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OFFICE OF
NATIONAL ESTIMATES

MEMORANDUM

Possibilities of Disruption of World Oil Supplies Through 1975

Secret
17 August 1972

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CENTRAL INTELLIGENCE AGENCY

OFFICE OF NATIONAL ESTIMATES

17 August 1972

MEMORANDUM

SUBJECT: Possibilities of Disruption of World Oil Supplies Through 1975

NOTE

This paper, prepared in response to a request from the Department of State, is limited in scope. It addresses the question of whether for any reason the principal oil-producing countries will interrupt supply to consuming countries over the next three years or so. It does not consider changes in the commercial terms on which oil will be supplied.

The paper was written by the Office of National Estimates and coordinated within the Central Intelligence Agency. Its principal judgments on future contingencies have been discussed with representatives of the Department of State and the Defense Intelligence Agency, who are in general agreement with them, but the paper has not been formally coordinated with the Intelligence Community.

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PRINCIPAL CONCLUSIONS

A. During 1972-1975, world facilities for producing and transporting oil will be adequate to meet anticipated consumption requirements with enough spare capacity for comfort.

B. Interruptions to the flow of oil from suppliers to consumers probably will occur, but these are likely to be of limited dimensions. For example, production from Iraq and Libya, and the relatively small amounts of oil shipped through pipelines from Iraq and Saudi Arabia to the Mediterranean, are especially susceptible to interruption for political reasons. However, no one of these sources alone provides more than 5 percent of the oil normally consumed in the non-communist countries. Even if all were simultaneously disrupted, at least 90 percent of the usual flow of oil would continue.

C. Oil will almost certainly continue to be exported by Iran, Algeria, Indonesia, and Venezuela throughout the period. So long as supplies from Saudi Arabia -- now the world's largest exporter -- also are available, a *major* oil shortage is highly unlikely. Although there is a possibility of an interruption of supplies from Saudi Arabia during a period of domestic upheaval,

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we believe that such a shutdown stemming solely from internal problems would be short-lived and would have only transitory effects. However, [redacted] 25X1 Saudi adherence to Arab interests will figure heavily in two other situations that could have consequences of considerable magnitude.

D. The Saudis are taking the lead for the major exporting nations in negotiations with the major producing companies over future ownership of production facilities; these could reach an acrimonious impasse leading to a multinational suspension of oil shipments. As many as five major exporters (Saudi Arabia, Kuwait, Iraq, Nigeria, and Libya) and several small ones -- producing in combination some 50 percent of the world's normal exports -- might cooperate, at least for a short period. Similarly, a severe heightening of the tensions surrounding the Arab-Israeli problem could lead to a sustained embargo on oil shipments by most of the Arab oil producers; this, too, could affect up to half of the normal world oil export trade.

E. Neither of these major contingencies now appears likely. Of the two, the possibility of an impasse in Saudi negotiations

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with the oil companies seems closer in time; it will come, if at all, within the next year or so. A new Arab-Israeli crisis or conflict with major consequences for oil supplies does not now seem imminent, but it will remain a possibility that could develop with relatively little warning.

F. Excess oil producing capacity worldwide is far short of the amount that would be needed to offset either of these multinational contingencies. Continuing consumption at normal levels would exhaust the oil stockpiles of the industrial countries in as little as 3 months.

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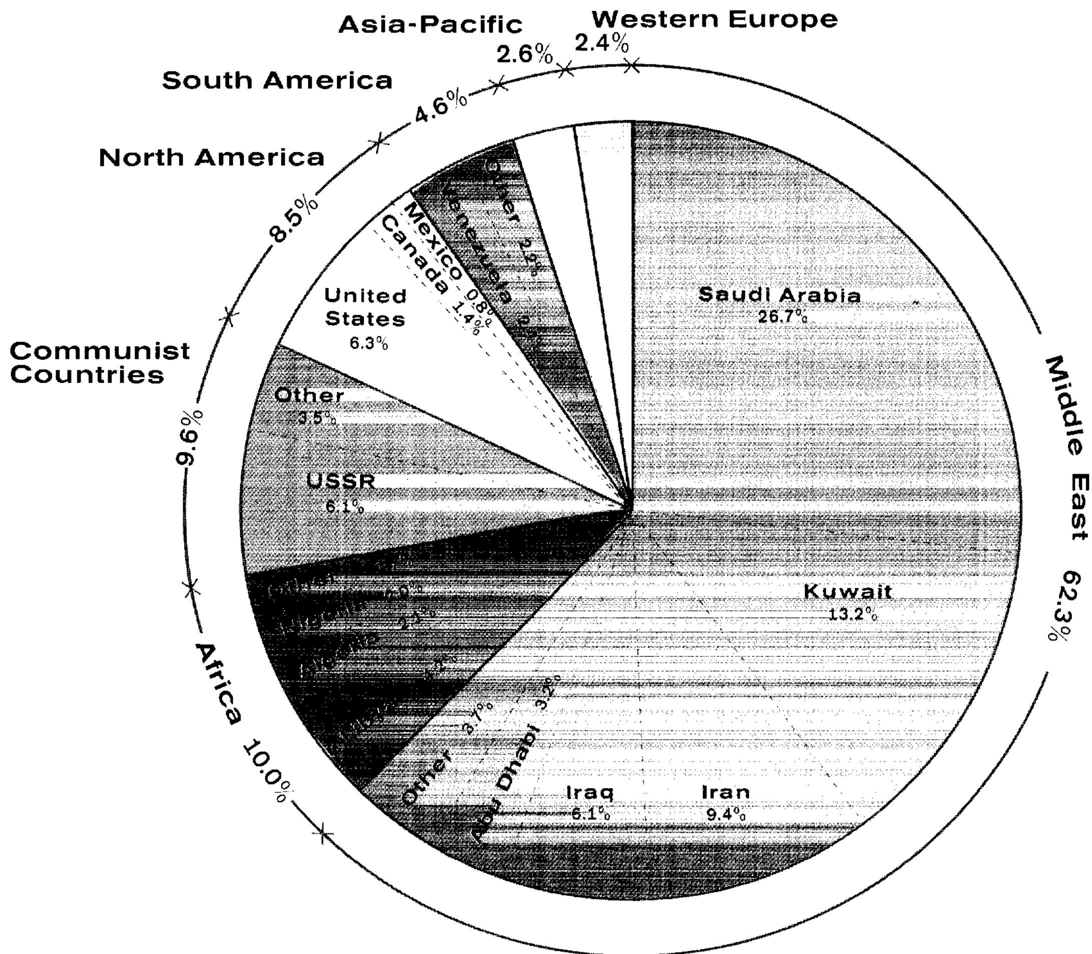
DISTRIBUTION OF WORLD PROVED OIL RESERVES, 1971



