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# WHAT PRICE GOLD?

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"Miniver scorned the gold he sought,
But more annoyed was he without it;
Miniver thought, and thought, and thought,
And thought about it."
E. A. Robinson ( Miniver Cheevy )

This review of monetary affairs is written for the gold-mining industry in the United States. It is in four parts, as follows:

Part I. Proposed plans for the improvement of the international monetary system.
Part II. The official policy of the United States Treasury upon international monetary systems.
Part III. The relief given to foreign gold mines by their governments.
Part IV. The unique economics of gold. What price gold? **

## Introduction

Since 1958 the United States' deficits in international payments have grown to such a size that they now endanger the soundness of the U. S. dollar. Two investigations and studies for an international payments system have been made by separate U.S. commissions (one official and the other semi-official). Two committees of the International Monetary Fund have been working on the subject; and a number of books and pamphlets have been published recently by well-known economists proposing plans for improving

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** Parts I and II are in this issue of The ORE BIN. Parts III and IV will be published at a later date.

the international payments system. These plans affect the gold-mining industry either directly or indirectly. The ones most likely to be followed offer no assistance and let the gold-mining industry get along in the best way it can. Because the Third Gold and Money Session* will not be held until the spring of 1967, an interim review in 1965, as here presented, may be useful in preserving continuity between the 1963 and 1967 sessions. This review is addressed especially to the American gold-mining industry.

What is causing all of these plans for improvement?

The gold-exchange standard** imposes no controls upon either the debtor or creditor countries, so undesirable deficits and surpluses result. Further, key currency nations can run up large deficits, since their financial integrity is the only regulatory instrument.

Since the restoration of international currencies' convertibility and the removal of the restrictions upon capital movement, large capital flows of "hot" money, short-term funds, speculative money, and American foreign investments have upset the international balance of payments used to settle trade balances.

All of this has raised the question as to whether the gold reserves are ample for present and future world trade and whether they give sufficient time to correct international trade imbalances. Stated in the usual way: Has the world adequate "liquidity"? Liquidity is the main subject of most of the plans, and also the greatest differences of opinion exist about it.

The United States' deficits have grown and its gold reserves have diminished to a point where there is a danger of the collapse of the free-world payments system. Europe has all of the dollar exchange it wants and may demand future payments all in gold.

Plans for the management of the dollar, mutual assistance among central banks, and centralization of monetary reserves are already in operation and have been valuable during recent crises in the pound sterling and the lira. However, they do not solve the fundamental troubles with present international payments.

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** Gold-Exchange Standard: The gold-exchange standard is a compromise frequently made in the hope that the gold-coin standard will be adopted later. The reserves of the governmental or central bank may be largely in foreign exchange or notes of gold-standard countries. The unit of account is not directly convertible into gold, but instead into the currency of a country having a gold standard. This standard economizes in the use of gold. The reserves may be gold deposited abroad as a working balance or exchange in terms of a currency based on gold, or interest-bearing short-time assets readily convertible into gold, such as short-term obligations of the United States Treasury.

PART I.

Proposed plans for the improvement
of the international monetary system.

Fritz Machlup, Director of the International Finance Section of the Department of Economics, Princeton University, has collected the various plans for the reform of the international monetary system and has published them (Machlup, 1964). He has systematically analyzed them and has classified them as follows:

A. Extension of the gold-exchange standard
   (1) With continuing increase of dollar and sterling reserves;
   (2) With adoption of additional key currencies.
B. Mutual assistance among central banks
   (1) With safeguards against expansive credit and fiscal policy;
   (2) With extension of domestic credit and expenditures.
C. Centralization of monetary reserves and reserve creation
   (1) With overdraft facilities available to deficit countries;
   (2) With autonomous reserve creation by the world central bank;
   (3) With finance of aid to underdeveloped countries.
D. Increase in the price of gold
   (1) With gold-exchange standard continued;
   (2) With gold-exchange standard abolished.
E. Freely flexible exchange rates
   (1) In order to make internal monetary policies more independent;
   (2) Because internal monetary policies are too independent.

Class A - Extension of the Gold-exchange Standard

(1) With continuing increase of dollar and sterling reserves.

The present international monetary system which has been followed since World War II is in Class A(1). It has many supporters among economists, bankers, officials, and politicians who believe that it is only a matter of time until our balance of payments will be adjusted to a satisfactory point, that our gold supply is ample for present and future needs, that our credit is so high our dollar obligations will be acceptable to other countries for gold-exchange reserves, and that our competitive position in world trade is improving while Europe's is deteriorating due to trouble with inflation, wage increases, higher cost of living, and rising prices.

