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Metals Market

RUSSIA IS MAJOR FACTOR IN GOLD MARKET,  
BUT THAT'S ALL ANYONE CAN BE SURE OF  
(The Wall Street Journal)

LONDON - A tip to gold speculators: If you have a friend at the CIA, be nice to him. If you don't have such a friend, find one.

He will undoubtedly have the best clues to the biggest mystery hanging over the world gold markets—the reserves, production and selling plans of the Soviet Union.

Many people think that Soviet gold production last year amounted to about seven million troy ounces, or 16% of world output. Many people think that Soviet gold reserves total nearly 58 million ounces, or nearly 5% of world monetary gold reserves. Some people even think they know it costs the Russians an average of about \$70 an ounce to produce gold from the frozen Siberian wastes, the remote province of Uzbekistan or other areas.

But only a few top Soviet officials really know for sure. And while they aren't telling, Western estimates have been subject to some gross revisions in the last decade.

The only direct Western knowledge of Soviet gold comes when it is sold on free-world markets. Here the Russians have shown that they can readily dispose of enough gold at any given time to move world prices sharply -- though probably never enough to manipulate the market for very long.

**GOLDEN GRAIN**

Soviet sales are estimated at 6.1 million ounces last year—about 13% of all gold that went on the free market. That was more than triple the estimated 1.9 million ounces sold by Moscow in 1971. Rising gold prices and the need to pay for massive grain imports provided the biggest stimuli to the Russians to unload more than 85% of their 1972 production, bullion dealers say.

The Soviet Union last published official figures on its gold stock in 1934; since then, Moscow has been keeping the subject a closely guarded state secret. Throughout the 1950s and early 1960s, Western estimates put Soviet gold production at anything between 8.8 million and 19.3 million ounces a year and put reserves at 112.5 million to almost 290 million ounces. However, in 1964, the CIA published a sharp downward revision, believed possibly to have been based on documents supplied by the Soviet defector, Col. Oleg Penkovsky. The new estimates placed production at 4.3 million to 4.9 million ounces a year, well below the level of then-current sales. Reserves were put at 70.7 million to 85.2 million ounces.

Using these figures as a base, the most comprehensive and up-to-date estimates come from Michael Kaser. He is an Oxford University professor who has been producing annual studies of Soviet gold for the last three years for Consolidated Gold Fields Ltd., a London-based company with wide South African press reports on the gold-mining industry; he puts these together with past CIA estimates published in the U.S. Department of the Interior's Bureau of Mines Journal and with reports of Western bullion dealers. (In 1964, the CIA stopped publishing its estimates--which is why you now need a friend at the CIA.) His calculation of the roughly \$70-an-ounce average cost of producing gold in the Soviet Union is carefully worked backward from reports of wholesale prices paid by the Soviet jewelry industry to the ministry that runs the gold mines.

#### THE DIVIDING LINE

The importance of the figure is that it marks the theoretical dividing line at which the Soviet Union's intentions and the character of its activity in the world gold market change. For instance, at prices less than \$70 an ounce, the Russians could be expected to sell gold grudgingly at a loss for hard currency to pay for imports from the West.

Reviews of the 1972 gold market published by London bullion dealers show that what the Russians do--or what Western speculators think they are doing--has a major impact on the market. For example, "renewed sales from the Soviet Union," along with other factors, caused stability in the market from January through early April of last year, says Samuel Montagu & Co., London merchant bankers that trade actively in the gold market.

However, in mid-April, the report adds, "the U.S.S.R. temporarily suspended its sales" at the same time that reports circulated of a decline in South African output. These factors gave rise to a spurt in the gold price "unprecedented since the end of World War II," the report says.

In August, the report goes on, word that "the U.S.S.R. would have to sell large quantities (of gold) to finance its purchases of wheat...led to a sharp fall in the price" of gold from record highs. Subsequent Soviet withdrawal from the market sparked a rally, Samuel Montagu says.

No one knows, of course, what the Russians will do this year. But bullion dealers estimate that they sold at a rate of 643,000 to 964,500 ounces a month in the first half, well ahead of a year earlier. The rising price is an inducement to Soviet sales for two reasons, Prof. Kaser suggests. First, there is obviously more hard cash to be raised per precious ounce. But also, as the higher price swells the value of Soviet reserves, it may lead Moscow to feel safer in parting with some of those reserves.

