seapower and Strategic and Critical Materials, House Committee on Armed Services, voted to authorize no further disposals of stockpile material until a new policy study was conducted and the planning period was increased to 3 years.

In August 1975 the National Security Council directed

^{1/} "Strategic" refers to the relative availability of materials, while "critical" refers to their essentiality. troy ounces - a series of units of weight based on a pound of 12 ounces and the ounce of 20 pennyweights or 480 grains.

that such a reevaluation be conducted by an interagency committee. This reevaluation was completed in July 1976 and basic stockpile assumptions and policy options were submitted to the President.

President Ford's policy decision and new stockpile goals were announced on October 1, 1976. The new policy called for a stockpile capable of supporting U.S. defense requirements for the first 3 years of a major war, assuming large-scale industrial mobilization. It also provided for the support of a wide range of basic economic needs to insure the health, welfare, morale, and productivity of the civilian sector during wartime. Quantities to be stockpiled represented the estimated material needs for the first 3 years of a war over and above those which could be provided from domestic production and reliable imports.

An Interagency Steering Committee was also established to develop an Annual Materials Plan showing proposals for the acquisition of needed materials and disposal of excess materials on a fiscal year basis. This Annual Materials Plan Steering Committee includes representatives from the Departments of Commerce, Defense, the Interior, State, and the Treasury and the Office of Management and Budget. The Steering Committee is under the leadership of the Federal Preparedness Agency (FPA), an agency within the General Services Administration (GSA).

The new decision and planning assumptions increased goals for 72 of the 93 stockpiled materials. President Carter announced a moratorium on stockpile acquisitions and disposals on February 22, 1977, pending a review of the recent Ford policy. After additional review, the President reaffirmed the 1976 policy and its underlying assumptions. However, acquiring stockpile materials that will increase U.S. readiness posture for the first year of an emergency have been given the highest priority.

GSA has initiated a procedure to fully implement the new stockpile policy objectives. The procedure includes an annual schedule of major acquisitions and disposals to align the stockpile with the new goals. GSA plans to acquire and dispose of stockpile materials at constrained rates to preclude disrupting the market. Achieving the new goals will therefore be a long-term proposition.

All stockpile disposals must be approved by the Congress.

SILVER

In June 1968, 165 million troy ounces 1/ of silver were transferred from the Treasury and introduced into the Strategic and Critical Materials Stockpile in accordance with the provisions of the act adopted in 1967, authorizing adjustments in the amounts of outstanding silver certificates (Public Law 90-29). Subsequently, 25.5 million troy ounces were transferred back to the Treasury for use in the Eisenhower coin program in accordance with section 202 of the Bank Holding Company Act amendments of 1970 (84 Stat. 1768). This transaction reduced the silver stockpile to its present 139.5 million troy ounce level. The silver stockpile is located at two locations: West Point, New York, with 49.4 million troy ounces and San Francisco, California, with 90.1 million troy ounces.

FPA has determined that no stockpile goal exists for the silver and would like to dispose of it through phased sales. Information regarding the number and individual sizes of these sales and the number of years over which they will take place is not yet available. However, the sales will be designed to preclude market disruption.

MANAGEMENT OF THE STOCKPILE

FPA is responsible for planning, programing, and reporting on the stockpile. The President, through the National Security Council, gives FPA guidance for developing stockpile policy. GSA's Federal Property Resources Service is responsible for purchasing, storing, maintaining, transferring, rotating, distributing, and protecting the materials.

Although FPA determines stockpile policy and goals, it relies upon information from other Federal agencies for supply and capacity projections, probable effects on foreign relations, special defense requirements for materials, probability of access to world sources of materials during wartime, and domestic mineral reserves. The major advising agencies are the Departments of Commerce, State, Defense, and the Interior.

SCOPE OF REVIEW

Our examination of the national defense requirements for a silver stockpile included

- review of the legislative history authorizing the stockpiling program;
- analysis of the defense requirement for the present silver stockpile and agency inputs used by FPA in arriving at the current silver goal;
- review of the modeling technique used by FPA to determine the stockpile goal for silver, including a sensitivity analysis of selected inputs to the model; and
- conversations with officials of FPA and the Departments of State, Commerce, the Interior, and Defense regarding their role in stockpile goal formulation.

Previously issued reports and testimony are listed in appendix II. Also, our other work in process will address some of the assumption issues not discussed here.

CHAPTER 2

ASSESSING THE NEED FOR A SILVER STOCKPILE

Silver is very important to any war effort. Its essentiality in photography and electrical applications requires that the United States ensure its availability in case of national emergencies. However, the available supply of silver, even under wartime conditions, has been determined as more than adequate to supply all the requirements of the United States. Accordingly, in 1976 FPA set the Nation's silver stockpile goal at zero. New stockpile goals are presently under interagency review and official figures are expected to be published in early 1979. However, FPA officials have informed us that the new study has again shown a wartime silver supply exceeding projected wartime requirements and the stockpile goal for silver remaining at zero.

In our opinion, the methodology FPA used to determine stockpile goals is a reasonable approach representing a variation of the generally accepted state of the art for this type of economic analysis. The basic modeling technique used to determine requirements is widely accepted by academic researchers and corporate planners alike.

Judgmental inputs to the model and modifications to model results are made by FPA in order to more closely approximate the many complex interrelations that would be present in a wartime economy. Although these inputs are subjective, their credibility is enhanced through independent formulation by the separate agencies involved and final review and approval by the Interagency Stockpile Goal Review Committee. Like the Annual Materials Plan Steering Committee, this Committee is also comprised of members from FPA, the Office of Management and Budget, and the Departments of Defense, the Treasury, Commerce, State, and the Interior.

Although projections of wartime supply are computed separately from the model, a like process of agency input and review is followed. Also, basic supply and input data used is partly based on past actual experience. Finally, all resulting goals are reviewed and approved by the above Committee. For further discussion on requirements development and supply resource computations see chapters 3 and 4.

OUR ANALYSIS

Our analysis of the requirement for a silver stockpile was primarily on the basis of relationships presented in data used to determine 1976 stockpile goals. Our work indicates that an excess of silver supply exists over the projected U.S. wartime requirements. Goals for 1977 were not published because new stockpile guidance was expected from the President. Because of delays experienced in 1978, new goals will not be published until early 1979. However, FPA officials have told us that preliminary unapproved figures indicate an excess of supply under the 1979 goals as well.

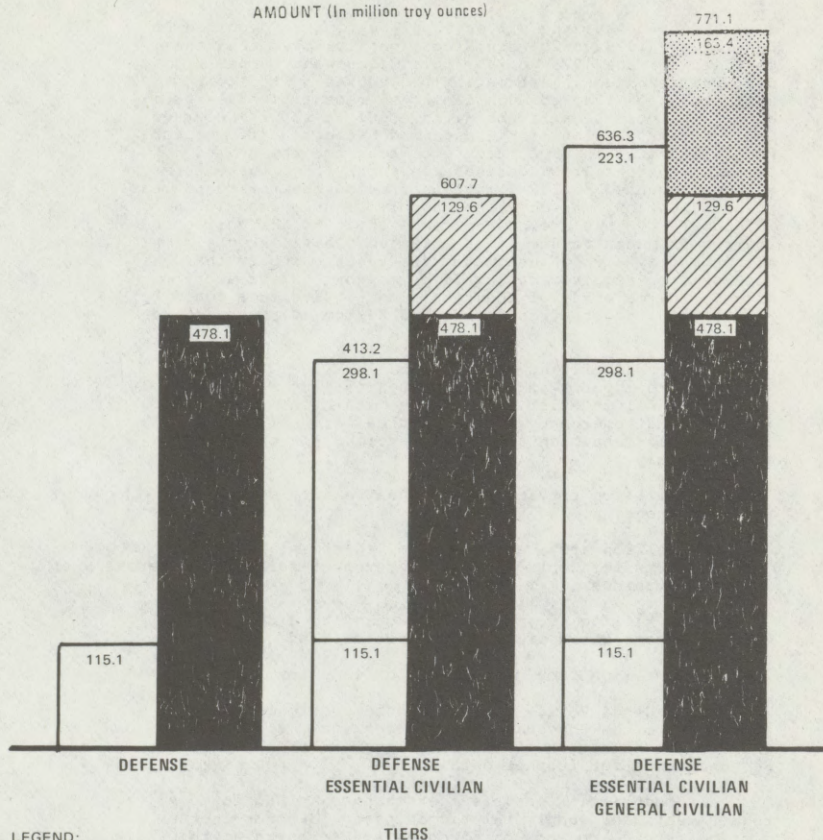
The purpose of the stockpile is to provide the basic materials necessary to support defense and essential civilian needs in times of national emergency. FPA accordingly has incorporated in the model a structure whereby wartime estimates of supplies and materials requirements are broken down by defense, essential civilian, and general civilian tiers. National security priorities can therefore be taken into account in the model by giving greater priority to meeting defense rather than essential civilian needs for strategic and critical materials and lesser priority to general civilian needs. Although the total stockpile requirement is considered important, the most reliable sources of supply are designated for the defense tier and less reliable sources are designated for the essential and general civilian tiers. The tiers are defined below:

Defense tier - represents all production necessary to obtain weapons, manpower, and support, including production necessary to support suppliers of defense contractors. Only small degrees of substitute materials are tolerated for defense tier goods.

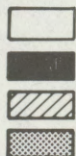
Essential civilian tier - those expenditures judged necessary to maintain health, safety, morale, and productivity to support a strong civilian wartime economy. Products in the essential civilian tier must be made without substantial reduction in their content of strategic and critical materials.

SILVER SUPPLY AND REQUIREMENTS—1976 GOALS (ADJUSTED)

AMOUNT (In million troy ounces)



LEGEND:



REQUIREMENTS

DEFENSE TIER SUPPLY

ADDITIONAL SUPPLY ALLOWED FOR ESSENTIAL CIVILIAN TIER

ADDITIONAL SUPPLY ALLOWED FOR GENERAL CIVILIAN TIER

NOTES: ALL THREE YEARS OF SUPPLY AND REQUIREMENTS ARE INCLUDED FOR EACH TIER. THE DEFENSE TIER IS SUPPLIED BY THE UNITED STATES, CANADA, AND MEXICO. UNITED STATES PRODUCTION ALONE ACCOUNTS FOR ABOUT 324 MILLION TROY OUNCES OF THIS EXPECTED SUPPLY.

General civilian tier - products in this tier can be made in varying degrees from noncritical substitute materials with no significant degradation in performance if less than their full material content is achieved.

We found that the silver supply estimates provided to FPA for the 1979 goals were significantly lower than those provided for the 1976 goals. This discrepancy arose from basic differences in estimating procedures. The lower estimates have tracked much closer to recent import experience. The most significant differences in supply occurred in import projections for Canada and Mexico. Differences were also noted in production estimates for the United States. The resulting decrease in supply from these three sources amounted to 142.3 million troy ounces for the 3-year planning period. We decreased supply figures used in the 1976 goals by this amount and compared it to the corresponding requirements to see if it affected the silver goal. Although only a rough estimate, the results showed that defense tier requirements could be met by U.S. production alone. The majority of the remaining requirements could be filled with imports from Canada and Mexico as shown in the chart.

Silver authorities and FPA officials feel that in addition to imports and U.S. production many other feasible sources of silver exist and could be drawn on, if required, in a national emergency. These sources are not considered in the above-mentioned supply projections and include approximately

- 39 million troy ounces in the Treasury stocks for coinage,
- 7 million troy ounces in the Department of Defense (DOD) stocks for contracts with Government-furnished material provisions,
- 118 million troy ounces in Commodity Exchange and Chicago Board of Trade warehouses, and
- 20 million troy ounces held by industry.

While we did not verify that all these assets would be available to the Government in an emergency, in view of the sizable sources some diversion should be possible. See chapter 4 for further details.

Although it is possible that changes in projected silver requirements and supply relationships could occur in the distant future, no such occurrences are foreseen at this time. Therefore, on the basis of our analysis, the 139.5 million troy ounces currently stored in the stockpile are not needed to support estimated national defense requirements.

In addition to evaluating whether or not the silver stockpile is required for additional defense purposes and the basis for such determination, other specific information requested is presented in the following chapters:

- Examination of the methodology and assumptions used to calculate silver requirements.
- Evaluation of the most sensitive parameters used in the computation of stockpile requirements.
- Assessment of the sources and quantities of silver available to the United States during national emergencies.
- Analysis of historical supply and demand for silver during past wars.

CHAPTER 3METHODOLOGY FOR DETERMINING SILVER REQUIREMENTS

In 1973 FPA implemented a new methodology to aid in establishing national stockpile goals. The methodology uses a computer-modeling technique to estimate the Nation's wartime strategic and critical materials requirements. The model takes into consideration many complex interactions that occur in the economy. The model can be thought of as an analytical device for simultaneously interrelating and quantifying the results of many judgmental inputs concerning a wartime economy. Before 1973 a series of interagency committee meetings staffed by experts determined stockpile objectives. However, the major drawback of the prior system was that the many considerations regarding a wartime economy could not be simultaneously interrelated and quantified through discussion or even manual analysis. The set of final stockpile objectives, therefore, did not reflect the U.S. economy at any one point in time.

Although modeling techniques have their limitations, it is widely recognized that they often represent the best analytical tools available for making economic projections which, because of their complexity, cannot be approached using other techniques. The general technique used by FPA is widely accepted and used by academic researchers and corporate planners alike. In addition, FPA's model is not stagnant. FPA continues to refine the methodology used in the model and update it with the latest data as soon as it becomes available--although substantial timelags still exist before this data can be obtained from published sources.

The methodology employed in the FPA model is a reasonable approach which represents a variation of the generally accepted state of the art for this type of analysis.

OVERVIEW OF THE FPA METHODOLOGY

FPA determines how much of each of the 93 critical and strategic materials should be stored in the stockpile by estimating what the requirements and supply for those materials will be for the first 3 years of a war of indeterminate duration. An estimate of the desired stockpile level for a given material is obtained by totaling the excess of requirements over supply for each of the 3 war years, for each stockpile tier. FPA computer modeling methodology primarily estimates wartime requirements for materials. Materials supply estimates, which are compared against these requirements to set stockpile goals, essentially are calculated apart from the model using virtually manual techniques. Determining supply projections is discussed in chapter 4 of this report.

The most important segment of FPA's modeling technique is determining what the estimated gross industrial dollar output (production) will be for 109 major categories of industrial sectors for each tier in each of the first 3 war years. These estimates are then multiplied by forecasts of corresponding material consumption ratios (MCR) to obtain strategic and critical materials requirements by industrial sector, which are then added to obtain the total materials requirements for each tier in each year of the 3-year planning period. MCRs are forecasted for each material by industrial sector for each year. The ratios represent the physical quantity of a material required per dollar of an industrial sector's gross output. MCR forecasts are primarily based on 15 years of historical data provided by the Department of Commerce.

The FPA model's estimates of wartime gross industrial output by sector reflect the level of the economy's mobilization effort required to support a given war scenario. The war scenario is reflected by estimates for 30 major categories of defense expenditures which are supplied directly by the Department of Defense (DOD) and input to the FPA model.

DOD provides estimates to represent two different war scenarios. Each scenario differs in terms of participants, war fronts, and type of war to be waged. The intensity of economic mobilization required to support a given war scenario consists of two major components:

--An "unconstrained" economic scenario.

--An economic scenario altered by Government mobilization planning policy.

The unconstrained economic scenario is generated to provide a base for estimating the war's impact on the economy. It represents how the economy would react to support a war in the absence of Government policy to influence the economy's war mobilization effort.

Unconstrained economic scenarios are reflected in the FPA model through the judgmental inputs of the Interagency Goal Review Committee regarding the war's impact on several key macroeconomic variables such as unemployment, interest and tax rates, plant capacity utilization, and household formations. The Committee also determines values for "planning factors" which are superimposed on the unconstrained wartime economy to reflect the effects of Government policy influencing the industrial mobilization effort supporting the war. These effects consist of varying levels of

--austerity imposed on civilian sectors,

--shifts in personal consumption patterns,

--shifts in investment patterns, and

--changes in imports and exports of manufactured goods.

The Government policy assumes that adjustments might be implemented through rationing, increased personal income taxes, accelerated writeoffs on war-related investment in plant and equipment, and enforced personal savings.

As previously discussed in chapter 2, the FPA model breaks down the estimated wartime materials requirements into three separate stockpile tiers. This is done to better reflect the priorities of different needs in a wartime economy. The wartime silver requirements, and therefore stockpile goals, estimated by the FPA model cannot be meaningfully interpreted without having some idea of the intensity of the war scenario and corresponding economic mobilization scenario which are hypothesized.

STRENGTHS OF THE FPA METHODOLOGY

The modeling methodology FPA used to estimate wartime requirements for strategic and critical materials recognizes the complexity of the economy and the many interactions between its economic sectors. Materials requirements estimates can therefore be more accurate, provided the methodology is properly applied. The model is also flexible because it allows for several adjustments to be made to better quantify expert judgment regarding the war's probable impact on the economy and the effects of Government policy to influence economic mobilization.

FPA's methodology also attempts to quantify the recognition that different sectors of the economy have different priorities during wartime for claims on strategic and critical materials.

LIMITATIONS OF THE FPA METHODOLOGY

Although modeling techniques such as FPA's are recognized as the best analytical tool the current state of the art has to offer for long-range economic projections, there are inherent shortcomings in their use. For instance, assumptions made in such models reflect a stability and proportionality in the relationships they quantify (linear relationships) which are not always present in the real world. However, these assumptions must be made because of shortcomings in available data that is necessary for input to the model. Key assumptions are similarly made in the FPA model because the detail, content, and availability of updated published data is limited. Generally, the FPA model implicitly assumes a proportionality and a stability over time and over a range of output levels of (1) interindustry transactions, (2) intermediate and end product mixes, and (3) price movements between products and between industries.

FPA emphasizes that the credibility of its materials requirements does not depend upon the existence of a strong theoretical validity to these assumptions of stability and proportionality. Rather, it depends, in its judgment, upon the assumptions being "close enough" to reality to provide a basis for deriving answers to economic problems which do not lend themselves to other analytical techniques.

Much of the internal structure of FPA's model is currently based on data that reflects the 1967 industrial technology. Gathering this data is a complex and resource-consuming task which cannot be undertaken very frequently. Published data reflecting the 1972 economy will not be available to FPA until mid-1979.

The FPA model provides estimates which essentially reflect nothing more than judgment. The model can be thought of as a device for simultaneously interrelating and quantifying the results of several inputs of judgment. Therefore, the results do not have a greater degree of quality than the judgments upon which they are based.