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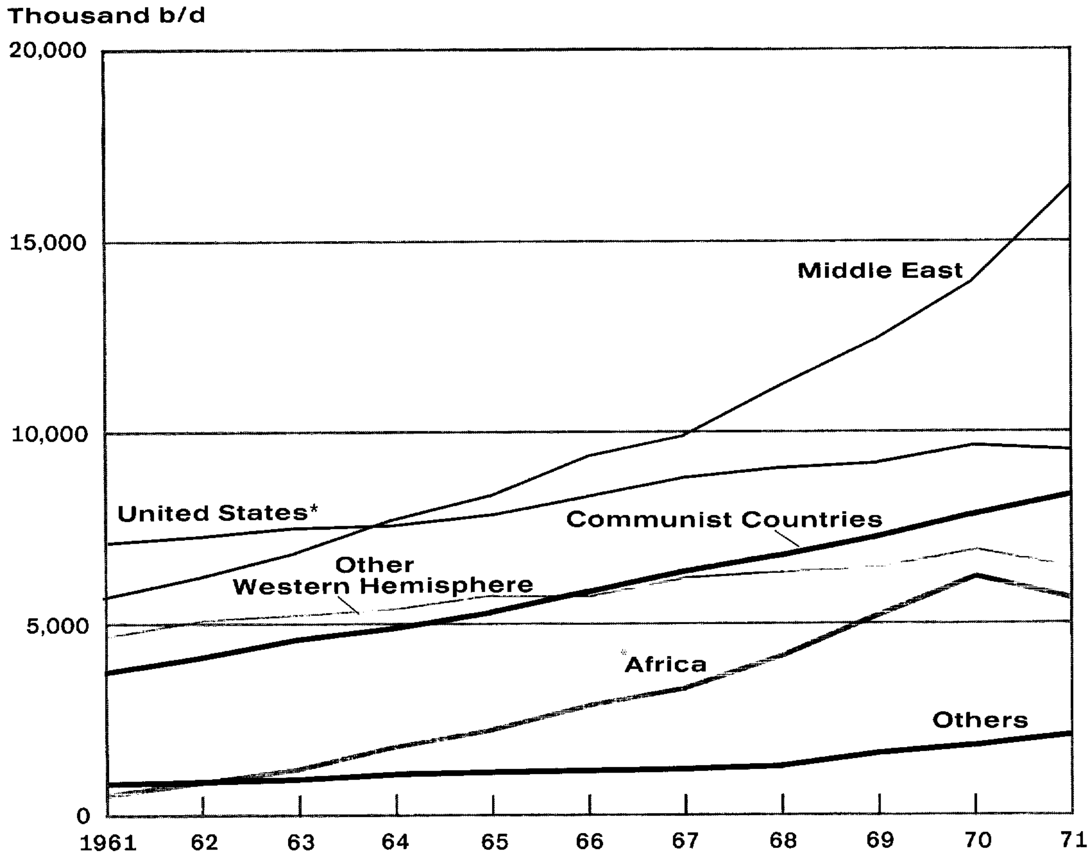
GROWTH IN WORLD CRUDE OIL PRODUCTION, BY MAIN AREAS



*Excluding natural gas liquids.

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I. SUPPLY, REQUIREMENTS, AND TRANSPORTATION

1. Aside from acts of policy, the factors that will influence the supply of oil to the US, Western Europe, and Japan from mid-1972 through 1975 can be forecast with considerable confidence. The many troublesome questions that must be addressed in discussing energy supply and requirements over the longer run are largely irrelevant to the short-run supply picture. Long lead times are involved in exploiting new oil discoveries, building new oil tankers, constructing new oil and gas shipping facilities, and bringing facilities for the production of energy from new sources into being. It is, therefore, reasonably safe to assume that in 1975 oil will continue to supply slightly over half of the world's energy needs, that virtually all of the oil produced then will come from fields already discovered and will move in pipelines already laid and in tankers already built or on order, and that the bulk of the oil moving in world trade will be produced in the Middle East and North Africa. The US will be getting very little, if any, oil from the North Slope of Alaska; Western Europe will be getting only about 5 percent of its supplies from the North Sea.

2. During 1971, oil consumption in the non-Communist countries averaged about 41 million barrels per day (bpd); in

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1975, that figure is expected to lie between 52 and 55 million bpd.* For analytical purposes, this paper uses a figure of 53.5 million bpd -- the mid-point of generally accepted projections (See Table 1). By 1975, consumption in Western Europe is likely to approach or equal that in the US; Japan will account for an increased share of the total. The industrial nations -- the US, Canada, Western Europe, and Japan -- will continue to consume some 80 percent of the oil produced outside the communist area.

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* *In the USSR, Eastern Europe, and Communist China as a whole, production slightly exceeds consumption; as a group these countries currently export about 1 million bpd to the rest of the world. Their output is expected to continue to grow enough to permit exports at roughly the same level, at least through 1975. This paper, therefore, includes 1 million bpd of oil from the Communist countries as production in -- and export by -- "Other" Eastern Hemisphere countries. It otherwise excludes oil produced and consumed in the Communist countries from the discussion.*

We do not believe that the Communist countries have the capability to bring on a major world oil crisis, either by agitating producing countries into a sweeping embargo or by buying up and hoarding or destroying enough of the world's production to make substantial inroads in supplies. On the other hand, we would not expect them to do much to alleviate the impact on the industrial West of any crisis that did occur.

