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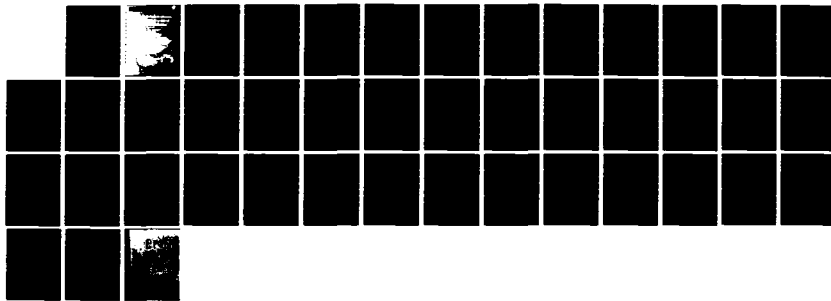
COST-BENEFIT ANALYSIS OF POSSIBLE US ADHERENCE TO TWO
INTERNATIONAL CONVE. (U) TEMPLE BARKER AND SLOANE INC
LEXINGTON MA 30 JUN 83 USCG-WER-83-1A DTICG23-82-C-5984

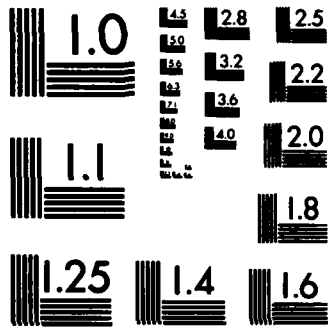
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16. Abstract This is the Executive Summary to the final report which assessed the benefits and costs to the United States of adhering to two international conventions on oil pollution liability and compensation. These conventions are: <ul style="list-style-type: none"> CLC--The 1969 Convention on Civil Liability for Oil Pollution Damage, which governs the tanker owner's liability for oil pollution damage in nations that have ratified the convention. FUND--The 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, which provides supplemental compensation in member states. <p>This Executive Summary presents a broad overview of the cost-benefit analysis including many graphs and tables. The primary question addressed in the study is whether adherence to one or both of the conventions would be in the interests of the United States as a nation. Both monetary costs and benefits, and broad non-monetary factors, are included in the analysis. A secondary issue addressed is the distribution of costs and benefits among different groups in the United States, particularly petroleum product consumers, industry, and government.</p>					
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I. OBJECTIVES

- ASSESS BENEFITS AND COSTS TO THE UNITED STATES OF ADHERING TO TWO INTERNATIONAL CONVENTIONS ON OIL SPILL LIABILITY AND COMPENSATION:
 - CLC - 1969 CONVENTION ON CIVIL LIABILITY FOR OIL POLLUTION DAMAGE. GOVERNS SHIPOWNER LIABILITY FOR SEAGOING TANKER AND BARGE OIL SPILLS.
 - FUND - 1971 INTERNATIONAL CONVENTION ON THE ESTABLISHMENT OF AN INTERNATIONAL FUND FOR COMPENSATION FOR OIL POLLUTION DAMAGES. COMPLEMENTS SHIPOWNER'S LIABILITY BY PROVIDING SUPPLEMENTARY COMPENSATION FOR OIL SPILL DAMAGES.
- TRACE DISTRIBUTION OF BENEFITS AND COSTS AMONG AFFECTED GROUPS WITHIN THE UNITED STATES:
 - SHIPOWNERS
 - OIL COMPANIES
 - OIL CONSUMERS
 - U.S. GOVERNMENT
 - POTENTIAL OIL SPILL VICTIMS

II. BACKGROUND

A. CLC AND FUND ARE AN INTERNATIONAL LEGAL REGIME OF SHIPOWNER LIABILITY AND A SUPPLEMENTARY COMPENSATION PROGRAM PAID FOR BY CARGO INTERESTS (SEE GRAPH, EXHIBIT 3)

