Iran-Iraq War: Threats to **Gulf Oil Exports**

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An Intelligence Assessment

DIA review completed.

NGA Review Complete

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November 1983

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Iran-Iraq War: Threats to Gulf Oil Exports

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An Intelligence Assessment

This paper was pre	epared by
Office of I	Near Eastern and South Asian
Analysis;	
	Office of Global Issues; and
	It was
coordinated with th	he Directorate of Operations.
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	Iran-Iraq War: Threats to Gulf Oil Exports	25X1 25X
	Guil Oil Exports	
Key Judgments Information available as of 28 October 1983 was used in this report.	The delivery of five French Super Etendard aircraft to Iraq would significantly increase the possibility of a disruption of Persian Gulf oil exports that are vital to the West. Iraq currently is embarked on a diplomatic offensive to exploit the threat posed by the Super Etendards in order to gain financial relief or to press Iran to end the war. If its diplomatic moves are unsuccessful, we believe Baghdad will attack oil tankers calling at Iran's Khark Island.	25X
	Iraq would have three objectives in attacking Iran's oil lifeline: to impair Iran's warmaking capacity by denying it revenues, to force Iran to begin negotiations to end the war, or, failing that, to force the Western powers to intervene in the Gulf.	25X ²
	We believe that Iraq would have difficulty stopping Iranian oil exports unless it could conduct repeated attacks against tanker traffic. Iraq will have too few Super Etendards to conduct intensive antiship warfare for a prolonged period. Although international oil tankers would stay away from Khark Island after the initial Iraqi attacks, we believe some probably would return unless the Iraqis maintained effective attacks over an extended period. To encourage continued tanker loadings, we believe that Iran would reduce oil prices to offset increased chartering and insurance rates. The excess world tanker capacity would also encourage shipowners to continue serving Khark.	25X
	If its antiship strategy failed, Iraq might launch a large-scale bombing campaign against Khark Island's facilities. This option is less attractive to Iraq than using the Super Etendards, partly because of the heavy losses that would be incurred.	25 X
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Approved For Release 2008/08/26: CIA-RDP85M00363R000400740020-9 25X1 If Iran did not directly attack their territory or oil facilities, the Gulf Arabs, in our judgment, would be unwilling to use their military forces to confront such Iranian actions as mining or blockading the Gulf or harassing tanker traffic. The Gulf Arabs would attempt strenuously to avoid involvement in hostilities and would look to the West to remove the Iranian threat. Oman, and to a lesser degree Saudi Arabia, probably would be willing to assist a Western military reaction by providing access to 25X1 facilities such as airfields for logistic support. Each escalatory option would have different effects on the oil market, but the more drastic ones could have economic repercussions for the West even more severe than those of the supply disruptions in 1973 and 1979. A prolonged closure of the Strait of Hormuz would stop current exports of 8-9 million barrels per day and cause the price of oil to double or triple, de-25X1 pending on the level of demand in consuming nations. The impact of other escalation scenarios is more complex, but, according to our analysis, for every 1-million-b/d net reduction in annual world oil supplies, official oil prices could rise by approximately \$8 to \$10 per barrel and OECD growth could decline by 0.3 to 0.4 percentage point, depending on the absolute size of the disruption. Spot market oil prices, however, could rise much higher. Current excess productive capacity outside the Gulf could make up most of the oil exports lost if Khark Island was shut down, the Iraqi pipeline through Turkey was severed, and Kuwaiti exports were stopped. Those reductions would remove most of the slack in the market, however, and expectations of additional supply losses probably 25X1 would drive up prices.

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Iran-Iraq War: Threats to		25X1
Gulf Oil Exports		25X1
Iraq's Predicament Iraq's inability to resolve its severe economic problems has forced Baghdad to seriously consider escalating the war in the Persian Gulf. The war with Iran is slowly strangling Iraq's economy. It has severed two of Iraq's three oil export routes reducing annual revenue by nearly three-fourths and saddling the economy with warrelated costs that may be \$1 billion per month. ²	The instrument of escalation probably would be the Super Etendards armed with Exocet antiship missiles that Iraq is purchasing from France.	25X1
We believe that 1984 could be a critical year for the Iraqi economy. Our analysis suggests that Iraq faces the prospect of a current account deficit nearly as large as this year's \$15 billion deficit unless it takes the political risks of deeper cuts in imports of consum-		
er goods. Meanwhile, its reserves will be further depleted, and, because of declining oil revenues, the Gulf states probably will be less able to provide the necessary financial support to prevent Baghdad from having to implement a new round of austerity measures. Moreover, because it has deferred repayment of some foreign loans until next year, some of Iraq's debts will come due in 1984.	Another possibility is that Iraq may attempt to resume oil exports from the Gulf, hoping the threat of attacks by the Super Etendards would deter Iranian interference. If Iran did attack Iraqi oil tankers, Iraq's attempts to resume exports would demonstrate that Baghdad had exhausted every alternative to escape its financial bind. Any subsequent escalation would be more easily justified as essential to the nation's survival.	25X1 25X1 25X1
Iraqi Strategy We believe Baghdad is embarked on a major diplomatic offensive to convince the international commu-	Because 90 percent of Iran's oil exports pass through	25X1
nity that it has no choice but to consider military escalation. We believe Iraq's diplomatic efforts will fail to resolve its economic problems soon enough, however, and Baghdad eventually will escalate the war. The objective of military escalation would be to impair Iran's warmaking capacity, to force Iran to the negotiating table, or to compel the Western powers to guarantee safe passage for Iraqi oil exports through the Gulf.	 Khark Island, Iraq has three options to reduce substantially Iranian oil exports: Stop the flow of oil into Khark by bombing pipelines, pumps, or manifold stations on the mainland. Destroy tank farms, pipelines, manifolds, or loading points on the island. Force tankers to stop calling at Khark by repeatedly attacking those trying to load there. 	
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Table 1
Persian Gulf Air Order of Battle

	Iraq	Iran	Saudi Arabia	Qatar	Kuwait	UAE	Bahrain	Oman
Personnel	30,000	50,000	17,000	300	4,000	3,000	100	2,500
Fighters	500	260 a	180	NA	50	30	NA	30
Attack helicopters	125	100	NA	2	23	6	NA	NA
SAM launchers	345	300	90	18	27	21	NA	24

a Less than one-third of these are operational.

the tank farm and the jetty at Khark, for example, were struck in 1981. Key pump and manifold facilities on the mainland also have been damaged, but these facilities are not critical. Gravity would keep the oil flowing at rates well above Khark's current exports of about 2 million b/d.