VALIDITY TESTING OF THE FPA MODEL

Validity testing of the FPA model's peacetime materials requirements estimates showed most of these estimates to be within + 25 percent of what the past actual requirements were for the items tested. Specific results for silver showed the model estimates to be within 10.5 percent of past actual requirements. FPA performed this validity check by comparing actual requirements data for various stockpile materials published from 1973 through 1975, with corresponding peacetime requirements estimates developed by its model. FPA used only data that would have been available as of 1972 to develop its estimates so that the full effect of forecast error would be present in the comparison. The results of this validity testing are summarized below:

	<u>1973</u>	<u>1974</u>	<u>1975</u>
Number of strategic and critical materials for which FPA estimated peacetime requirements.	57	57	36
Number of strategic and critical materials for which FPA's estimates are within ± 10 percent of corresponding published values.	23	24	11
Number of strategic and critical materials for which FPA's estimates differed by more than ± 25 percent from published values.	14	14	17

Specific validation test results for silver were as follows:

	<u>FPA's estimate of peacetime total silver requirement</u>	<u>Published actual total silver requirement</u>	<u>Percent dif- ference of estimate from actual</u>
	(troy ounces)	(troy ounces)	
1973	176,131,000	196,800,000	10.5
1974	167,860,000	178,000,000	5.7
1975	151,402,000	156,200,000	3.1

It should be noted that the error percentages shown in the tables above reflect estimates made under peacetime assumptions. The FPA model understated total peacetime silver requirements by approximately 3 percent to 10 percent. Determining requirements under wartime assumptions is a much more speculative process and associated error rates are likely to be greater. However, FPA officials conjecture that wartime estimates for silver would be accurate within ± 10 percent.

OUR SENSITIVITY ANALYSIS WITH RESPECT TO SILVER REQUIREMENTS

We determined that the FPA model's estimates of wartime silver requirements are sensitive to three major areas of inputs to the model: (1) wartime economic mobilization scenarios unconstrained by Government policy, (2) choice of war scenario option, and (3) various values for wartime planning factor parameters which reflect different levels of policy, risk, and substitution. Our estimates were made by calculations apart from FPA's computer hardware. Time constraints and resource limitations of FPA personnel precluded running the FPA model for the specific purpose of determining silver requirements sensitivities. However, our estimates are based on sound methodology and they compare favorably with results FPA previously obtained in actual computer runs where the stockpile dollar volume sensitivity was tested for all materials.

Unconstrained wartime economic mobilization

The hypothesized level of "unconstrained" mobilization of the wartime economy has the largest impact in determining total silver requirements for each war year. FPA generates this unconstrained economic scenario to provide a base for estimating the war scenario's impact on the economy. It

represents the economy's war mobilization level, a of Government influence. Unconstrained economic scenarios are determined by the Interagency Stockpile Goal Review Committee's judgment regarding the war's impact on several key macroeconomic variables such as interest rates, unemployment rates, plant capacity utilization, tax rates, and household formations.

Various alternative unconstrained mobilization bases are simulated by FPA in test runs, although only one is chosen for each war scenario option for the purpose of determining stockpile goals. The total silver requirement estimate can vary significantly depending on the set of values chosen. For example, we estimated the difference in impact on the total silver requirement for two alternative unconstrained mobilization bases for the same war scenario option. The difference for the three war years was approximately 6, 15, and 20 percent, respectively.

War scenario option

Two sets of defense expenditure estimates for each of 30 major categories of weapons systems, equipment, ammunition, support, and personnel are provided for each war year by DOD as direct inputs to the FPA model. Each of the two sets of estimates reflects the military effort required to wage a war hypothesized in terms of participants, war fronts, and type of military action. A 10-percent-across-the-board change in DOD inputs to the FPA model would result in a maximum change of about 2 percent in the total silver requirement for each war year.

Wartime planning factors

Economic planning factors are used in the FPA model to represent implementation of Government policy to influence the industrial mobilization effort supporting the war. Other planning factors are used to substitute materials and to assign risk of stockpile shortfalls for each tier. The total effect of the planning factors is to shift emphasis on the usage of a given material from the personal civilian to the defense-related sector of the economy. Although the individual effect for each of these factors may be small, cumulatively they can be significant.

The impact of each planning factor or wartime silver requirements is classified information. To avoid having to classify this report, we instead based our analysis on unclassified documentation and estimated the difference in maximum impact on the silver requirement for each war year as a function of alternative values for each planning factor. The planning factor values evaluated were those recommended by the Interagency Stockpile Goal Review Committee as compared with alternative sets of values similar to those previously used by FPA in determining the sensitivity of the stockpile aggregate dollar volume for all materials to changes in planning factor values.

Wartime planning factor values selected by the Committee are those which in almost all cases result in the more conservative (higher) estimate of total silver requirements for each war year as compared with alternative sets of values tested. Nevertheless, the total effect of all the planning factor inputs serves to decrease the silver requirement estimate for each war year. Our analysis of each of these planning factors is included in appendix I.

CHAPTER 4SILVER SUPPLY AND DEMAND

Only one-third of the world's silver is produced as the primary end product of mining operations. The remaining two-thirds is derived as a byproduct of copper, lead, and zinc mining. Programs to recover silver from scrap metal, photographic film, and developing solution annually add about 50 million troy ounces to the world's yearly silver production.

In 1977, 325 million troy ounces of silver were produced worldwide. Mexico was the leading producer followed by the U.S.S.R., Canada, the United States, Peru, and Australia. The U.S. peacetime silver production in 1977 was 38.2 million troy ounces. Another 47.9 million troy ounces were added to this total by recovery programs. Imports of 90.2 million troy ounces filled the remaining national demand. Mexico and Canada supplied the majority of these imports. U.S. silver imports for 1977 and the supplier countries appear below:

U.S. Silver Imports - 1977

<u>Country</u>	<u>Million troy ounces</u>
Canada	44.9
Mexico	20.1
Peru	16.0
Other	<u>9.2</u>
Total silver imports	<u>90.2</u>

ESTIMATE OF WARTIME SILVER SUPPLY

FPA's projection of wartime supply constitutes the second half of the process by which it determines stockpile goals. Supply projections are determined apart from the econometric model discussed in the previous chapter. Computing wartime supply is largely a manual process of integrating the various judgmental supply inputs provided by the various contributing agencies.

To determine the probable wartime silver supply, FPA combines the Department of the Interior's Bureau of Mines projected silver production and import estimates with judgmental factors provided by DOD and the Department of State.

These factors include proximity of supplier nations to the war zone, supplier nation political reliability, and probable wartime shipping losses.

Bureau of Mines silver estimates

Commodity experts at the Bureau of Mines formulate projections of future peacetime silver production for domestic and foreign producers and the expected levels of silver imports that will occur for those years. Bureau of Mines silver supply estimates include both a high and low range of silver production for each country to allow for increased production levels. These estimates are supplied to FPA for use in formulating the silver stockpile goal.

Despite the fact that unforeseen events and other factors can cause significant differences between projections and actual experience, estimates are an essential part of any planning exercise. Information provided by estimates can be made more useful if it is derived from a consistently applied, credible method of estimate formulation. This enhances the comparability of results from

year to year and generally assists in the formulation of more accurate future estimates.

However, we found that the computations used at the Bureau of Mines to formulate silver import projections had varied with the commodity experts performing the estimates. These variances had resulted in large differences in the figures used by FPA to formulate the 1976 and 1979 silver stockpile goals. Specifically, the silver import estimates used for the 1976 goals were based on one year's experience which has since proved unusually high. These projections were formulated in 1974 based on actual import experience in 1973. It was the commodity expert's opinion that the 1973 level of imports would continue. Although his estimates projected that level through future years, actual imports have fallen far short of these projections.

In 1976 another commodity expert was assigned to formulate silver projections. This expert used an averaging method of past years experience to arrive at a base import figure. The base figure was inflated by a small percentage growth factor for each succeeding year on the basis of his knowledge of what was taking place in the silver production area. These estimates were significantly lower than previous projections and have tracked closely to subsequent import experience. The 1979 goals were formulated with the same base figure used in these projections. The most significant differences in projected supply occurred in import estimates for Canada and Mexico. There were also differences in projections for U.S. silver production. The total decrease in projected wartime supply for these three sources amounted to 142.3 million troy ounces over the 3-year planning period, as is shown in the table below:

Differences in Silver Supply Estimates
For the 3-Year Period

(in million troy ounces)

<u>Estimate</u>	<u>United States</u> <u>(production)</u>	<u>Canada</u> <u>(imports)</u>	<u>Mexico</u> <u>(imports)</u>	<u>Total</u>
Original	344.9	114.9	160.5	620.3
Revised	<u>324.1</u>	<u>86.9</u>	<u>67.0</u>	<u>478.0</u>
Difference	<u>20.8</u>	<u>28.0</u>	<u>93.5</u>	<u>142.3</u>

In an effort to determine what effect the 142.3 million troy ounce reduction in projected silver supply would have on stockpile goals, we reduced supply figures used in the 1976 goals by this difference and compared the adjusted supply to the corresponding requirements. Even with the reduction ample supply remained to support U.S. requirements, as shown below:

1976 Goals With Revised Supply Estimates for
U.S. Production and Imports From Canada and Mexico

(in million troy ounces)

<u>Stockpile tier</u>	<u>3-year requirements</u>	<u>3-year supply</u>	<u>Excess</u>
Defense	115.1	478.1	363.0
Essential civilian	298.1	a/363.0 <u>b/129.6</u>	194.5
		492.6	
General civilian	223.1	a/194.5 <u>b/163.4</u>	134.8
		357.9	

a/Excess supply from previous tier.

b/Additional supply allowed for tier.

Figures for the 1979 goals were not available for our review. However, FPA informed us that the reduced silver supply projections only decreased the amount of excess supply available over the projected demand and that there is still no stockpile goal for silver.

It would be difficult to assess how much of the decrease in excess supply is due to the lower supply figures alone. A new econometric model was used to formulate the 1979 goals and requirements data and some planning data input to it have also been modified.

Although an inconsistency was noted in Bureau of Mines estimating procedures for silver supply, we do not know if such inconsistency is present in the supply computations for other commodities. Our work was limited to only one commodity.

War zone considerations

The feasibility of receiving supplies from a nation can be significantly impaired by that nation's close proximity to the war. FPA uses this factor to eliminate expected supply from nations that are included within the current scenarios. However, with respect to silver, the majority of the required supply is expected from U.S. production and imports from Canada and Mexico.

Political reliability factors

The Department of State provides FPA with political reliability assessments for foreign suppliers in wartime. This information is developed by individual country experts (country desk officers), subject to review by senior regional foreign service officers, and represents their expert judgment as to each specific country's dependability as a supplier of strategic and critical materials to the United States in terms of the current war scenarios. Subfactors evaluated during this process are:

- A country's political orientation towards the United States.
- Ability to sustain materials industry exports in wartime.
- Dependability of labor force in materials and related industry.
- Vulnerability to sabotage of materials industry.

Each of these subfactors is broken down further into technical indicators which are rated on a scale of 1 to 5 (with 5 indicating a high reliability). The indicators are weighted from 0 to 100 to express their relative importance within a particular subfactor. FPA uses risk assessments both to reduce supply figures and to designate supply sources for each particular stockpile tier. Supply from the most politically reliable countries would be applied against defense tier requirements. For instance, only the expected supply from the United States, Canada, and Mexico is used to offset defense tier requirements. Remaining countries and their expected supply are assigned to the remaining two stockpile tiers in a like manner.

Shipping losses

Projections of expected silver supply are also reduced by those amounts that are expected to be lost during shipment in a wartime environment. FPA accomplishes this by applying shipping loss probability rates supplied by DOD for each war zone according to current scenarios.

The total amount of expected supply remaining after evaluating war zones, political reliability, and shipping what amounted to 104 percent of its silver production for that year. The additional amounts provided may have come from these foreign stores. Countries would most probably ship silver to the United States from in-country stores as long as it was economically advantageous for them to do so.

Additional silver stores in the United States

According to FPA and various silver experts, there are several other sources of silver onhand that could be used, if needed in a national emergency, in addition to the 139.5 million troy ounces of silver in storage in the Strategic and Critical Materials Stockpile. DOD silver stocks to be provided to contractors as Government-furnished material amounted to about 7 million troy ounces at the end of 1978. The Treasury retained approximately 39 million troy ounces for coinage. Approximately 138 million troy ounces were held in industry, Commodity Exchange, and Chicago Board of Trade stocks at the end of 1978. The peacetime economy of the United States has occasionally depended on these stocks to meet fluctuations in its demand and export needs. For instance, the increased demand for silver during the Vietnam conflict from 1964 to 1972 was met by Treasury silver sales to industry. The Strategic Stockpile of silver was not affected.

Another less feasible source of silver would include silver bullion, jewelry, tableware, and coins privately held by U.S. citizens.

PEACETIME SILVER DEMAND

The national peacetime demand for silver averages about 162 million troy ounces per year. The Bureau of Mines projects a 2.5 percent annual increase in silver demand through the year 2000. The largest peacetime usage of silver in the United States is for the manufacture of silverware and photographic supplies. Additional major categories of peacetime silver usage include jewelry and arts, refrigeration, coinage, appliances, batteries, electrical equipment, electronics components, medallions and commemorative objects, and other miscellaneous uses. The actual U.S. silver demand for 1977 was 153.7 million troy ounces.

Defense silver usage for the past 3 fiscal years, 1976, 1977, and 1978, was approximately 4.7, 3.2, and 2.7 million troy ounces, respectively. Primary defense usage

what amounted to 104 percent of its silver production for that year. The additional amounts provided may have come from these foreign stores. Countries would most probably ship silver to the United States from in-country stores as long as it was economically advantageous for them to do so.

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Defense silver usage for the past 3 fiscal years, 1976, 1977, and 1978, was approximately 4.7, 3.2, and 2.7 million troy ounces, respectively. Primary defense usage categories during this period included batteries, brazing alloy, X-ray and photographic film, and medical uses (excluding X-ray). The single largest defense use of silver during the period was in batteries, accounting for over 7 million troy ounces of the approximate 10.6 million troy ounces used. The Navy was the single largest defense user of silver, accounting for about 5.9 million troy ounces of the approximate 10.6 million troy ounce total.

The silver demand under a projected wartime situation is greater than under peacetime conditions due to the increase in defense expenditures. In the past 3 fiscal years, defense silver use has averaged about 3.5 million troy ounces a year. In comparison, the defense wartime silver requirement, based on the 1976 goals, averages about 38.4 million ounces a year; an increase of 34.9 million troy ounces a year over peacetime consumption.

PAST WARTIME SUPPLY AND DEMAND RELATIONSHIPS

Historically, the United States has always been able to supply its wartime silver requirements without having to draw on amounts stored in the Strategic and Critical Materials Stockpile. Available data shows that silver sup-

ply actually exceeded wartime demand during World War II and the Korean conflict. Although this data also shows silver requirements exceeding available supply during the Vietnam conflict, there was in fact no shortage of silver. Historical supply data only show silver amounts obtained from domestic production and imports. However, throughout the Vietnam era the Treasury was selling off large amounts of silver and the industry's increased need for silver was easily filled from these Treasury sales. Because the increased wartime demand was filled in this manner, domestic production and import levels were unaffected and remained at peacetime levels. Therefore, figures for the Vietnam era reflect a shift in supply source rather than a wartime supply shortage.

The average yearly silver usage during the Vietnam conflict was slightly higher than it was during World War II and the Korean conflict. Two factors that contributed to these higher usage levels were:

- The degree to which air reconnaissance was used during the Vietnam conflict.
- Austerity actions were not imposed on the civilian sector during the Vietnam conflict.

Specific figures regarding silver supply and demand for these periods are as follows:

Silver Wartime Supply and Demand

(in million troy ounces)

<u>War/conflict</u>	<u>Number of years covered</u>	<u>Supply</u>	<u>Yearly average</u>	<u>Demand</u>	<u>Yearly average</u>	<u>Excess or deficit (-)</u>
World War II	6	870.5	145.0	621.0	103.5	249.5
Korean conflict	4	505.4	126.4	430.0	107.5	75.4
Vietnam conflict	9	894.9	99.4	1250.0	138.9	-355.1

Silver requirements and supply relationships shown in the 1976 stockpile computations reflect the World War II and Korean conflict experience because an excess of supply over requirements is projected. In fact, even by using the lower supply figures for expected U.S. production and imports from Canada and Mexico, all defense tier requirements for silver can be met from U.S. production alone. The addition of probable imports from Canada and Mexico fills all but a small portion of the total U.S. requirement. The small portion of remaining general civilian tier needs are more than offset by expected supply from more than nine additional sources. Figures for the 1979 stockpile goals are now in the process of interagency review. These figures reflect lower silver supply estimates than those used in the formulation of the 1976 silver stockpile goal. Although these figures were not available for our review, FPA officials inform us that silver supply is still exceeding projected requirements and the silver stockpile is not needed.

SUBSTITUTION

Depending on the individual application, it may be possible to partially meet the demand for a critical or strategic commodity by using substitute materials. Substitution factors affect about half of the materials stockpiled. However, little substitution is technically feasible for the

other materials in the short run (1-to-3-year time frames). Silver is among those materials for which only an insignificant amount of substitution over peacetime levels can be assumed. Changes in silver substitution planning factor values will therefore have only small effects on wartime silver requirements.

Some substitutes for silver are widely used today. For instance, stainless steel flatware is commonly used in place of silver utensils. Other possible candidates for substitution with silver include

- aluminum and rhodium as reflecting surfaces in mirrors and other devices;
- tantalum for use in surgical plates, pins, and sutures; and
- cupronickel, cuprozinc, nickel, and aluminum for use in coinage.

To determine the amount of substitution possible, the strategic and critical importance of the proposed substitute material must also be considered. Also, for some applications there may be no substitute. For instance, in spite of the millions of dollars spent to find a substitute material, silver remains indispensable to photographic applications.

Substituting lithium thionyl chloride for silver in MX missile system batteries virtually eliminated the systems requirement for approximately 35 million troy ounces of silver. System silver requirements are now estimated to be about 1 million troy ounces maximum. However, it should be noted that requirements of the MX system and the substitution previously mentioned never affected the silver stockpile. Essentially, commodities are stockpiled by the United States to meet projected requirements for the first 3 years of a conventional war. The requirements of the nuclear MX would not be reflected in stockpile goals and objectives.