At the same time, Prof. Kaser adds, increasing Soviet access to Western credits relieves pressure on the Russians to sell gold for hard currency to pay for imports. And that gives them even more freedom to play the market when and as they like.

U.S. POSITION AS PHOSPHATE EXPORTER WEAKENS

(June 25, 1973)

**WORLD MARKETS FOR PHOSPHATE ROCK  
WILL TURN TO SOURCES OUTSIDE THE  
U.S. AS DEMAND OUTPACES U.S. MINING  
CAPACITY.**

With growing demand and increasing pressure on available reserves, the U.S. is facing a phosphate rock crisis similar to its more publicized energy crisis. But there are differences. Although the U.S. has alternate energy supplies, such as its vast coal and shale reserves and its nuclear potential, there are no alternatives for phosphate rock. And, although the U.S. already imports large volumes of energy raw materials, it remains a major phosphate supplier to world markets.

However, says Agrico Chemical chairman Kenneth P. Lundberg, U.S. phosphates, particularly rock, will become less significant on world markets.

Speaking at the recent meeting of the Fertilizer Institute at White Sulphur Springs, W. Va., Mr. Lundberg said that the U.S. should be able to maintain its present share of the world market, which takes 47% of U.S. phosphate production as rock and upgraded products and another 11% in the form of agricultural products, until 1980. After that, phosphates from such sources as Morocco, the U.S.S.R., Tunisia, Algeria, Jordan, Syria, Egypt, Togo, Spanish Sahara, Angola, Australia, and Peru will have to take up the slack. "At some point in the future," Mr. Lundberg says, "the U.S. will be a net importer of phosphate rock."

Despite the gloomy outlook for phosphate rock and despite predictions that the U.S. phosphate industry will start going downhill in the mid-1980's, Mr. Lundberg is optimistic. He thinks that technology and economics can make a lot of difference between now and 1985. He points out that U.S. phosphates can be exported in many forms, from rock to food, and that the outlook for U.S. agriculture never has been brighter.

Last year, 19% of U.S. domestic phosphate consumption was exported in the form of crops. Mr. Lundberg estimates that by 1980 this will increase to 25% and will require an additional 3 million tons of rock. Another 5.5 million tons more will be needed for crops that will be grown and consumed domestically. Thus, domestic demand alone for phosphate rock will increase from last year's 19.2 million tons to 27.7 million tons. By 1985, it will hit 32.7 million tons.

In addition to the phosphates exported as crops, another 23% of total U.S. phosphate exports move as up-graded phosphate products. This percentage is certain to increase, he says, as higher costs of opening up mines make upgrading more profitable.

Meanwhile, for the balance of 1973 and 1974, rock exports will be under pressure from an increasing domestic demand. By 1975 the rock situation will improve. New mining capacity is expected to come on stream, and Mr. Lundberg says that the U.S. can participate in a growing world market through 1980. However, if the U.S. is to maintain its present share of the world market for rock and phosphate products through 1985, it will need an additional 12 million tons of new mining capacity just for exports.

He estimates that about 27 million tons of new mining capacity will be in operation by 1985. But the contemplated drop of 12 million tons as a result of depleted reserves will put the net increase at only 15 million tons. And by then, increasing domestic demand will force the industry to withdraw rock from the export market.

Fortunately, world mining capacity which totaled 110 million tons last year, is on the threshold of substantial growth, according to Mt. Lundberg.

He expects world capacity to reach 133 million tons by 1975, 159 million tons by 1980, and 180 millions tons by 1985. Of the total 70 million ton increase projected through 1985, he says 28 million tons will be in Africa, 10 million tons in the U.S.S.R., 15 million tons in Florida and North Carolina, and 17 million tons in other countries.

In 1970 worldwide rock consumption from non-U.S. sources was 57 million tons. If U.S. producers hold their present share of the world market, the demand for non-U.S. sources will increase to 89 million tons by 1980. And any shortfall in the U.S. industry's ability to hold its present world position will further increase the demand on overseas producers.

"LET'S GO PROSPECTING"

(The Mining Record - July 4, 1973)

(Editor's Note;) The following is the second of a series of guest articles submitted to The Mining Record by Arden L. Larson, geologist, Multi Metals Inc.