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Table 1

OIL CONSUMPTION IN THE NON-COMMUNIST WORLD

Million barrels per day

	1970 (Actual)	1971 (Actual)	1975* (Forecast)
United States	14.4	14.8	17.5
Canada	1.5	1.6	1.9
Western Europe	12.7	13.2	17.3
Japan	4.0	4.4	6.6
Other	6.9	7.4	10.2
TOTAL	39.5	41.4	53.5

* *Reflecting an average annual rate of growth during 1972-1975 of 6.6 percent in the total; 4.3 percent for the US, 10.7 percent for Japan, 7.0 percent for Western Europe.*

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3. These consumption projections involve certain assumptions -- no major war, no world depression, and no widespread resort to rationing. There is no doubt that aggregate production can be increased to meet 1975 requirements, but forecasts of production by country and area necessarily involve many assumptions about the policies of governments in countries where oil is produced. Given the continuation in office of governments similar to those now in power, pursuing revenue and conservation policies now foreseen, over 40 percent of the oil consumed by the non-Communist countries will come from the Middle East and almost 15 percent will come from North and West Africa (See Table 2). Saudi Arabia is already the largest single supplier, and will probably continue to be so, with Iran running second. In 1975, the two will account for over a quarter of the oil produced for consumption in the non-Communist countries and about a third of the oil moving in world trade.

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Table 2

PRODUCTION OF OIL FOR CONSUMPTION IN NON-COMMUNIST COUNTRIES

Million Barrels per day

	1971 (Actual)	January-June 1972 (Preliminary)	1975 (Projected)
USA	11.2	11.1	11.3
Canada	1.6	1.5	2.2
Subtotal: US & Canada	12.8	12.6	13.5
Venezuela	3.6	3.1	3.3
Other Western Hemisphere	1.6	1.6	2.0
Subtotal: Other Western Hemisphere	5.2	4.7	5.3
Iran	4.5	4.8	6.5
Saudi Arabia[a/]	4.7	5.7	7.5
Kuwait[a/]	3.2	3.4	3.7
Iraq	1.7	1.6	2.3
Abu Dhabi	0.9	1.0	1.6
Qatar	0.4	0.4	0.5
Other Middle East	0.8	0.9	1.2
Subtotal: Middle East	16.2	17.8	23.3
Algeria	0.8	1.0	1.4
Libya	2.8	2.3	2.5
Nigeria	1.5	1.8	2.4
Other Africa	0.7	0.5	1.1
Subtotal: Africa	5.8	5.6	7.4
Indonesia	0.9	1.0	2.0
Other Eastern Hemisphere[b/]	2.1	1.8	2.0
Subtotal: Other Eastern Hemisphere	3.0	2.8	4.0
GRAND TOTAL	43.0	43.5	53.5

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Table 2

(continued)

	1971 (Actual)	January-June 1972 (Preliminary)	1975 (Projected)
Of which:			
OPEC[c]	25.0	26.1	33.7
OAPEC[d]	15.1	15.9	20.1

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a/ *Including one-half of production from Kuwait/Saudi Arabia Neutral Zone.*

b/ *Including net imports from communist countries.*

c/ *Organization of Petroleum Exporting Countries: Venezuela, Iran, Saudi Arabia, Kuwait, Iraq, Abu Dhabi, Qatar, Algeria, Libya, Nigeria, and Indonesia.*

d/ *Organization of Arab Petroleum Exporting Countries: Saudi Arabia, Kuwait, Iraq, Abu Dhabi, Qatar, Algeria, Libya, Bahrein, Dubai, Egypt, and Syria.*

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4. The extent and location of producing capacity available in 1975 in the form of wells, pumps, and loading terminals depends largely on investment already made or to be made within the next 18 months. Production capacity in excess of current output probably now amounts to some 4 million bpd in the non-Communist world. Of that figure, roughly half is in Libya and Kuwait. In Libya conservation regulations have been imposed that hold production well below previous peaks. Over a million bpd of excess capacity now exists and will remain in being, but the companies are not free to use it. Other countries with limited known oil reserves and no pressing need for additional current income are also adopting conservation practices, which discourage investment in additional facilities. Kuwait recently has limited its major concessionaire to 3 million bpd -- at least half a million bpd below capacity. As a result, the concessionaire has cancelled plans to expand storage and loading facilities. In Venezuela, the companies (rather than the government) have curtailed production, and output could readily be increased by at least half a million bpd. There is usually some spare capacity in Iran and Saudi Arabia, where oil companies are expanding their producing facilities very rapidly as a hedge against future supply crises; by 1975 installed capacity in each of them is expected to exceed production by substantial

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amounts. Little spare capacity now appears to exist in other producing countries and little appears to be planned.

5. Delivery of oil during the 1972-1975 period is not likely to be hampered by shortages of tanker or pipeline capacity. Demand for oil has fallen a bit short of expectations recently, because Japanese and European economic growth has slackened slightly and because an unusually mild winter in Europe left storage tanks overfull. The world tanker fleet presently exceeds the demand for tankerage by a substantial amount -- tankers recently have been available for charter at all-time low prices. Moreover, additions to the tanker fleet now on order will increase tanker capacity more rapidly than necessary to meet any known forecast of demand, at least until mid-1974 and probably for some time thereafter. The expected tanker surplus would still be adequate to move the world's oil if both the major Middle Eastern pipelines (from northern Iraq and Saudi Arabia) were shut down even while the Suez Canal remains closed.

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II. PROSPECTS FOR UNILATERAL ACTION TO CUT OFF OIL

6. A cut-off of oil production or shipment from one country -- acting alone, willingly or not -- is most likely to occur for one of two reasons. Internal domestic problems sometimes are accompanied by real or threatened damage to oil installations, making oil shipment impossible or excessively risky. Second, a government/company dispute can lead either the host country or the producing company to stop exports in an attempt to bring pressure on the other. This section discusses the prospects for such crisis-causing events in each of the nine largest exporting countries. The prospects for multilateral action by oil producing countries are discussed in Section III.