CLC

- PROVIDES FOR STRICT LIABILITY OF SHIPOWNER FOR TANKER OIL SPILLS
- APPLIES ONLY TO MEMBER COUNTRIES' WATERS, PERSISTENT OILS, SEAGOING VESSELS, LADEN VOYAGES
- ALLOWS OWNER TO LIMIT LIABILITY IN MOST CASES TO EQUIVALENT OF \$147 PER CONVENTION TON OR \$15.4 MILLION MAXIMUM (LIMIT STATED IN SDR'S, DOLLAR VALUE FLUCTUATES)
- COVERED BY P&I CLUBS AS COMPONENT OF MARINE LIABILITY
- WIDELY ADOPTED, WITH 51 MEMBER-STATES AT PRESENT AND 86 PERCENT OF WORLD TANKER TONNAGE
- INTERNATIONAL MARITIME ORGANIZATION (IMO) LEGAL COMMITTEE PRESENTLY DISCUSSING INCREASED CLC LIMITS AND OTHER IMPORTANT CHANGES
- OTHER CHARACTERISTICS PER EXHIBIT 1

Exhibit 1

MAJOR CHARACTERISTICS OF CLC

<p><u>Status</u></p>	<p>Negotiated in 1969, entered into force 1975</p>
<p><u>Membership</u></p>	<p>51 nations at present cover 86 percent of world tanker tonnage</p>
<p><u>Coverage</u></p>	<p>--Seagoing vessels carrying oil in bulk --Within territorial seas of CLC country --Damages and cleanup costs, following an actual spill --Vessels in ballast not covered</p>
<p><u>Oils</u></p>	<p>Persistent oil only</p>
<p><u>Liability</u></p>	<p>Strict liability of shipowner</p>
<p><u>Liability Limits</u></p>	<p>--Stated in gold francs or SDRs --Equivalent to about \$147 per convention ton with maximum \$15.4 million per incident</p>
<p><u>Grounds for Denying Limitation</u></p>	<p>Actual fault or privity of owner</p>
<p><u>Defenses</u></p>	<p>--Natural irresistible phenomena --War --Intentional act or omission of third party --Government negligence with aids to navigation</p>
<p><u>Financial Responsibility</u></p>	<p>--Certificate required for vessels over 2,000 DWT --Owners obtain cover from P&I Clubs</p>
<p><u>Claims Procedure</u></p>	<p>--Limitation fund established by owner --Claims brought in member country court suffering damage --Shipowner can recover cleanup costs from fund --Court decisions recognized internationally</p>

FUND

- PROVIDES TOP-OFF FUND ABOVE CLC LIMITS, UP TO \$49.6 M COMBINED MAXIMUM (LIMIT SET IN SDR'S, DOLLAR VALUE FLUCTUATES)
- PROVIDES ROLLBACK TO OWNERS OF PART OF CLC LIABILITY
- PAID FOR BY FEES ON CRUDE OIL AND HEAVY PRODUCTS RECEIVED AT TERMINALS IN EACH MEMBER NATION FROM SEAGOING VESSELS
- CHARGES FOR COMPENSATION PAYMENTS LEVIED RETROACTIVELY BASED ON SPILL CLAIMS EXPERIENCE EACH YEAR
- ADMINISTERED BY RESPECTED LONDON-BASED SECRETARIAT
- POLICY SET BY 27 MEMBER-NATIONS (ONE NATION, ONE VOTE)
- MANAGEMENT GUIDED BY EXECUTIVE COMMITTEE, WHICH INCLUDES MAJOR OIL RECEIVING AND TANKER OWNING NATIONS
- IMO LEGAL COMMITTEE PRESENTLY DISCUSSING INCREASED FUND LIMIT AND OTHER CHANGES
- OTHER CHARACTERISTICS PER EXHIBIT 2