(2) With adoption of additional key currencies.

In 1962 Robert V. Roosa (Aliber, 1964), then Under Secretary of the U.S. Treasury for International Finance, together with the Federal Reserve System made a series of agreements with other central banks and governments which add other currencies to the previous key currency reserves of the dollar and pound sterling. The United States now holds a number of foreign currencies in its reserves which were obtained in exchange for dollars. The other countries are also holding these dollars in their reserves. These arrangements are called "currency swaps." They have certain advantages in the management of the dollar in international finance and in the easing of the demand upon our gold reserves. They do not reduce the deficit in the United States' international payments.

## Class B - Mutual Assistance among Central Banks

Under this heading come the "stand-by swaps" (Aliber, 1964) of currencies between the United States and foreign governments or central banks (these include the sales of U.S. Treasury obligations to foreign governments and central banks which are payable in the purchaser's own currency, are tax exempt, and are not marketable but serve in the place of gold); the mutual support by the free world's central banks, the U.S. Treasury, Federal Reserve System, and the International Monetary Fund in times of crisis; and the gold pool.

The "stand-by swaps" are agreements to exchange credits on demand but are not executed until an emergency arises. The sale abroad of U. S. securities gives the United States reserves of foreign currencies to have on hand in emergencies. These measures are designed to meet the sudden shifts of short-term "hot" money from one financial center to another. They replace the transfer of gold and extend the gold-exchange system. R. Z. Aliber's "The Management of the Dollar in International Finance" (1964) explains fully how, by intervening in the market, this protects the U. S. reserves of gold. The Group of Ten, namely the United States, the United Kingdom, Canada, Japan, Germany, France, Italy, the Netherlands, Belgium, Sweden, and by special arrangement, Austria and the Bank for International Settlements have a mutual support agreement for short-time credit which was used in the sterling crises of 1961, 1962, and 1964 and also during the run on the Italian lira in 1964.

These plans are now in effect and it has been proposed to put them on a permanent basis under the management of the International Monetary Fund.

## Class C - Centralization of Monetary Reserves and Reserve Creation

Professor Machlup lists 11 plans in this classification, which he defines as follows:

> "What all these plans, beginning with the Keynes plan (Machlup, 1964, p. 41; Triffin, 1960, p. 90-93) and including all other prototypes and variants, have in common is that an international financial institution is charged with the function of creating - through the acquisition of claims or other assets (or fictitious assets) - additional deposit liabilities that would be accepted by central banks as part of their monetary reserves."

Keynes (Machlup, 1964, p. 41) proposed a new international monetary unit called "Bancor" for which national obligations, notes, etc., were security. Bancor would be used in place of gold to pay countries having a surplus. A Central Clearing Union would handle the international payments. This plan would create additional reserves. The Triffin plan (Triffin, 1960, p. 102; Harris, ed., 1961, p. 223-306; Machlup, 1964, p. 39-61) follows a similar line of reasoning and was until recently the most discussed plan of this type. It modified Keynes' plans in accordance with the experience acquired since the end of World War II. Robert Triffin explains his plan fully in "Gold and the Dollar Crisis" (1960); it is thoroughly discussed by Triffin and Altman in "The Dollar in Crisis" (Harris, ed., 1961).

The "Group of Ten," at the Tokyo meeting of the International Monetary Fund in September 1964, did recognize the possibility of the creation of a "new form of reserve asset" in the future. The International Monetary Fund's charter was the work of Lord Keynes and Harry Dexter White of the U.S. Treasury at Bretton Woods in 1945. Many of Lord Keynes' ideas were too novel and were not included at that time, but he is responsible for much of IMF's success. The study of these plans is not a waste of time, because they give a thorough understanding of the international payments problem.

So much has been written on Class C that it is reviewed only briefly here. Many of the tables of data are factual or based on good sources and are well worth studying; it is only in their interpretation that differences of opinion exist. The most important papers and publications are given in the references for those who wish to study them fully.

## Class D - Increase in the Price of Gold

(1) With the gold-exchange standard continued
(2) With the gold-exchange standard abolished

The plans which would continue to accept the United States' and the United Kingdom's currencies, obligations, and liabilities as reserves for foreign government treasuries and central banks' reserves as a supplement to gold are placed in Class D (1), while those which would abolish these currencies and deficits in dollars and sterling as reserve assets are put in Class D (2), which actually makes them a return to the gold standard for international payments.