7. The joint dependence of oil companies and exporting countries on oil and the revenues it generates is the strongest -- and most often cited -- reason for expecting oil to continue to flow from producers to consumers in a fairly regular way over time. In general terms, dependence on oil revenues does, in fact, exist in every exporting country but the need for money is far greater -- and thus more compelling as a force -- in some cases than in others (See Table 3). Some countries (e.g., Iran and Algeria) are deeply committed to massive development programs

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Table 3

OFFICIAL RESERVE POSITION OF
MAJOR OIL EXPORTING COUNTRIES

	Official Foreign Reserve Holdings June 1972 (Million US Dollars)	Commodity Imports-1971 Monthly Average (Million US Dollars)	Reserve/Import Ratio (months)
Algeria	442	105[a]	4
Indonesia	negligible	73-95[a]	0
Iran	808[b]	156	5
Iraq	690	58	12
Kuwait	2147[c]	56	38
Libya	3148	46[a]	68
Nigeria	353[b]	126	3
Saudi Arabia	1951	76	26
Venezuela	1505	172	9

a/ *1970*

b/ *May*

c/ *March*

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that demand large sums of money over an extended period of time. For others (e.g., Nigeria and Libya) doing without oil revenues would be more of an inconvenience than a disaster.

8. A continuing and growing supply of oil from *Iran* appears as certain as anyting can be in an uncertain world. The Shah of Iran has striven consistently, over a number of years, to establish his country as a reliable supplier; at every opportunity, he has emphasized the contrast between his own attitude and the intemperate actions and words of [25X1] Arab neighbors. His policy is to maximize Iranian revenues over the next decade or two, in order to maintain and accelerate Iran's impressive economic development program.

9. To batten down his position as most reliable Middle East supplier, the Shah recently took the initiative in extending the term of operation of Iran's major oil producer, the Consortium, from 1979, when it was due to expire, to 1994, and to disassociate himself specifically from the expressed desire of other major oil producing countries for direct ownership participation in all exploitation companies. In return, he received assurances of increased exploration, rapid expansion of oil production, shipping, and refining facilities, greater access to oil at preferential

prices -- in short, to more rapid development by the producing Consortium of Iran's oil producing and processing capability. He also made it abundantly clear that he expects to receive financial compensation for Iranian oil at least as generous as anything granted to the Arab producers. In these circumstances, Iranian oil revenues, which have doubled in the past two years, reaching about $2 billion in 1971, should continue to expand at a healthy rate, and Iranian oil should continue to flow to the consuming countries in ever growing quantities.

10. Immortality is not, of course, among the Shah's many attributes, and Iran could be in for turmoil if he died or lost control. A political struggle, however, would probably be centered in Teheran, 300 miles or more from the oil producing areas, and it probably would pose little or no threat to oil production facilities. A successor government almost certainly would be anxious to receive the oil revenues that have become vital to the Iranian economy and to continuation of other costly aspects of the Shah's ambitious programs. The overthrow of the monarchy and a complete change of Iranian goals and political orientation is highly unlikely in the next three years.

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11. *Saudi Arabia* is now the world's largest oil exporter, and the plans of the Arabian American Oil Company (Aramco) for increasing production capacity are likley to maintain it in first place for some years to come, *provided* that there is no major confrontation between Aramco and the Saudi Government. Aramco and King Feisal's regime can probably negotiate themselves out of the corners into which they have been busily backing one another on the issue of participation (See Section III). If so, we see no reason to anticipate unilateral Saudi action to curtail drastically or cut off oil exports for an extended period. Feisal is convinced that continued close cooperation with the United States is in the best interests of his country and his regime. He has repeatedly declared that he will not use a threat to cut off oil supplies as a political weapon. The Aramco owners are sufficiently confident of his sincerity to be installing additional producing capacity at an unprecedented rate.

12. King Feisal's regime has had no serious domestic political problems. High paying jobs and gradual social change have dampened most opposition elements, and the Saudi security system has kept in check whatever Arab nationalist elements they have found in the armed forces. Saudi Arabia is, however, a candidate for political turmoil sooner or later; Feisal is aging, and he is

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tending toward political and religious conservatism while the educated, potentially-political part of the population is becoming more worldly and more liberal in its attitudes. Disaffection is fairly widespread

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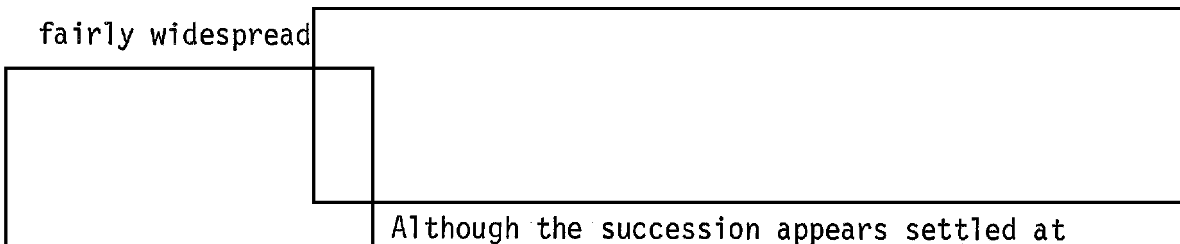

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Although the succession appears settled at the moment, the royal family is huge and factional quarrels could erupt during a succession crisis. Political upheaval might entail sabotage of oil facilities in the Eastern Province. Governmental crisis could lead to a shutdown of oil shipments, but we believe that any stoppage would be very short-lived and that Saudi oil would continue to be produced and exported. The domestic programs of any Saudi regime -- even a revolutionary one -- are likely to demand the continuation of oil revenues at very high levels. Feisal's passing, however, probably would increase the prospects for an Arab-wide attempt to use oil as a political weapon in the Arab-Israeli dispute. (See Section III)

13. *Kuwait* is so dependent on the international oil business that a unilateral decision to suspend oil exports for more than a short period is virtually inconceivable. It has accumulated very substantial financial reserves and could live off its savings for

at least a year or two, so far as import needs are concerned. Without oil production, however, economic activity would be drastically curtailed. Indeed, the almost entirely urban population would face grave difficulties if oil production were shut down completely for an extended period. (Kuwait must keep pumping oil at 20 percent or so of current production in order to obtain associated natural gas, which provides almost all the small country's power, including the fuel for making the national drinking water supply from seawater.) Kuwait has no quarrels -- internal or external -- of a magnitude to cause any Kuwaiti deliberately to bring on such drastic circumstances. It is possible that Iraq might at some time attempt to take over Kuwait. That eventuality, however, seems particularly remote at present; Iraq has a wide assortment of pressing problems of its own and is receiving financial support from Kuwait. Moreover, a major motive for any such move would be to seize Kuwait's oil and sell it for Iraqi benefit, not to hold it off the market.