The only mainland targets Iraq could destroy to reduce exports from Khark would be the pipelines, and they would have to be struck regularly because they are easily repaired.

The Iraqi Air Force on paper has the capability to destroy loading facilities at Khark. It has overwhelming air superiority (see table 1) and should be able eventually to shut down Iranian oil exports through a major air campaign. Such a campaign, however, would risk heavy air losses from Iranian ground-based defenses. Iran also flies regular fighter patrols and keeps naval patrols near Khark. To date Saddam has used conservative tactics to avoid losses. In our judgment, the potential for heavy losses and the complexity of a systematic attack against Khark's heavily defended installations make this option less attractive to the Iraqis than attacks on shipping.

Iraq also could decide to use its Scud surface-tosurface missiles against Khark. The island is some 200 kilometers from Iraq, but in late October Iraq successfully attacked the Iranian city of Behbahan, almost exactly the same distance from Iraq, with Scud missiles. Iraq could not be confident of hitting specific installations on Khark with Scuds but, instead, would have to saturate the island to ensure a high probability of striking a vital installation.

Employing the Super Etendards Against Tankers.

The simplicity and low risk of using the Super Etendards make it the most likely weapon Iraq would use against Iranian oil exports.⁵ The military conservatism of the Iraqis will affect the way they would employ the Super Etendards against oil tankers.

Super Frelon helicopters armed with Exocets have the range to reach Khark Island, but their slow speed makes them too vulnerable to Iranian fighter aircraft and air defenses. Instead, the helicopters have been used against merchant shipping in the northern Gulf. The Iraqis probably could conduct regular bombing raids using conventional munitions to keep tankers away from Khark Island, but, in Iraqi hands, such weapons would require more sorties and probably would be less effective in sinking tankers than Super Etendards armed with Exocets.

Commando attacks also could be highly effective against Khark or associated mainland facilities, but they would be risky and out of character for the Iraqis. The Iraqi Navy is little more than a coastal defense force and is unlikely to venture as far as Khark Island for combat operations.

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Super Etendard fighter



Combat radius: 350 nm high-low-high with/one external tank, one Exocet 460 nm high-low-high with/two external tanks, one Exocet

Analysis of past Iraqi practice suggests that Iraq would try to minimize the risks to the Super Etendards by:

- Flying MIG-25s for reconnaissance before Super Etendard attack missions.
- Allowing only one or two Super Etendards outside Iraq at any given time.
- Accompanying the Super Etendards with MIG-23 or Mirage F-1 fighters for air cover.
- Keeping the Super Etendards out of range of ground-based defenses.

Cautiousness and distance will influence the choice of initial employment options and route selection. A direct, low-level approach to Khark Island is a possible tactic, but, fearing discovery close to Iran, Iraq would be more likely to seek to avoid defenses rather than to surprise them. Iraq probably would use a high-level profile flying from southern Iraqi airbases 6 on a circuitous route possibly over Kuwait, then south along the Saudi coastline, and east to Khark Island.

⁶ The Super Etendards probably will be based initially at Qayyarah Airfield in northern Iraq, where most of Iraq's other French-built fighter aircraft are based. After a few weeks, during which the aircraft would be prepared for combat operations, we would expect the Super Etendards to be brought south to Tallil or Shaibah Airfields. Tallil is 245 nm from Khark Island and Shaibah, 150 nm.



Exocet missiles mounted on Super Frelon helicopter

Type: Cruise missile launched from aircraft, ships, or shore facilities designed almost exclusively

for antiship operations.

Range: 50 to 70 km when launched from an aircraft.

Guidance: Active radar.

Warhead: 165 kg in two stages (shaped charge with contact fuse to penetrate the target's hull and a fragmentation charge with a preset time-

delay fuse).

Mode of operation: The pilot locks onto the target with the

aircraft radar, transfers the target to the missile computer, and launches the missile. The missile homes in on the target without further guidance from the aircraft, continually adjusting its flight path to seek the largest radar return in its field of view, generally the

center of mass of the target ship.

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We have insufficient data to determine the effectiveness of the Exocet against oil tankers.

The effectiveness of the Exocet in the Falklands war may have been overstated in the press. Out of five missiles fired—four launched from Super Etendards and one launched from shore—three hit ships. The ship that was hit by the ground-launched Exocet was able to leave the combat area under its own power. The two ships hit by air-launched Exocets sank, but a major factor in one sinking apparently was poor ship design. The Exocet's propellant began burning, and a fire raged through the ship. In the other sinking of a ship by an air-launched Exocet, the missile may have hit the wrong target.

Iraqi pilots probably will have little difficulty hitting tankers with the Exocet, but several factors suggest the missile may have a low probability of sinking them. The Exocet's warhead is small relative to the size of a supertanker, and the crude may provide the ship some protection by dampening the effects of an internal explosion from the Exocet's fragmentation warhead.