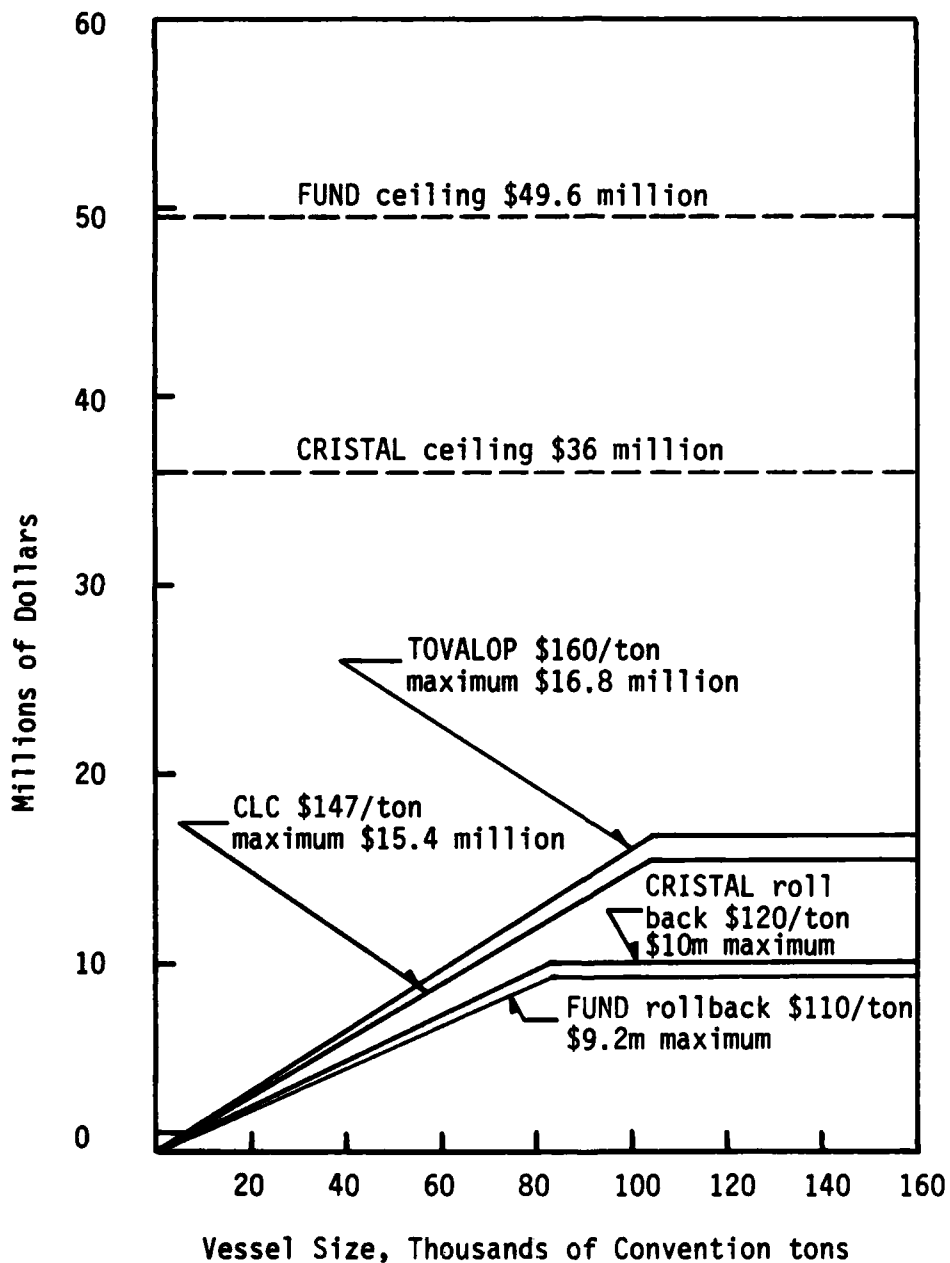
Exhibit 2

MAJOR CHARACTERISTICS OF FUND

<u>Status</u>	Negotiated in 1971, entered into force in 1978
<u>Membership</u>	27 nations at present
<u>Coverage</u>	As per CLC
<u>Oils</u>	As per CLC
<u>FUND Limits</u>	--Stated in gold francs or SDRs --Equivalent to about \$49.6 million maximum, including CLC portion --Rollback paid to owner, if FUND-registered vessel, down to about \$110 per convention ton or \$9.2 million
<u>Defenses</u>	--War --No proof of ship-source spillage --Intentional or negligent act of claimant
<u>Financial Arrangements</u>	--Modest initial contribution based on oil receipts --Annual contributions based on worldwide FUND spill claims and share of oil receipts --Oil receipts consist of crude oil and heavy fuel oil --Oil receiving companies pay
<u>Administration</u>	--IOPC Fund secretariat (three professionals) --Executive Committee (nine nations) --FUND Assembly (all members have equal votes)
<u>Claims Procedure</u>	--Submit written claim within three years --FUND assembly approves payment