14. The two large North African producers, Algeria and Libya, stand in sharp contrast to one another. *Algeria* has a relatively large, comparatively well educated population and a wide variety of resources -- minerals, arable land, and tourist attractions -- that can, with time and money, be developed. Its leadership has chosen

to exploit moderate oil reserves and huge gas reserves as rapidly as possible and to use oil and gas revenues to finance development of the rest of the economy. It has moved in a gradual but determined manner to take over operation of all industrial facilities formerly controlled by foreigners; the Algerian state oil company now controls more than three-quarters of the oil produced. Gas production is and will be carried out entirely by Algerian entities, with foreign involvement confined to transporting and marketing liquefied gas. We are confident that any Algerian government will continue producing oil and making its oil sales decisions on commercial grounds.

15. *Libya* is awash with money and short of virtually every other asset necessary for development. Its people are few in number and generally backward by the standards of the region. Its government gives every appearance of being firmly in control; there is no present sign of substantial, organized opposition. In the immediate aftermath of the September 1969 revolution, the 12-man Revolutionary Command Council (RCC) demanded and got the rapid removal of US and British military installations; in late 1970 and early 1971, it took advantage of its position as an important supplier close to the markets in a tight transport situation to wring two rapid increases in oil revenue payments from the oil

companies. Since then the regime has been casting around for new victories. The President of the RCC, Colonel Qadhafi, is a young man with a messianic complex looking for new worlds to conquer and bumping frustratedly against immovable obstacles to his cherished objectives of Arab unity, Libyan glory, and Islamic purity. With huge foreign exchange reserves, a strong bent toward conservation of relatively limited known deposits of oil, and a leadership that alternates between frequent quarrels *in camera* and dramatic confrontations with one or another external antagonist, Libya could be in for almost any conceivable kind of turmoil and trouble. The odds appear high that some event -- coup and nationalization head the list of possibilities -- will lead to further curtailment or cessation of Libyan oil production between now and the end of 1975. There is no necessary reason, in the case of Libya, to expect an oil crisis to be of short duration.

16. Relations between the government of *Iraq* and the internationally owned Iraq Petroleum Company have been at or near crisis level for over a decade, but oil production has never ceased totally. Since their chronic quarrel reached a new extreme with the 1 June 1972 announcement by Iraq of nationalization of the northern IPC fields, vituperation has lessened and all parties have begun yet another search for yet another compromise. Mediators have been

appointed, Iraq is free to sell oil from the nationalized fields at least until October without the threat of immediate legal action by IPC, and IPC affiliates are continuing normal operations of fields in the southern part of the country which were not affected by the nationalization decree. Iraq's need for oil revenues and an apparent willingness on the part of the companies to accept any sort of deal that does not set precedents that would do violence to company operations in other parts of the world augur well for an eventual compromise. An expanded consortium patterned on that devised for Iran after Iranian oil was nationalized 20 years ago is one possible outcome.

17. A deal permitting smooth operation of the nationalized fields, however, would only serve to put to rest -- perhaps temporarily -- one of the many problems that could interfere with the flow of oil from Iraq. The chronically restive Kurds of northern Iraq live alongside the oil facilities in that area. They or the Syrians could sabotage the pipeline from the northern fields to the Mediterranean; the Syrians could close down the pipeline on their own territory as they have in the past. Iraqi facilities also are vulnerable to direct action from Iran. Moreover, Iraqi governments are not notable for longevity, and a new regime might feel impelled to reinforce its nationalist credentials with some

new punitive action against Western oil interests. All things considered, some politically-inspired disruption of oil shipments from Iraq during the next few years appears likely. Iraq's acute need for money, however, leads us to believe that such disruptions would be of comparatively short duration -- a matter, say, of one to six months.

18. *Nigeria* will depend on oil for more than half of its foreign exchange earnings and government revenues over the next three years, but it could survive financially without oil income. Its revenues have risen rapidly in recent years, its credit is good, and it has had practice in coping with sudden stoppage in revenues during the recent civil war. Nationalist sentiment and distrust -- even hostility -- towards foreign investors and most of the Great Powers have grown apace as the country has regained self-confidence in the post-civil war period. For the time being, however, the urge to increase Nigerian control over Nigerian assets probably has been assuaged by a new policy, under which no new oil concessions will be granted and a national company will hold all areas not parcelled out and will take over exploration rights in all areas relinquished by present concessionaries. Thus, a unilateral move by the Nigerian government against foreign oil interests within the next several years is possible, but it does not appear

likely. Although a certain amount of civil commotion and turmoil is to be expected, Nigerian oil deposits are located in areas unlikely to be much affected. Another major civil war, on the scale of the one that ended two years ago, seems highly unlikely for some time to come.

19. We think there is virtually no prospect of an extended interruption of oil exports from *Indonesia* over the next three years. With no foreign exchange reserves to speak of, the Suharto government has been struggling to meet its debts and get its financial house in order. It has clearly focused on economic betterment as the primary national goal and has decided on economic cooperation with Japan and the West as the best means to accomplish it. Operations of foreign oil companies currently earn Djakarta about $200 million (20 percent of its foreign exchange earnings), and this may double in 1973. Djakarta welcomes foreign investment, especially in the oil sector. Indonesia already holds majority ownership in all of the concessions issued in recent years, and it has renegotiated the longstanding agreement with its major concessionaire to provide for similar government ownership participation in the future. In May 1972, the Indonesians received a development loan of $207 million from Japan in return for Djakarta's promise to sell the Japanese virtually all uncommitted low sulphur oil production for the next ten years.

20. Political change probably would be disadvantageous rather than disastrous to the oil companies. Oil export problems and occasional work stoppages could occur in periods of domestic stress. In such instances, the Indonesian Army could and would move quickly to protect the nation's oil installations. While dissidents might embark on a program of sabotage, including targets in the oil industry, we tend to discount the possibility of any major success along these lines. The possibility of a xenophobic reaction to the pro-West course of the Suharto government and a resurgence of Sukarno-era ultra-nationalism appears distant in time. Even in the highly unlikely event that a radical regime took control, we would expect foreign firms to experience harassment and irresistible demands for renegotiation of contracts, rather than expulsion.