Professor Machlup distinguishes between the plans which would raise the price of gold for both newly mined gold and accumulated gold reserves, and the plans which would raise the price of newly mined gold alone. The increased value of the gold in the gold reserves of the latter plans would be neutralized to prevent realization of the "capital gain" and its misuse for issuing more money and consequent inflation. The raising of the price of newly mined gold is more important to the gold-mining industry than increasing the value of the gold reserves. Many monetary authorities believe you cannot raise the price of newly mined gold without increasing the monetary value of the gold reserves and creating loss of confidence in the stability of the currencies and international exchanges. The U.S. Treasury has resisted stubbornly any change in the price of gold for monetary reasons. Others, who say that world trade needs more liquidity, would secure it by raising the price of gold and increasing the value of the gold reserves correspondingly. So to keep these various purposes separate and distinct, Professor Machlup's Class D plans were reclassified in accordance with the gold-mining industry's needs. Also, some of Professor Machlup's Class D plans reduce the price of gold rather than increase it, so hardly come under his classification.

Plans concerned principally with gold price
as advocated by those who would:

(1) Return to the gold standard
    (a) Raise the price of gold: Jacques Rueff (1961), Michael Heilperin (1962), Charles Rist (1961), Philip Cortney (1960, p. 34-38), Ian Shannon (1962), W.J. Busschau (1963, p. 11-18), Henry Hazlitt (1963, p. 7-10), John Davenport*, Donald H. McLaughlin (1963, p. 26-29).

* With reservations, see "The U.S. Economy," p. 160-163.

(b) Maintain the price of gold at $35.00: J. W. Bell and W. E. Spahr (1960), F. A. Bladford, the late D. E. Kemmerer, F. R. Niehaus, R. T. Patterson, C. W. Phelps, G. C. Wiegand (all in Bell and Spahr, 1960).

(c) Raise the price of new gold but neutralize the accumulated gold reserves: Fritz Machlup (1964, p. 73 and 88).

(2) Continue the gold-exchange standard, using gold as a supplement, and raise the price for greater liquidity: Sir Roy F. Harrod (Harris, ed., 1961, p. 46-62).

(3) Reduce the price of gold: L. A. Hahn, A. O Dahlberg, and Fritz Machlup (in Machlup, 1964, p. 69-71).

(4) Gradually increase the price of gold: Kiyojo Miyata, Paul Wonnacott (in Machlup, 1964, p. 72-73).

Plans concerned principally with gold:

(1) This includes those who would return to the true gold standard. They are further subdivided into three groups:

(a) Members of this group would raise the price of gold, because they believe it is essential to the successful operation of the gold standard by providing the necessary liquidity for international payments today. Their plans cover only the international payments system. They are mainly foreign economists, some of whose economic policies directed the recovery of post-war Europe. Very few American economists have come out openly for raising the price of gold.

(b) The second group would not change the price of gold, but would return the U.S. domestic monetary system to the old gold standard. "A Proper Monetary and Banking System for the United States" (Ronald Press Co., New York), edited by J. W. Bell and W. E. Spahr, states their plan and their arguments.

(c) Professor Fritz Machlup says he "...can reassure the friends of gold that he himself has been an old and faithful advocate of the orthodox gold standard...." He also approves Miyata's and Wonnacott's plans (in Machlup, 1964, p. 88), which would raise the gold price by a small percentage yearly.

(2) Sir Roy F. Harrod has several plans, but his first choice has always been to raise the price of gold to increase international liquidity. He would supplement this further by a plan on the order of the Triffin plan or a

modification of it. His main argument is "that the great benefit of revaluation would not be the immediate benefit from the act of revaluation, but from the greater flow of trade throughout the free world that would be its lasting consequence." Harrod is a tutor and reader at Oxford University and is one of the few economists who is familiar with the problems of the gold-mining industry; therefore, his writings and theories are of particular value to it.

(3) These plans would reduce the price of gold. Their object is to curb the speculation in gold, which has grown since the removal of many of the post-war restraints upon the movements of capital and funds and the convertibility of exchange. Three plans have been offered. The first would reduce the price only to private individuals; the second would reduce the price at the rate of 2 percent annually; the third would reduce the price gradually and periodically at a rate of three-quarters of 1 percent every three months. These plans would, according to their proponents' theory, recover a large amount of hoarded gold and put it back into the gold reserves. Such plans are like cutting down a tree to harvest the fruit.