On the other hand, there is a good possibility that the missile's radar guidance will assess the center of mass of a loaded tanker to be the superstructure that houses the crew and ship control stations.

Ayatol-

lah Khomeini made similar public threats in late September.

Initial Response. We believe that some Iranian military response is certain, and Iran can choose among the following options:

- Attack the oil pipeline going from Iraq to Turkey, Iraq's only remaining oil outlet.
- · Attack Kuwaiti oil facilities.
- Harass ships serving Iraq's Gulf allies.
- Strike oil facilities of UAE, Qatar, Bahrain, or Saudi Arabia.
- ² Close the Strait of Hormuz using mines or a blockade.

Several factors suggest that Iran's initial military reaction may not be so drastic as mining the Strait of Hormuz:

- Iran has about \$13 billion in foreign reserves, the equivalent of about one year's imports. This financial cushion could allow Tehran to adopt a waitand-see attitude for a time.
- By showing restraint, Tehran could argue that Iraq is the real threat to international oil shipping, thereby attempting to create a rift between the Arab Gulf states and Iraq.
- Mining the Strait while Iranian imports and oil exports are still flowing would create an economic predicament for Iran that eventually would be worse than that of Iraq.
- A drastic response to Iraqi attacks would raise the possibility of a Western military response that Iran could not effectively counter.

Even if foreign tankers stopped serving Khark Island, Iran could continue to export oil at about 20 percent of current levels. Iran probably would continue to load its own ships at Khark and shuttle oil from there to anchorages near the southern end of the Gulf, as it did in the early days of the war. By shuttling, Iran could ship at least 200,000 b/d, and it may be able to purchase or lease additional tankers to increase this capacity. In addition, Iran could continue exporting

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about 200,000 b/d from Sirri and Lavan Islands, which are located in the southern Gulf at the outer limit of even the most optimistic estimates of the range of the Super Etendards.

We believe that Iran's choice and timing of a retaliatory option will be influenced by the effectiveness of Iraqi attacks in disrupting Iranian oil exports, its own military capability, and its perception of the likely political and economic repercussions. Assembly Speaker Rafsanjani, possibly the second most powerful man in Iran, indicated in a speech in mid-October that Iran would not take the most drastic step of closing the Gulf if Iran could still export at least 50 percent of its oil.

We would expect Iran's initial military response to be at the lower end of the escalatory ladder; for example, attacks on the Turkish pipeline, Kuwaiti oil facilities, or general harassment of Gulf shipping. Nonetheless, we cannot rule out the possibility that hardliners in Tehran, playing on the regime's ideological underpinnings, might get the regime to take the most extreme military reaction at the outset of Iraqi attacks on Khark Island.

Attacks on the Turkish Pipeline. On several occasions this year Iranian leaders have publicly threatened to attack the oil pipeline from Iraq through Turkey. We believe that attacks on the pipeline probably would be carried out either by commandos or Iraqi dissidents, most likely Kurds, receiving Iranian support. All known sabotage to the pipeline during the war has occurred in Turkey, but any Iranian-sponsored attack would harm Iranian-Turkish relations, a factor Tehran must consider. The Iranians also could try to destroy oil installations along the pipeline using fighter-bombers. Iran has not used this tactic for nearly two years to conserve its dwindling number of operational aircraft

Damage to the pipeline itself, in our judgment, would cause only a temporary disruption to Iraqi oil exports because most types of

Potential Targets on the Iraq-Turkey Pipeline

The two crude processing plants at Kirkuk in Iraq are required for final stabilization and treatment of produced crude before it can be shipped through the Iraq-Turkey pipeline. Tehran demonstrated its ability to conduct successful air operations against these facilities early in the war

when it damaged one of the plants. Our analysis suggests that unless both facilities were heavily damaged or destroyed, Baghdad could continue to export some crude oil; the two plants now are operating at about two-thirds capacity.

The pipeline has five pumping stations, two in Iraq and three in Turkey. Past sabotage, however, has concentrated exclusively on the pipeline itself, which has been repaired in a few days.

The seven gas/oil separation plants in the Kirkuk oilfield—capable of handling more than 1.5 million b/d—are required for crude oil production. The Iranians are unlikely to target these facilities, in our judgment, because they probably are aware that at least one-third of the current capacity of the plants would have to be destroyed to affect export levels.

We believe that damage to any other Iraqi oil installations is unlikely to affect current levels of crude exports.

damage could be quickly repaired. Damage to pumping stations would cause longer periods of disruption, but the stations normally are well defended.

Attacks on Kuwait. Kuwait, the primary port for heavy military equipment coming from the USSR to Iraq, is the most visible of Iraq's Gulf supporters. Iran has attacked Kuwait before with little international reaction. We believe Iran would resume attacks on

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Kuwait to demonstrate its resolve to retaliate and to involve directly Iraq's supporters. At the same time, attacks against Kuwait at the northern end of the Gulf might not affect oil exports from Saudi Arabia or the UAE as long as the military action seemed unlikely to spread. As a result, Iran might believe that the Western powers would not intervene. We believe that Tehran probably also would hope that other Gulf states would blame Baghdad for making military decisions that threatened their security.

The most critical economic target in Kuwait is the Mina al-Ahmadi Island terminal, through which flows all of Kuwait's current oil exports of 750,000 b/d. The Ahmadi Sea Island, some 16 kilometers offshore, is highly susceptible to the kind of seaborne commando assault used so effectively by the Iranians against Iraqi offshore terminals. Iranian naval commandos also could attack Kuwait's offshore oil-loading buoys with a high probability of success. An isolated air attack against those targets would, in our judgment, be less effective.

Iranian air attacks against onshore berths, tank farms, or processing facilities in Kuwait also could inflict severe damage.

