

4788

~~SECRET~~
(When filled in)

Support Project Initiation Memorandum (for Non-Scheduled Intelligence Production)		Type B	Control Number S.08953
TO: Production Control Staff			
2. Title or Subject (31) Line 1 Soviet Oil Line 2 Line 3 Line 4 Line 5		3. Analyst(s) & Other Contributors (31) Line 1 Line 2 Manhours: 30 Completion Date (y m d) 31 July 1975	
4. Requester and Purpose (39) Line 1 Ambassador Deane Hinton, Department of Line 2 State to use in a briefing 31 July of Line 3 Undersecretary Charles Robinson Line 4 Line 5 Line 6		Classification (39) UNCLASSIFIED	
5. Precis (39) Line 1 Briefing paper on Soviet oil. Line 2 Line 3 Line 4 Line 5 Line 6 Line 7 Line 8			

APPROVAL:	Branch (if less than 10 manhours)	Date
		31 July 1975
	Division (if 10 manhours or greater)	Date
		1 AUG 1975
	Director (for special requesters)	Date
		4 Aug '75

Note: Numbers in parentheses indicate the maximum number of characters and blanks to be inserted in a line--i.e., (16) means no more than 16 spaces.

CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED
1999

~~SECRET~~

4288

Briefing Materials on SOVIET OIL
Prepared for Ambassador Deane Hinton,
Department of State

31 July 1975

Project No. S.08953

3
ANALYSTS:

BRANCH :

Ext. :

SOVIET OIL

Current Performance

1. Last year the USSR produced 9 million barrels per day of crude oil, thereby for the first time surpassing the US (which produced 8.9 million) to become the world's leading producer. In addition it procured about 100,000 barrels per day from the Middle East and North Africa, almost entirely for shipment to other Communist countries on Soviet account. The USSR itself imports only very small quantities of petroleum products, mainly from Eastern Europe. About three-quarters of the total supply of 9.1 million barrels per day went to satisfy the rapidly growing needs of the Soviet economy, 15% was exported to other Communist countries (primarily to Eastern Europe), and about 10%, or 900,000 barrels per day, was exported to non-Communist countries to earn foreign exchange. (Table 1. shows Soviet oil trade with individual countries in 1974. Table 2. summarizes Soviet oil trade for selected years since 1960.)

2. Before the sharp increase in OPEC oil prices in October 1973, the price of Soviet oil exported to the West was about the same as, or a little lower than, the OPEC price, because the USSR had to compete to maintain its position in the market. In fact, the price of Soviet oil exported to non-Communist countries was usually lower than the price the USSR charged its East European allies. As OPEC raised its oil prices the USSR followed suit, increasing its prices to maintain their general relationship to those of other suppliers of Western markets. Prices to Eastern Europe were also increased, but not as much. They continued to be based on the average for 1966-70 and remained less than \$3 per barrel through 1974. Early in

1975, however, the USSR negotiated increases that raised the price charged its East European customers to more than \$7 per barrel (a figure still below the price to Western customers) and instituted a sliding-scale formula calling for annual price revisions based on the average world oil price for the preceding five years. Undoubtedly the USSR will continue to follow OPEC's lead in increasing the price of oil it exports to the West. Soviet need for hard currency will be an incentive to maximize earnings by charging as much as is compatible with maintaining its exports to the West. (Table 3. compares recent trends in Soviet and OPEC oil export prices.)

Reserves

3. The potential oil resources of the Soviet Union are large. Just how large is not known because the USSR regards the size of its oil reserves as a state secret. Fragmentary data from Soviet publications imply "explored" reserves in the vicinity of 150 billion barrels, of which perhaps some 40 billion barrels can be regarded as sufficiently explored to be equivalent to proved, recoverable reserves in the West. (The US has proved reserves of about 35 billion barrels.) Most of the undeveloped Soviet reserves are located east of the Ural Mountains, especially in West Siberia, where climate, terrain, and working conditions are difficult. Substantial reserves are also believed to be located offshore in the Barents, Kara, and East Siberian Seas, and offshore from Sakhalin. Potential reserves offshore from Sakhalin in a 38,600-square-mile area out to 660-foot water depths have been estimated at 30 billion to 45 billion barrels, of which about half may be under water depths up to 330 feet.

Quality of Soviet Oil

4. The quality of Soviet crude oil varies from region to region. The crude of the Urals-Volga region has an asphalt base and a medium to high sulfur content (1% to 3% by weight) and salt, characteristics that cause metal corrosion and complicate refining. -- About two-thirds of all Soviet crude oil produced has a sulfur content ranging from 0.5% to 2.0% by weight. Some 10% has a high sulfur content (more than 2%) and the remainder has a sulfur content of 0.5% or below. -- The oils of the newer fields in West Siberia and on the Mangyshlak Peninsula (Kazakh SSR) generally have a paraffin base and are low in sulfur content (less than 1% by weight). The Mangyshlak crude oil, however, has a very high wax content and pour point, tends to solidify at temperatures below 90°F, and frequently must be heated for pipeline transmission.