Exhibit 3

GRAPH OF CLC/FUND AND
TOVALOP/CRISTAL REGIMES
(Values as of December 31, 1982)



B. THERE ARE CERTAIN DIFFERENCES BETWEEN CLC/FUND AND

- TWO VOLUNTARY INDUSTRY AGREEMENTS
- PRESENT U.S. LEGISLATION

INDUSTRY AGREEMENTS

- TOVALOP IS SIMILAR TO CLC:
 - LIABILITIES INSURED BY P&I CLUBS IN BOTH CASES
 - LIMITS ARE \$160 PER CONVENTION TON, MAXIMUM OF \$16.8 MILLION
 - VESSEL - SPECIFIC RATHER THAN GEOGRAPHICAL
 - 97 PERCENT OF WORLD TANKER TONNAGE COVERED
 - INCLUDES TANKERS IN BALLAST
 - HAS NO STATUTORY AUTHORITY; VOLUNTARY

- CRISTAL DIFFERS SOMEWHAT FROM FUND:
 - BOTH SCHEMES PAID FOR BY OIL CARGO INTERESTS (CRISTAL BY CARGO OWNERS, FUND BY RECEIVING COMPANIES)
 - BOTH PROVIDE TOP-OFF FUNDS AND ROLLBACK, ALTHOUGH SHIPOWNER PAYS FIRST \$1 MILLION IN CRISTAL CASES
 - CRISTAL LIMIT OF \$36 MILLION IS 27 PERCENT BELOW FUND LIMIT
 - CRISTAL COVERAGE IS CARGO-OWNER SPECIFIC, NOT GEOGRAPHICAL
 - MORE THAN 90 PERCENT OF SEAGOING PERSISTENT OIL CARGOES ARE COVERED, BUT PORTION IS DECLINING DUE TO EMERGENCE OF OIL TRADING FIRMS AND RELATIVE REDUCTION IN ROLE OF OIL MAJORS
 - INCLUDES PRE-SPILL PREVENTIVE MEASURES EVEN IF OIL NOT ACTUALLY SPILLED
 - HAS NO STATUTORY AUTHORITY; VOLUNTARY AGREEMENT
 - PAYS ONLY AFTER OTHER REMEDIES EXHAUSTED
 - OIL COMPANIES WOULD LIKE TO END CRISTAL IN FAVOR OF FUND

PRESENT U.S. LEGISLATION (SEE BRIEF DESCRIPTIONS, EXHIBIT 4)

- U.S. FEDERAL REGIMES DIFFER CONSIDERABLY FROM CLC/FUND:
 - U.S. HAS NO OIL SPILL LIABILITY LAW COMPARABLE TO CLC
 - FWPCA COVERS ONLY GOVERNMENT CLEANUP EFFORTS
 - TAPA, DMPA, AND OCSLAA ARE VERY LIMITED IN THEIR SCOPE, AND FUNDS ESTABLISHED WITH PER-BARREL FEES HAVE SO FAR NEVER BEEN REQUIRED
 - TREND REVEALED IN THESE SITE-SPECIFIC STATUTES IS TOWARD STRICTER LIABILITY AND HIGHER LIMITS (SEE EXHIBIT 5)
 - CLC IS LIMITED TO PERSISTENT OIL, LADEN VOYAGES, AND SEAGOING TANK VESSELS; THESE RESTRICTIONS OF COVERAGE ARE NOT FOUND IN RECENT U.S. LEGISLATION
 - DEFINITION OF DAMAGES COVERED IS MORE SPECIFIC IN U.S. LAWS--PARTICULARLY REGARDING ENVIRONMENTAL DAMAGE--THAN UNDER CLC
 - TRADITIONAL MARITIME LIMITATION OF LIABILITY ACT DOES NOT PROVIDE ADEQUATE COVERAGE, ESPECIALLY IF VESSEL BECOMES A LOSS DUE TO INCIDENT