The short time frames associated with nuclear war would not allow enough time to build additional systems once the war had begun. Such systems would therefore have to be in place prior to the war, and the silver required to build them would have to come from the open market.

EFFECTS OF ALTERNATIVE PLANNING FACTOR VALVES

ON THE TOTAL WARTIME SILVER REQUIREMENT

AUSTERITY PLANNING FACTOR

The degree of austerity (reduced standard of living) implemented for each war year is measured by comparing per capita personal consumption expenditure (PCE) levels, existing in the year prior to the start of the war, with levels expected in each of the 3 war years. The set of austerity planning factors currently implemented is 98, 95, and 90 percent for war years one, two, and three, respectively. For example, it is assumed that Government policy will restrict per capita PCE in the first year of the war to 98 percent of what it was in the last non-war year.

The maximum change in wartime silver requirement resulting from substituting two different sets of austerity planning factor values is estimated below:

Alternative sets of austerity planning factor values			Estimated maximum percent- age change in total sil- ver requirement		
War year <u>one</u>	War year <u>two</u>	War year <u>three</u>	War year <u>one</u>	War year <u>two</u>	War year <u>three</u>
1.00	1.00	1.00			
to	to	to	-0.9	-2.1	-4.0
<u>.98</u>	<u>.95</u>	<u>.90</u>	—	—	—
.98	.95	.90			
to	to	to	-3.5	-2.2	0
<u>.90</u>	<u>.90</u>	<u>.90</u>	—	—	—

PCE shift planning factor

The PCE shift planning factor represents the effect of Government policy to restrict purchases of consumer durables in order to conserve raw materials and free production facilities for war-related activities. It is assumed in the FPA model that unsatisfied demand for consumer durables would be channeled toward and evenly divided between consumer non-durables and services.

The set of values for the PCE shift currently implemented by FPA is 25, 50, and 50 percent for war years one, two, and three, respectively. For example in war year one, although consumer demand is already constrained by austerity, that which is allowed is further modified to restrict demand for durables by 25 percent.

The estimated maximum change in the wartime silver requirements resulting from a change to a more severe set of values for the PCE shift planning factor is shown below:

PCE shift planning factor values			Estimated maximum percentage change in total silver requirement		
War year <u>one</u>	War year <u>two</u>	War year <u>three</u>	War year <u>one</u>	War year <u>two</u>	War year <u>three</u>
0.25	0.50	0.50			
to	to	to	-5.6	-5.5	-5.4
.50	.75	.75			

Investment shift planning factor

The investment shift planning factor represents the effects of Government policy to restrict wartime investment in commercial and residential structures. The resulting unsatisfied investment capital is assumed to be channeled into investment in industrial equipment to increase production capacity in support of the war. We determined that the fractional change in the impact of the investment shift planning factor on the total silver requirement is precisely equal to the fractional change in the planning factor values. For example, if the values shown for war year one in the table below were reduced by half (25 and 12-1/2 percent for residences and other structures, respectively), the impact of the investment shift planning factor on the total silver requirements would be half as much.

The set of values currently used in the FPA model for the investment shift planning factor is:

	Percentages		
	War year one	War year two	War year three
Residences	50	62.5	75
Other structures	25	25.0	25

Thus, investment in other structures is assumed to be restricted an additional 25 percent for each year and investment in residences is restricted by an additional 75 percent in the third war year.

Import-export planning factor

We estimate that a 10-percent-across-the-board decrease in total exports of manufactured goods (not materials) will result in about a 1.7-percent decrease in the total silver requirement for each war year. A 10-percent-across-the-board decrease in imports of manufactured goods (not materials) will increase the total silver requirement for each war year by about 1.5 percent.

The import-export planning factor effectively assumes a 36-percent decrease in imports of goods with respect to the amount the economy would demand during each war year. This reflects decreased wartime availability of supply from foreign sources and shipping losses. Exports of essential civilian goods are assumed to remain between 93 percent and 99 percent. All resulting exports and about 75 percent to 80 percent of the resulting imports are assumed to be essential civilian goods.

We determined that planning factor values which further cut essential civilian imports (not materials) in half would increase the total silver requirement by about 4 percent for each war year. However, if planning factor values were also changed to cut essential civilian exports (not materials) in

half, the net result would be a decrease in the total silver requirement of about 4 percent each year.

Substitution planning factor

Substitution planning factor values are used to reflect the rates at which industry may be expected to approach maximum feasible substitution of noncritical for critical materials. However, substitution factors affect slightly less than half of the stockpile materials. Little substitution is technically feasible for the other materials in the short range (1 to 3 years) time period. Thus, since silver is among those materials for which only an insignificant amount of substitution can be assumed, the impact of changing substitution planning factor values will be small with respect to wartime silver requirements.

Material consumption planning factor

The FPA model determines wartime materials requirements by (1) estimating gross dollar volume output for each of 109 major industry sectors, (2) forecasting the physical quantity of each material consumed per dollar of gross output for each industry sector, and (3) multiplying the two and summing over all sectors to obtain materials requirements estimates in physical units.

MCR forecasts are subject to a forecast error band. The upper end of this error band is used to estimate MCRs which will be applied to gross industrial outputs for the defense tier. This results in a more conservative estimate of defense materials requirements. Accordingly, this tends to decrease the risk, when setting stockpile goals, of not meeting wartime defense materials requirements. The lower end of the forecast band is used to estimate MCRs which are applied to gross industrial outputs for the general civilian tier, thus reflecting a willingness to accept more risk in not meeting general civilian wartime materials requirements.

We estimate that (1) the maximum impact of using the upper estimate (versus the midrange estimate) for the defense tier is an increase in total silver requirements of about 1.9, 2.5, and 2.6 percent for each war year, respectively and (2) the maximum impact of using the lower estimate (versus the midrange estimate) for the general civilian tier is a decrease in total silver requirements of about 6.7, 6.1, and 5.8 percent for each war year, respectively.

APPENDIX II

APPENDIX II

OUR PRIOR TESTIMONY AND REPORTSCONCERNING STOCKPILE MATTERSTESTIMONY

Statement of Elmer B. Staats before the Joint Committee on Defense Production on Comments on the National Stockpile - November 24, 1976.

FORMAL REPORTS

"U.S. Actions Needed To Cope With Commodity Shortages - Multiagency" (B-114824, Apr. 29, 1974).

"Stockpile Objectives of Strategic and Critical Materials Should be Reconsidered Because of Shortages" (LCD-74-440, Mar. 11, 1975).

"Additional Precious Metals Can Be Recovered" (LCD-77-228, Dec. 28, 1977).

"The Department of Interior's Minerals Availability System" (EMD-78-16, July 17, 1978).

"The Department of Interiors Computerized Resources Information Bank" (EMD-78-17, July 17, 1978).

"Management of Federal Materials Research Should Be Improved" (EMD-78-41, July 27, 1978).

"The Strategic and Critical Materials Stockpile Will Be Deficient for Many Years" (EMD-78-82, July 27, 1978).

"Interior Programs for Assessing Mineral Resources on Federal Lands Need Improvements and Acceleration" (EMD-78-83, July 27, 1978).

LETTER REPORTS

- July 9, 1974 - Addressing Disposal of Excess Copper From the National Stockpile of Strategic and Critical Materials (B-124103).
- August 5, 1974 - Questions Concerning the Guidelines and Assumptions Which the Department of Defense and the General Services Administration Used To Make Their Calculations for Disposing of the Chromite Stockpile (B-159161).
- December 10, 1976 - Information on the Sale of Metallurgical Grade Chromite From the Stockpile at Nye, Montana (B-159161).
- March 11, 1977 - Discussion of Israel's Purchase of Excess Industrial Diamonds From the Strategic and Critical Materials Stockpile (B-118623).
- September 9, 1977 - Observations on Selected Matters Concerning the Strategic and Critical Materials Stockpile (B-125067).

APPENDIX III

APPENDIX III

JOHN C. STERNES, MISS., CHAIRMAN
 HENRY M. JACKSON, WASH.
 HOWARD W. CARMON, IND.
 THOMAS J. MC INTYRE, N.J.
 HARRY F. BYRD, JR., VA.
 SAM NARM, GA.
 JOHN C. CALVER, IOWA
 BARRY HART, CALIF.
 ROBERT MORGAN, N.C.
 WENDELL R. ANDERSON, MISS.
 PAUL HATFIELD, MONT.

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 JESSE HELMS, R.I.
 JAKE GARN, UTAH

United States Senate

COMMITTEE ON ARMED SERVICES
 WASHINGTON, D.C. 20510

May 25, 1978

Honorable Elmer B. Staats
 Comptroller General of the
 United States
 Washington, D. C. 20548

Dear Mr. Staats:

The purpose of this letter is to request that you undertake a study for the Senate Armed Services Subcommittee on Military Construction and Stockpiles concerning the national defense requirements for a silver stockpile.

Specifically I would ask that you:

1. Examine the current Administration calculations, together with underlying assumptions, that define the U.S. requirements for silver during a period of national emergency.
2. Assess the validity of estimated silver sources available to the United States during a period of national emergency. Such assessment should include a validation of the quantity of silver available from the various sources during a period of national emergency.

I do not expect you to include in this study an evaluation of stockpile policy -- for instance, is a three year contingency realistic?, are priorities for acquisitions proper?, etc. You may start with the assumption that basic stockpile policy is not in question.

I would like for your study to show whether or not the U.S. needs a silver stockpile for national defense purposes, and if a stockpile is needed, what size should it be?

I am suggesting a schedule below that fits our hearing plans for Fiscal Year 1980. This schedule is, however, flexible and I would be willing to work out a compromise if you desire.

Study Plan - September 1, 1978
 Progress Report - December 1, 1978
 Final Report - February 1, 1979

The staff contact on this matter is Jim Smith of the Senate Armed Services Committee staff, extension 224-5871.

Sincerely,

Strom Thurmond

Strom Thurmond

Gary Hart
 Gary Hart, Chairman
 Subcommittee on Military
 Construction and Stockpiles

Jesse Helms

Jesse Helms

Paul Hatfield

Paul Hatfield

Mr. GROSSHANS. I would like to make one additional point that arose this morning, and that deals with the question of what the war years demand and supply may have been.

Again, as mentioned this morning, it came out of page 26 of our report, and I think there was a little confusion on that. I think the meaningful figure that should be looked at is the yearly average because some of these total numbers, both supply as well as demand, span different periods of time. For example, World War II, we had a 6-year figure in there. Therefore, if one were to look at the yearly average of supply, that amounted to about 145 million troy ounces, as contrasted to the yearly average demand of about 103. So we more than satisfied that need during that period. The Korean war, a similar usage of about 107 million troy ounces, as contrasted to about 126 million supply per year. Vietnam conflict, we used a yearly average of about 138.9.

Now, when one looks at the figure to the far right of that column, we have a deficit for the 9-year Vietnam conflict, and part of the reason for that deficit is that the Treasury was making large sales during that particular period of time, so that more than offset the deficit that showed up. Those sales would have had an impact on the imports, for example. So that partially explains the deficit figure in that column.

In the statement that we submitted to you, Mr. Chairman, appendix I is a recap of both the supply and demand for the tiers, the defense, the essential civilian, and general civilian tiers, and I think, based on analyses that we have performed, we are satisfied that the computations are reasonable and there doesn't appear to be any need for silver as far as defense needs are concerned.

I think that basically concludes my summary, and I would be happy to answer your questions.

Mr. BENNETT. Any questions?

Mr. STRATTON. Mr. Chairman.

Mr. BENNETT. Mr. Stratton.

Mr. STRATTON. I'm sorry I wasn't here when the gentleman began his testimony.

How do you account for putting a strategic stockpile of zero on silver? What kind of rational analysis went into that?

Mr. GROSSHANS. Basically, the way the computation is made and the factors that go into it, one considers what the available supply is in this country.

Mr. STRATTON. What is the available supply in this country?

Mr. GROSSHANS. Let me give you that figure.

Mr. STRATTON. Are you talking about production or are you talking about reserves?

Mr. GROSSHANS. No. I'm talking now simply of production, the mining capability.

Mr. STRATTON. It's my understanding that silver is in about the same situation as oil, that we import about half of our annual domestic requirements. Is that correct?

Mr. GROSSHANS. I can give you the figures.

Mr. STRATTON. Is that correct?

Mr. GROSSHANS. Essentially correct.

Mr. STRATTON. We regard ourselves as virtually strapped when half of our oil comes in from abroad. Now how can any reasonable person who is talking about strategic needs, when even Canada may be opposed to us, and certainly Peru and Mexico, and Costa Rica, as the gentleman from Georgia has pointed out, have not been particularly friendly to us, how can you say that it's OK to have no stockpile when only half of our needs are supplied from our domestic production?

Mr. GROSSHANS. If I may, the figures—

Mr. STRATTON. Just answer the question. How can you say that?

Mr. GROSSHANS. We know what the mining capabilities in this country are. The recycling accounts for another 48 million. So a total of 86 million troy ounces are available.

Mr. STRATTON. I don't have the figures in front of me, but you've already agreed to my statement that only half of our annual needs in a normal peacetime economy are produced domestically, and the other half are imported from abroad.

Do you want to retract that statement?

Mr. GROSSHANS. No. If I may? I didn't get a chance to explain.

Mr. STRATTON. Don't give me these troy ounces, and Albany ounces, and Schenectady ounces. I don't have those figures in front of me. I just don't see any rationale to say that we're going to have a stockpile of zero, that that's what you need when you can produce half of what your requirements are.

Mr. GROSSHANS. It's roughly half. There's about 153 million.

Mr. STRATTON. All right. That's good enough. It's roughly half in oil too. It's 40 percent, or something or other, and we're in a bind if Iran has a revolution.

I don't know whether silver is more important to the economy than oil is, but to me it is obvious you have not really made a strategic decision at all. You have simply decided you want to get rid of this material and get some money because, as Mr. Conte said, you're paying too much rent, and that's not the way the stockpile is supposed to be managed. You have no conception of strategy, to come in and say we don't need any silver.

Mr. GROSSHANS. Could I respond to that?

Mr. STRATTON. I'd like to have you respond.

Mr. GROSSHANS. I would just like to mention from a GAO standpoint we have no ax to grind on this one. We were instrumental in bringing about some of the changes that the chairman had mentioned in 1975 where the administration changed the conditions for the stockpile.

Mr. STRATTON. Tell me why it's OK to have a strategic mineral zero when in the normal circumstances we have to bring in, to keep our industry going, one-half of our needs.

Mr. GROSSHANS. I think while you were out, Mr. Stratton, I pointed out what the formula considers, and the type of countries that you're mentioning, for example, if they're not stable they would not be considered in the import sources of supply.

Mr. STRATTON. Any country is going to be unstable in a wartime situation. We've kicked out the heads of three or four governments friendly to us lately. I don't know that anybody is going to remain friendly to us. I hope that you are not planning in the Defense De-

partment to fight a war counting on anybody else coming to our aid.

Is that the way you're making your stockpile? What are these countries that we're going to get the necessary silver from in the event of an emergency?

Mr. GROSSHANS. I could mention those, but I think some of those sources, the data is classified.

Mr. STRATTON. Oh, come on. A country is classified? It's classified that some country mines silver?

Mr. GROSSHANS. We could submit that for the record, if you want us to or FPA can answer that particular question.

Mr. STRATTON. I'd like you to answer the question, Mr. Secretary, because I just don't think you've done any analysis at all, and I think this is an incredible performance.

Mr. GROSSHANS. Mr. Stratton, I think you may have me confused with Mr. Church, who testified before me. I'm with the U.S. General Accounting Office.

Mr. STRATTON. You're with the General Accounting Office?

Mr. GROSSHANS. Yes, sir.

Mr. STRATTON. Maybe I have. So you're not involved in establishing the stockpile at all then; is that right?

Mr. GROSSHANS. That is correct. We simply reviewed the inputs that DOD provided and the methodology that FPA uses in arriving at these goals.

Mr. STRATTON. Do you approve of the idea of a zero stockpile?

Mr. GROSSHANS. Yes, sir.

Mr. STRATTON. If the auditing agency of Congress is going to come up here and say that a zero stockpile in a strategic metal, for which we get half of our supply each year from abroad, then you are still my witness, because that is, in my judgment, the most irresponsible, irrational, unsupported statement I have ever heard, and you still haven't told me why the GAO is taking the position that it's OK to have no silver because we can get it from country X, country Y, and country Z when we need it.

Mr. GROSSHANS. I think I have tried to explain before what we've tried to do and how—

Mr. STRATTON. Where are you going to get it? You're counting on a certain number of countries. These are all highly classified so we won't mention their names. How many countries are you counting on? How many countries did those giants of defense analysis, whose report you audited, count on for supplying us with this particular metal? Because if you're going to do it on silver, you can do it on titanium, you can do it on every other damn thing that comes along, and that's what we've been fighting, and this is presumably what this legislation that our committee passed out is supposed to stop. But the first bill that you come in with is a request of zero stockpile.

Mr. GROSSHANS. There are roughly about 10 countries involved.

Mr. STRATTON. Ten countries. How many of those can you mention?

Mr. GROSSHANS. I think the contiguous countries have already been mentioned. For the defense tier, which would be the highest priority requirement, there are basically two countries, Canada and Mexico. I think that's been mentioned before. Then as you move to the next tier, which is the essential civilian tier, more liberal interpretations

are made under the criteria followed in this model and, as I pointed out before, the Department of State is the one that determines the stability of the country, the stability of the work force.

Mr. STRATTON. GAO, when they go over to the Defense Department, doesn't say that the admirals or the generals are the ones who decide whether a particular weapon makes sense. You come in with some pretty critical stuff, and you say that they don't know what they're doing when they're talking about a particular tank, and they don't know what they're doing with a particular weapon. Yet, you're going to accept on gospel truth that countries that are currently hostile to us, and have demonstrated that hostility, nevertheless it makes sense for the State Department to say that we can count on them to supply us with one of our strategic minerals.

Mr. GROSSHANS. I don't think we're saying that. We simply reviewed the methodology used, and what I am suggesting is the data that goes into that is pretty good, and it is reevaluated—

Mr. STRATTON. How can the data be pretty good if they're counting on minerals from countries that told us to get our helicopters out when we were trying to evacuate American citizens or friends of the United States from Nicaragua?

Mr. GROSSHANS. I pointed out that—

Mr. STRATTON. What kind of methodology is that? We assume that the GAO is at least up to date in the newspapers. So it's not just a question of adding up 2 and 2. It's a question of whether the facts upon which they based their decision are reasonable facts, and to count on the new Sandinistan government, for example, to supply us with assistance over the next 12 months, I would think would be an unreasonable suggestion, would it not? And if you saw that that was one of the countries that was included, would you say, "Oh, this is a fine methodology"?