The first step in meeting our challenge of supplying the metals of tomorrow is to find new mines. The first step in finding a new mine is a prospecting trip. I am quite certain that everyone of you, small miners have your own ideas on how and where to go prospecting. I don't think that my comments will astound you, but perhaps you can apply some of them to your own pet area.

I believe that you can identify two broad methods of prospecting, a random method and a scientific method. I would say that a person using the random method has a decreasingly small chance of finding a new mine. However, this is the method by which most of our base metal mines were found. In this method a person takes his rock pick or fishing rod or hunting rifle and takes off into parts unknown to see what he can see. The main problem involved here is that he isn't the first person to do this at his place. Thus the chances of finding something by kicking over a rock are rather small. However, he may stumble across someone else's prospect pit that was dug many years ago and therein find something that is of value now that wasn't when the pit was dug. Thus there is still a place for this method.

The scientific method of prospecting is rather painstaking but is the method by which we will find the majority of our new mines. This is the method that the big mining companies use at considerable expense. Now the small miner can't afford to go to much expense, so how does he use this method? To answer this, first, I had better explain exactly what I mean by the scientific method.

This method could also be called an indirect method as opposed to a direct method where you find the mine by picking up a chunk of ore. In the indirect method you use your head a little bit. Suppose that you were out looking over a forested hillside and you noticed a line of big trees, each one of them showing effects of being struck by lightning. Now don't just sit there and say isn't that interesting, go over and see if you can determine why. I know of a large fluorite vein that was traced in exactly this manner. Either the vein matter was very nourishing to the trees and they grew taller, or the vein itself was a better conductor than the surrounding rock and thus attracted the lightning strikes through the trees. In any event, the miners who noticed this phenomenon were able to develop their mine much easier than they would have otherwise.

There are quite a few indirect methods that the small miner can use without spending much money. The oldest and most overlooked is the gold pan. A great many of our big mining districts were found with the gold pan. Among them are

Leadville and the Comstock. However, the Comstock could have been found several years sooner than it was had someone been fortunate enough to identify the strange black sand that kept clogging up the riffles in the sluice boxes (it was argentite silver).

A very new mine in Colorado could also have been found by the use of a gold pan. Associated with the Urad and Henderson molybdenum deposits of Climax is some tungsten. Had an individual been so fortunate as to analyse the black sand obtained by panning in Clear Creek in Denver, he would have noticed that it was anomalous in tungsten compared with the other streams in the area. Had this individual followed the stream, panning and analyzing all of the large tributaries he would have eventually found himself at Urad by following the tungsten.

So, how does the small miner prospect for minerals other than gold with a gold pan? Suppose you are in Montana and want to find tungsten. Take your pan (I have used a pie plate and a hubcap!) and a portable blacklight and start panning streams in your area of interest.

When you get your concentrate, use your blacklight to check for scheelite. If you want to spend a little money, have the concentrate assayed for tungsten. Then follow the tungsten home.

Use your pan regularly in prospecting; examine the heavy minerals with a hand-lens. Often you can tell quite a lot about rock types this way in any area that is completely covered by forest. You can save a sample of the heavy minerals for later analysis, but be sure to label them as to where you got it. A person can spend one day panning streams in an area, covering many square miles of drainage basins, and later have the assays to tell you what basin to go look at in more detail. Many ore deposits leave their fingerprints in the heavy minerals of the streams draining them.

Most indirect methods used by the large companies involve detailed trace element work by competent chemists. Sometimes, a very simple observation in the field would do the same thing. I remember a silver property that carried a little bit of selenium. There is a certain flower whose color is normally white, but when there is a trace of selenium around, the flower is violet, becoming darker with more selenium. I could actually trace the silver veins on this property by following the darkest violet flowers! A detailed geochemical sampling program could not have done better. My point is, don't overlook the obvious. Fortunately the small miner is receptive to new ideas and also a very good observer. So when you go out prospecting, look closely at the trees, grasses, cactus, flowers as well as the rocks. Listen to what they are trying to tell you.

I know that each of you has heard the saying about follow that ore even if it goes up a tree. That same saying can be applied to answer the question of where to go prospecting. I firmly believe that each new mine that will be found by the small miner will be near an area where someone has found ore of some kind before. The geologists of the big companies will find new ore deposits in virgin country, but we small miners will not. We can not afford the sophisticated methods needed nor do we comprehend the geologic reasoning involved. However, we will find our share.