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III. PROSPECTS FOR MULTINATIONAL ACTIONS TO CUT OFF OIL

23. The major oil producing countries are geographically dispersed, diversified in their interests, and disparate in economic development and political orientation. Yet there are elements common to a number of producers. Most are in the Middle East, most are Muslim, most are highly nationalistic, and many are Arab. The latter two characteristics underlie the only two contingencies that are at all likely to embroil several of the producers in a way that could lead to simultaneous disruption of oil supplies from several major sources.

A. A "Participation" Crisis

24. Nationalist sentiment -- in particular, resentment that oil resources long were controlled and exploited by foreigners who could operate with little regard for the welfare of the countries in which the oil originated -- was a motive force behind the establishment of the Organization of Petroleum Exporting Countries (OPEC) in 1960. Membership has been expanded in the past twelve years; the five founders (Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela) have been joined by six newcomers (Libya, Algeria, Abu Dhabi, Qatar, Nigeria, and Indonesia). But much more than the membership has

changed. In several cases, the political orientation of member governments has altered drastically. In all cases, the notion that the government has an overriding duty to manage oil to the maximum benefit of the country is now an article of faith. Moreover, by maintaining a considerable degree of solidarity through a series of price confrontations with the companies, the OPEC members have seen the tangible benefits of formulating and maintaining a common position. Once the major international oil companies controlled not only the markets but significant amounts of excess capacity in the US as well as elsewhere. In recent crises, the OPEC members, through their control of a commodity now in relatively short supply, have been able to enforce demands on the companies.

25. The desire for "participation" -- equity ownership in producing companies given exclusive concessions decades ago -- was first expressed as an official goal of OPEC in 1968. In the wake of a 1970-1971 series of price agreements that greatly increased the amounts paid by companies to host countries for each barrel of oil, participation became an immediate OPEC goal. Both the OPEC members and the oil companies recognize that any agreement on the terms for attaining and conducting participation will

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involve a host of complex issues and that the major single problem in any particular company/country deal is that precedents would be set for other agreements in areas where circumstances are not identical. The Saudis, wanting the psychological fruits of leadership and anxious to preempt ultra-nationalist Arabs, offered to spearhead the drive for participation. OPEC agreed to let the Saudi oil minister, Zaki Yamani, initiate negotiations with Aramco; the other Arab members from the Persian Gulf area agreed to accept the Saudi lead and to support one another in seeking agreements on terms broadly similar to whatever the Saudis worked out. (Iran, as noted above, chose to go its own way.)

26. The Saudis -- who were somewhat isolated in Arab affairs for some years -- are delighted to be back in Arab favor playing a key role. King Feisal's personal prestige and honor are committed; he is anxious to demonstrate his dedication to Saudi and Arab causes, his independence of the West, and his concern for the interests of all the producing countries. In short, he is now on record as unwilling to settle for anything less than 20 percent participation immediately and majority participation (51 percent or more) in the none-too-distant future, and he clearly means to remain adamant.

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27. Aramco's four parent companies -- Standard of New Jersey, Mobil, Standard of California, and Texaco -- have experienced great difficulty in formulating a common position. Each of them (and the 19 other companies with whom they are consulting) is subject to conflicting pressures from stockholders, customers, and government bodies. Outside Saudi Arabia, they are competitors with varying worldwide interests to protect. Their leaders disagree both on proper strategy and on negotiating tactics; some, at least, appear to have assumed wrongly that the King could be persuaded to cut the ground from under Yamani. In March, after an ultimatum by the King, Aramco grudgingly accepted the principle of 20 percent participation. But all four companies are opposed to the Saudi insistence that the formula for Saudi compensation of the Aramco owners be based on the depreciated book value of existing facilities in Saudi Arabia. None has come up with an alternative proposal that is acceptable to the Saudis.

28. Negotiations continue to drag on, with another meeting scheduled for August 19. If the parties can reach an agreement on a compensation formula, this would remove a major roadblock to a package deal on other contentious issues involved in participation, e.g., arrangements for marketing the Saudi share of

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production and provisions for Saudi sharing in future investment expenditures. With such questions settled, Aramco would probably continue to increase productive capacity in accordance with its existing plans.

29. On balance, we are inclined to believe that an overall agreement eventually will be reached, without any interruption in oil production. Feisal has declared his intention to keep the oil flowing. He has indicated that his first move, following a breakdown of participation negotiations, would be legislation to nationalize the Aramco operations, rather than an embargo on shipments. The companies certainly will strive to retain an ownership position in the country with the world's largest oil reserves and will go to great lengths to settle with Feisal on some basis that avoids nationalization. Moreover, the companies badly need Aramco oil to meet their marketing obligations and might continue to ship Saudi oil even after nationalization.* Nevertheless, we cannot be fully confident of any judgment on the Saudi/Aramco situation; there are too many players, with too many conflicting

* *Standard of California depends on Aramco for almost half the oil it sells; Texaco gets about a third, Jersey Standard almost a quarter, and Mobil nearly a fifth.*

interests, subject to too many outside pressures, operating from too many sets of preconceptions, prejudices, and loyalties.

30. If a Saudi/Aramco agreement is indeed reached, participation probably will lose its potential as a cause for widespread disruption of oil production. In varying forms, the agreement will be extended gradually to the other Persian Gulf producers on the Arab side; Nigeria, too, will get an equivalent deal. Iran will get some form of additional financial recompense, and Venezuela will attempt to reap some benefits. Libya can, of course, be expected to hold out for extra-special terms; it might well induce a crisis leading to a cut-off of its own output. But Libya is not now able unilaterally to bring about major, worldwide problems, and it probably will not be in any such position over the next few years.

31. On the other hand, if the Aramco/Saudi situation should reach a showdown, the Saudis probably would not have to stand alone against the companies. Should matters reach the extreme state of a shutdown of Saudi production, Kuwait, Abu Dhabi, and Qatar probably would follow the Saudi lead. The Libyans probably would follow suit, too, although they would seek some excuse to make their action appear independent of the Saudis, rather than an acknowledgement

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of Saudi leadership on the issue. Iraq, wanting continuing financial assistance from other Arabs, and hoping to maximize its own future revenues, probably would also leap on the bandwagon. Moreover, Nigeria probably would cooperate with an OPEC-declared embargo on shipments -- at least for some weeks, and possibly for a number of months. We would expect production and shipment to continue -- and increase as much as possible -- in Iran and Indonesia, and probably in Venezuela and Algeria as well.