(4) This type of plan would raise the price of gold by a small percentage (about 2 percent) annually. It would remove any uncertainty about the future price of gold and the advance would not be sufficient to hold gold for the prospective profit. Professor Machlup thinks both Miyata's and Wonnacott's plans have merit. They certainly have far greater appeal to the gold-mining industry than those in Class 3.

Any monetary plan will affect the gold-mining industry - either by benefiting it or killing it by abolishing the use of gold for money, or further by keeping gold at $35.00 an ounce as the base and approaching a step nearer to an international central bank - all of which would leave gold just where it is in its present predicament.

The only way to find out the faults of these many plans is to read the claims of one of them which always corrects the weaknesses of the others. While the gold standard has in its favor strong evidence and persuasive argument, it is not perfect. The following quotations are worthwhile to keep in mind:

> "One mistake we must not make. We must not say that the system did not work, for in fact the gold standard ran along fairly smoothly - subject to crises - for a century before 1914 and indeed for a much longer period. Still from the fact that it worked, it does not follow that it worked in the manner described by the contemporary economists. It may have worked in a different manner." (Harrod, 1958, p. 21-22)
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> "The English monetary system in the generation before the

First World War has sometimes been represented as unchanging, largely automatic, and as near perfection as can be expected of any human institution. This brief sketch should be enough to show that it was none of these things; the Bank (of England) always had to exercise discretion; it had to face many changes in environment and was often in difficulties; it frequently experimented with new techniques; and it was exposed to a running fire of criticism" (Feaveryear, 1963, p. 334).

"Although basically absurd, a drastic revaluation of current gold prices is by no means an unlikely solution to the world liquidity problem. It will become well-nigh unavoidable - and preferable indeed to the alternate solutions of world deflation or world restrictions - if international negotiation fails to develop in time other and more constructive solutions to the problem" (Triffin, 1960, p. 79).

## Class E - Freely Flexible Exchange Rates

This last classification, also called "fluctuating exchange rates," if chosen would depress the gold-mining industry. It would reduce the need for international reserves and in turn the need for gold.

Fluctuating exchange rates depend upon the following principles in their operation: "A reduction in the value of a deficit country's currency reduces the prices of its exportable goods in foreign currencies, thereby encouraging foreign demand for them and raising their prices in its own currency. The rise in the domestic price reduces the domestic market for them, releasing more of existing supplies for export. It also raises the prices of imported goods in the national currency, discouraging their importation and shifting domestic demand toward domestically produced goods and services. Thus the competitive position of the deficit country can be improved rapidly without deflation. The reverse changes occur in the surplus countries without inflation" (Salant and others, 1963, p. 259).

It is not the purpose of this review to go into the merits and faults of flexible or fluctuating exchange rates compared to fixed rates, but rather to call attention to the theory. Professor Machlup has made an analysis of the various proposed systems and the reader is referred to this author. It is a persuasive theory - one well supported by authority. Professor Machlup refers to a partial list of 24 noted economists who have written in favor of this theory. They, of course, differ about the working details and the practical operations. The Brookings report, made at the request of President Kennedy's Council of Economic Advisers, chooses flexible rates as an alternate to their primary policy recommendations (Salant and others, 1963,

p. 258-262.

Professor Jacob Viner (1964, p. 32), in discussing "freely flexible versus fixed foreign exchange rates," says "I know of only two instances of full-fledged floating exchanges, the Canadian and the Peruvian, both now dead, but both deaths bemoaned by many economists."

The first four classes of plans - extension of the gold exchange standard, mutual assistance among central banks, centralization of reserves and reserve creation, and finally the increase in the price of gold - have for their purpose increasing international liquidity. The fifth plan - flexible exchange rates - does away with the regulation of international payments by central banks and the necessity for reserves to tide over deficits in international payments until the imbalance is corrected. Gold is reduced thereby to a minor role in international monetary arrangements.