Kuwait has a small but modern inventory of air defense equipment, including 17 Mirage F-1 interceptors and six HAWK surface-to-air missile batteries.

the equipment is inadequately maintained and air defense personnel poorly trained. We do not believe Kuwait could effectively detect and defend against a surprise Iranian attack.

Harassment of Gulf Shipping. We estimate that Iran has the capability to harass ships serving other Gulf states, and the other Gulf navies could not stop them.

Iranian aircraft and ships could closely monitor shipping through the Gulf and selectively turn back those carrying goods to Iraq or its allies. The Iranian Navy also could board suspect ships or even force them to go to an Iranian port for search or detention of the crew, as it did early in the war.

Iranian weapon systems are seriously degraded, the Gulf navies have nothing comparable to Iran's destroyers and frigates (see table 2). We estimate that Oman has the most competent Navy of the Peninsula states, but its only meaningful combat capability is provided by three missile boats armed with Exocets.

Moreover, Iran's naval base and airbase at Bandar Abbas give the Iranians a major advantage in harassing shipping in the Strait of Hormuz. Iranian units are able to respond quickly to a potential confrontation in the Gulf and have easy access to resupply and repair facilities. Fighter aircraft stationed at Bandar Abbas could threaten ships passing through the Strait and provide cover for naval ships operating there.

The Gulf Arabs, in our judgment, are unlikely to challenge Iran except in self-defense. Unless directly attacked, the Gulf states would attempt strenuously to avoid hostilities and would look to the West to remove the Iranian threat. We believe their willingness to support Western military moves would differ depending on the level of the threat. Nonetheless, they all recognize that Iran can cause them long-term security problems and would strongly prefer to avoid giving the Iranians cause for retaliation.

If directly attacked, we believe the Gulf Arabs, with the possible exception of Kuwait, almost certainly would appeal to the United States for military assistance. There are differences in the Gulf Arabs' willingness to cooperate militarily with the United States, 25X1 25X1

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In September Iran warned the Gulf states that it would restrict shipping in the Gulf if they continued to ship arms to Iraq through their ports. This tactic could bring Iran into confrontation with the USSR, whose ships dock in Kuwait and is the only carrier taking heavy military equipment to Iraq through the Gulf. The USSR apparently is taking the Iranian warning seriously and has begun sending only arms carriers without deck cargo to Kuwait.

Table 2 Persian Gulf Naval Order of Battle

	Iraq	Iran	Saudi Arabia	Qatar	Kuwait	UAE	Bahrain	Oman
Personnel	4,500	15,000	5,500	700	600	1,500	100	1,500
Major combatants	NA	7	NA	NA	NA	NA	NA	NA
Missile boats	10	11	6	3	NA	6	NA	3
Coastal patrol boats	21	34	100	35	40	44	19	24

but, if under attack, most of the governments probably would allow US forces increased access to their airfields or ports. Of these states, we believe Saudi Arabia, Oman, and Bahrain would be most willing to allow US combat operations to be launched against the Iranian threat.

We believe the Gulf Arabs are unlikely to view Iranian actions such as mining, blockade, or harassment of shipping in the Gulf as direct threats to their regimes. In such situations, all the Gulf states probably would be unwilling to use their military forces to confront the Iranians. Oman, and to a lesser degree Saudi Arabia probably would agree to assist a Western military reaction by providing access to facilities such as airfields or ports for logistic support. We believe none of the Gulf states would allow US combat operations to be launched against Iranian targets from their territory if they were not under direct attack.

Attacks on Gulf Oil Facilities. If Iraq could reduce the flow of oil from Khark by 20 percent or about 400,000 b/d for several weeks, Tehran would have to begin drawing down foreign exchange reserves to maintain current levels of imports. Recent demonstrations in major Iranian cities suggest that a major reduction of imports would be a politically volatile issue. We believe that Iran would consider more drastic retaliatory measures, hoping that pressure from the international community would stop Iraqi attacks.

To spread the war to Iraq's allies in the lower Gulf, Tehran could use commandos or local dissidents to sabotage facilities, or it could launch air raids against onshore oil facilities.

The action that, in our judgment, offers Iran the least risk with the highest likelihood of success is an Iranian-backed sabotage operation by local Shia dissidents. Iran has supporters on the Arabian Peninsula, especially in Bahrain, Qatar, and the UAE.

The Gulf states have increased their individual and collective security over local Shia populations, most of whom have a vested interest in maintaining the status quo. Bahrain's disadvantaged and disaffected Shia majority is a potential source of conspirators to support an Iranian sabotage operation.

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Isolated incidents of violence, including sabotage, are possible, however, and if well planned could cause considerable damage.
Because Iranian commando operations have proved successful in the past, Tehran is likely to choose them over air attacks, in our judgment. The oil production and export systems of all the Gulf states are highly vulnerable to this type of attack and difficult to repair. The ground forces and coastal defense forces of the Arab Gulf states could not, in our judgment,
Air attacks would be riskier, but we believe that even Saudi Arabia, the only Arab Gulf state that could effectively defend against repeated Iranian airstrikes, could not prevent some fighter-bombers from successfully attacking critical targets. We estimate that less than one-third of Iran's 260 fighters are operational,
probably would not attempt to sustain an air campaign against Saudi Arabia's critical oil facilities once the element of surprise was gone.
Closure of the Gulf. If Iraq could reduce substantially Iranian oil exports—perhaps by more than 50 percent to less than 1 million b/d—we believe Iran probably would be forced to consider more drastic escalatory reactions. As long as its own oil was flowing, Iran probably would attempt to blockade the Strait before attempting to close it by mining. Iran is likely to mine the Gulf only as a last-ditch measure because it would effectively close off the rest of its own oil exports and its major route for importing goods. Moreover, this step would force Iran to increase overland imports through Pakistan, Turkey, and, most undesirably from Tehran's perspective, the USSR
from Tehran's perspective, the USSR.