PRESENT U.S. LEGISLATION continued

- FWPCA IS THE BROADEST U.S. POLLUTION LIABILITY LAW, BUT HAS SOME LIMITATIONS:
 - FUNDING COMES FROM CONGRESSIONAL APPROPRIATIONS, NOT FROM OIL COMPANIES OR OIL CONSUMERS, IN EVENT COSTS NOT RECOVERED FROM SPILLER
 - GOVERNMENT HAS RECOVERED ONLY 41 PERCENT OF COSTS FROM SPILLERS, INCLUDING SHORESIDE, INLAND, AND OCEAN SPILLS
 - SHIPOWNER MAY HESITATE ON CLEANUP EFFORT SINCE CANNOT RECOVER COSTS FROM FUND
 - LIABILITY LIMITS UNDER FWPCA AND CLC ARE SIMILAR, BUT HAVE PROVEN TO BE LOW, SINCE THERE IS NO TOP-OFF FUND PAID FOR BY CARGO INTERESTS
 - ISSUE OF EXCLUSIVITY OF FWPCA REMEDY FOR COAST GUARD CLEANUP COSTS UNCLEAR
 - GOVERNMENT CANNOT RECOVER FROM SHIPOWNER IN PURE THREAT SITUATION (I.E., NO DISCHARGE OF OIL)
 - LENGTHY AND COSTLY LITIGATION HAS OFTEN RESULTED DUE TO LOW LIMITS AND LACK OF CLARITY ON EXCLUSIVITY ISSUE

- COURT INTERPRETATIONS AND FEDERAL/STATE CONFLICTS IN THE U.S. HAVE CREATED A CONFUSING SITUATION:

- U.S. COURTS HAVE INTERPRETED NATURAL RESOURCE DAMAGES SOMEWHAT MORE BROADLY THAN THE ECONOMIC DAMAGES DETERMINED BY FUND

- U.S. COURTS HAVE GENERALLY BEEN FAIRLY WILLING TO DENY SHIPOWNER'S LIMITATION UNDER THE LIMITATION OF LIABILITY ACT, PARTLY BECAUSE LIMITS ARE SO LOW

- FEDERAL LAW DOES NOT PREEMPT STATE LEGISLATION IN OIL SPILL LIABILITY AREA:

- SEVERAL STATES, INCLUDING FLORIDA AND MASSACHUSETTS, HAVE LEGISLATION WHICH IMPOSES UNLIMITED LIABILITY ON VESSEL AND FACILITY OPERATORS OR OWNERS FOR CERTAIN COSTS