While the subject of flexible payments may be distasteful to a gold producer, still Professor Machlup's presentation, which compares flexible rates with fixed rates, contains a sound criticism of the present system based on the International Monetary Fund and its short-comings. Certainly it is knowledge with which those interested in gold and money should be familiar. Where political decisions are supreme and action waits until a crisis has arrived, anything may happen. Professor Machlup's warning given in the next to last paragraph of his analysis of flexible exchange rates cannot be brushed aside as a false alarm. It is as follows:

> "These remarks may sound strange to ears used to continual whispers that the price of gold may be raised and to periodic shouts that it ought to be raised. Bankers inclined to regard as practical only what is not too much in contradiction with political interests, may find it ridiculous to have gold referred to as a potential non-valeur. Whether it will ever come to the demonetization of gold depends on which idealogy will win. In a world in which the discipline of the gold standard is felt chiefly as a nuisance, and monetary management is regarded primarily as an instrument of national growth and employment policy, not even the most inventive representatives of vested interest will be able to maintain the myth that the demonetization of gold is 'impractical' "* (Machlup, 1964, p. 88).

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* "Perhaps the present author (Professor Machlup [Ed.] ) can reassure the friends of gold that he himself has been an old and faithful advocate of the orthodox gold standard in the purity described by the most obsolete textbook. He would still vote for a 100 percent pure gold standard, where gold is really a 'standard' and not merely a price-supported commodity." (Machlup, 1964, p. 88)

Professor Machlup's classification and analysis of the foregoing plans are helpful in understanding the problems of the international payments system and his special paper is recommended reading. While these plans revolve around the subject of "liquidity" principally, they do not agree upon how much liquidity is needed to carry on world trade or how to determine it. Consequently, when authorities cannot agree upon premises - in this case liquidity - only confusion results.

## PART II.

### The official position of the U.S. Treasury upon international monetary systems.

### Official Actions and Declarations

The future of American gold mining lies in the hands of either the U.S. Congress or the finance ministers and central bankers of the free world, or both.

Plans for the reform of the international payments system are being studied by several agencies. Just what will be agreed upon, it is now too early to say. Advance statements made by officials reject certain definite elements and principles. They give little hope for anything favorable to gold production or anything which would demonetize gold. They are worth examining in detail.

The report of the Commission on Money and Credit, 1961, is primarily upon domestic monetary policy, but because it makes recommendations upon gold and international monetary policy its conclusions are given here (Commission on Money and Credit, 1961). Its recommendations are that the price of gold be kept at $35.00 an ounce, that the 25 percent gold reserve back of the Federal Reserve System's bank notes and deposits be abolished, and that a more easily adjusted exchange rate be established. Its viewpoint upon the price of gold is the following:

> "The Commission believes that the arguments against an increase in the world gold price counsel against such a step at this time. At some future date, if alternative methods of meeting the needs for increased reserves be unsatisfactory, the revaluation of gold

may be advisable, but it should be under IMF sponsorship."

Because of the official origin of this report, it has been referred to here. The Eisenhower administration desired such a report but could not agree upon the persons to make it. Accordingly, the Committee for Economic Development sponsored it and appointed the Commission on Money and Credit (Commission on Money and Credit, 1961). The authority of the report is weakened by the number of distinguished persons connected with it in one way or another. Seventy-one are listed. The healthy condition of France's and Germany's finances are largely, in each case, the work of one mind. Possibly no such mind exists in the United States and could not be found?

The Brookings report (Salant and others, 1963), "The United States Balance of Payments in 1968," is official, since it was commissioned by the President's Council of Economic Advisers and paid for by the Government. Published in 1963, its title may be misleading on first glance. The high points of this report for gold mining are:

(1) It rejects the devaluation of the dollar or raising of the price of gold.
(2) It would abolish the Federal Reserve System's gold reserves for its notes and bank deposits.
(3) It recommends a plan which comes under Professor Machlup's "C" classification which is stated as follows: "Institutional arrangements should be proposed that will permit the liquid claims of surplus countries and liabilities of deficit countries to be denominated in an international unit of account, either with the IMF or with a new international payments union associated with it."

The report states that present reserves are inadequate; that as United States liabilities are paid off it will reduce the gold dollar exchange and cause a further loss in liquidity. It believes the United States' payments deficits will adjust themselves by 1968 with normal measures, and that fixed rates of exchange contribute to the development of world trade. It gives warnings and cautions against interfering with certain national objectives. On the whole, a lot can be learned from this report.

The most disturbing recommendation in the Brookings report is the alternative to the main recommendations, given in the last chapter, which approves of flexible exchange rates, as follows: "The best alternative to a system of fixed rates with provision for increasing liquidity, in our view, would be a modified system of flexible exchange rates consisting of a dollar-sterling bloc and an EEC (European Economic Council) bloc. There would be relatively fixed rates within each bloc and flexible rates between them.

Adoption of this system would imply cutting the tie between gold and the dollar."