Mr. GROSSHANS. Negative.

Mr. STRATTON. All right. Then you're in exactly the same position with Peru, with Costa Rica, and with some of these other countries that have not demonstrated any great friendliness, and Canada has not been too friendly to us either lately.

That's all I have, Mr. Chairman.

I just think this is incredible.

Mr. FAZIO. Thank you, Mr. Stratton.

Does anybody else on the committee have any questions of Mr. Grosshans?

[No response.]

Mr. FAZIO. Thank you, Mr. Grosshans.

Let's have our last witness, Walter L. Frankland, Jr., of the Silver Users Association. Go right ahead.

STATEMENT OF WALTER L. FRANKLAND, JR., SILVER USERS ASSOCIATION, INC.

Mr. FRANKLAND. Mr. Chairman, it's pretty easy to get very emotional about silver for some reason.

Mr. FAZIO. I've noticed that.

Mr. FRANKLAND. We like to consider it now as an industrial metal, one that is important to the economy. At the same time, we've fol-

lowed this issue for many years, and for the last 6 years it's probably the most studied, restudied, evaluated, reevaluated, appraised, and reappraised item in the stockpile. Each time the answer comes up that silver is surplus to defense needs.

With that as an introduction, Mr. Chairman, I would say that I am Walter L. Frankland, Jr., executive vice president of the Silver Users Association in Washington, D.C. I am here today to present the statement of the association concerning the stockpile legislation. We appreciate being allowed to express the views of the association members in support of H.R. 3385, which would authorize the release of 15 million ounces of silver from the national stockpile; and in support of H.R. 1325, which would authorize the release of all of the silver in the stockpile which is surplus to defense needs.

We request that our statement be placed in the record in its entirety, with the enclosures. I would like, however, to highlight that statement, Mr. Chairman, and be available for any questions the committee might have.

First, may I emphasize, as has already been pointed out, that the recent study of silver by the Comptroller General confirms the excess status of silver and makes the full 139.5 million ounces surplus to defense requirements. H.R. 1325 would authorize the release of the entire stockpile. H.R. 3385 would authorize the release of 15 million ounces of that silver, or about 11 percent of the surplus. We advocate that the disposals be made in a manner comparable to the sales that were conducted by the GSA during the period 1967-70. We suggest that weekly auctions be in amounts of 500,000 to 1 million ounces.

The GAO report to which I referred is dated April 10, 1979. It substantiates the position of the Federal Preparedness Agency that the stockpile goal for silver should remain at zero. The GAO analysis goes even further in stating that, and I quote: " * * * defense tier requirements could be met by U.S. production alone."

We are glad, Mr. Chairman, that this full GAO report is being made a part of the record.

We believe that the Congress should realize that because of high prices for silver, the current value of the surplus stocks is more than \$1.2 billion. The interest costs alone for carrying this surplus silver are more than \$355,000 per day. It would seem that in these times of high inflation and rising Government costs, maintaining materials surplus to defense requirements is not in the best interests of the taxpayers.

Unlike many of the stockpile items, silver is available from the Western Hemisphere; the United States, Canada, and Mexico together produce about 181 million ounces annually, and the balance of the Western Hemisphere supplies an additional 50 million ounces of new production, making a total of 181 million ounces. For an annual current demand in the United States of 160 million ounces, it is evident that this raw material would be accessible in an emergency. The cited production does not include silver recovered in the United States annually from coins and other forms of usable scrap, which in 1978 was estimated at 62 million ounces.

In summary, Mr. Chairman, the rationale for the association position is as follows:

By National Security Council criteria, 139.5 million ounces of silver have been declared surplus to defense needs.

The Stock Piling Act provides that surplus commodities are to be made available to the market.

With the high current market price for silver, which yesterday was about \$9.50, the sale of Government silver would mean increased revenue to the Treasury, benefiting all taxpayers, and could reduce the budget deficit.

Government silver made available to the market would meet a portion of domestic requirements, thus lessening the need for imports.

Additional supplies to the market of usable metal would be in the best interest of millions of Americans who consume products using silver.

Funds available from the sale of surplus silver could be used to purchase high priority items needed for the stockpile.

In closing, Mr. Chairman, we think the reference to the MX missile in the GAO report is important. That report explains that should the MX missile system become operational, silver used in the whole project would be about 1 million ounces instead of much larger quantities. A larger requirement for the missile system had been misleading information distributed by those interested in higher silver prices.

I thank you, Mr. Chairman, and again request that our statement be placed in the record.

STATEMENT OF WALTER L. FRANKLAND, JR.

Mr. Chairman:

We appreciate the opportunity to appear today to express the views of the members of the Silver Users Association in support of H.R. 3385 which would authorize the release of 15 million ounces of silver from the national stockpile; and, in support of H.R. 1325 which would authorize the release of all of the silver in the stockpile which is surplus to defense needs.

The Silver Users Association is composed of manufacturers which use silver in the production of photographic film, electrical appliances and contacts, silverware, fabricated industrial products, commemorative art, jewelry and medical supplies. It is estimated that members of SUA consume approximately 80% of the silver used in domestic manufacturing. A list of the current membership is attached as enclosure A to this statement. A Fact Sheet explaining in more detail the purpose of the Silver Users Association is at enclosure B.

SUA SUPPORTS SILVER SURPLUS SALES

In previous testimony before this subcommittee, SUA has explained its position that the amount of silver determined to be surplus to defense requirements should be returned to the market from which it originally came. For more than six years, silver in varying amounts has been declared surplus by three different administrations including the current one. The Strategic and Critical Materials Stock Piling Act specifically provides that commodities declared surplus are to be made available to the market "with due regard to the protection of the United States against avoidable loss...and the protection of producers, processors, and consumers against avoidable disruption of their usual markets..." Congress has been exceptionally slow in performing its approval role in this procedure.

GAO REPORT CONFIRMS ZERO SILVER GOAL

At the request of the Senate Subcommittee on Military Construction and Stockpiles, the Comptroller General of the United States was asked to study national defense requirements for a silver stockpile. That report, LCD-79-410, dated April 10, 1979, has been completed. It confirms that the methodology used by the Federal Preparedness Agency is "a reasonable approach" to this form of economic analysis and that "current information indicates that the silver supply exceeds projected wartime requirements." The report substantiates the position of the Federal Preparedness Agency that the stockpile goal for silver should remain at zero. The GAO analysis goes even further in stating that, "...defense tier requirements could be met by U.S. production alone." (Emphasis added)

Mr. Chairman, we submit that the report by GAO should help relieve the concerns of those who might question the zero stockpile goal for silver. We would urge, too, that the GAO report be made a part of the record of these hearings.

MAJOR SILVER SOURCES ARE IN WESTERN HEMISPHERE

It should be emphasized, Mr. Chairman, that the United States, Canada and

Mexico together produce about 131 million ounces annually. The balance of the Western Hemisphere supplies an additional 50 million ounces of new production, making a total of about 181 million ounces. For an annual current demand of 160 million ounces in the U.S., it is evident that this raw material would be accessible in an emergency. The cited production does not include silver recovered in the U.S. annually from coins and other forms of usable scrap, which in 1978 was estimated at some 62 million ounces.

SUA CALLS FOR SILVER AUCTIONS BY GSA

The Association believes that now is the time for the Congress to act in carrying out its responsibility. We, therefore, urge approval of legislation to release silver to the market as soon as possible. We advocate that the disposals be made in a manner comparable to the sales conducted by the General Services Administration during the period 1967-1970. We suggest that weekly auctions be in amounts between 500,000 ounces and one million ounces.

The Congress should be reminded that at current silver prices, the value of the surplus silver is about \$1.2 billion. The interest costs, alone, for carrying this surplus silver are more than \$355,000 per day. It would seem that in these times of high inflation, and rising government costs, maintaining materials surplus to defense requirements is not in the best interests of the taxpayers.

SUA RATIONALE

Rationale for the SUA position supporting legislation which calls for the release of surplus silver from the stockpile may be summarized as follows:

- By National Security Council criteria, 139.5 million ounces of silver have been declared surplus to defense needs.
- With the high current market price for silver (about \$9.40 per ounce) the sale of government silver would mean increased revenue to the Treasury, benefiting all taxpayers and could reduce the budget deficit.
- Government silver made available to the market would meet a portion of domestic requirements, thus lessening the need for imports.
- Additional supplies to the market of usable metal would be in the best interests of millions of Americans who consume products using silver - photographic, electrical, silverware, and medical and dental supplies.
- Finally, funds available from the sale of surplus silver could be used to purchase high priority items needed for the stockpile.

GOVERNMENT SALES WOULD IMPROVE BALANCE OF PAYMENTS

Because the U.S. is a net importer of silver, this metal contributes unfavorably to a deficit in the balance of payments. Should supplies be made available from government stocks, the need for imports would be reduced. At the average price of \$5.40 per ounce for 1978, the cost of silver net imports of 53 million ounces was approximately \$286 million. For every ten-cent increase in the price, the cost for silver imported at the 1978 rate will be about an additional \$5.3 million.

GOVERNMENT SILVER SALES WOULD MEAN NET REVENUE TO THE TREASURY

At current prices, the revenue to the government would be about \$9.40 per ounce. With an average price at the latter amount, the full stockpile release of 139.5 million ounces would realize a profit to the government of more than one billion dollars. The sale of 15 million ounces would result in a net gain of \$120 million since the stockpile silver is valued at \$1.29 per ounce.

In closing, Mr. Chairman, perhaps one other reference should be made to the GAO report on silver. Because of misleading information distributed by those interested in higher silver prices, the timely reference to the MX missile program is quoted as follows:

"Substituting lithium thionyl chloride for silver in MX missile system batteries virtually eliminated the systems requirement for approximately 35 million troy ounces of silver. System silver requirements are now estimated to be about 1 million troy ounces maximum. However, it should be noted that requirements of the MX system and the substitution previously mentioned never affected the silver stockpile. Essentially, commodities are stockpiled by the United States to meet projected requirements for the first 3 years of a conventional war. The requirements of the nuclear MX would not be reflected in stockpile goals and objectives."

Mr. Chairman, we request that additional material be received for the record as relevant to the SUA position. I refer to enclosure C, entitled, "Background on Domestic Silver", and its attachments.

Thank you.

Enclosure A

SILVER USERS ASSOCIATION, INC.
1717 K Street, N.W.
Washington, D.C. 20006

SUA MEMBERSPHOTOGRAPHIC MATERIALS

E. I. du Pont de Nemours & Company, Inc. - Wilmington, Delaware
Eastman Kodak Company - Rochester, New York
Minnesota Mining & Manufacturing Company - St. Paul, Minnesota
Polaroid Corporation - Cambridge, Massachusetts
Powers Chemco, Inc. - Glen Cove, New York

SILVERWARE

Gorham Division of Textron, Inc. - Providence, Rhode Island
International Silver Company - Meriden, Connecticut
Samuel Kirk & Son, Inc. - Baltimore, Maryland
Lunt Silversmiths - Greenfield, Massachusetts
Oneida Limited - Oneida, New York
Reed & Barton Silversmiths - Taunton, Massachusetts
The Stieff Company - Baltimore, Maryland
Tiffany & Company - New York, New York
Towle Manufacturing Company - Newburyport, Massachusetts
Wallace Silversmiths - Wallingford, Connecticut

COMMEMORATIVE AND COLLECTOR ARTS

Medallic Art Company - Danbury, Connecticut

FABRICATED AND INDUSTRIAL PRODUCTS

Engelhard Industries - Iselin, New Jersey
Handy & Harman - New York, New York
J. W. Harris Company, Inc. - Blue Ash, Ohio
Midland Processing, Inc. - Pomona, New York
Precision Metallurgical Corporation - Millis, Massachusetts

ASSOCIATIONS

Manufacturing Jewelers & Silversmiths of America, Inc.
National Association of Mirror Manufacturers

Enclosure B

FACT SHEET: Purpose of SUA, Inc.

The Silver Users Association, Inc., established in 1947, represents the interests of corporations that make, distribute and sell products in which silver forms an essential part. Association membership today includes representatives from the photographic, electronic, chemical, commemorative arts, silverware and jewelry industries; producers of semi-fabricated and industrial products; and mirror manufacturers.

A major purpose of the Association is to keep its members and the public informed on the pertinent developments in the field of silver; such as, production, consumption, availability, uses, prices, regulations and legislation.

The applications of silver are highly diversified and range from photography to missiles; from computers to sterling jewelry. An approximate breakdown of the silver usage in the U.S. shows these percentages: photography, 37.6%; electrical and electronics, 23.6%; sterling ware, 12.0%; brazing alloys, 6.9%; catalysts, 5.5%; jewelry, 4.5%; electroplated ware, 4.6%; commemorative and collectors arts, 1.8%; mirrors, 1.3%; and, all others, such as bearings, dental and medical supplies and rockets and missiles, 2.2%.

The Association estimates that its members account for approximately 80% of all silver consumed in the United States. More than 80,000 men and women work for Association members who are heavily dependent upon silver for manufacturing. In addition, there are about 1,500 firms of the Manufacturing Jewelers and Silversmiths of America and their 70-75,000 employees; and, the 22 members of the National Association of Mirror Manufacturers and their employees. The Association was incorporated in the District of Columbia in April, 1971.

President of the Silver Users Association, Inc., is Mr. Robert F. Wilson, President, Wallace Silversmiths. Mr. Jay Powers, Treasurer, Powers Chemco, is Vice President and Chairman of the Executive Committee. In addition to these two officers, other members of the latter committee are:

Mr. Nelson B. Colton, Engelhard Industries
 Mr. Philip G. Deuchler, Handy & Harman; Treasurer, SUA, Inc.
 Mr. George R. Frankovich, Manufacturing Jewelers & Silversmiths of America, Inc.
 Mr. Frank E. Grzelecki, Gorham Division of Textron, Inc.
 Mr. Denham C. Lunt, Jr., Lunt Silversmiths
 Mr. R. C. Mack, Eastman Kodak Company
 Mr. Donald Schwartz, Medallie Art Company
 Mr. Sinclair Weeks, Jr., Reed & Barton Silversmiths
 Mr. John L. Whitehead, E. I. du Pont de Nemours & Company, Inc.
 Mr. Robert Wiele, Minnesota Mining & Manufacturing Company

Mr. Walter L. Frankland, Jr., Executive Vice President-Secretary, SUA, Inc.

Enclosure C

BACKGROUND ON DOMESTIC SILVER

General

During its two hundred-year history, the U.S. Government has been the largest buyer, user and seller of silver. Currently, it is probably the largest single holder of silver in the world with 139.5 million ounces in the strategic stockpile, 39 million ounces in the U.S. Mint and 6 million ounces held by the Defense Department.

Domestic Supplies

- New production in the U.S. for 1978 amounted to 38.6 million ounces. (Source: Bureau of Mines)
- Secondary recovery from scrap including melted coins is estimated at 62 million ounces for 1978. (Source: The Silver Institute)
- Net imports accounted for 53 million ounces during 1978. All but 5 million ounces of this figure are attributed to countries of the Western Hemisphere. (Source: Handy & Harman)

Domestic Consumption

Industrial demand in the U.S. for 1978 was estimated by the Bureau of Mines at 160 million ounces, an increase of about six million ounces from 1977. In addition to new production, scrap recovery and imports, other silver used to meet industrial requirements in recent years has come from industry inventories and speculative holdings. A breakdown by usage category is contained in Attachment 1.

Price

At the time the Treasury ceased selling silver to all comers in May, 1967, the price was \$1.29 per ounce. While the U.S. Government sold silver to domestic users at \$1.29, a two-tier price system existed with the world price reaching \$1.78. In July, 1967, the Treasury withdrew from the market and a month later sales were resumed as a weekly auction through November 10, 1970. Prices rose to a high of \$2.565 by June, 1968, and then began dropping until a low of \$1.288 was recorded in November of 1971. The average price in 1972 was \$1.68; \$2.57 in 1973; and \$4.71 in 1974.

A new all-time high was established at \$6.70 on February 20, 1974. The strong upward pressure on the price was caused by a world-wide distrust of currencies and a speculative and investment craze. From August, 1975, until

The Silver Users Association, in establishing its position on the stockpile issue, does not attempt to determine what should be considered an appropriate level of silver to meet defense needs. Rather, the Association firmly supports the concept of an orderly disposal of whatever silver is determined to be surplus to defense requirements.

In this regard, the Association wishes to point out that the United States, Canada and Mexico together produce about 131 million ounces annually. The balance of the Western Hemisphere supplies an additional 50 million ounces of new production making a total of about 181 million ounces. For an annual current demand of 160 million ounces in the U.S., it is evident that this raw material would be accessible in an emergency. The cited production does not include silver recovered in the U.S. annually from coins and other forms of usable scrap which in 1978 was estimated at some 62 million ounces.

The National Security Council has determined that there is no requirement for stockpiling silver. The amount currently in the stockpile - 139.5 million ounces - is surplus to defense needs. It should be noted that other stocks in this country could become available for extreme emergencies not contemplated in the plans, such as:

- 39 million ounces in the Treasury stocks for coinage
- 34 million ounces held by industry
- 6 million ounces in Defense Department stocks for contracts with government furnished material provisions
- 110 million ounces in COMEX and Chicago Board of Trade warehouses

- An estimated 250-900 million ounces in 90% U.S. silver coins held by citizens
- An undetermined amount of silver in ingots held as investments by citizens and institutions.

Attachments: 1. U.S. Industrial Consumption (1973-1978)
 2. World Silver Consumption and Supplies (1973-1978)
 3. Price History (1967-1978)
 Industry Stocks (1967-1978)

January, 1976, the price of silver had been in a downward trend, with an average of \$4.42 in 1975 and \$4.35 in 1976. Fluctuations between \$4.30 and \$4.96 during 1977 were wide at times, with 5-10 cent differentials not unusual from one day to the next. The average for that year was \$4.62. The average price for 1978 was \$5.40, with the high of \$6.296 on October 30 and the low of \$4.829 on January 5.

During the first half of 1979, silver prices were very volatile with a low of \$5.961 per ounce and a record high of \$8.768. As of June 30, the average for the year was \$7.587.

Government Stockpile

Silver was first placed in the strategic stockpile in June, 1968, when 165 million ounces were transferred from the Treasury in accordance with the Silver Certificate Adjustment Act of 1967. By the Bank Holding Company Act of 1970, 25.5 million ounces were transferred to the Treasury for use in the Eisenhower coin program. The stockpile currently contains 139.5 million ounces.