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Restoration of Gulf Oil Facilities		
Our analysis suggests that, even if key Gulf oil facilities sustained substantial damage, current oil export levels might be restored within six months, primarily because Gulf oil production facilities now are underutilized. A more precise estimate of the time to repair facilities would require a clearer definition of the extent of damage. When feasible, temporary repairs, cannibalization, or purchase of equipment from existing inventories can significantly shorten leadtimes.	In our judgment, however, if a large number of facilities have been heavily damaged, cannibalization would not be a feasible option. In this case, some facilities would take years to repair because many critical components—for example, high pressure separation valves, loading arms, and crude stabilization columns—generally are not stocked and would have to be custom built. In this situation competing orders would strain the world's manufacturing capability and lengthen the time required to restore exports to current levels.	25. 25X
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In our view, Iran has the capability to close the Gulf temporarily by mining or by blockade as long as it is not challenged by Western navies. We doubt that the Gulf states would confront Iran on their own.		25 25)
If Tehran mined or claimed to have mined the Strait of Hormuz, the perception of the shipping industry would be at least as important as the actual capability of the Iranian Navy. A simple declaration that the		
Strait had been mined probably would be sufficient to deter most shipowners from attempting transit for a time.		25
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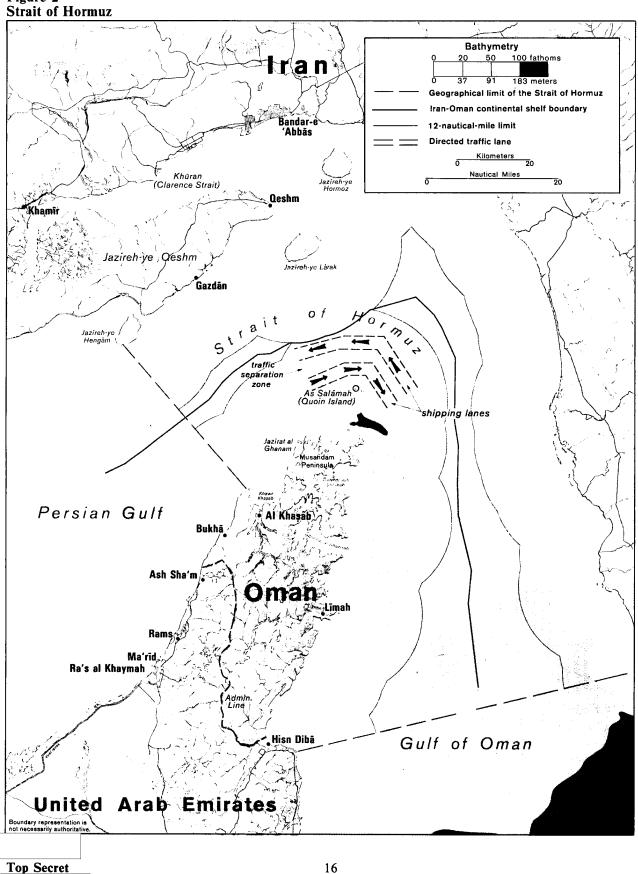
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Figure 2



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Moreover, artillery batteries would have difficulty hitting a moving ship even under the most favorable conditions. Iran's longest range artillery can strike targets at a distance of about 32 km.		
Economic Impact of Disruptions of Gulf Oil Exports Each Iraqi and Iranian escalatory option would have different levels of impact on oil markets and the economies of the United States and other OECD nations. Some of the more drastic options that resulted in a major, prolonged reduction of Persian Gulf oil exports would have more severe economic repercussions for the West than the oil supply disruptions in 1973 and 1979. Despite the fact that the United States imports little of its oil from the Gulf, it could not insulate itself from a major reduction in exports from the area. Moreover, our analysis suggests that even a modest runup in oil prices resulting from an interruption of Persian Gulf oil exports would have severe repercussions on the international financial system (see appendix B).		25X1
We estimate that for every 1-million-b/d net reduction in annual world oil supplies, official oil prices could increase by about \$8 to \$10 per barrel and OECD growth could decline by 0.3 to 0.4 percentage point, depending on the absolute size of the disruption. Spot market oil prices, however, could rise much higher. Current excess productive capacity outside the		
Gulf could absorb most of the oil exports that would		25 X 1
be lost if Khark Island was shut down, the Iraqi pipeline through Turkey was severed, and Kuwaiti exports were stopped. These reductions would, however, remove most of the slack in the market, and expectations of additional losses probably would begin to drive up prices. The economic impact of any disruption of Gulf oil exports in the near term would depend heavily on a number of factors:	The present combination of surplus productive capacity and weak consumption affords OECD countries considerable protection against a short-term oil supply disruption. Persian Gulf countries have been producing some 12 million b/d in recent months, although present productive capacity is about 17 million b/d. Nine or 10 million b/d are now exported from the Gulf, of which about 1 million b/d is sent through pipelines. Current surplus capacity in non-Communist	25X1

- Expectations of the duration and magnitude of the disruption.
- The actual extent and duration of the disruption.
- The availability of non-Gulf energy supplies from surplus productive capacity.
- The availability of alternative fuels such as coal and
- Worldwide petroleum stock levels and stockholder response.

countries outside the Gulf is about 3 million b/d, mainly in Nigeria, Libya, Venezuela, and Indonesia

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Western Dependence on Gulf Oil. Non-Communist countries depend on Persian Gulf oil for about 30 percent of their needs. The United States, however, is not so dependent on Persian Gulf oil as are most of its Western allies and some Third World countries. US imports of Gulf oil this year are about 300,000 b/d, primarily because of the sluggish economy and the drawdown of excess stocks. US dependence on Persian Gulf oil has dropped to only 5 percent of total oil imports and 2 percent of oil consumption.