- MAINE CHANNELS LIABILITY FOR VESSEL SPILLS IN STATE WATERS ENROUTE TO A FACILITY TO THE RECEIVING FACILITY

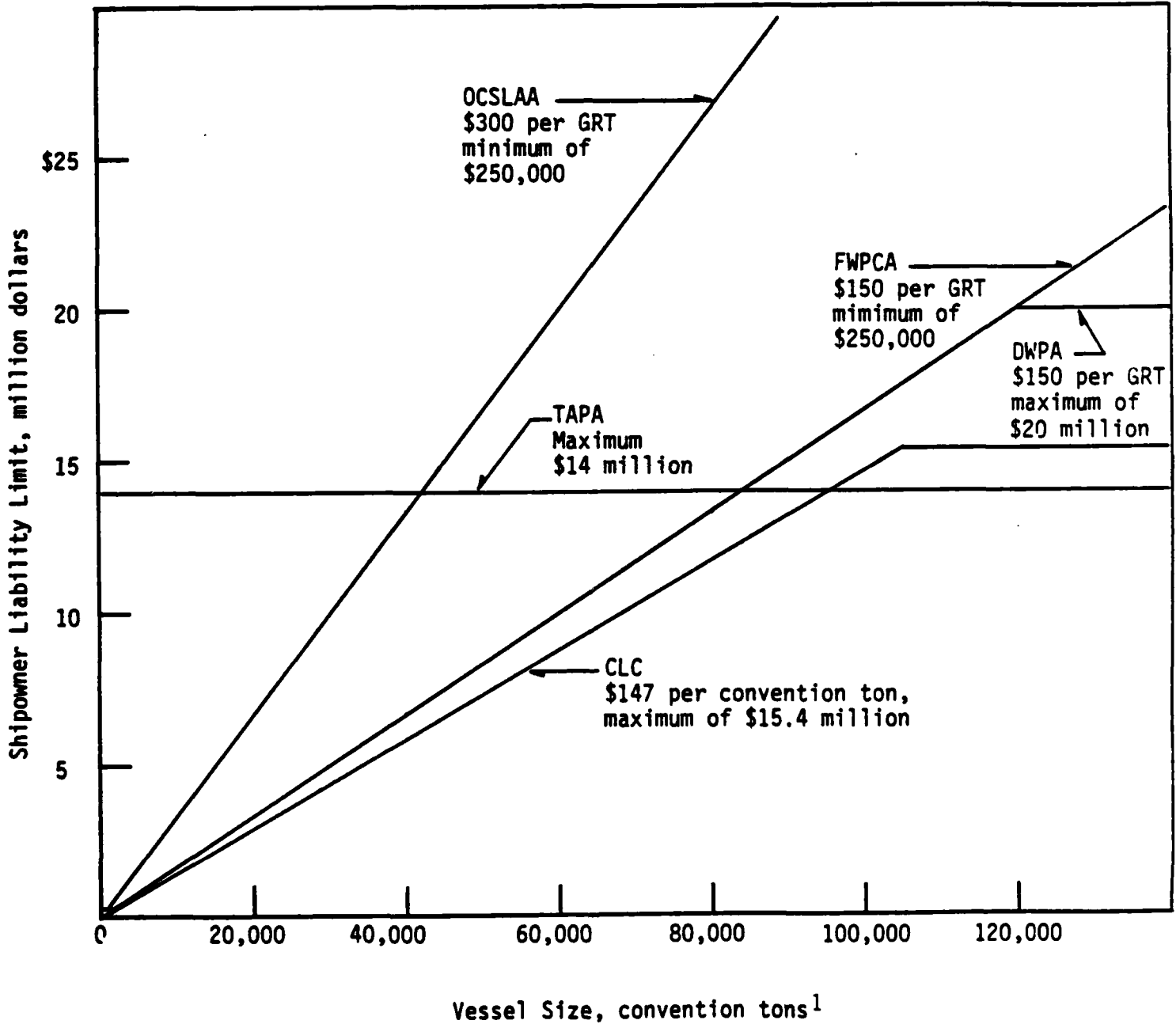
- ADOPTION OF CLC/FUND WOULD REPLACE PORTIONS OF SEVERAL EXISTING STATUTES, BUT WOULD NOT RESOLVE THE MANY CURRENT INCONSISTENCIES FOR OTHER TYPES OF SPILLS

Exhibit 4

MAJOR RELEVANT U.S. LEGISLATION

<u>Acronym</u>	<u>Title/Purpose</u>
LLA	Limitation of Liability Act of 1851--Shipowner's liability limited to value of vessel and pending freight after an accident.
FWPCA	Federal Water Pollution Control Act Amendments of 1972--Governs spiller's liability and government recovery of cleanup costs associated with oil spills; creates a fund for government cleanup.
TAPA	Trans-Alaska Pipeline Authorization Act of 1973--Governs liability and creates a fund for cleanup and damages related to oil transport from Alaska to U.S. ports.
DMPA	Deepwater Port Act of 1974--Governs liability and creates a fund for cleanup and damages related to operations at deepwater oil facilities.
OSCLA	Outer Continental Shelf Lands Act Amendments of 1978--Establishes oil spill liability and a compensation fund dealing with production and transportation of offshore oil.

COMPARISON OF SHIPOWNER LIABILITY LIMITS:
FEDERAL STATUTES vs CLC



¹/ U.S. regimes stated on gross register ton (GRT) basis are converted to convention ton basis, assuming convention tonnage equals 90 percent of GRT.

III. METHOD OF ANALYSIS

- COMPLEX BENEFITS AND COSTS MEASURED AGAINST SEVEN KEY OBJECTIVES
- OIL MOVEMENT, OIL SPILL, AND TRANSPORTATION COST DATABASES CREATED TO QUANTIFY IMPACT
- HINDCASTING, BASED ON 1970-1980 SPILL EXPERIENCE, ADOPTED AS BASIC APPROACH
- CASE STUDIES UTILIZED TO IDENTIFY KEY REGIME CHARACTERISTICS IN PRACTICE