U. S. INDUSTRIAL CONSUMPTION

(Million of Ounces)

Category	1978	1977	1976	1975	1974	1973
Electroplated ware-----	7.2	6.8	9.5	8.7	13.2	14.5
Sterling ware-----	17.9	16.7	19.8	23.7	22.2	29.4
Jewelry-----	6.8	8.1	11.0	12.7	5.2	5.8
Photographic materials-----	64.3	53.7	55.5	46.1	49.6	52.0
Dental and Medical supplies-----	2.0	2.2	1.9	1.5	2.4	3.0
Mirrors-----	1.9	2.1	4.6	3.1	3.9	2.6
Brazing Alloys and solders-----	10.3	12.4	11.2	13.6	14.5	17.7
Electrical and electronic products:						
Batteries-----	6.0	5.8	3.5	4.3	4.2	4.2
Contact and conductors-----	30.7	31.3	32.3	27.2	31.3	40.2
Bearings-----	.4	.5	.3	.5	.4	.4
Catalysts-----	8.2	8.9	12.3	8.8	7.3	6.0
Coins, Medallions and Commemorative objects-----	2.7	4.3	8.2	7.2	22.3	20.1
Miscellaneous-----	1.0	.9	.3	.3	.5	.5
*TOTAL-----	159.4	153.6	170.6	157.7	177.0	196.4

*Totals may vary due to rounding off

Source: Bureau of Mines

Attachment 1

WORLD SILVER CONSUMPTION AND SUPPLIES*

(In Millions of Ounces)

<u>CONSUMPTION</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Industrial Uses:						
United States	160	161	171	158	177	196
Other Countries	228	228	228	208	247	282
Coinage Uses:						
United States	-	1	1	3	1	1
Other Countries	35	21	29	36	27	28
Total Consumption	<u>423</u>	<u>411</u>	<u>429</u>	<u>405</u>	<u>452</u>	<u>507</u>
<u>SUPPLIES</u>						
New Production	265	248	247	238	239	254
U.S. Treasury Silver	-	1	1	3	1	1
Other Supplies	<u>154</u>	<u>152</u>	<u>201</u>	<u>180</u>	<u>166</u>	<u>190</u>
Total Supplies	419	401	449	421	406	445
Liquidation of (Additions to) Speculative Inventories	<u>4</u>	<u>10</u>	<u>20</u>	<u>16</u>	<u>46</u>	<u>62</u>
Available for Consumption	<u>423</u>	<u>411</u>	<u>429</u>	<u>405</u>	<u>452</u>	<u>507</u>

Data taken from Handy & Harman Silver Reviews

* Excluding Communist Dominated Areas

Attachment 2

SILVER PRICE HISTORY (H&H-N.Y.)

1967 - 1978

(\$ Per Ounce)

<u>YEAR</u>	<u>HIGH</u>	<u>LOW</u>	<u>AVERAGE</u>
1978	\$6.30	\$4.83	\$5.40
1977	4.96	4.32	4.62
1976	5.10	3.82	4.35
1975	5.23	3.91	4.42
1974	6.70	3.27	4.71
1973	3.28	1.96	2.56
1972	2.05	1.39	1.69
1971	1.75	1.29	1.55
1970	1.93	1.57	1.77
1969	2.03	1.54	1.79
1968	2.57	1.81	2.15
1967	2.17	1.29	1.55
1966	1.29	1.29	1.29

SILVER IN U. S. INDUSTRY STOCKS

(Millions of Ounces)

1978.....	29
1977.....	33
1976.....	30
1975.....	35
1974.....	60
1973.....	38
1972.....	52
1971.....	56
1970.....	82
1969.....	86
1968.....	77
1967.....	52

Source: Bureau of Mines

Attachment 3

Mr. FAZIO. Thank you, Mr. Frankland.

Let me just ask you this question:

Our colleague, Mr. McDonald, says we ought to be buying silver, not selling it.

Could you give us your response, and then we'll throw you to the lions?

Mr. FRANKLAND. OK, sir.

I spent several hours with Mr. McDonald, and he and I understand each other's position. We haven't been able to convince each other to alter in any way the positions that we take.

The point that I would like to make is, first, that the association argues in no way with what is required for defense purposes.

The Stock Piling Act was set up with certain fixed criteria. This act has been revised, and under the guidance of this particular subcommittee the procedures set forth in that act to be carried out by the Federal Preparedness Agency have been clarified in very much detail, and I think to the satisfaction of the subcommittee. With these procedures the input from the various departments is invited and is thrown into the computer and into the calculations, and out comes the figure necessary for defense requirements, with assumptions. Obviously, it would be best if we could have everything we need for every possibility, but I don't think the budget would allow that, and the taxpayer, I don't believe, would stand for it.

So once that is done and the goal set, then our association believes that the provisions in the act which say that once there is a surplus in the stockpile it should be returned to the market and available to the market from which it originally came. In the case of silver, it came off the market at much higher than market prices, as a result of Government interference and Government regulation.

Mr. FAZIO. Thank you very much.

Mrs. Byron, do you have any questions?

Mrs. BYRON. No; I have no questions.

Mr. FAZIO. Mr. Spence.

Mr. SPENCE. I have no questions.

Mr. FAZIO. Mr. Stratton.

Mr. STRATTON. Thank you, Mr. Chairman.

Mr. Frankland, you represent the people who use silver, is that correct?

Mr. FRANKLAND. That is correct, sir.

Mr. STRATTON. And you have referred in your statement to the surplus of silver that exists in the stockpile. You talk about various administrations having determined what the surplus is.

Are you aware of the fact that this administration has determined that everything we have in the stockpile is surplus and that our requirement, our strategic requirement, is zero?

Mr. FRANKLAND. Are you speaking of silver in particular?

Mr. STRATTON. That's what we're talking about, isn't it, today, silver?

Mr. FRANKLAND. Right, sir. For 6 years it's been a major—

Mr. STRATTON. Are you aware of the fact that they have determined that we have no need for any reserve?

Mr. FRANKLAND. The current goal for silver is zero; yes, sir.

Mr. STRATTON. Yes. Is that in consonance with the view of your association?

Mr. FRANKLAND. Yes, sir, it is, because we do not argue with the experts in the Government on——

Mr. STRATTON. I'm not asking you that. Just answer the question. That's in line with the views of your organization?

Mr. FRANKLAND. That's exactly what the statement says, sir.

Mr. STRATTON. I see.

Suppose there isn't any more silver around, what are your people going to do for these various things, the Eastman Kodak Co., the Minnesota Mining, de Nemours, Tiffany Jewelers, Oneida silverplate? You have all the silver you want? You count on it, regardless of what happens in the world situation?

Mr. FRANKLAND. Mr. Stratton, our association and our members have taken the position that we are willing to deal with the marketplace for these raw materials.

Mr. STRATTON. Just answer the question. Do you have all of the silver that you want?

Mr. FRANKLAND. We have as much silver——

Mr. STRATTON. So that you won't need to come back to the Government and say, "We're out of silver, and we can't do our business, and somebody better do something about it."

You give us, I think, the figures here on page 3 of your statement that the current demand in the United States is 160. Is that right?

Mr. FRANKLAND. That is correct, sir.

Mr. STRATTON. Now, very cleverly you don't put down what the United States produces. You lump the United States, Canada, and Mexico together.

Are you aware of the fact that——

Mr. FRANKLAND. Mr. Stratton——

Mr. STRATTON. Just a minute.

Are you aware of the fact that we produce less than 50 percent, or maybe it's more than 50 percent, I don't have the exact figures, of our current annual demand? Are you aware of that?

Mr. FRANKLAND. Yes, sir. We take——

Mr. STRATTON. What is the figure on that?

Mr. FRANKLAND. We take quite a bit of pride in the information we provide to Congress.

Mr. STRATTON. What is the figure for the United States? Never mind taking pride.

Mr. FRANKLAND. If you'll look on enclosure C, the new production there shows——

Mr. STRATTON. What is the figure for the United States? Just give me the figure. I can't turn to enclosure C.

Mr. FRANKLAND. It is 38.6 million ounces.

Mr. STRATTON. It is 38.6 million ounces?

Mr. FRANKLAND. That is correct, sir.

Mr. STRATTON. And our current demand in the United States is 160 million ounces?

Mr. FRANKLAND. That is correct, sir.

Mr. STRATTON. Then we're in even worse shape than I thought.

Mr. FRANKLAND. You did ask me a specific question, and I gave you an answer.

Mr. STRATTON. That's fine. You've given me the answer. I'm not familiar with these figures, and I've had to rely on my colleague, Mr. McDonald, who has done a lot of research on this. He tells me that we're producing about 50 percent, or less than 50 percent. Now you tell me that we're only producing 38.6 million ounces in the United States, and our current demand is 160 million.

Mr. FRANKLAND. And there's nothing new about that, sir.

Mr. STRATTON. OK. I don't care whether it's new or not, but the situation then is worse than we face in oil, right?

Mr. FRANKLAND. No, sir. Since 1946, more silver is being consumed in this world than is coming out of the ground, and everybody knows that. There's nothing new about that.

Mr. STRATTON. I'm not arguing about what's new or what isn't new. We've been importing a lot of our oil for a long time, and half of the American people don't even think that we have a problem.

Mr. FRANKLAND. There is a big difference.

Mr. STRATTON. I, frankly, don't stay up nights worrying about whether we have enough silver. Mr. McDonald does, but I don't. But the situation, in terms of—

Mr. FRANKLAND. I don't either. It doesn't bother me at all, and our people are not worried about it either.

Mr. STRATTON. I imagine the Eastman Kodak Co. must be worrying about it, and Tiffany's must be worrying about it, because you are producing in this country, in other words, only a quarter of the silver that you need for normal purposes, right?

Mr. FRANKLAND. Silver is a world market.

Mr. STRATTON. Is that right, 40 million is 25 percent?

Mr. FRANKLAND. I haven't figured out the percentage, sir; 38.6 million ounces.

Mr. STRATTON. 38.6 million is only 1.4 million off of 40 million, and 40 million, according to my arithmetic, is a quarter of 160 million.

Mr. FRANKLAND. That is correct.

Mr. STRATTON. I'm trying to get at a point here.

What do you plan to do, these industries that you represent, if, God forbid, we should have an emergency or a war and we should be limited to the 38.6 million ounces that are annually produced in this country?

Mr. FRANKLAND. I don't have any qualms about it.

Mr. STRATTON. What do you propose to do?

Mr. FRANKLAND. There will be sufficient silver around, sir. In our estimate there will be—

Mr. STRATTON. You mean something is going to turn up, is that it?

Mr. FRANKLAND. There's silver, plenty of silver, around in this country.

Mr. STRATTON. There's a lot of people who tell us there's a lot of oil in this country, too. Obviously, there isn't going to be enough.

Mr. FRANKLAND. The price of silver is not controlled, like it is in the case of oil, for one thing.

Mr. STRATTON. Isn't that the reason that you're here, Mr. Frankland? The silver is becoming an increasingly scarce commodity, right, and the price has been going up, hasn't it?

Mr. FRANKLAND. At higher prices it becomes——

Mr. STRATTON. The price has been going up, hasn't it?

Mr. FRANKLAND. The price has been going up, no question.

Mr. STRATTON. All right. It's gone up this year from about \$6.50 to \$10 an ounce, right?

Mr. FRANKLAND. That is correct.

Mr. STRATTON. All right. And you're in here because you're getting worried about that scarcity. You're getting worried about the fact that the price has been going up, just the way the price of oil has been going up, and so you think that it would be a great idea if the United States got rid of all of the silver that we have because that might bring the price down a little bit. Isn't that the case?

Mr. FRANKLAND. No, sir. We have been very consistent in our position, and that is that we want to get the Government out of the silver business, and this has been a consistent position over 25, now 30 years. One of the last elements is maintaining silver that is surplus to defense requirements, whether the price is \$1.29 or \$9.50, or whatever it might be. This has been our objective, and this is the reason I am here.

Mr. STRATTON. Is your objective to maintain adequate silver supplies for the defense of the country, or is your objective to try to get the silver as cheaply as possible so that you can do your photographic business, your jewelry business, and all the rest as profitably as possible, which is, of course, the American system? Don't try to kid me that you're interested in preserving the stockpile when you've endorsed a zero stockpile in silver.

Mr. FRANKLAND. We came in here the first time when there was a surplus declared by the Government. The Government took it off the market in the beginning. We're asking now that it no longer meets defense requirements it should be returned to the market.

I'm surprised that in your case, Mr. Stratton, you don't support this kind of position.

Mr. STRATTON. If the Government is stupid, I don't blame you for trying to take advantage of them, and part of the job that we're supposed to do—and that's the reason that some of us sound a little bit ornery from time to time—is to try to find out those stupidities, because you can bet your bottom dollar they don't come up here and tell us when they're stupid. If this Congress weren't exercising its authority to find out some of those stupidities, like the idea of withdrawing troops from Korea, for example, we might be in a lot of trouble. Occasionally we're right. And to have you come in and suggest that you think it's a great idea to reduce the stockpile to zero when, in fact, what you're worried about is the growing scarcity of silver and the increasing price of silver, that is precisely the time, it seems to me, when we ought to protect the stockpile.

That's all I have, Mr. Chairman.

Mr. FAZIO. Thank you, Mr. Stratton.

Mr. McDonald, I'm sure, has some questions.

Mr. McDONALD. Thank you, Mr. Chairman.

Mr. Frankland, just to clear up a couple points of confusion.

You did mention at the very beginning that you did support the zero stockpile?

Mr. FRANKLAND. That is correct, sir.

Mr. McDONALD. But in all honesty, the silver users had no input in reaching that determination, is that correct?

Mr. FRANKLAND. That is absolutely correct.

Mr. McDONALD. So in other words, if they had come out with a 50 million ounce stockpile requirement you would have supported that?

Mr. FRANKLAND. That is correct, sir.

Mr. McDONALD. You would have supported 100?

Mr. FRANKLAND. We would support whatever the stockpile is, sir. We do not get into defense business.

Mr. McDONALD. In other words, you really take no position on what the needs really are, and you really did not express expertise in that area, is that correct?

Mr. FRANKLAND. You're asking a little different question now.

If our members had any qualms about the defense of the Nation, they would not be supporting this position. In other words, from an outside-the-Government standpoint, our members believe there is plenty of silver around, even in the case of an emergency, to meet our own defense requirements, and we believe that this has been reinforced by the Government agencies.

Mr. McDONALD. Mr. Frankland, surely you must be aware there's a problem of the transfer of technology from the West to the East, and I can assure you that there are many people in the Department of Commerce, the Department of State, and in the administration, and there are many people in industry who say, and will swear on a stack of Bibles of any height, that they absolutely stand for the defense of the Nation, but at the same time they are perfectly free with the concept of transferring technology from the West to the East.

So there's nothing really new. You're a graduate of West Point, and I appreciate your concern about national defense, but with all due respect—

Mr. FRANKLAND. I served 20 years in the Army too, I might add.

Mr. McDONALD. That's very good.

But in reaching the requirement of the zero requested, which you say you support, even though you had no input in reaching that determination, and to you, in essence, it's just convenient that the zero is very comfortable with the position of the Silver Users. That's a nice convenience, and I would agree with that.

Mr. FRANKLAND. I would say that it is convenient, if you want to put it that way. Our people do not believe there is a shortage of silver.

Mr. McDONALD. I agree with you, Mr. Frankland. There is no shortage, providing you're willing to pay the price, and I think if we sell it at \$10 an ounce here we may very well 3 years from now be buying it back at \$30 an ounce. There is no shortage if you're willing to pay the price. The exact same thing is true of oil, and that's one of the problems we have. If you're willing to pay the price of oil there is no shortage, but the problem is we're kind of running out of money too.

Mr. FRANKLAND. That is correct.

I would say that one of the more convincing arguments in, say, the last 6 months that changed this position, if anything, has been the need for some more critical items in the stockpile. From a logical standpoint, from a layman's standpoint, this seems to me a logical way to get some things that we really need.

Mr. McDONALD. I would say the logical way might be to take it out of the general fund and maybe cut back in some of the areas of waste and some of the areas in the welfare state, but that's a personal opinion.

Mr. Frankland, you are aware that the stockpile requirements and that the solemn pronouncements by our Government as to what the 3-year war needs might be have varied from time to time, haven't they?

Mr. FRANKLAND. Yes; I'm aware of that. The stockpiles have gone up and down.

Mr. McDONALD. Particularly down. I mean we've been sort of selling it off up until now and putting the money in the Treasury, and it sort of makes our deficit not look so bad. Isn't that right? We have been putting the money in the Treasury, haven't we?

Mr. FRANKLAND. This was your last question, I believe?

Mr. McDONALD. Up until now haven't we been? You said the stockpile estimates seemed to be going up and down.

Mr. FRANKLAND. In the various commodities. In the case of silver—

Mr. McDONALD. But in the case of silver it's been uniformly going down, hasn't it?

Mr. FRANKLAND. In fact, Mr. McDonald, I would like to address that very issue.

The only reason there's silver in the stockpile, in my opinion for whatever that might be worth, is the emotional nature of silver. The fact that the Government used huge quantities of silver in coinage, and in an emergency, until we had the cupro-nickel clad coin to substitute for the silver coinage, it was necessary to provide huge quantities of silver for the coinage. Since that time, frankly, there has been no requirement, in our judgment.

We haven't argued to try to get it out, until the Government finally agreed there has been no requirement for silver in the stockpile. It was put in there as a result of a strong fight made by those on the Hill to keep from selling the silver when it was down at a lower price. I think that's very clear. I believe the record shows that.

Mr. McDONALD. The cupro-nickel coins came in when, about 1965, wasn't it?

Mr. FRANKLAND. Exactly.

Mr. McDONALD. When did we get involved in the Vietnam war on a real war basis, in about 1965?

Mr. FRANKLAND. 1964 or 1963.

Mr. McDONALD. 1964 or 1965. During the Vietnam war we had a need of 1.4, 1¼, billion ounces.

Mr. FRANKLAND. That is correct, and not an ounce of it came out of the emergency stockpile.

Mr. McDONALD. Yes. But we did have sales out of the Treasury Department then, and we did have fairly substantial imports then, Mr. Frankland, didn't we?

Mr. FRANKLAND. That is correct.

Mr. McDONALD. Has India shut off exports this year?