Start your prospecting trip in an area where you know there is mineralization, then work out from it. Perhaps you can work between two mining camps, trying to find a possible connection in mineralization. When someone made a strike, he had plenty of pals looking right around him for another one, but their efforts decreased as the distance from the strike decreased. The chance of finding something on the doorstep of another mine is not too good, but the chance of finding something between two mines on the same trend is much better.

Before I sign off, let me mention a bit on my next subject, proper sampling. Take your samples and the very first thing, put them in a sack and label it as to

where it came from and what it is. You know very well that the sample that you forgot to label will be the best one!

In conclusion my basic philosophy on prospecting is to use your head and listen to Mother Nature. Sometimes we get too educated and miss the obvious. Good luck!

Next: Proper sampling

### \$8-\$12 SILVER PRICES ARE PREDICTED BY CURRENCY AUTHORITY

(The Mining Record - August 1, 1973)

LOS ANGELES, Cal. - Dr. Frank Pick of New York, one of the world's best known authorities on currencies and gold, was in Los Angeles recently conducting a seminar on how to preserve capital in spite of inflation and the eroding U.S. dollar.

While there he told an audience that within 20 to 24 months he foresees the total collapse of the American dollar and the issuance of a new U.S. currency. Pick also said "silver is going to go up and its position is excellent. He predicted silver at \$8 to \$12 an ounce within two years.

He recommended long term silver futures contracts.

"The risk is that in the violent declines of the market--and you will get about two a year--that you will be wiped out. But, a risk like that can be taken," he said.

"If you now have silver contracts of near expiration, transfer to silver for the long run. Think about two contracts--one long, one short, for one year. You can hardly lose on this silver gambit."

While gold has been attractive to Arab countries, Pick said there has recently been a switch to diamonds.

"The princes of Kuwait, Saudia Arabia, Syria and Iraq have gold, but they say it takes a lot of watching. Their dollar income continues to increase so they now are going into diamonds.

"They buy what are called the unopened DeBeers packets of raw diamonds (about the size of a match book for five carats) which are \$350,000. These now are sold at 25 per cent premium over that price on the West 47th Street diamond center in New York.

Of the other two precious metals, Dr. Pick said "if you have guts, you might have one in palladium. And if you don't get seasick, platinum futures are very good."

### SMOG CONTROL NEEDS COULD BOOST DEMAND FOR PLATINUM, BUREAU REPORT NOTES

(Department of the Interior - May 15, 1973)

Domestic demand for platinum could triple overnight if the catalytic muffler becomes the standard automobile exhaust control device, according to a report just published by the Interior Department's Bureau of Mines. Copies are on sale at the Government Printing Office.

Of the various exhaust control techniques now being studied by government and industry researchers, a platinum-based catalyst system appears to have the best features for conventional gasoline engines. The catalytic action of the platinum eliminates most of the carbon monoxide and unburned hydrocarbons in the exhaust.

According to the Bureau report, each device would require about a tenth of an ounce of platinum. This means that in 1976, when all newly manufactured vehicles are supposed to have antipollution equipment, almost a million and a half ounces of platinum could be needed for the manufacture of catalytic mufflers.

Projections in the Bureau report were based on the Environmental Protection Agency's 1975 auto emission standards, which have since been postponed to 1976. The delay only moves the dates of the projections ahead by one year, the Bureau noted, without substantially changing the figures themselves.

Normally the country uses about 500,000 ounces of platinum each year, three-fourths of which is recycled. For the first few years of production of exhaust control equipment, all of the platinum used would have to be new metal. Demand would peak in 1980, according to Bureau experts.

After that, many of the earliest exhaust control devices would reach their 50,000-mile operational limits and would be turned in for recycling. Demand for new platinum would decline, and by 1990, salvaged emission control equipment might provide as much as three-fourths of the platinum needed for new equipment.

Even so, automobile manufacturers would continue to need large quantities of new platinum each year. In addition, platinum is necessary in the manufacture of lead-free gasoline, the only kind that can be used in cars with platinum-catalyst mufflers. So the petroleum industry's consumption of the precious metal can also be expected to rise in coming years.

The U.S. produces a very little platinum. Roughly 98 percent of world production comes from three countries: In 1972 the Republic of South Africa supplied us with 899,000 ounces, the USSR furnished 720,000 ounces, and 172,000 ounces came from Canada.