The other countries in the OECD—mainly Western Europe and Japan—received 8 million b/d from the Gulf last year, about 55 percent of their total oil imports and 40 percent of their total consumption. Most of the remainder of the Gulf's oil output is consumed by the Gulf countries or exported to the LDCs.

Managing an Oil Crisis. The United States theoretically could do without Gulf oil by drawing on surplus capacity available outside the Gulf, including 1 million b/d among major producers in the Western Hemisphere. Because of the heavy dependence of non-Communist countries on Persian Gulf oil, however, the United States would not be immune to the shocks of a major disruption in the Middle East oil supply. Such disruptions could lead to a sharing of the burden of the shortfall through adjustments in company distribution systems, intervention of consuming governments, or, under certain circumstances, implementation of the formal IEA oil sharing program.

rising oil prices and private stock behavior are the main determinants of the price impact of a major, prolonged supply disruption. Price runups following the Arab oil embargo and the Iranian revolution were due in part to demand pressures resulting from stockholders' efforts to rebuild and add to oil inventories. In contrast, the oil market remained fairly stable following the outbreak of the Iran-Iraq war, reflecting falling consumption and the existence of about 400 million barrels of excess stocks.

Commercial stocks now represent the bulk of oil inventories held in consuming countries,

Sizable strategic stockpiles—oil

purchased and owned by governments as opposed to inventories held by commercial firms—are located only in the United States, Japan, and West Germany. Other fuels, especially natural gas, also could help offset oil losses during a disruption, as happened in the United States following the Iranian revolution.

Stock drawdowns play a major role in reducing the price impact of an oil supply disruption. If oil users anticipate a short-lived disruption and a fairly quick release of oil from stockpiles, the initial scramble to build and hoard inventories that produced the severe economic impact of the supply disruptions in 1973 and 1979 may be averted. As a result, a sharp escalation in spot prices and the ensuing rise in official prices may be dampened considerably.

We believe that a disruption of oil flows from the Persian Gulf, however, would reverse the glut mentality that has gripped the oil market for the last two years. Industry expectations of a price decline combined with the high cost of holding oil have caused a large inventory liquidation since the beginning of 1983. With current commercial stockpiles near normal levels, we would expect stockholders to be less willing to deplete inventories sharply if there were a supply disruption. In our judgment, there is a good possibility that attempts would be made to increase inventories because of the prospects for higher prices and the uncertainty surrounding the duration of the disruption. This behavior would add to our oil demand estimates and projected supply shortfalls.

Sensitivity Analysis. Despite these uncertainties, we have attempted to assess the sensitivity of oil prices and economic growth of the OECD nations to various escalation scenarios in the Persian Gulf. We used the CIA energy model to calculate how far oil prices would have to rise to balance supply and demand under varying levels of disruption.

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If Khark Island were shut down, the loss of Iran's exports of nearly 2 million b/d would have little impact for most consumers. Surplus available capacity is sufficient to absorb the loss, but spot prices probably would run up if buyers anticipate a spread of the conflict. At a minimum, Iranian customers would be forced to line up alternative supplies. Turkey, Spain, and Italy rely on Iran for about 16 percent of their oil import needs, while Japan relies on Iran for 13 percent of its needs.

If Khark Island were shut down, the Iraqi pipeline through Turkey to the Mediterranean severed, and Kuwaiti exports cut off, the impact of a combined loss of about 3.5 million b/d would be more severe. The loss would eliminate most of the surplus productive capacity outside the Gulf and leave the oil-importing countries exposed to high risks. The uncertainty surrounding the length of such a disruption and the risk to other suppliers in the Gulf would almost certainly cause an increase in spot oil prices. Among major importing countries, Brazil and Turkey rely on imports from Iraq and Kuwait for more than 20 percent of their supplies.

If the effects of a selective blockade of the Strait of Hormuz were added, the impact on the West would be severe. Stopping an average of one supertanker per day, for example, could reduce Gulf exports by 2 million b/d.

A closure of the Strait and the Iraq-Turkey pipeline would cause a net supply shortfall in the non-Communist world of 5-9 million b/d in early 1984, depending on demand levels in the consuming nations (see table 4). We estimate that a prolonged closure would double official oil prices—from the current level of about \$30 per barrel—under a low demand assumption and triple prices under a high demand assumption. If oil prices tripled, OECD growth could decline by 4 percentage points.

Table 4
Scenarios for Reductions in Non-Communist
Country Oil Supplies

	Million Barrels Per Day in Early 1984		
Non-Communist country oil production capacity	52		
Non-Communist country oil consumption			
Low demand case	44		
High demand case	48		
Available surplus capacity			
Low demand case	8		
High demand case	4		
Persian Gulf capacity	17		
Pipeline export capacity a	3		
Domestic use	2		
Strait of Hormuz	12		
Net reduction from closure of Strait of Hormuz and the Iraq-Turkey pipeline			
Low demand case	5		
High demand case	9		

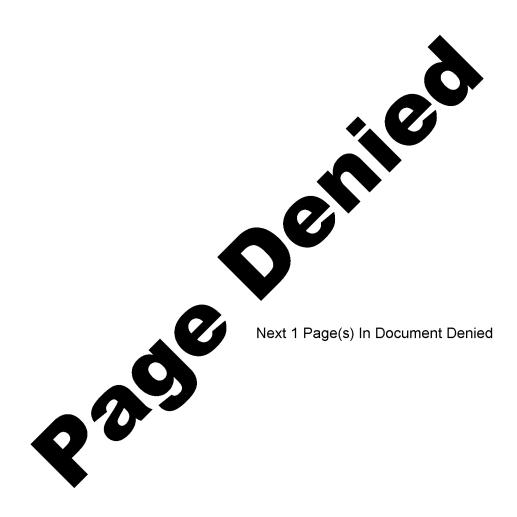
^a Saudi Arabia's pipeline to the Red Sea can carry about 1.85 million b/d, and Iraq's pipeline via Turkey to the Mediterranean can carry nearly 1 million b/d.