The United States Treasury policy on the price of gold has been clear for the past five years. Former Secretary Anderson stated it long ago: "The assured interchangeability of dollars and gold at $35.00 an ounce...is a basic element of strength in the international financial structure." Former Secretary Dillon confirmed this repeatedly.

Under-Secretary Roosa, who recently retired, had this to say while still in office (Roosa, 1963, p. 107-122):

> "Yet in our present complex of economic relations among nations, it is difficult to imagine any gold standard at work without being rather extensively managed. And if managed, it would be little different from the procedures of today, except that a gigantic devaluation would have intervened and confidence in the dollar or any other currency as a supplementary part of the management process would, as a consequence, have been largely destroyed. It would seem difficult to build a system that depends on periodic repudiation of a government's firm undertaking to maintain the fixed price of gold."

Further on he takes up liquidity:

> "The concept or meaning of international liquidity needs clarification. For there are three different meanings and much unnecessary and unintentional disputation arises from confusion among them. One meaning is related to the needs of the trade; it refers to the availability of credit facilities for the financing of a growing volume of transactions among growing economies. In this sense, there clearly is not now, and it is not likely to be over any foreseeable future period, a shortage of international liquidity."

And this is followed by more discussion, and he continues:

> "But underlying the flows of trade and capital are the national reserves of each country - reserves that must be drawn upon if seasonal or cyclical or accidental or structural and sustained factors bring about a cumulative total of outpayments that exceeds the total of inpayments received by the country as a whole. And these resources for settling the residual balances among countries represent two other kinds of liquidity - the stock of actual reserves and the availability of borrowed reserves."

Distinctions between different types of liquidity are not usually made and are lumped together. In this writer's opinion, Mr. Roosa is right in making these distinctions. Countries vary in their requirements for reserves according to their resources, and what would be sufficient liquidity for one nation would not be for another.

Mr. Roosa also gave his position on the many plans for the reform of the international payments system. In order to discuss them, he divided them into three types, as follows:

(1) "They would return to a 'full' gold standard by doubling or tripling the price of gold and then removing dollar or sterling or other foreign exchange from the world's monetary reserves. Proposals of this presume a fixed price for gold after a one-time drastic change has been made in that price.

(2) "Giving up a fixed price of gold entirely and providing that each currency fluctuate in price against others. With a country free to allow its exchange rate to drop whenever it might lose reserves, proponents argue that there would be an economizing of reserves and the world would presumably no longer need to be as concerned over the composition or the total of the monetary reserves themselves.

(3) "This third approach would include in reserves a more flexible and larger volume of foreign exchange or internationalized credit than is used today, superimposing this upon the slow accretion of gold that reaches the world's monetary reserves. In most cases, proposals of this character would continue the present settled gold price of $35.00 per ounce."

And he concludes:

> "The first is discussed somewhat further in the next section; variable exchange rates, briefly, in the section following; but for reasons which will then appear, the United States considers only the third to be a promising avenue for constructive advance in the future."

On international liquidity, around which so much of the discussion for reform takes place, Mr. Roosa's position is:

> "The United States must, of course, re-establish balance of payments equilibrium to maintain confidence in the strength of the dollar. Yet it is quite possible, once the flow of new dollars into monetary reserves ceases, the present excess of dollars will be quickly absorbed and that the prospects of an imminent shortage of international liquidity will appear."

The U. S. Treasury's position agrees with that of the Group of Ten of the International Monetary Fund as far as the Group has made it known.

The U.S. Treasury has made few statements of policy in the last five years and when it has done so they were short, crisp answers to questions. Mr. Roosa's lengthy paper in "Foreign Affairs," from which the preceding quotations were taken, is one of the rare official policy statements. It is official because Mr. Roosa was Under Secretary of the Treasury for International Finance. It will probably continue to be the policy because during President Kennedy's term the present Under Secretary, Frederick Deming, was selected to take Mr. Roosa's place in case he was unable to perform his duties, the basis for the selection being that Mr. Deming had the same convictions regarding policy as Mr. Roosa.

This seems to be the right place to quote from the official Brookings Institution report (Salant and others, 1963, p. 261):

> "One objection sometimes made to a flexible exchange rate for the dollar is that the maintenance of the present gold parity and the present exchange rates between the dollar and other currencies are essential to U. S. national power or prestige. We think this view mistaken. The power and prestige of the United States derive in large degree from its economic strength and vigor, which in turn depend upon its high productive potential and its success in using that potential."