These totals combined would hardly more than fill anticipated U.S. anti-pollution requirements for 1976. Data in the Bureau report indicate, however, that production can be increased to meet foreseeable antipollution needs. South Africa, in particular, has rich undeveloped sources of platinum and could probably boost its production to two or three million ounces a year.

Platinum producers' prices have remained fairly stable over the past five years, ranging from \$130 to \$155 per troy ounce. The use of platinum in anti-pollution devices might not drastically alter this situation, the Bureau said, because in order to hold new customers over the long term, platinum producers would have to be able to offer price stability.

Bureau of Mines Information Circular 8565, "Demand for Platinum to Reduce Pollution from Automobile Exhausts," by David J. Kusler, can be obtained for \$.55 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Orders should specify catalog number 128.25:8565, and stock number 2404-01212. The report is not sold by the Bureau of Mines.

#### DIVISION OPEN-FILE REPORTS AVAILABLE

The following open-file reports are available for public examination at Alaska Division of Geological and Geophysical Surveys offices at: Maintenance Building, University of Alaska; 323 East Fourth Avenue, Anchorage; Room 509 Goldstein Building, Juneau and Room 312, 306 Main Street, Ketchikan, Alaska.

Copies may be obtained by sending prepayment directly as follows: AOF-35 is available from Technical Supply, 729 First Street, Fairbanks, Alaska 99701, telephone 456-4982 and AOF-37 is available from McCauleys Reprographics, Inc., 721 Gaffney Road, Fairbanks, Alaska 99701, telephone 456-4400. Prices are listed with title below.

#### TITLE

#### Open-File No.

- |        |   |
|--------|---|
| AOF-35 | Coal Reserves Study - Chuitna-Beluga-Capps Area, 5 p. text, Geologic map and three cross sections. (\$3.75)                                 |
| AOF-37 | Preliminary geochemical anomaly maps of Southeast Ambler River and part of Survey Pass Quadrangles, Alaska, 2 maps, Scale 1:63,360 (\$2.00) |

NEW DIVISION REPORT

The Alaska Division of Geological and Geophysical Surveys, Department of Natural Resources, has released the publication: **Geologic Report No. 36 - GEOLOGY AND GEOCHEMISTRY OF THE SINUK AREA SEWARD PENINSULA, ALASKA** - by Gordon Harreid, Mining Geologist. It contains 63 pages of text and illustrations, three pocket maps.

The report is \$1.00 and may be obtained from the Division of Geological & Geophysical Surveys, P.O. Box 80007, College, Alaska 99701; 323 East Fourth Avenue, Anchorage, Alaska 99501; Room 509 Goldstein Building, Juneau, Alaska 99801; and Room 312, 306 Main Street, Ketchikan, Alaska 99901.

METAL MARKET

August 24, 1973

Month Ago      Year Ago

Metals

	<u>August 24, 1973</u>	<u>Month Ago</u>	<u>Year Ago</u>
Antimony ore, stu equivalent, European ore	\$13.40-14.40	\$13.40-14.40	\$7.63-8.16
Barite (drilling mud grade per ton)	\$18.00	\$14-18	\$18-22
Beryllium powder, 98%, per lb.	\$53-56	\$54-66	\$54-66
Chrome ore per long ton	\$24-27	\$24-27	\$24-27
Copper per lb.	60¢	60¢	50.6¢
Gold per oz.	\$104.19	\$118.05	\$67.15
Lead per lb.	16.5¢	16.5¢	15.0¢
Mercury per 76# flask	\$271.00	\$260.00	\$265
Molybdenum conc. per lb.	\$1.72	\$1.72	\$1.72
Nickel per lb. (cathode)	\$1.53	\$1.53	\$1.33
Platinum per oz.	\$163.91	\$167.0	\$154.0
Silver, New York, per oz.	263.48¢		189.4¢
Tin per lb., New York	241.15¢	240.5¢	181.6¢
Titanium ore per ton (Ilmenite)	\$32.00	\$22-24	\$30-35
Tungsten per unit	\$55.00	\$55.00	\$55.00
Zinc per lb.	20.31¢	20.25¢	18.0¢

\*Handy & Harmon was not quoting silver because silver was selling above the price ceiling. Silver sold at 284.17¢ per ounce on the London Metal Exchange and 291.9¢ per ounce on the New York commodity exchange, 1st. pos (c).

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