Mr. FRANKLAND. No, sir, not completely. The official movement of silver out of India is zero. Unofficially it is still coming out at a fairly good clip, 12 to 25 million ounces, depending on—

Mr. McDONALD. In other words, the black market traffic in silver is still going on, but the government policy is to shut off the export of silver. Is that correct?

Mr. FRANKLAND. Within the last year they did that.

Mr. McDONALD. And that's been changed this year, hasn't it?

Mr. FRANKLAND. That's a temporary position of their government, in my opinion.

Mr. McDONALD. I can give testimony and show that we have people from India who said that will be the policy this year and next year.

Mr. FRANKLAND. Wait until the big monsoons and then we'll see whether it is.

Mr. McDONALD. India, as you may know, has been able to solve a lot of its agricultural problems.

Mr. FRANKLAND. Yes; that is correct.

Mr. McDONALD. And no longer has the famines and no longer has to dump a lot of silver to compensate for the famines, so we're in a different ball game than in the past with regard to India.

Aren't we also in a different ball game with regard to imports coming in from Peru and Mexico because of the shift in their systems into coinage?

Mr. FRANKLAND. Mexico especially and Peru to a lesser extent. That is correct.

Mr. McDONALD. Thank you, Mr. Frankland.

I have no further questions, Mr. Chairman. Thank you.

Mr. BENNETT. Are there any further questions?

Mr. FRANKLAND. Mr. Chairman, if I might add that I would need about another hour to comment on everything that Mr. McDonald came up with this morning, but I would like to point out that some of the additional material that's going to be provided by Mr. Sarnoff of Conti-Commodities and Mr. Dial of Clayton Brokerage is material with regard to the speculation of silver and the use of silver in hedging. I would like to add some additional information that I could provide if the chairman desired that would answer a lot of questions, some of which would be as factual as what I expect to come in from these other sources.

Mr. BENNETT. You mean you want to extend your remarks by some additional papers?

Mr. FRANKLAND. If it would be all right, sir.

Mr. BENNETT. That will be fine.

Mr. FRANKLAND. Thank you very much.

Mr. BENNETT. Without objection, that will be added to the record.

[The following information was received for the record:]

A DISCUSSION PAPER ON STOCKPILE REQUIREMENTS VERSUS SILVER SUPPLY AND DEMAND, PREPARED BY SILVER USERS ASSOCIATION

The statement is often made that more silver is consumed annually than is mined. There is nothing new about this situation. Since 1945, world consumption has exceeded new production. The peak in consumption was reached in 1965. Since that time, total consumption including coinage has dropped significantly. Industrial consumption, alone, actually peaked in 1973, when U.S. consumption was 196 million ounces, according to the Bureau of Mines.

In a recent debate in Congress the statement was made that, "...in World War II we used far in excess of 1 billion ounces of silver. Over 400 million ounces of silver were sent to the Soviet Union under the lend-lease program..."

The total amount of silver consumed in the U.S. by all industries, not just the war effort, during the period of 1942 thru 1945 was 580 million ounces or an annual average of 116 million ounces. (Source: American Bureau of Metal Statistics, Year Book: 1946).

As a substitute for copper in bus bars, nearly 900 million ounces of silver were loaned to atomic defense plants by the Treasury. Today, there is no shortage of copper and the technique formerly requiring bus bars is obsolete.

During the same period, 374 million ounces were used by the Treasury for coinage. Today, no silver is used in circulating coinage.

Under the lend-lease program the amount of silver furnished by the U.S. and the receiving countries were as follows: (Source: Annual Report of the Director of the Mint FY 1967).

Country	Mil. Oz.
Australia	11.8
Belgium	.3
Ethiopia	5.4
Fiji	.2
India	172.5
Netherlands	56.7
Pakistan	53.5
Saudi-Arabia	22.3
United Kingdom	<u>88.1</u>
Total	410.8

The major use for this silver was monetary purposes. Today, no country uses silver in current minting of circulating coinage. All silver issued under the lend-lease program was returned to the U.S. with the exception of 24 million ounces from Saudi Arabia and Pakistan. In the latter cases, a dollar equivalent was repaid to the Treasury. No silver was delivered to Russia under this program. (Source: Annual Report of the Director of the Mint FY 1967).

Also in the Congressional debate, the statement is made that, "After World War II the United States found itself with a general stockpile of approximately 2 billion ounces of silver. This has now been sold off largely, except for the remaining stockpile of 140 million ounces in the special strategic stockpile."

In 1946 when the last Silver Purchase Act was enacted, the U.S. had a silver supply of 1.5 billion ounces. During the next 20 years more than 400 million ounces were purchased and 1.47 billion ounces were used in coinage. Another 487 million ounces were exchanged for silver certificates. During the 1950's 140 million ounces were sold and during the last major sale on competitive bid conducted by GSA for the Treasury between 1967 and 1970, 303 million ounces were sold. Today, in addition to the 139.5 million ounces in the strategic stockpile, the U.S. Treasury has 39 million ounces for commemorative coinage purposes.

established in the early 1960's, the U.S. government was a big user of silver in coinage. In one year, 1965, this country consumed 320 million ounces in coinage. During the last five years of the 90% coinage program (1961-1965) more than 700 million ounces were so consumed. Thus, there was at that time a need for large amounts of silver in the stockpile for coinage alone. The objective was reduced to 165 million ounces when the cupro-nickel coin was available.

When references are made to the high percentage of silver imports to this country, it must be made clear that more than 70% of these imports are from our neighbors, Canada and Mexico, and another 25% from other countries in the Western Hemisphere. In times of emergency, if we cannot depend on these countries, we are in such deep trouble that it is difficult to believe that any size of a silver stockpile would be of any serious consequence toward an overall war effort.

Although it is generally agreed that silver prices in the long run will probably increase due mainly to inflation, there is certainly no assurance of this fact since silver does respond to supply and demand. The three-year period of 1974-1977, is a good example. After the then record high price of \$6.70 per ounce in February, 1974, silver prices averaged \$4.70 for that year. They continued to decline to \$3.91 in December, 1975, with an average of \$4.41 for the year. They rose again to \$5.10 in July, 1976, and then dropped to \$4.04 in August, 1976. The average for 1976 was \$4.35 and for 1977 it was \$4.62.

During 1978, prices steadily rose with the average of \$5.40. The average price through June of 1979 was \$7.587.

As part of the Congressional debates over the stockpile in August of 1976, charges were made that the manufacturers who use silver in their operations are only interested in driving the price of silver down. This is not a true characterization of the users' position on the stockpile. For years, the users have argued that the government should get entirely out of the silver business. Since the stockpile objective for silver has been set at zero, there is a surplus and in accordance with the current law, these supplies should be returned to the market from which they originally came. The users do not take a position on the size of the stockpile - leaving that to the defense planners in the Federal government. However, once the level has been established, the users believe the surplus should be sold in an orderly manner. The users are more than willing to take their chances in the open market. The government need not be in the role of stockpiling silver or any other material for economic purposes.

One of the most disruptive factors in the silver market has been the very existence of the stockpile. Whenever discussions at any level are held on this topic, the market reacts sometimes very violently. Removal of the stockpile could actually result in a more stable market since a most disruptive influence will have been removed.

The argument is held that silver in the strategic stockpile should be used as an economic stockpile. This proposal, so far, has not been backed with logic. At least the report of the National Commission on Supplies and Shortages makes no case for maintaining a silver stockpile.

It is also claimed by those who favor an expensive stockpile of silver, that there was a rush to get legislation passed to release silver from the stockpile. Actually, proposals for the release of at least 118 million ounces have been in Congress for more than six years. The issue has been studied and studied and the answer is still the same - there is no need for a stockpile of silver. To do so would be an unnecessary drain on the public treasury. It is apparently clear, at least to defense planners, that no case exists for a silver stockpile. At current high interest rates, the government loses some \$330,000 per day in interest costs while keeping the stockpiled 139.5 million ounces of silver surplus to defense needs.

So called trading advisors who often claim that there will be an immediate critical shortage of silver rely almost entirely on the fact that more silver is consumed than is mined annually. These individuals who appear to have much influence on speculators and potential investors in silver simply disregard the vast quantities of above-ground silver available to the market. Stocks on deposit at the major exchanges alone are, as mentioned earlier, still high. Billions of ounces are in India and there is a flow of this secondary material to the market. Silver recovered from recycled scrap including coinage also continues to be an important source of material used by industry.

The claim is quite often repeated that silver should be retained because of its need in the MX missile system. Defense officials have stated repeatedly that silver for this weapons system appears to be negligible, limited only to the usage for electrical contacts and missile parts. Although silver was originally considered for use in the batteries for the ground control system, "alternative technologies are being pursued due to the high cost and limited availability of silver," according to the office of Defense Research and Engineering.

These same "silver bugs" refer to the historic gold-silver ratio as an indicator that silver is currently underpriced. In fairness to the argument, it should be pointed out that there has been no official fixed ratio for more than 100 years when the bi-metal monetary system was discarded by the United States.

Citing silver as one of the best hedges against inflation certainly is subject to serious questioning. Except for the period between 1971 and 1974, and the current year, silver has not been of value as a protection against inflation. Rather, the contrary has been the case. From February 1974, through 1977, the major price trend was downward. Since early 1978, prices have risen steadily to new highs during the first half of 1979. From the high of \$6.70 in February, 1974, the price has been as low as \$3.85 and as high as \$8.768. The average price during this period, together with price levels to keep up with inflation, alone, are as follows:

<u>Annual Average Silver Price (H&H)</u>	<u>Silver Price Segment Attributed to Inflation</u>	<u>Cost of Living Increase (Annual)</u>
Per Oz.	Cents	%
1974 - \$4.71	+ .28	+ 11
1975 - \$4.42	+ .42	+ 9.1
1976 - \$4.35	+ .25	+ 5.8
1977 - \$4.62	+ .29	+ 6.7
1978 - \$5.40	+ .35	+ 7.7
1979 - \$7.59 (through June	+ .21	+ 8.0

As a hedge just to offset inflation the silver price should have been at least:
(does not include annual holding costs estimated at 12-15%).

1975 -	\$5.14
1976 -	\$5.44
1977 -	\$5.80
1978 -	\$6.25
1979 -	\$6.50 (through June)
(using 8% inflation)	

July, 1979

Prepared by SILVER USERS ASSOCIATION, 1717 K Street, N.W., Washington, D.C. (202) 785-3050

Questions and Answers on Current Silver Statistics

1. Is there a shortage of silver?

There is no shortage of silver; however, there is an annual deficit in the amount of approximately 120 million ounces between U.S. new production of silver and U.S. consumption of the white metal. In the past, this gap has been filled by silver from secondary sources such as U.S. Treasury stocks, scrap recovery, other government stocks and demonetized coins. In the future, the gap is expected to be filled by silver from scrap material, imports and silver from demonetized coins, especially the 90% U.S. coins.

2. How do the visible stocks for silver compare in 1977, 1978, and 1979?

The visible stocks generally referred to are those certificated stocks in warehouses for the Commodity Exchange of NYC (COMEX), Chicago Board of Trade (CBOT), and London Metal Exchange (LME). In June of 1977, this total was some 159 million ounces. A year later it was 151 million ounces. As of June 30, 1979, the figure was 111 million ounces.

3. What is the story on Indian silver?

For many years, the citizens of India have accumulated large quantities of silver. Today estimates of this silver in the form of jewelry, religious items and decorations vary between four and five billion ounces. In the late 60's when silver reached \$2.57 an ounce, silver from India reached the market at the rate of 60-80 million ounces per year. In the early 70's this rate was as low as 15-25 million ounces. In 1975, many observers estimated the supply from India was from 45 to 55 million ounces. For 1976, the figure was 63 million ounces; in 1977, it was estimated at about 30 million ounces, and for 1978, the figure is estimated at 25 million ounces.

4. How much silver in 90% U.S. silver coins is estimated to be available to the market?

Since our country's beginning, slightly more than two billion ounces have been consumed in coinage. During the final four years (1962-1965) of silver coinage more than 700 million ounces were used. The amount of silver available from this source is estimated at several hundreds of million ounces. Observers estimate that the rate of coin melting was between 20-25 million ounces in 1976. In 1977, that fell to about 13 million ounces. For 1978, the figure is estimated at 5 million ounces.

5. What has been the recent history of silver usage in U.S. coins?

By the Coinage Act of 1965, silver was removed as a coinage metal in all coins except the John F. Kennedy 40% silver half dollar which was minted through 1969 for circulation and through 1970 for special mint and proof sets. In 1971, the Mint began its production of 40% silver Eisenhower dollars for proof and uncirculated sets to be sold at a premium. In 1973, Congress directed the minting of 45-60 million 40% silver bicentennial coins (dollar, halves and quarters) to be made from silver set aside in the Treasury for the Eisenhower coin program. Minting kept to the lower figure of 45 million coins, consumed about 8 million ounces of silver, all furnished from Treasury stocks. So far, only half of the coins have been sold.

6. What would be the value of the silver in a 40% silver half dollar?

The bullion parity of the silver in 40% silver half dollars is approximately \$3.38 per ounce of silver involved or, each \$1,000 face value of 40% silver half dollars would contain 295 ounces of silver, allowing for wear. This compares with 715 ounces per \$1,000 face value of 90% silver coins which have a bullion parity of \$1.38 per ounce of silver involved. The 90% half dollar coin contains .36 of an ounce of silver while the 40% coin has .15 of an ounce each. The total amount of silver in the three-coin bicentennial set is slightly more than .55 of an ounce.

7. What has been the recent history of silver prices?

At the time the Treasury ceased selling silver to all comers in May, 1967, the price was \$1.29 per ounce. While the U.S. Government sold silver to domestic users at \$1.29, a two-tier price system existed with the world price reaching \$1.78. In July, 1967, the Treasury withdrew from the market and a month later sales were resumed as a weekly auction through November 10, 1970. Prices rose to a high of \$2.565 by June, 1968, and then began dropping until a low of \$1.288 was recorded in November of 1971. The average price in 1972 was \$1.68; \$2.57 in 1973; and \$4.71 in 1974.

A new all-time high was established at \$6.70 on February 20, 1974. The strong upward pressure on the price was caused by a world-wide distrust of currencies and a speculative and investment craze. From August, 1975, until January, 1976, the price of silver had been in a downward trend, with an average of \$4.42 in 1975 and \$4.35 in 1976. Fluctuations between \$4.30 and \$4.96 during 1977 were wide at times, with 5-10 cent differentials not unusual from one day to the next. The average for that year was \$4.62. The average price for 1978 was \$5.40, with the high of \$6.296 on October 30 and the low of \$4.829 on January 5.

During the first half of 1979, silver prices were very volatile with a low of \$5.961 per ounce and a record high of \$8.768. As of June 30, the average for the year was \$7.587.

8. Has anyone been successful in cornering the silver market?

We are aware of no efforts to corner the silver market. Since 1974 there have been rumors that one big investor held between 40-50 million ounces outright as well as forward contracts. Such a position represented a major portion of CBT and COMEX stocks. We believe the concentration of so much silver in the hands of one individual is contrary to the best interests of the users and consumers. This is the main reason for SUA's support of the efforts by the Commodity Futures Trading Commission to proscribe fuller disclosure in these markets and other requirements to prevent market manipulation.

9. Why is it necessary for silver futures to be regulated?

Silver futures trading needed to be regulated because the degree of self-regulation exercised by exchanges on which the metal traded was not sufficient to prevent attempts to manipulate the market and other fraudulent activities.

10. What do the consumption statistics reveal during 1978 - 1979?

Domestic industrial consumption in 1978 was estimated by the Bureau of Mines at 160.2 million ounces. This was a 4.3% increase from the figure for 1977, but still some 36 million ounces below the historic high of 196 million ounces in 1973. In the first quarter, 1979, consumption at 51.8 million ounces was at the highest level since the first quarter, 1974.

11. What is the silver import situation for the U.S.?

Because the U.S. is a net importer of silver, this metal contributes unfavorably to a deficit in the balance of payments. Should supplies be made available from government stocks, the need for imports would be reduced. At the average price of \$5.40 per ounce for 1978, the cost of silver net imports was approximately \$345 million. For every ten-cent increase in price, the cost for silver imported at the 1978 rate (64 million ounces) will be about an additional \$6.4 million.

12. What is the importance of silver recovery, today?

Secondary silver is one of the most important factors in the silver market. In 1978, in the U.S. alone, scrap recovery including coins was estimated at 62 million ounces after being as high as 75 million ounces in 1974. For many years, scrap recovery has exceeded new production in the U.S.

13. What are the prospects for a substitute for silver in the photographic area?

Substitutions in the photographic area have already taken place with the best example being the office copying machines, most of which no longer use silver. Research efforts for other substitutes have been intensified but it is not foreseen that any major substitution will appear in the near future. In the x-ray sector, there is in limited use in hospitals, a silverless x-ray system. In this same area, the most interesting development is the introduction of microfilm recording of x-rays to permit immediate recycling of the silver and the one-time recapture of the large quantities of silver in the eight or ten year supply of medical x-ray film stored in hospitals and clinics around the country. The latter has been estimated at 100 million ounces. In the graphic arts area, laser techniques are being used to replace photographic reproduction in some printing.

14. What is the position of the Silver Users Association regarding stockpile legislation?

The members of the Silver Users Association support legislation which would authorize the disposal of all or any portion of the 139.5 million ounces of silver previously declared surplus to defense requirements.

15. What is the SUA rationale for its stockpile position?

Rationale for the SUA position supporting legislation which calls for the release of surplus silver from the stockpile may be summarized as follows:

- By National Security Council criteria, 139.5 million ounces of silver have been declared surplus to defense needs.
- With the high current market price for silver, the sale of government silver would mean increased revenue to the Treasury, benefiting all taxpayers and could reduce the budget deficit.
- Government silver made available to the market would meet a portion of domestic requirements and should lessen the need for imports.
- Additional supplies to the market of usable metal would be in the best interest of millions of Americans who consume products using silver - photographic, electrical, silverware, and medical and dental supplies.
- Finally, funds available from the sale of surplus silver could be used to purchase high priority items needed for the stockpile.

16. What is the opposition to the disposal of silver through GSA?

Opposition to the disposal of silver surplus to defense needs has been expressed by the domestic producers of silver as a part of their general opposition to the release of stockpile materials. During the consideration of copper stockpile releases in 1973, many of these same producers offered no objections to disposing of all copper in the stockpile, a metal as much or more important to defense needs as silver. Speculators and investors looking to the further appreciation of silver values also object to a release of silver from the stockpile. Some members of Congress have expressed concern over the proposed release, arguing that the precious metal should be retained for future, but unspecified or unjustified needs.