32. On the basis of these individual country proclivities, it is conceivable that some 50 percent of normal exports to the non-communist countries might be cut off for a number of months. That however, appears to be an outside limit; it is more likely that not every participant would cooperate fully or for an extended period. It is more realistic to visualize a situation in which a third or so of world exports would be cut off for a few weeks with production gradually resuming -- first in one country and then in another, as each feels the pinch. We emphasize that the precipitant -- a breakdown of Saudi/Aramco negotiations followed by a shutdown of Saudi output -- for such a multinational cutoff remains unlikely, especially because the Saudis themselves would want to be assured of more than majority support from the OPEC members before shutting off their own production.

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B. Arab Use of Oil as a Weapon in the Arab-Israeli Context

33. The Arab countries have long been aware that their collective importance to world oil supplies is a potential source of leverage over the industrialized West; they have frequently discussed the possibility of depriving the West of oil in order to bring pressure on Israel. The amount of world attention devoted to the need for energy in general and oil in particular in the last several years has been reflected in increased Arab discussion of the relationship between oil, the West, and Israel. Both Sadat of Egypt and Qadhafi of Libya have indulged in public reminders of Western need for Arab oil in the past few weeks. Nevertheless, the Arab world never has undertaken an embargo on all oil shipments, and we believe any such action remains highly unlikely as a deliberate act of collective Arab policy aimed at bringing about an imposed settlement of the Arab-Israeli situation. Saudi King Feisal has declared his opposition to the use of oil as a political weapon and without the participation of Saudi Arabia a purely Arab boycott would not be effective.* The mutual trust among Arab states necessary to bring about an embargo does not exist;

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* *If King Feisal's regime were replaced by a radical one, the possibility of joint Arab action to use oil as a political weapon obviously would increase.*

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in its absence, no Arab state -- with the possible exception of Libya -- is likely to take the first step. Nevertheless, threats no doubt will be uttered and repeated at frequent intervals.

34. Arab behavior might be different in the event of renewed or imminent Arab-Israeli hostilities, and the possibility of such hostilities, leading to a substantial interruption of oil supplies, is a contingency that cannot be ruled out. A full-scale Arab-Israeli war does not now seem likely, but the situation is potentially volatile, subject to change because of developments in Israel, in Egypt, in Jordan, in Saudi Arabia, or in the policies of the Great Powers. In the event of a new crisis, some Arabs immediately will look for ways to strike out at the US. In the past, the US oil companies have been able to maintain an appearance of disinvolvement in US foreign policy that has served them well when Arab-Israeli issues became critical. Recently, however, both the companies and some producer governments have encouraged increased US Government involvement in oil matters; hereafter, the companies may find themselves more closely associated than before in Arab minds with US policy on the Arab-Israeli question and hence more exposed to direct punitive actions from Arab governments. At a minimum, some of the Arab states would attempt to embargo oil shipments to the US.

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35. Moreover, the events of the past several years have increased the chance that in a highly charged crisis the majority of the Arab producers would be willing to attempt a joint embargo on all shipments to the US, Western Europe and Japan. The Arab leaders are now much more aware that an embargo against the US or only one or two other countries is unlikely to have any substantial effect, whereas a total Arab shutdown would cut off roughly half the oil normally moving in world trade. The new Libyan regime is willing to do almost anything to promote the Arab cause. The Saudis, as noted above, are back in the mainstream of Arab life and anxious to maintain that position; King Feisal is deeply committed emotionally to the Arab cause. He might undertake embargo action in a time of crisis and continue it out of pride and stubbornness. The Kuwaitis have never been in a position to ignore the wishes of the Arab world when there is virtual unanimity of opinion. And the animosities and mutual suspicions that hamper joint Arab action in normal times tend to subside at least temporarily when the Arabs believe they are being humiliated by -- or on behalf of -- the Israelis.

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36. Moreover, the capability of the several Arab oil producers to sustain an embargo will improve in the years ahead. The various revenue agreements of the past two years have led to a very rapid accumulation of Arab financial reserves. The gold and foreign exchange holdings of the four richest Arab producers have risen from $3.3 billion at the end of 1969 to $7.2 billion in mid-1972. (See Table 4.) (The total commodity import bill of the entire Arab world in 1971 was about $6 billion.) By 1975, reserves probably will be two to three times as large. The principle of inter-Arab financial support has been clearly established by the Khartoum subsidies initiated after the 1967 war and the current payments by Kuwait and Libya to support the Iraqis in their confrontation with IPC. Consequently, any joint embargo agreement probably would include a provision for inter-Arab financial cooperation that could permit the Arabs to maintain a joint shutdown of oil production for long enough (several months) to cause major problems for all the consuming nations.

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Table 4

OFFICIAL GOLD AND FOREIGN EXCHANGE HOLDINGS

Million US Dollars

	December 1969	December 1970	December 1971	June 1972
Iraq	476	462	600	690
Kuwait	1282	1376	1690 a/	2147 b/
Saudi Arabia	607	662	1465	1951
Libya	918	1590	2666	3148
TOTAL	3283	4090	6421	7186

a/ *September*

b/ *March*

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IV. SUPPLY EFFECTS OF VARIOUS CRISES

37. The consequences to the consuming countries of sudden interruptions in oil exports of various magnitudes for certain periods of time can be sketched out in a general way. It is vital to note, however, that any projections and judgments necessarily are based on literally dozens of assumptions. The projections in Tables 1 and 2 are certainly more accurate in the aggregate than in the detailed breakdown of either consumption or production by area or country; they apply to 1975 on average, rather than to any particular season; they assume an international situation and a set of oil company/producing country relationships not drastically different from those prevailing in mid-1972. The following paragraphs, in essence, address the impact of a sudden oil crisis introduced into an otherwise "normal" situation.