CRITERIA FOR MEASUREMENT OF KEY OBJECTIVES

- NET MONETARY COST - DIFFERENCE BETWEEN LIKELY U.S. CONTRIBUTIONS TO FUND AND LIKELY COMPENSATION FOR SPILLS IN U.S. WATERS. (CLC PRESENTS NO MONETARY DIFFERENCE TO TOVALOP AT PRESENT.)
- ADEQUACY OF COVERAGE - LIKELIHOOD THAT CLEANUP COSTS AND THIRD-PARTY DAMAGES WILL BE FULLY COVERED BY ONE OR A COMBINATION OF LIABILITY/COMPENSATION REGIMES.
- SPEED AND CERTAINTY OF PAYMENT - ELAPSED TIME REQUIRED TO RECOVER COSTS AND DAMAGES, AND CERTAINTY OF RECOVERY.
- PREDICTABILITY AND CONSISTENCY - PROVISION OF A PREDICTABLE BASIS FOR OIL COMPANIES AND SHIPOWNERS TO ASSESS FUTURE COSTS OF INSURANCE PAYMENTS AND CONTRIBUTIONS.
- INTERNATIONAL INFLUENCE - EFFECT ON U.S. INFLUENCE DURING 1984 CLC/FUND DIPLOMATIC CONFERENCE, U.S. ROLE IN OTHER IMO LEGAL COMMITTEE MATTERS, AND GOOD-WILL FROM KEY U.S. ALLIES SUCH AS JAPAN, UK, GERMANY, AND FRANCE.
- DOMESTIC REGULATORY SIMPLIFICATION - EXTENT TO WHICH LIABILITY AND COMPENSATION SYSTEM RESOLVES EXISTING INCONSISTENCIES AMONG VOLUNTARY INDUSTRY REGIMES, FEDERAL AND STATE LEGISLATION, AND CASE LAW.
- ALLOCATION OF COST - EXTENT TO WHICH COSTS OF OIL SPILLS ARE BORNE BY OIL CONSUMERS, AND AVOIDANCE OF UNDUE FINANCIAL BURDEN ON ANY SPECIFIC SECTOR.

OIL MOVEMENT DATABASE

- OIL MOVEMENTS QUANTIFIED TO DETERMINE U.S. SHARE OF FUND AND CRISTAL OIL CARGO LEVIES:
 - U.S. RECEIVES ABOUT 444 MILLION TONS PER YEAR OF CONTRIBUTING OIL (1981)
 - U.S. SHARE OF WORLD CONTRIBUTING OIL HAS RANGED FROM 23 PERCENT TO 33 PERCENT OVER PAST 12 YEARS
 - U.S. CONTRIBUTING OIL RECEIPTS AVERAGED 28.4 PERCENT OF CRISTAL OIL RECEIPTS AND 29.6 PERCENT OF FUND OIL RECEIPTS, OVER THE 1970-1980 PERIOD, ASSUMING U.S. ADHERENCE TO FUND IN ADDITION TO PRESENT MEMBERSHIP.
 - FUND PRESENTLY ACCOUNTS FOR ABOUT 65 PERCENT OF WORLD CONTRIBUTING OIL, AND WOULD HAVE 96 PERCENT IF U.S. JOINED

● OIL MOVEMENT PATTERNS EMERGE:

--NORTHERN EUROPE REPRESENTS 41 PERCENT OF FUND CONTRIBUTING OIL; MUCH OF THIS MOVES VIA ENGLISH CHANNEL AND OTHER CONSTRICTED AREAS