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Impact on the International Financial System

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a disruption of Persian Gulf oil exports that would trigger only a modest oil price increase to \$35 per barrel could, if maintained over several months, have severe repercussions for the international financial system. Heavily indebted oilimporting LDCs would be unable to finance higher oil import bills and, barring new reschedulings, could be forced to delay debt repayments. Unlike the major oil price increases in 1973 and 1979, additional oil export revenues would accrue largely to those countries with high propensities to spend on imports instead of the wealthy Persian Gulf countries, which in the past have provided immediate liquidity to the international banking system. Moreover, in our judgment, bankers would be reluctant to recycle whatever new oil money is deposited to such heavily indebted oil-importing LDCs as Brazil, Chile, Morocco, and possibly the

Philippines. At the same time, IMF funds may be inadequate to handle new loan requests.

Oil-Importing LDCs

Higher oil import bills and a slowdown in OECD growth would pose insurmountable financial problems for many oil-importing LDCs. In our judgment, major debtors such as Brazil, Chile, Philippines, Pakistan, Morocco, Sudan, India, and South Korea would have trouble meeting scheduled external payments with even an \$8 per barrel price increase. Without liberal rescheduling arrangements from private and official creditors, they could be forced to delay repayments on this external debt. Higher oil prices would also create payments problems for many smaller Central American, African, and Middle Eastern oil-dependent economies with limited financial reserves.

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Table B-1 Major LDC Debtors and Net Oil Importers: Foreign Exchange Impact of a Major Oil Price Income

Net Oil Importers	Projected Net Oil Imports, 1983 (thousand b/d)	Projected Net Oil Import Bill, 1983 at	Projected Current Account Balance, 1983	Estimated Debt in 1983 a (billion US \$)	Additional Foreign Exchange Requirement If Oil Price, Rises to			
		Current Prices (billion US \$)	(billion US \$)		37 Per Barrel (billion US \$)	70 Per Barrel (billion US \$)	100 Per Barrel (billion US \$)	
Brazil	700	7.6	-7.5	31.0	2.0	10.5	18.1	
South Korea	530	6.1	-2.3	19.1	1.5	7.9	13.7	
India	335	4.1	-3.4	2.7	1.0	5.0	8.7	
Chile	58	0.8	-1.6	6.7	0.2	0.9	1.5	
Philippines	200 .	2.2	-3.0	7.6	0.6	3.0	5.2	
Morocco	95	1.0	-1.8	4.9	0.3	1.3	2.2	
Taiwan	340	4.1	4.0	6.1	1.0	5.1	8.8	
Thailand	230	2.6	-2.0	4.1	0.7	3.4	6.0	
Pakistan	105	1.1	-1.3	2.0	0.3	1.6	2.7	
Sudan	45	0.5	-0.7	0.4	0.1	0.5	0.8	
Ivory Coast b	10	0.1	-1.1	1.5	NEGL	0.2	0.3	

a Includes short-term debt maturities, principal payments on medium- and long-term debt, and interest due on all debt maturities but does not include interbank debt. For Brazil, Chile, and Sudan any debt rescheduled through 14 September 1983 is not included in the total debt service figures.

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b Despite projected exports of 30,000 b/d, we expect Ivory Coast to remain a net oil importer in 1983.

Table B-2 LDC Net Oil Exporters: Foreign Exchange Impact of a Major Oil Price Increase

Net Oil Exporters	Projected Net Oil Exports, 1983 (thousand b/d)	Projected Net Oil Revenues at \$29/b (billion US \$)	Projected Current Account Balance, 1983 (billion US \$)	Estimated Debt Due in 1983 a (billion US \$)	Estimated Surplus Productive Capacity (thousand b/d)	Additional Oil Revenues at Full Capacity If Prices Rise to		
						37 Per Barrel (billion US \$)	70 Per Barrel (billion US \$)	100 Per Barrel (billion US \$)
Mexico	1,500	15.5	2.5	23.0	400	9.1	30.6	50.2
Argentina	10	0.1	-1.1	3.8	NEGL	NEGL	0.1	0.2
Venezuela ^b	1,570	15.2	-1.1	22.5	430	9.4	31.3	51.2
Indonesia b	930	9.9	-4.8	7.5	200	5.5	19.3	31.8
Egypt	200	2.1	-3.0	5.9	NEGL	1.0	3.5	6.0
Algeria b	855	9.0	-2.4	6.7	140	4.3	16.2	27.0
Nigeria ^b	1,090	11.7	-1.9	5.7	880	15.2	39.1	60.9
Peru	60	0.6	-0.6	5.4	NEGL	0.2	0.8	1.5
Malaysia	120	1.5	-3.2	3.4	NEGL	0.4	2.1	3.7
Ecuador b	100	1.0	-1.6	2.6		0.3	1.4	2.4
Zaire	9	0.2	-0.4	1.0	NEGL	NEGL	0.1	0.2
Cameroon	87	0.9	-0.7	0.6	NEGL	0.3	1.3	2.3

^a Includes short-term debt maturities, principal payments on medium- and long-term debt, and interest due on all debt maturities but does not include interbank debt. For Mexico, Argentina, Nigeria, Peru, and Ecuador any debt rescheduled through 14 September 1983 is not included in the total debt service figures.

b OPEC member.