The world price for gold can be settled only by international agreement. The International Monetary Fund is the established agency through which nations value their currencies in either gold or dollars and secure stable exchange rates. It has had two committees studying and making "a thorough examination of the outlook for the functioning of the international monetary system and of its probable needs for liquidity" (Internat. Monetary Fund, 1964, p. 25). Some preliminary conclusions by the Group of Ten have been reached and reported at the last meeting in Tokyo in September 1964; several of them concern the future of gold. While not formally ratified, they undoubtedly will be.

The Group of Ten is the principal committee, composed of 10 nation members, as noted in Part I. The Fund itself has intensified its studies of international liquidity and related questions. Following are some of its preliminary conclusions (Internat. Monetary Fund, 1964, p. 25-33):

> "It appeared to be generally agreed that international liquidity was adequate."
>
> "Since the end of the war, the international financial system - based on reserves in the form of gold and reserve currencies supported by the International Monetary Fund as well as certain other

credit arrangements – has permitted a signal expansion of the world economy and of international trade. It has made it possible to restore the convertibility of the main currencies and to cope with a number of difficult situations which affected certain currencies. These results have been obtained while a relatively high level of employment was maintained in the world."

"It will be wise, therefore, to supplement and improve the system where changes are indicated, rather than to look for a replacement of the system by a totally different one."

"The supply of gold for monetary purposes is dependent upon such factors as changes in the conditions governing gold mining, as well as on the confidence factors that influence private gold hoarding."

"It must be assumed that payments deficits of the United States will not contribute to formation of reserves in future on the same scale as in recent years. It therefore seems safe to forecast that in the future greater reliance than over the past decade will have to be placed on the provision of international liquidity as needed by other means. The Fund could make an essential contribution in this connection."

The First National City Bank's monthly economic letter of September 15, 1964 (p. 104–107) discusses thoroughly previous decisions arrived at in the beginning, in 1963, by the International Monetary Fund's Group of Ten. They are:

"Of the bewildering array of reform proposals, the Ten discarded two ideas at the very outset of the inquiry. No change is contemplated in the established price of gold because, by spreading turmoil and creating distrust, it would do irremediable damage to the incentive to currencies as reserves, which is an essential part of the system as it operates today."

"Gold will continue to be 'the ultimate international reserve asset. However, while more gold is now being added from current output to official reserves than at any other time during the postwar period' we cannot prudently expect new gold production to meet all liquidity needs in the future."

Mr. Henry H. Fowler, who succeeded Douglas Dillon as Secretary of the Treasury this year, served as an Under Secretary from 1961 until April 1964. According to news reports, he will give his attention to the Government's part in promoting the nation's economy and leave the technical and operating divisions to his staff. It is too early to say whether Mr. Fowler will change the Treasury's past policies towards giving aid to the gold-mining industry.

For the past six years the Treasury has defeated the gold-mining industry's every effort to obtain help from Congress. The third part of this review, which will appear in an early issue, will show that the Treasury official's testimony before Congress has been purely opinion and cannot be supported by facts.

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## UNION PACIFIC PURCHASES BUFFALO MINE

The Union Pacific Railroad Co. Friday (Sept. 10) exercised the option held on the Buffalo Mine since June 11 and purchased the property for a price reported to be in excess of $100,000. The gold and silver mine, owned and operated by Mr. and Mrs. James P. Jackson, is located about 21 miles north and west of Sumpter in Grant County, and is one of the very few active gold mines in the Northwest.

A Union Pacific spokesman said today that the Jacksons will continue to operate the mine which normally has a crew of 6 to 10 men. Expansion of the mine is expected under the new ownership with a "substantial" amount to be spent on opening the existing ore veins, according to the U.P. spokesman. The working crew will probably be doubled, he said. The Jacksons retained a royalty interest in the mine reported by the spokesman to be 5 percent of smelter output.

The purchase of the gold and silver mine is the first known venture for Union Pacific in the gold mining business. "The purchase is unusual for the U.P. in the past but not for the future. The U.P. Natural Resources Division has the authority to acquire properties for development for profit," the spokesman said. The company contracted test drilling and examination work during the summer to the Boyles Bros. Drilling Co. A geologist for Union Pacific, Keith Jones, was at the mine during the summer. (Democrat-Herald, Baker, Oregon, Sept. 11, 1965.)

[Editor's note: The geology of the Buffalo Mine is described in the Department's Bulletin 49, "Lode mines of the central part of the Granite Mining District, Grant County, Oregon."]