17. What is the background of the present silver stockpile?

Silver was first placed in the strategic stockpile in June, 1968, when 165 million ounces were transferred from the Treasury in accordance with the Silver Certificate Adjustment Act of 1967. By the Bank Holding Company Act of 1970, 25.5 million ounces were transferred from the Treasury for use in the Eisenhower coin program. The stockpile currently contains 139.5 million ounces.

18. What is an appropriate size of an emergency stockpile?

The National Security Council has determined that there is no requirement for silver in the stockpile. The United States, Canada and Mexico together produce about 131 million ounces of silver. When one considers that the rest of the Western Hemisphere supplies an additional 50 million ounces for about 180 million ounces against an annual demand of 160 million ounces in the U.S., it is evident that this raw material would be accessible in an emergency. The Comptroller General of the U.S. has confirmed the zero stockpile goal and methodology used by the Federal Preparedness Agency in determining goals.

19. Besides the stockpile silver, what other domestic above-ground supplies could be used to meet an emergency?

In addition to the government stockpile, other above-ground silver includes:

- 39 million ounces in the Treasury stocks for coinage
- 33 million ounces held by industry
- 6 million ounces in Defense Department stocks for contracts with government furnished material provisions
- 110 million ounces in COMEX and Chicago Board of Trade warehouses
- An estimated 250-900 million ounces in 90% U.S. silver coins held by citizens
- An undetermined amount of silver in ingots held as investments by citizens.

20. How much does it cost for the government to hold the 139.5 million ounces of silver which has been declared surplus?

At the current high interest rates, the equivalent cost of holding silver now valued at more than 1.2 billion dollars would be about \$120 million per year or about \$330,000 per day. In addition to the interest costs, about two percent of the silver's value (or \$20 million) is needed to maintain the metal in the stockpile annually.

21. Is any silver required for the MX missile system being developed by the Defense Department?

The silver required for the MX missile system appears to be negligible, limited only to the usage for electrical contacts and missile parts. Although silver was originally considered for use in the batteries for the ground control system, "alternate technologies are being pursued due to the high cost and limited availability of silver", according to the Office of Defense Research and Engineering.

22. What effect would a disposal of 139.5 million ounces of silver have on the market?

Disposal of the 139.5 million ounces of silver surplus to defense needs at a rate of up to one million ounces per week at the market price should help provide stability to silver trading. This action, in turn, should make the market price more responsive to industrial supply and demand factors since there should be reduction in wild speculation. When the government sold silver in 1967, prices continued to rise during the first nine months of the sales. During the next two years, prices were volatile ranging from a high of \$2.56 per ounce to a low of \$1.19 in 1969, and ending at \$1.81 on the day of the last government sale in 1970. Within a year of the end of government sales, the world price returned to \$1.29 before starting up again.

23. What would be the benefits to the economy from the government silver disposal?

With the disposal of government silver and the expected accompanying damper to the speculative fever affecting silver, consumers should be able to obtain articles using silver such as photographic products, electrical appliances, silverware and dental and medical supplies at more reasonable levels. Manufacturers of high silver content products could return to more normal marketing practices, and avoid any worsening of the employment picture. Revenue to the government would help reduce the budget deficits thus contributing to the fight against serious inflation. The balance of payments picture would be improved through lower silver imports.

24. At what rate should government silver be sold?

The rate of sale should be such as not to disrupt the silver market. As demonstrated by its handling of the 1967-1970 silver sales and the disposal of other commodities, the General Services Administration is capable of determining an appropriate release rate. At one million ounces per week, or half of the original rate of the previous sales, the government release would be about the same as imports at the 1978 level. A disposal at a smaller weekly rate should extend for a longer period the steadying influence over the market of this important silver source.

25. Would the use of silver in a coin be an appropriate alternative to GSA sales?

Silver has become too valuable for coinage. Because of the high price of silver, an appropriate alloy could not be adopted to mint a silver coin which would circulate. Using silver in a U.S. coin in the nature of a commemorative has already been tried in the 40% silver Eisenhower dollar and the bicentennial proof and uncirculated sets. The latter programs have failed to meet the expectations of their advocates.

26. Does the government purchase silver?

The government no longer purchases silver. The silver purchase acts were repealed in 1963; however, as a protection to the domestic producers of silver, the Coinage Act of 1965 requires that the government purchase domestically produced silver offered to it at \$1.25 per ounce.

27. Is silver a good investment?

Silver, like any investment, performs well for the investor if it can be bought low and sold high. Unfortunately for the silver investor, this metal has been anything but stable in recent months. Another criteria for a good investment is liquidity. Despite many advertisements to the contrary, silver bullion is difficult to resell. One can obtain silver easily but when time comes for resale, the story is quite different. It is the old saying, "I can buy it; but to whom will I sell it?" The collateral value of silver bullion has also been exaggerated. Few bankers jump with joy when bullion is offered for collateral because there is the matter of purity and extreme price fluctuations.

28. What are the SUA views on the proposals for an economic stockpile of silver?

SUA does not support proposals for an economic stockpile of silver. The supply/demand situation for silver is not such that would require an economic stockpile. The open silver market is sufficiently diverse to provide the raw material for users as required. Any stockpiling needed should be left to the manufacturers concerned rather than be a function of government. Further, from past experience there is no evidence that the government possesses any particular expertise in determining the levels of such a stockpile or for devising the procedures for insuring such a stockpile would be responsive to the demands of the market. The forces of supply and demand seem adequate to govern the flow of silver to the market. Lastly, any such economic stockpile would require additional bureaucratic activity by the government without a noticeable benefit to the health, safety and welfare of the general public.

29. Where can I get more information about silver?

From the Silver Users Association, the Bureau of Mines and the Silver Institute, all in Washington, D.C. The various bullion dealers in New York City prepare silver summaries quite regularly. For 63 years, Handy & Harman has issued an

30. What has been the recent trend in futures trading in silver?

A study of silver futures trading during the last five years reveals that until recently, to have been a winner, one would have had to sell contracts rather than buy them. We went back a little more than five years as the speculative fever was then just starting to capture the silver market - the fall of 1973 when the spot price was \$2.90. For the study, we assumed the purchase of one contract of 5,000 ounces on the COMEX as soon as it appeared on the board. The sale of each contract was assumed to take place the first day of the delivery month. The results of the study are on a chart attached to these questions and answers. In summary, though, while using the assumptions we mentioned, the figures show losses up to \$40,000 for nearly four years. Only in the last two months of the period has there been shown a net gain, now up to \$28,270. If anything is revealed by this informal study, it is that by the time all of the promotions and advertisements for getting rich quick are in the media, the train has already left the station. The remaining questions unanswered are, "Is there another train?"; "When is it coming through?"; and lastly, "Should I get on?"

Category	U. S. INDUSTRIAL CONSUMPTION (Million of Ounces)				
	1978	1977	1976	1975	1974
Electroplated ware-----	7.2	6.8	9.5	8.7	13.2
Sterling ware-----	17.9	16.7	19.8	23.7	22.2
Jewelry-----	6.8	8.1	11.0	12.7	5.2
Photographic materials-----	64.3	53.7	55.5	46.1	49.6
Dental and Medical supplies-----	2.0	2.2	1.9	1.5	2.4
Mirrors-----	1.9	2.1	4.6	3.1	3.9
Brazing Alloys and solders-----	10.3	12.4	11.2	13.6	14.5
Electrical and electronic products:					
Batteries-----	6.0	5.8	3.5	4.3	4.2
Contact and conductors-----	30.7	31.3	32.3	27.2	31.3
Catalysts-----	.4	.5	.3	.5	.4
Bearings-----	8.2	8.9	12.3	8.8	7.3
Coins, Medallions and Commemorative objects-----	2.7	4.3	8.2	7.2	22.3
Miscellaneous-----	1.0	.9	.3	.3	.5
*TOTAL-----	159.4	153.6	170.6	157.7	177.0
					196.4

*Totals may vary due to rounding off

Source: Bureau of Mines

Attachment 1

A Study of Silver Futures Trades 1973 - 1979
(5,000 oz. per contract)

Contract	Bought Date	Amount Per oz.	Sold		Profit		Loss	
			Date	Amount per oz.	Per Ounce	Per Contract	Per Ounce	Per Contract
1975								
March	10/30/73	\$3,068	3/3/75	\$4,486	\$1,418	\$7,090		
May	12/31/73	3,451	5/1/75	4,336	.885	4,425		
July	2/27/74	6,292	7/1/75	4,556			\$1,736	\$8,680
September	4/29/74	6,138	9/2/75	4,367			1,771	8,855
December	7/30/74	5,550	12/1/75	4,063			1,487	7,435
1976								
January	8/30/74	4,738	1/2/76	4,230			.508	2,540
March	10/30/74	5,352	3/1/76	4,162			1,190	5,950
May	12/30/74	5,158	5/3/76	4,398			.760	3,800
July	2/28/75	4,940	7/1/76	5,001	.061	305		
September	5/1/75	4,800	9/1/76	4,267			.533	2,665
December	7/30/75	5,653	12/1/76	4,328			1,325	6,625
1977								
January	8/28/75	5,303	1/26/77	4,545			.758	3,790
March	10/30/75	4,746	3/28/77	4,781	.035	175		
May	1/13/76	4,548	5/23/77	4,552	.004	20		
July	3/2/76	4,360	7/26/77	4,597	.037	185		
September	4/30/76	4,896	9/27/77	4,605			.291	1,455
December	8/2/76	4,696	12/27/77	4,758	.062	310		
1978								
January	8/30/76	4,507	1/26/78	4,965	.458	2,290		
March	10/29/76	4,648	3/28/78	5,363	.715	3,575		
May	12/29/76	4,722	5/25/78	5,232	.510	2,550		
July	2/28/77	5,121	7/3/78	5,258	.137	685		
September	4/28/77	5,107	9/1/78	5,543	.436	2,180		
December	7/29/77	4,914	12/1/78	5,875	.961	4,805		
1979								
January	9/1/77	4,884	1/2/79	6,000	1,116	5,580		
March	9/15/77	4,953	3/1/79	7,250	2,297	13,985		
May	8/31/77	5,011	5/1/79	7,906	2,895	14,475		
July	8/31/77	5,068	7/2/79	8,554	3,486	17,430		
					Grand Total GAIN \$80,065			
							Grand Total GAIN \$80,065	
							Grand Total LOSS \$1,795	

Note: The highest number of contracts held at one time was eight with a deposit of about \$1,200 each, for a minimum investment of \$9,600 at any time, not including margin calls. \$28,270 Net Total GAIN

Mr. BENNETT. Are there any other questions of Mr. Frankland or Mr. Markon?

Mr. FAZIO. Mr. Chairman, I don't think I was here when Mr. Markon made his presentation. I have a couple of questions I would like to direct to him.

Mr. BENNETT. All right.

Mr. FAZIO. First of all, I would like to try to clarify where the receipts from the sale of any silver would go under the policy bill, H.R. 2154, which is almost at the end of its journey to the President.

Would you comment on that?

Mr. MARKON. Yes.

By the time we get this authorization the policy bill will be a law. There will be created a transaction fund. All of the proceeds from current disposals, as well as the disposals to be authorized in the pending legislation, will go into this transaction fund. Those funds will be used to buy those materials that are in short supply, and very critical, to restructure the stockpile.

Now, we came up with three bills, three commodities, and we anticipate that the revenues to be generated from the disposition of these three commodities would equal our acquisition plan. Now, that plan was submitted to you in the annual materials plan. That's a classified document, and the reason why we can't get into the acquisition is because of the classified nature of it. But we do have a balanced plan. For every dollar of proceeds that we'll get from the disposition of these commodities we will buy materials that are more critical to our needs.

Mr. FAZIO. In other words, there are 40-some elements in the stockpile that are short at this time?

Mr. MARKON. That is correct, sir.

Mr. FAZIO. How many have you selected out of that number?

Mr. MARKON. We have selected 18.

Mr. FAZIO. And in order to purchase those supplies to bring the stockpile in those 18 items up to what would be considered appropriate in light of national security needs you're choosing to sell off three items that are, in your opinion, in over-supply, or excess to our needs, and that would be silver, diamonds and what?

Mr. MARKON. And tin. The whole idea of the policy bill is to restructure the stockpile without going into appropriations from general receipts.

Mr. FAZIO. So the arguments about balancing the budget and freeing up stockpile reserves for purposes of helping the Treasury are really no longer applicable after this committee's bill becomes law. We're talking about a self-contained problem. We're talking about trying to solve the problem of our stockpile within the fund that's created in our legislation.

Mr. MARKON. That's right, sir. We do have some very serious problems with some of those shortfalls, and this is really what's driving this whole thing. It's not that we want to sell off things, but we want to acquire things. We have been trying for years to get appropriations, but it's very difficult in tight budget years.

Mr. FAZIO. And you're given a mechanism without cranking in other elements of the Federal budget.

Mr. MARKON. That's right.

Mr. FAZIO. You're talking about trying to solve your own problem. Could you give me some feeling as to why—and this question was raised earlier, and I'm not sure we ever got a real answer—you believe we can reduce our silver stockpile to the extent that you recommended? Wouldn't you feel that a higher stockpile is more appropriate, particularly in light of the 3-year need that we try to project in the stockpile?

Mr. MARKON. These requirements for silver, if you're talking about the requirements, are determined by the FPA, and you've heard Mr. Church testify as to the defense analysis; you've heard the GAO testify as to their review of our own analysis; and you've heard from the silver users their comments on the GAO.

Mr. Krueger has given, I think, a brief summary, and I don't know whether he completed his statement or not, but he can answer that.

Mr. FAZIO. We've had such widely different perspectives on this issue, all the way from a zero stockpile to buying additional silver. Somewhere in between what will have to pass as truth must lie, and perhaps additional conversation here might help us determine where that is.

Mr. MARKON. Mr. Krueger.

Mr. KRUEGER. Basically what we do is, using guidance passed down by the National Security Council, construct what we believe the economy would look like during a 3-year war. When we look at the industrial activity associated with this economy we identify various requirements for all of our stockpile material. Silver is just one of them. Offsetting these requirements, we look at what supply would be available. The first thing we look at is what supply is available here in the United States. In the case of the silver, we anticipate some 90 million ounces of silver to be available on an annual basis. If we look at just the purely direct and indirect defense needs, defense requirements, for silver during wartime, it's a little under 40 million ounces. So, just looking at our domestic base for defense requirements versus domestic supply, we more than cover those requirements.

We also look at, for sources of supply, other areas of the world, and we first, once again, look at those areas which are contiguous to the United States and which have a high degree of political reliability and economic stability.

If we look at just Canada and Mexico, we find that we can anticipate another 60 million ounces per year during wartime. This, with what's left over from domestic supply plus this addition of the Canadian material, we find that we meet not only all of our defense needs, both direct and indirect, but all of those essential civilian needs which provide for the health and well-being of the population, plus those investment needs to build up industry to support the war effort.

Finally, we find that we also have what we call general industrial requirements, which are difficult to associate directly to a defense effort, but provide for the health and well-being of a strong industry during wartime. Even these needs can be met by supplies which we consider will be available from other countries which have a reasonably high degree of political reliability and economic stability during wartime.

When we add all the numbers up for the entire 3 years, we find that our overall requirements for the entire economy are something

over 500 million ounces. The available supply would be something over 600 million ounces, and it's at this point a case of simple arithmetic.

This is not to say that silver is not an extremely critical material. It is. But we can get the supplies we need with reasonable reliability from domestic sources, contiguous sources, and other areas of the world.

This is not true for other materials in the stockpile, and this is why, as part of our annual budget we requested moneys to purchase these other materials which we feel are highly critical.

Mr. FAZIO. You used this overall criteria to include the tin, diamonds and silver, which are the most easily replaceable and most readily available. You didn't go into some of the other areas where we are perhaps, in your opinion, well supplied because, I gather, there were some concerns about further acquisition or price.

Mr. KRUEGER. In the case of diamonds, we have around 20 million carats in our stockpile inventory. We feel that the wartime requirements for stockpile are around 6 million carats. This leaves a very large excess of some 14 million carats of diamonds. We propose to sell 1.5 million carats.

In the case of tin, we have over 200,000 tons of tin. Our estimated stockpile requirements for wartime are about 32,500. So we have 160,000 tons of excess. The administration proposal is to sell 10,000 tons of this excess.

We have tried to take a balanced approach, a rational approach, that will allow us to, on a non-market-disruptive basis, sell off our excesses, and on a non-market-disruptive basis buy those needed commodities.

Mr. FAZIO. Thank you, very much.

Thank you, Mr. Chairman.

Mr. BENNETT. Does anybody have any further questions? Mr. McDonald?

Mr. McDONALD. Thank you, Mr. Chairman, I have just a couple of questions.

Mr. Markon, you mentioned under the new bill that our chairman sponsored and which is now about to become law it does go into a 3-year revolving fund. Is that correct?

Mr. MARKON. It goes into a revolving fund. The 3-year limitation gives us 3 years to ask for authorization for acquisitions.

Mr. McDONALD. But if it's not spent by that time, it would then go into the Treasury?

Mr. MARKON. No. Once we get the authorization it goes into another fund.

Mr. McDONALD. Suppose no authorization is gained. Suppose you do not ask for anything, and the money is still around after 3 years. Then it would go into the Treasury?

Mr. MARKON. That's right.

Mr. McDONALD. All right.

The gentleman who was just speaking and giving to my colleague from California, Mr. Fazio, the details regarding the various areas of acquisition and the various areas of reliability, and in taking that into account, you, of course, relied upon the State Department's evaluation, is that correct?

Mr. KRUEGER. The initial input of data did, in fact, come from the State Department. The Federal Preparedness Agency evaluates this data and makes the initial rankings of which countries are the most highly reliable and which ones are not, and it is reviewed by the entire interagency——

Mr. McDONALD. Prior to 1958 a large portion of our nickel came from Cuba, is that correct? Are you aware of that? That is my understanding.

Mr. KRUEGER. We have always relied principally on Canada for nickel. But yes, in fact, we did import nickel from Cuba.

Mr. McDONALD. In fact, we even owned a nickel mine in Cuba. The U.S. Government, I believe, owns a large nickel mine in Cuba.

Mr. KRUEGER. That is true.

Mr. McDONALD. And prior to 1958 that would certainly be viewed as a country of extremely high reliability, wouldn't you imagine, just speculating at this point?