5. Most of the crude oil exported in recent years has come from the large older fields -- Romashkino, Mukhanovo, Arlan, Tuymazy -- in the Urals-Volga region. Most of these oils are similar in quality to medium crudes from Saudi Arabia and Iran. They have an API gravity of 32° to 35° and generally contain 1.2% to 1.6% sulfur, and can be processed in refineries that can handle Middle East oil. In recent years, however, as oil production from West Siberia has risen sharply, this oil has been piped to the Urals-Volga region, blended with Urals-Volga (and some Mangyshlak) crudes, and delivered to Eastern Europe and to export ports on the Black and Baltic Seas via large-diameter pipelines extending over distances of 1,000 to 2,500 miles. The pipeline system that moves West Siberian crude oil to consuming centers in the western regions is being expanded. The oil pipeline construction program has high priority, but substantial imports of Western pipe and ancillary equipment are needed. Despite the intensive effort to expand the oil pipeline network in recent years, at least one-third of all Soviet oil is transported by rail.

6. The quality of Soviet oil products exported to the West is generally comparable to that of products from Western refineries. The USSR has made a deliberate effort to deliver high quality products to Western customers; in many instances the products sold to the West are of higher quality than those available for domestic use.

Problems and Prospects

7. During the past several years the rate of discovery of new oil reserves has fallen behind the rate of increase in production, and the requirement for new production capacity to offset depletion of old fields has risen rapidly. The major oilfields in the Urals-Volga region that contributed to rapid expansion of output during the 1950s and 1960s are being depleted somewhat faster than anticipated. Production from this region is being maintained by extensive water-flooding, use of imported submersible pumps, and by exploration and development of smaller, deeper, and economically less attractive deposits. Increases in oil production during 1976-80 will come primarily from reserves in West Siberia and Kazakhstan.

8. West Siberian production of crude oil will account for about 30% of total Soviet output in 1975, and approximately one-half by 1980. Even the rapidly increasing production from West Siberia may be insufficient to offset the need for oil from new sources within a few years. After 1980, technical problems may cause production from the West Siberian fields to slow down somewhat, and additional increases in output will have to come from new reserves as yet undiscovered. Soviet geologists have been

instructed to increase their efforts in exploring East Siberia, an area where geological conditions, climate, and logistic problems will be even more troublesome than in West Siberia. To maintain its position as a net exporter of oil during the next 15-20 years, the USSR will have to reduce drastically its rate of increase in oil consumption. Apparently some of this reduction is to be accomplished by substituting natural gas, which is more readily available, and by increased use of coal in some applications such as in large thermal powerplants. No matter what course the USSR takes, its role in world oil trade will remain small during the next 15-20 years.

9. In the period after 1980, increases in production will have to come from as yet undiscovered reserves onshore (perhaps in East Siberia), or from the as yet largely unexplored reserves offshore. Soviet experience with offshore oil has been limited chiefly to the relatively shallow waters of the Caspian and Black seas where operations are conducted from trestles or "man-made islands". If it is to move into the greater depths and more difficult conditions offshore from Sakhalin and in the Arctic seas, access to Western experience, technology, and equipment will be essential.

10. Tentative forecasts advanced by Soviet sources for the period up to 1990 indicate that the USSR hopes to satisfy almost all of its own needs while providing a growing surplus for export. Achievement of these objectives will be very difficult, given the serious problems that will be encountered in locating and exploiting reserves in inhospitable regions and the need for technological improvement.

11. The USSR lacks sophisticated geophysical tools, such as modern seismic equipment and computerized field units, used routinely in the West. Without such equipment Soviet capability to locate deep structures is limited. Poor drilling equipment is a bottleneck. Shortages of good quality pipe for drilling and casing, poor quality drill bits, and underpowered mud pumps are among the items that contribute to inefficient operations in the field. The Soviet turbodrill is an excellent tool for the relatively shallow hard rock structures previously encountered in the Urals-Volga region, but is inefficient at the depths from which most new additions to reserves must now come.

12. The USSR has an agreement with Iraq whereby it will take oil as part payment for helping to develop Iraqi oil fields. The Soviets reportedly are also seeking to obtain oil from Libya in payment for delivery of military equipment and arms. No firm estimates are available concerning the amounts of oil that the USSR may procure from these or other OPEC countries, but in recent years the amounts have varied from 100,000 to almost 300,000 barrels per day. All of this oil is delivered to other Communist countries on Soviet account and eases the burden of the USSR in providing increasing amounts of its own oil to Eastern Europe. By 1980, the USSR may be procuring some 400,000 barrels per day of OPEC oil, primarily for Eastern Europe. In the short run, the USSR itself is unlikely to import sizable quantities of Middle East oil. Soviet ports are now geared for exports, not imports, and there is little excess capacity in storage, pipeline, and port handling facilities. As a result, the system lacks flexibility, and a sizable import capability could not be developed for 3 or 4 years.