We believe that many of these LDCs will have difficulty obtaining loans to finance their higher oil bills, as bankers will be reluctant to increase LDC debt exposure and risk another round of moratoriums and reschedulings. IMF resources could be inadequate to meet new financing requests. During past oil price hikes, the IMF helped defray rising LDC oil imports through special lending facilities funded by wealthier OPEC members. Under the current scenario, however, the traditionally surplus Gulf economies are losing oil revenue, and many are in deficit themselves. With relatively low levels of foreign reserves, oil exporters outside the Gulf might not be so ready to extend aid to other LDCs.

We expect that many of these oil-importing LDCs would turn to Washington for funding and leadership in handling the oil price crisis. Lacking adequate

financing, LDCs that cannot export oil would face severe recessions and growing unemployment, which for many governments could stimulate serious political and social unrest.

Non-OPEC LDC Oil Exporters

The economies of Mexico, Egypt, Malaysia, Peru, and Cameroon would benefit from substantially higher oil revenues. A large oil price windfall would alleviate current debt servicing problems of Mexico and reduce prospects for political or social unrest. Mexico's IMF austerity program is causing bankruptcies, rising unemployment, and real wage losses and is likely to result in a 5- to 8-percent decline in real growth this year, according to our calculations. We also believe

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Table B-3
Persian Gulf Oil Exporters:
Foreign Exchange Impact of a
Closure of the Hormuz Strait

	Projected Oil Exports, 1983	_	Projected Current Account	1983 Imports	Official Foreign Assets Yearend, 1982	Estimated Export Capability If Hormuz Strait Closed a (thousand b/d)	Loss/Gain If Oil Price Rises to	
	(thousand b/d)	Prices	Balance, 1983 (billion US \$)	` ,	(billion US \$)		70 Per Barrel (billion US)	100 Per Barrel \$) (billion US \$)
Saudi Arabia	4,415	44.8	-14.2	39.0	153	1,900	3.7	24.5
Kuwait	730	7.4	4.5	7.0	73	0	-7.4	-7.4
United Arab Emirates	1,120	12.3	1.7	8.0	35	0	-12.3	-12.3
Iran	1,945	20.2	4.5	12.0	13	0	-20.2	-20.2
Iraq	600	6.8	-14.8	16.0	8	0	-6.8	-6.8
Qatar	290	3.2	2.0	1.5	15	0	-3.2	-3.2

^a Assuming closure of the Iraq-Turkey pipeline.

that Egypt, under current oil market conditions, is edging toward a financial crisis, and we believe that tough domestic austerity measures needed to bring the economy into balance could create political problems for President Mubarak.

Cameroon and Malaysia would directly benefit from an oil price rise by boosting oil revenues some \$200 million and \$400 million, repectively, for each \$8 per barrel increase. Emerging oil exporters Ivory Coast and Zaire would gain only if the price hike spurred exploration efforts that could boost net oil exports at a later date. Financially troubled Peru, with current net oil exports of about 60,000 b/d, would add about \$200 million for each \$8 per barrel oil price rise and reap \$1 billion or more if Persian Gulf supplies were cut off.

OPEC Members

A disruption of 4 million b/d in Persian Gulf oil would cause a net reduction in oil supplies to the non-Communist countries of about 1 million b/d and would result in a 1984 current account deficit of \$20-35 billion for OPEC as a whole depending on the import behavior of non-Gulf members. This would be near the \$20-30 billion deficit we currently project for 1983-84 if oil prices remained stable.

If oil prices rose \$8 per barrel following the net shortfall to the non-Communist world of 1 million b/d, we estimate that the current accounts of the major OPEC debtors-Venezuela, Indonesia, Algeria, Nigeria, and Ecuador—would move from a projected deficit of \$12 billion at current prices in 1983 to an annual \$11 billion surplus. Among the financially troubled Governments of Ecuador, Nigeria, and Venezuela, an \$8 price rise would help only Nigeria to forgo debt rescheduling arrangements and IMF loans. According to our calculations, Venezuela and Ecuador would still require some debt rescheduling or large new credits in 1984. A larger windfall, resulting from a complete cutoff of Persian Gulf supplies, however, would solve their debt problems, allow import growth, and permit the lifting of unpopular austerity measures.

Of the six Persian Gulf producers, Saudi Arabia could experience financial gains from a price rise following closure of the Strait of Hormuz, provided its pipeline to the Red Sea remains open. Iran and Iraq would be hardest hit by closure of the Strait and the Iraq-Turkey pipeline. Faced with a loss of income and

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large import needs, Tehran would be forced to draw down foreign assets—which we estimated at \$13 billion at the end of 1982—and cut imports, including those needed to fulfill the Khomeini regime's first five-year development plan. With Iraq's foreign assets declining to \$3-4 billion by the end of this year, closure of the pipeline across Turkey would make Baghdad even more dependent on foreign financial assistance

Large foreign asset holdings and modest import needs would enable Kuwait, UAE, and Qatar to absorb the loss of oil revenue from the closure of the Strait over the short term. We estimate that these governments would have to draw down \$15 billion in foreign assets to maintain current import levels and cover projected current account deficits over one year. Private capital outflows, which we believe would be high in this pessimistic climate, would force even larger asset drawdowns. Private outflows could also erode any surplus the Saudi Government may accrue. In our judgment, an oil supply disruption—if it occurred in the near future—could have serious adverse consequences for Kuwait's financial sector, which is still trying to settle numerous bankruptcies and cope with serious liquidity problems resulting from last year's stock market crash. Despite large foreign reserves, the need for economic stringency under these circumstances will pose difficult questions for these governments on domestic spending, asset management, and foreign aid levels. In the past, control over massive oil revenues has been a politically and socially stabilizing factor for these governments, and ruling royal families will have to be careful to minimize criticism that could undermine the governments' authority.

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