38. To soften the immediate impact of a major curtailment of oil imports, the consuming countries can draw on stockpiles and can attempt to increase oil production in countries not involved in the curtailment. The Western European nations and Japan have recently agreed to raise oil stockpiles to a 90-day supply by 1975. Some steps are underway to put that decision into effect,

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but implementation will be slow -- the most important problems are disputes over precisely what constitutes available oil in storage and the very high cost of storage and facilities. So far as can be determined, the actual 1970-1971 stockpile figure probably was in the neighborhood of a 45-day supply, although a 60-day minimum supposedly was in effect and all available storage capacity was in use. It seems likely that targets will continue to be missed and that the average availability will be on the order of a 55-60 day supply in 1973, a 65-70 day supply in 1974, and a 75-80 day supply in 1975. Supplies would be abnormally low at the end of a long, cold winter, and at a peak at the end of summer. In the US, which produces three-fourths of the oil it consumes, oil over and above the amounts necessary to keep refineries and pipelines operating probably amounts to only a 2-4 week supply, and we know of no major plans for increasing storage capacity. On this basis the combined stockpiles of the US, Canada, Japan, and Western Europe probably now fluctuate around 1.4 billion barrels; by 1975, they probably will fluctuate around 2.3 billion barrels. Combined consumption amounts to about 1.1 billion barrels a month at present; it will grow to about 1.3 billion by 1975.

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39. Production capacity in excess of current output probably now amounts to some 4 million barrels per day in the non-communist world. By 1975, based on what we know of existing plans of the oil companies, excess capacity may increase 75 percent. At 7 million barrels per day, however, it will still be equivalent to less than 15 percent of production. Moreover, the bulk of the excess will be located in Arab countries -- that is, in countries where there is a substantial risk of supply interruption. Only some 2 million bpd (1.5 million bpd from Iran and 0.5 bpd from Venezuela) is reasonably sure to be available under most circumstances.[1] A further 2.5 million bpd would be available from Saudi Arabia in 1975 if that country were not involved in a cutoff.

40. In Table 5, three alternative possibilities for oil supply shortfalls are outlined in general terms. For purposes of calculation, they assume that world consumption is maintained in the face of the embargo. They also assume that shipments from the communist countries are neither cut off nor increased.[2]

1/ *In the US and Canada, output probably could be increased by only 200,000-500,000 barrels per day within 3 months.*

2/ *The reasons for the latter assumption are noted in the footnote to paragraph 2.*

They use a rounded consumption figure of 54 million bpd in 1975 and a conservative figure for the additional capacity that could be brought into production. They further assume that the output of the Western Hemisphere -- as well as the rest of the world still producing -- is fully shared.

41. The situation sketched out in Case I -- a sudden cutoff of 50 percent of the oil normally exported by all countries except the US and Canada -- is approximately what we estimated above as the worst that we would expect to result from a cutoff precipitated either by a "participation" crisis or an Arab-wide attempt to embargo oil shipments. The Table indicates that the world could, in theory, do without these supplies for about 3 months this year and about 4 months by 1975. The other "Cases" are indicative of the results if either crisis occurred in less sweeping fashion; the world's stockpiles would last for six months if 25 percent of normal exports were cut off this year and for 10 months if such a cutoff occurred in 1975. (The question of whether or not Saudi Arabia is one of the countries still producing makes very little difference for 1972; in 1975, however, the ability to draw on perhaps 2.5 million bpd of excess capacity in Saudi Arabia could substantially slow the drawdown on stockpiles.)

42. In a real crisis, of course, the situation would be far more complicated. Lumping together the requirements of the non-communist world averages out a great many differences. The effects of any given curtailment would vary widely, depending on the role that oil plays in a particular economy and the sources a country normally draws on for its oil. Japan depends on oil -- all imported -- for 75 percent of its total energy supply; the comparable figure for Western Europe is about 60 percent. The US, on the other hand, gets some 43 percent of its energy from oil -- and only 11 percent from imported oil. Japan gets a great deal of its oil from Iran and Indonesia, which would probably go on producing and shipping throughout any of the contingencies we have identified. Europe, by contrast, depends heavily on imports from the Arab countries, which are more likely than the non-Arabs to be involved in shutdowns. In any actual crisis, reality could be worse than the models in some ways -- e.g., stocks would not necessarily be in the immediate neighborhood of consumers. In some ways, reality could be better -- e.g., consumption control and rationing devices certainly would be introduced very early in a major crisis. Severe and sustained rationing inevitably would curtail industrial production, with a fairly immediate effect on total economic output.

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Table 5

APPROXIMATE DIMENSIONS OF VARIOUS OIL CRISIS ALTERNATIVES

Million Barrels per day

CASE I: 50 percent of Normal World Exports Cease

AVAILABILITY	1972	1975
US and Canadian production at full capacity	13	14
50% of total normally exported by other producers	15	20
Excess capacity in Iran and Venezuela brought on stream	1	2
Total	29	36
NORMAL CONSUMPTION IN NON-COMMUNIST COUNTRIES	44	54
SHORTFALL (% of consumption)	15 (34%)	18 (33%)

CASE II: 33 1/2 percent of Normal World Exports Cease

AVAILABILITY	1972	1975
US and Canadian production at full capacity	13	14
66 2/3% of total normally exported by other producers	20	27
Excess capacity in Iran and Venezuela brought on stream	1	2
Total	34	43
NORMAL CONSUMPTION IN NON-COMMUNIST COUNTRIES	44	54
SHORTFALL (% of consumption)	10 (23%)	11 (20%)

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Table 5 (continued)

CASE III: 25 percent of Normal World Exports Cease

	1972	1975
AVAILABILITY		
US and Canadian production at full capacity	13	14
75% of total normally exported by other producers	22	30
Excess capacity in Iran and Venezuela brought on stream	1	2
Total	36	46
NORMAL CONSUMPTION IN NON-COMMUNIST COUNTRIES	44	54
SHORTFALL	8	8
(% of Consumption)	(18%)	(15%)

Balance between Shortfall and Stockpiles

	Monthly drawdown (million barrels)		Stockpile (million barrels)		Approximate Months before Supply Exhausted	
	1972	1975	1972	1975	1972	1975
Case I	450	540	1400	2300	3	4
Case II	300	330	1400	2300	5	7
Case III	240	240	1400	2300	6	10

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