Mr. KRUEGER. I can only speculate. I would imagine——

Mr. McDONALD. You weren't around then, but I think it would be reasonable to say that Cuba would be very high in reliability, and I think Iran was viewed as very high in reliability until recent events, and certainly Central America was viewed as very high in reliability until 2 weeks ago. I've just reviewed the Nicaraguan situation, which may be subject to some interpretation as to just how bad it is. But I took a very friendly country, a neighbor, Costa Rica, who told us to take our helicopters out, unarmed helicopters out, because of fear of reprisal of the Sandinistas within their country.

What reliability factor in a war against, say, an international Marxist power, a 3-year war, did you place on Peru, which has large amounts of Soviet equipment in it now? Did that get a pretty high reliability factor, or is that classified?

Mr. KRUEGER. We would be happy to discuss that in a closed session.

Mr. McDONALD. All right.

Mexico, frankly, is every bit as volatile as Nicaragua. It has had a single-party system. It has not really had anything other than one political party for about 45 years. That is not well known.

Back during the Olympics a group of students were protesting, and they opened up machineguns on them and killed a bunch of students, which created quite an international incident, but it was quickly hushed up.

At the termination of Echeverria as President and before Lopez Portillo came in there was a tremendous amount of armed unrest, revolutionary unrest, and areas of the countryside unsafe because of the very thing that then exploded later in Nicaragua.

You have your job, but we have ours, and I just really question, in view of the past track record, how much we, the Congress, can trust your reliability ratings.

Also, in answer to the gentleman from California, Mr. Fazio, when he asked you about the excess of those items and the fact that these were three items which were in excess, but in all honesty I think we would have to admit that asbestos is in short tons, in excess apparently some 16 million short tons. We would have to also point out that manganese natural ore is notably in excess, that manganese ore of

metallurgical grade is notably in excess, that mica, two different forms of mica, are in heavy excess, quartz crystals are in heavy excess, thorium nitrate is in massive excess, tungsten ores are in massive excess, and so forth. So I think it's important just for our colleagues and members of the committee to know; as they look down the list themselves they can see that there are numerous items listed in excess. Is that correct?

Mr. KRUEGER. That is true, sir.

Mr. McDONALD. Thank you, sir.

Thank you, Mr. Chairman.

Mr. BENNETT. Are there any other questions? We're about to have a quorum call.

Mr. FAZIO. Mr. Chairman, just following up on Mr. McDonald's question, why didn't we add some of the items that are in excess into the legislation recommended by the administration?

Mr. KRUEGER. For many of these items we already have authorization from this committee to sell these items.

Mr. FAZIO. Does that mean you're going to proceed and sell them? Is that factored into the overall dollars and cents evaluation?

Mr. KRUEGER. Yes. For instance, the tungsten, I think the last item mentioned, we would hope to sell some 3 million pounds out of over 80 million pounds we have in excess.

The entire plan was submitted to this committee early in January, which details those materials we wish to acquire and the quantities and also the materials we anticipated selling and the quantities.

Mr. FAZIO. What percentage of the total is generated by the silver sales?

Mr. KRUEGER. Most of the revenues we would expect to receive offsetting our requested appropriation would come from the three bills before the committee.

Mr. FAZIO. These other items are relatively minor in terms of the total amount available for purchase?

Mr. KRUEGER. I'm just guessing that 70 percent would come from the tin, diamonds, and silver, and 30 percent would come from existing authorizations.

Mr. FAZIO. Thank you.

Mr. BENNETT. Are there any further questions?

Mrs. BYRON. If we have a few moments, I have one quick question while we're waiting.

Mr. BENNETT. Yes.

Mrs. BYRON. I question the cost of keeping the silver per day. Could you give me a little explanation on why the cost is \$350,000 per day?

Mr. MARKON. Yes.

I think that figure refers to the opportunity cost. In other words, if you had the silver converted to dollars, those dollars could be earning interest to that extent. It is not the storage cost.

Mrs. BYRON. Thank you.

Mr. BENNETT. Did you have any further questions, Mrs. Byron?

Mrs. BYRON. No. That was the only question I had.

Mr. BENNETT. We'll go and answer the quorum call. We'll come back at 1:30.

[Whereupon, at 11:48 a.m., the subcommittee recessed, to reconvene at 1:30 p.m., the same day.]

AFTERNOON SESSION

Mr. BENNETT. The subcommittee will come to order.

Mr. Spence.

Mr. SPENCE. Mr. Chairman, I have a motion. I move the subcommittee favorably report to the full committee H.R. 3384, a bill to authorize the disposal of 1.5 million carats of industrial diamond stones, without amendment.

Mr. BENNETT. Is there any discussion?

[No response.]

Mr. BENNETT. I might say, by way of discussion, that this is a Department request. There is no controversy; nobody raised any controversy against it; and the bill has been held up for some time because we wouldn't let it come out until after we had finished our policy bill.

Is there any other discussion about it?

[No response.]

Mr. BENNETT. We'll call the roll on it.

Mr. MARSHALL. Those in favor, answer "Aye"; those opposed, "No."

[Rollcall vote taken.]

Mr. MARSHALL. Mr. Bennett.

Mr. BENNETT. Aye.

Mr. MARSHALL. Mr. Brinkley.

[No response.]

Mr. MARSHALL. Mr. Spence.

Mr. SPENCE. Aye.

Mr. MARSHALL. Mr. Mollohan.

Mr. BENNETT. Aye by proxy.

Mr. MARSHALL. Mr. Fazio.

[No response.]

Mr. MARSHALL. Mr. Emery.

[No response.]

Mr. MARSHALL. Mrs. Byron.

[No response.]

Mr. MARSHALL. Mr. Wyatt.

Mr. WYATT. Aye.

Mr. MARSHALL. Mr. Tribble.

Mr. TRIBBLE. Aye.

Mr. MARSHALL. Mr. Stratton.

Mr. STRATTON. Aye.

Mr. MARSHALL. Mr. Dougherty.

Mr. DOUGHERTY. Aye.

Mr. MARSHALL. Seven voting, Mr. Chairman; seven voting "Aye."

Mr. BENNETT. All right. So that will be handed to the full committee, having met with approval.

The next thing we have before us are three silver bills.

Maybe Mrs. Byron would like to be asserted affirmatively with everybody else on the diamond bill.

Mrs. BYRON. Yes.

Mr. BENNETT. So that makes eight.

Then we'll go to the silver bills. There's Mr. Conte's bill, which says that all silver will be disposed of. There's the Department bill, which will dispose of 15 million ounces.

Mr. MARSHALL. There are only two before us, Mr. Chairman.

Mr. BENNETT. Would anyone who wasn't here before like to ask any questions?

[No response.]

Mr. BENNETT. Positions were vigorously taken by Mr. McDonald in opposition of disposing of any silver and by Mr. Conte in favor of disposing of all of it. There are three bills.

Mr. MARSHALL. Two silver bills, Mr. Chairman.

Mr. BENNETT. Mr. Conte's position was disposing of all of it.

Mr. MARSHALL. That is correct.

Mr. BENNETT. He doesn't have a bill?

Mr. MARSHALL. Yes, sir. H.R. 1325.

Mr. BENNETT. Then there are three bills, aren't there?

Mr. MARSHALL. Yes, sir.

Mr. BENNETT. That's what I said. There's three bills instead of two. Are there three bills or two?

Mr. Spence has corrected the record for me, that the matter of Mr. McDonald goes to the Appropriations Committee for the purchase. It doesn't come to this committee because we have not yet the authority to authorize it.

Mr. Wyatt has a motion.

Mr. WYATT. Mr. Chairman, I move the subcommittee favorably report to the full committee H.R. 3385, a bill to authorize the disposal of 15 million ounces of silver, without amendments.

Mr. BENNETT. Is there any discussion?

[No response.]

Mr. BENNETT. If there's no discussion, we'll have a rollcall.

Mr. MARSHALL. Those voting in favor, "Aye"; those opposed, "No."

[Rollcall vote taken.]

Mr. MARSHALL. Mr. Bennett.

Mr. BENNETT. Aye.

Mr. MARSHALL. Mr. Brinkley.

[No response.]

Mr. MARSHALL. Mr. Spence.

Mr. SPENCE. No.

Mr. MARSHALL. Mr. Mollohan.

Mr. BENNETT. Aye by proxy.

Mr. MARSHALL. Mr. Fazio.

Mr. FAZIO. Aye.

Mr. MARSHALL. Mr. Emery.

[No response.]

Mr. MARSHALL. Mrs. Byron.

Mrs. BYRON. Aye.

Mr. MARSHALL. Mr. Wyatt.

Mr. WYATT. Aye.

Mr. MARSHALL. Mr. Tribble.

Mr. TRIBBLE. No.

Mr. MARSHALL. Mr. Stratton.

Mr. STRATTON. No.

Mr. MARSHALL. Mr. Dougherty.

Mr. DOUGHERTY. No.

Mr. MARSHALL. Mr. Chairman, nine voting; five "Aye," four "No."

Mr. BENNETT. So the bill is approved and goes to the full committee for consideration.

This is the administration request bill.

Mr. MARSHALL. Yes, sir.

Mr. BENNETT. All right. That's all, unless somebody has something they would like to bring up. Is there anything you would like to bring up, Paul?

Mr. TRIBBLE. No. Thank you, Mr. Chairman.

Mr. BENNETT. All right. I appreciate your all coming.

Mr. MARSHALL. Mr. Chairman, I request permission to insert in the record several statements that have been presented to the committee on these two bills.

Mr. BENNETT. Without objection, so ordered.

[The following information was received for the record:]

AMERICAN MINING CONGRESS,
Washington, D.C., July 20, 1979.

HON. CHARLES E. BENNETT,
*Chairman, Subcommittee on Seapower and Strategic and Critical Materials,
Committee on Armed Services, U.S. House of Representatives, Washington,
D.C.*

DEAR MR. CHAIRMAN: Enclosed is the statement of Simon D. Strauss, Chairman of the American Mining Congress Minerals Availability Committee, with regard to bills H.R. 1325 and H.R. 3385 that would authorize the disposal of silver from the national stockpile.

I would appreciate it if this statement could be included in the record of your hearings on these bills scheduled for July 25.

Sincerely,

J. ALLEN OVERTON, Jr.,
President.

Enclosure.

STATEMENT OF SIMON D. STRAUSS, DIRECTOR, ASARCO INC.

My name is Simon D. Strauss. I am appearing on behalf of the Minerals Availability Committee of the American Mining Congress to testify in regard to H.R. 1325 and H.R. 3385, bills to authorize the disposal of silver from the national stockpile. I am a director and was formerly vice chairman of ASARCO Incorporated, a company that is a major producer of silver and a substantial consumer of tin.

The American Mining Congress is an industry association that encompasses producers of most of America's metals, coal, industrial and agricultural minerals; manufacturers of mining and mineral processing machinery, equipment and supplies; and engineering and consulting firms and financial institutions that serve the mining industry. AMC member companies operate on public and private lands in all 50 states.

Mr. Chairman, before turning to the bills on which you are holding hearings, I would like to express the appreciation of the Mining Congress and indeed the entire mining industry for the work done by you and your committee—as well as by Senator Hart and his committee in the other chamber—in regard to stockpile policy. The legislation that is now moving toward final enactment into law that provides for the channeling of all proceeds from stockpile disposal into earmarked funds for stockpile purchases marks a significant strengthening of the defense and security aspects of the stockpile. Over the last eighteen years, the mining industry has repeatedly expressed its concern that some actions in regard to the stockpile appeared to be motivated by economic and budgetary considerations rather than by security needs. However laudable these other motivations may have been, to the extent that they undermined the original purpose of the stockpile, they raised dangerous issues. The policy bill which Senator Hart and you have guided through the Congress in our judgment is entirely sound and will add to national security.

On past occasions, the American Mining Congress has raised questions as to the objectives, targets or goals set for specific commodities. These have been established by an inter-agency committee in relation to military and essential civilian needs. Direct defense requirements obviously involve restricted information to which the public, including the mining industry, does not have access. Nor is it appropriate for laymen to pose as military strategists or experts. Nevertheless, based on experience in the production and use of mineral products, it should not be surprising that industrialists will have opinions as to the adequacy of the individual commodity targets.

There have been reports in the press that new goals may be announced shortly by the Administration. Meanwhile, however, the proposed release is based on the most recently published goal of no silver.

With regard to the goal for silver, the American Mining Congress has previously stated its view that the goal is incomprehensible.

The proposed sale of even 15,000,000 ounces appears questionable. Not that this would create a serious problem in terms of disposal. On the contrary, the amount could readily be absorbed by the market and the government would realize a substantial sum—probably well in excess of \$100,000,000—from the disposal of this precious metal.

Among silver producers there are some who frankly state that they would prefer to see the strategic stockpile liquidated. The amount held, 139,500,000 ounces, represents less than one-third of a year's industrial consumption in the Free World. Once sold, it would no longer exert whatever restraining influence it has had on a market that has advanced very sharply in price in the last 12 years.

The General Accounting Office in a recent study concluded that there was no need for a government stockpile of silver. One of the reasons advanced for this was there exist substantial stocks of silver in the warehouses of the New York and Chicago commodity exchanges where silver is traded. This may have been true in the past, but these stocks are diminishing—having dropped by 7,153,000 ounces since the first of 1979. There is no way of forecasting what these stocks will be at the time when an unpredictable emergency arises; nor is it possible to estimate what the cost will be of, in effect, expropriating such privately held inventories. With regard to no other commodity has the suggestion been made that privately held stocks be included in calculating the strategic stockpile. Why single out silver?

GAO also laid great stress on the large production of silver in Mexico and Canada, on the theory that these supplies would be available to the country in the event of an emergency. How true has this been with regard to Canadian and Mexican oil in the present crisis? No criticism of these neighbors is implied in stating that they will make their own decision in regard to disposal of their silver output and that United States policy cannot and should not automatically assume that silver from these countries will flow here in time of crisis.

Domestic silver production is less than 40,000,000 ounces a year from mines. There is a substantial secondary production of salvaged silver on which reliance can be placed. But imports into the United States will range from 50,000,000 to 75,000,000 ounces a year under normal conditions.

In World War II huge stocks of silver were available in the U.S. Treasury and very large amounts were diverted into various war-related channels. Direct sales to industry—quite apart from silver lend-leased to our Allies or silver substituted for copper in government-owned plant facilities—amounted to about 150,000,000 ounces—somewhat more than the present stockpile. Industrial uses of silver, excluding its decorative or coinage applications, continue to rise. As someone who has studied the silver situation over a period of more than 40 years, I am frank to state that the conclusion that no silver is needed for the stockpile is incomprehensible—except for the fact that it is an easily salable item. If the plan to sell all the stockpile is eventually followed, there may come a day when that decision will be bitterly regretted.

Before concluding, I should like to refer to the bills introduced last year with regard to acquisition of copper for the stockpile. The present holding is less than 2 percent of the goal. The mining industry suggested that the government would do well to take advantage of the low prices and large stocks then prevailing to begin an orderly acquisition of this essential metal. The legislation was not then enacted. Meanwhile the copper market has strengthened and a buying opportunity has been missed. Even today, however, copper prices appear to be below the level required to ensure expansion of productive capacity to meet future growth in the world economy.

It should be reiterated that the mining industry is a firm supporter of the concept that the strategic stockpile should not be used for economic purposes. On the other hand, since prices of strategic commodities are volatile, it is equally true that timing in purchases for the stockpile is an important consideration in ensuring that the taxpayers' funds are spent in a frugal manner. Inflation is a fact of life. Over the long pull most analysts of the copper industry expect substantially higher prices. Consequently in planning for acquisition, the stockpile authorities should carefully monitor markets of those materials in which large deficiencies exist—such as is the case with copper.

Thank you for this opportunity to present the views of the American Mining Congress.

LOOMIS, OWEN, FELLMAN & HOWE,
(FORMERLY COUNIHAN, CASEY & LOOMIS),
Washington, D.C., July 27, 1979.

MR. RALPH MARSHALL,
U.S. House of Representatives, Armed Services Committee,
Washington, D.C.

DEAR MR. MARSHALL: Enclosed herein for inclusion in the record is the position paper of the Industrial Diamond Association of America concerning the stockpile commodities disposal legislation now pending before the House.

Very truly yours,

JAMES E. ANDERSON,
Washington Representative of the
Industrial Diamond Association of America.

Enclosures.

POSITION PAPER OF THE INDUSTRIAL DIAMOND ASSOCIATION CONCERNING DISPOSAL
OF MATERIALS FROM THE NATIONAL DEFENSE STOCKPILE

1. The Industrial Diamond Association of America is in favor of legislation giving the Executive Branch of the Government authority to dispose of industrial diamond stones, bort, and diamond dies from the stockpile, provided that such disposal does not unduly disrupt the commercial market for such materials, and further provided that such legislation contains provisions limiting sales of these commodities to established American business interests and prohibits sales to foreign business interests and foreign governments.

2. In order to avoid undue disruption of the market, authorization to dispose of materials from the stockpile should be limited as follows:

(a) Industrial diamond stones sales from the stockpile should be limited to approximately 15 percent of the U.S. consumption annually. Under present estimates this equals approximately 900,000 carats per year.

(b) Bort sales should be limited to approximately 15 percent of the free world consumption annually, which under present conditions is approximately three million carats per year. It must be recognized that present authorization for bort disposal will expire on or about October 1, 1979, if sales continue at present rate. Therefore, IDA supports and recommends that legislation be enacted authorizing further disposal of bort from the stockpile in accordance with the provisions stated above.

(c) Diamond die sales triple 0008 inches and smaller, should be limited to 15 percent of the United States consumption. Under present estimates this equals approximately 900 pieces per year.

3. All sales of materials from the stockpile should be made in lots sufficiently small in size to afford small American business interests the ability to bid and purchase goods from the stockpile.

4. IDA opposes any sales from the stockpile that are made to foreign business interests or for political purposes, and strongly recommends that all sales be made on a fair, equal, and non-discriminatory bases.

MR. BENNETT. Thank you very much for coming. We can all return to the floor now to work our will there. Thank you.

MR. DOUGHERTY. Mr. Chairman, before we adjourn, maybe Mr. Fazio wants to vote on the other bill.

MR. BENNETT. Did you miss voting on the first bill, on diamonds?

MR. FAZIO. Yes, Mr. Chairman. I would like to be recorded as voting "Aye."

MR. BENNETT. Without objection, Mr. Fazio is recorded as voting "Aye." The vote will then be nine to nothing.

MR. MARSHALL. Yes, sir.

MR. BENNETT. Thank you very much.

[Whereupon, at 1:42 p.m., the subcommittee adjourned.]