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## THE WILLAMETTE AND OTHER LARGE METEORITES

By Erwin F. Lange
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Occasionally an old, unpublished photograph of the Willamette meteorite comes to light, as is the case with the accompanying picture. The Willamette meteorite, found near Willamette (West Linn), Oregon in 1902 remains to this day the largest meteorite discovered on the American continent north of the Mexican border. Today it is on display in the Hayden Planetarium, a part of the American Museum of Natural History, New York City. The 15½-ton Willamette iron focuses attention on other large meteorites of the world.

Of the approximately 1,600 known meteoritic specimens in the world, there are 30 irons which weigh from one to 60 tons. Eight were found in Mexico and four in the United States west of the Rocky Mountains. The largest single individual yet discovered is the 60-ton Hoba West, and it remains where it was found near Grootfontein, South Africa, in 1920. The world's second most massive meteorite is the Ahnighto, the largest of the Cape York, Greenland, irons brought to the United States in 1897 by the famed Arctic explorer, Robert E. Peary. The Ahnighto, weighing 36½ tons, is also the property of the American Museum of Natural History. The next three largest meteorites remain where they were found. They are the Bacubirito, Sinola, Mexico; the Mbosi, Tanganyika, Africa; and the Armanty, China. Their weights are estimated at 27, 27, and 26 tons, respectively.

The Willamette is the world's sixth largest meteorite and the most massive one ever found in the United States. The second largest United States meteorite is the Navajo, found in 1922 in Apache County, Arizona. It weighs 4,814 pounds and is the largest meteorite in the collection of the Chicago Museum of Natural History. The third largest iron in this country is the Quinn Canyon, which was found in 1908 in Nevada and is now also in Chicago. It weighs 3,190 pounds. In 1938, deer hunters discovered the Goose Lake meteorite in the Modoc National Forest, California, less than a mile from the Oregon border. It weighs 2,573 pounds and is the largest meteorite in the collection of the U.S. National Museum (Smithsonian Institution) in Washington, D. C. [Photograph courtesy of Richard G. Bowen.]

## LUNAR FIELD CONFERENCE GUIDE BOOK

"Lunar Geological Field Conference Guide Book," prepared by N. V. Peterson and E. A. Groh, editors, C. J. Newhouse, cartographer, and the editorial staff of the Department, has been published as Bulletin 57. The guidebook was designed for the international Lunar Geological Field Conference held at Bend, Oregon, August 22-29, 1965, and sponsored by the University of Oregon Department of Geology and The New York Academy of Science. It describes and illustrates recent volcanic features that can be seen in five field-trip areas in the High Cascades and Bend region. The areas were selected for their diversity of volcanic expression and for their accessibility, in the belief that analysis of such lunar-like geology is prerequisite to a manned base station on the moon.

The guidebook will be useful to anyone interested in the study of volcanology, and will serve as a basis for more detailed research in this field. The 56-page publication is abundantly illustrated with colored geologic and topographic maps, aerial views, sketches, and photographs.

NOTE: Between the time the above announcement was prepared as a press release and the publication of this issue of The ORE BIN, there has been an unprecedented demand for the guidebook. The supply is exhausted, but arrangements are under way for the reprinting of this bulletin.

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## ARTICLES ON RECENT VOLCANISM IN OREGON REPRINTED

A collection of seven papers on recent volcanism, originally published in The ORE BIN between October 1961 and July 1965, has been issued by the Department as Miscellaneous Paper 10. These articles have been very popular and the issues of The ORE BIN in which they appeared have, in most instances, been exhausted. The reprinted papers include: "Hole-in-the-Ground," "Recent volcanic landforms in central Oregon," "Maars of south-central Oregon," "Diamond Craters, Oregon," and "Crack-in-the-Ground, Lake County, Oregon," all by N. V. Peterson and E. A. Groh; "Age of Clear Lake, Oregon," by G. T. Benson; and "Recent volcanism between Three Fingered Jack and North Sister, Oregon Cascade Range," by E. M. Taylor. In addition, there is a brief description of Lavacicle Cave. The articles, illustrated by maps and photographs, depict some of the unique volcanic features in Oregon that had never been described in detail before. The collection is enclosed in a 7½-inch by 10½-inch envelope for convenience in storing and mailing.

Miscellaneous Paper 10 is available from the Department's offices in Portland, Baker, and Grants Pass. The price is $1.00.

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