Soviet Oil Trade in 1974

Thousand barrels/day

<u>EXPORTS:</u>	<u>2320</u>
<u>To Communist countries:</u>	<u>1434</u>
<u>CEMA</u>	1333
<u>Eastern Europe:</u>	1173
Bulgaria	217
Czechoslovakia	296
East Germany	288
Hungary	135
Poland	237
Romania	7
Cuba	153
Mongolia	7
<u>Other:</u>	101
Yugoslavia	76
North Korea	19
North Vietnam	6
<u>To Non-Communist countries:</u>	<u>886</u>
<u>Western Europe</u>	<u>754</u>
* Austria	19
* Belgium	35
* Denmark	14
* Finland	183
* France	29
* Iceland	9
* Ireland	2
* Italy	136
* Netherlands	60
* Norway	6
* Portugal	1
* Spain	27
* Sweden	61
* Switzerland	16
* United Kingdom	18
* West Berlin	11
* West Germany	127

* Hard currency countries -- total about 620,000 barrels per day.

Thousand barrels/day

<u>Middle and Near East</u>	<u>29</u>
* Cyprus	2
Egypt	5
Greece	21
Syria	1
<u>Africa</u>	<u>23</u>
Ghana	6
Guinea	2
* Ivory Coast	Ngl.
Morocco	13
* Nigeria	Ngl.
* Senegal	Ngl.
* Sierra Leone	Ngl.
Somalia	2
<u>Asia</u>	<u>52</u>
Afghanistan	4
Bangladesh	3
India	20
* Japan	25
* Nepal	Ngl.
<u>Latin America</u>	
* Brazil	25
<u>North America</u>	
* Canada	3
<u>IMPORTS</u>	<u>108</u>
<u>Crude Oil**</u>	<u>88</u>
Iraq	78
Egypt	3
Syria	7
<u>Petroleum Products</u>	<u>20</u>
Romania	9
Poland	2
Cuba	0.4
West Germany	0.4
UK	0.2
Others	8

* Hard currency countries -- total about 620,000 barrels per day.

** Procured for shipment to other Communist countries on Soviet account.

Table 2.
Soviet Oil Trade in Selected Years
(million barrels/day)

	1960	1965	1970	1971	1972	1973	1974
<u>Exports</u>							
To Communist countries:	<u>0.66</u>	<u>1.29</u>	<u>1.91</u>	<u>2.10</u>	<u>2.14</u>	<u>2.37</u>	<u>2.32</u>
CEMA	<u>0.30</u>	<u>0.58</u>	<u>1.01</u>	<u>1.11</u>	<u>1.20</u>	<u>1.35</u>	<u>1.43</u>
Eastern Europe	0.23	0.55	0.93	1.03	1.12	1.26	1.33
Cuba	0.18	0.45	0.81	0.90	0.98	1.10	1.17
Mongolia	0.04	0.10	0.12	0.13	0.14	0.15	0.15
Other a/	Negl.	Negl.	Negl.	Negl.	Negl.	0.01	0.01
To the West:	0.07	0.03	0.08	0.08	0.08	0.09	0.10
Western Europe and Japan	<u>0.36</u>	<u>0.71</u>	<u>0.90</u>	<u>0.99</u>	<u>0.94</u>	<u>1.02</u>	<u>0.88</u>
Less developed countries	0.28	0.52	0.78	0.83	0.83	0.91	0.78
Imports b/	0.08	0.19	0.12	0.16	0.11	0.11	0.10
Net Exports	0.09	0.04	0.02	0.13	0.18	0.29	0.11
	0.57	1.25	1.89	1.97	1.96	2.08	2.21

a. Includes Yugoslavia, North Korea, and North Vietnam (and PRC in 1960 and 1965).
 b. Almost entirely crude oil procured from the Middle East and North Africa for shipment to other Communist countries on Soviet account. Only small amounts of petroleum products enter the USSR.

Table 3.

Oil Export Prices

	(\$ per barrel)		
	<u>1972</u>	<u>1973</u>	<u>1974</u>
<u>FOB Price of Soviet oil a/</u>			
To Western Europe	2.45	4.60	9.00
To Eastern Europe	2.55	2.90	2.90
<u>FOB Price of OPEC crude oil b/</u>	1.53	2.19	9.57

a. The Soviet prices for 1972 and 1973 were derived from ruble values of both crude oil and petroleum product exports and hence are not comparable to the OPEC crude oil price. The Soviet prices for 1974 are for crude oil only.

b. Average weighted cost of benchmark light Saudi Arabia crude oil.