--JAPAN ACCOUNTS FOR 31 PERCENT OF FUND CONTRIBUTING OIL

--JAPAN RESEMBLES U.S. IN HAVING A LARGE DOMESTIC SEABORNE MOVEMENT OF OIL PRODUCTS

--DOMESTIC TRANSPORT REPRESENTS 38 PERCENT OF U.S. CONTRIBUTING OIL

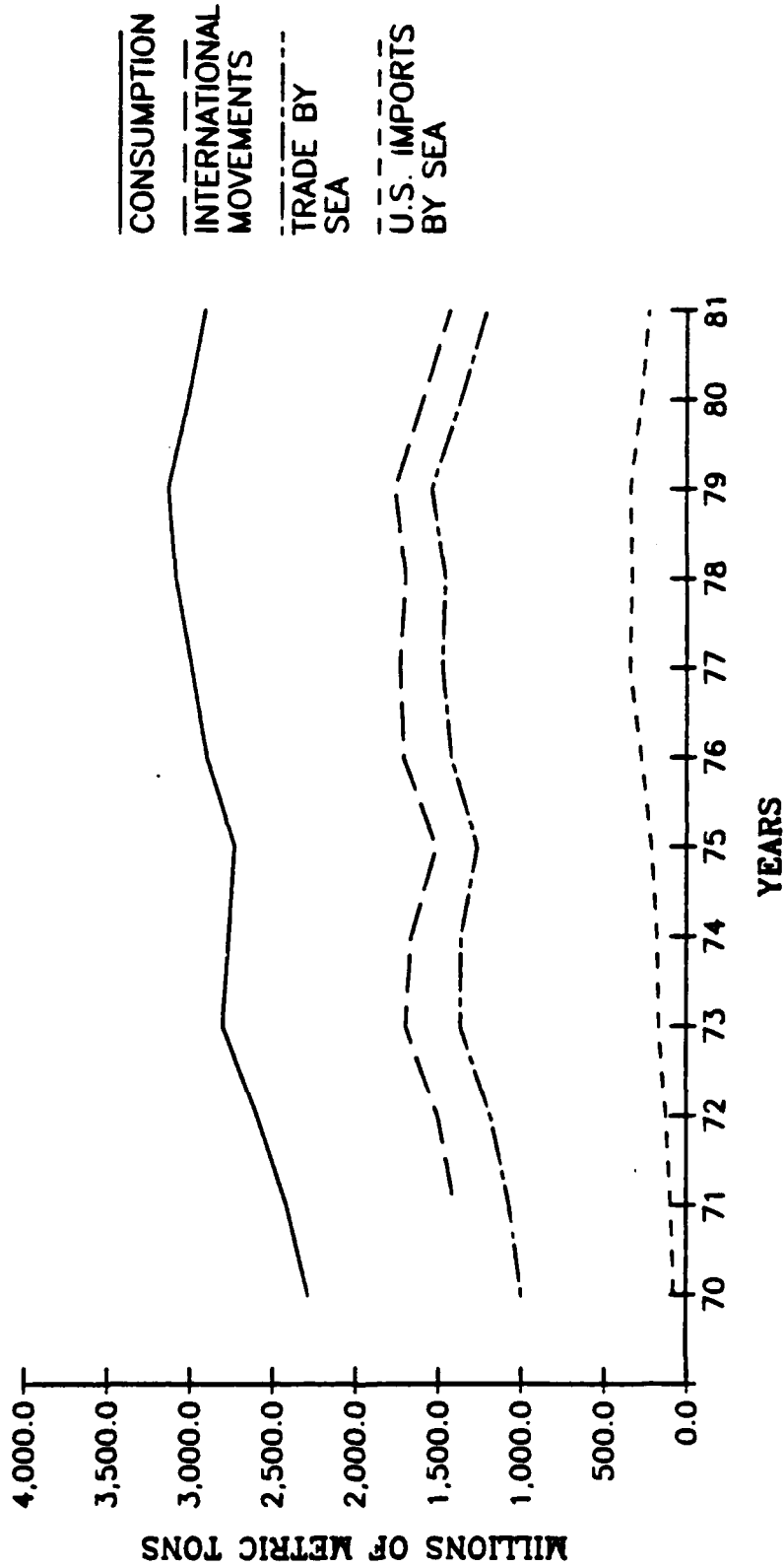
--JAPAN HAS THE LARGEST NUMBER OF SMALL TANKERS (1,283 TANKERS BELOW 4,000 DWT)

--U.S. HAS THE MOST SEAGOING TANK BARGES (721 AVERAGING 4,000 DWT)

EXHIBIT 6

TRENDS IN WORLD CRUDE OIL CONSUMPTION AND TRANSPORTATION

1970-1981



NOTE: EXCLUDES CANADA.

EXHIBIT 7

SUMMARY OF INTERNATIONAL INTERREGIONAL CRUDE OIL
AND PRODUCTS TRADE SEABORNE TRANSPORTATION

1970-1981

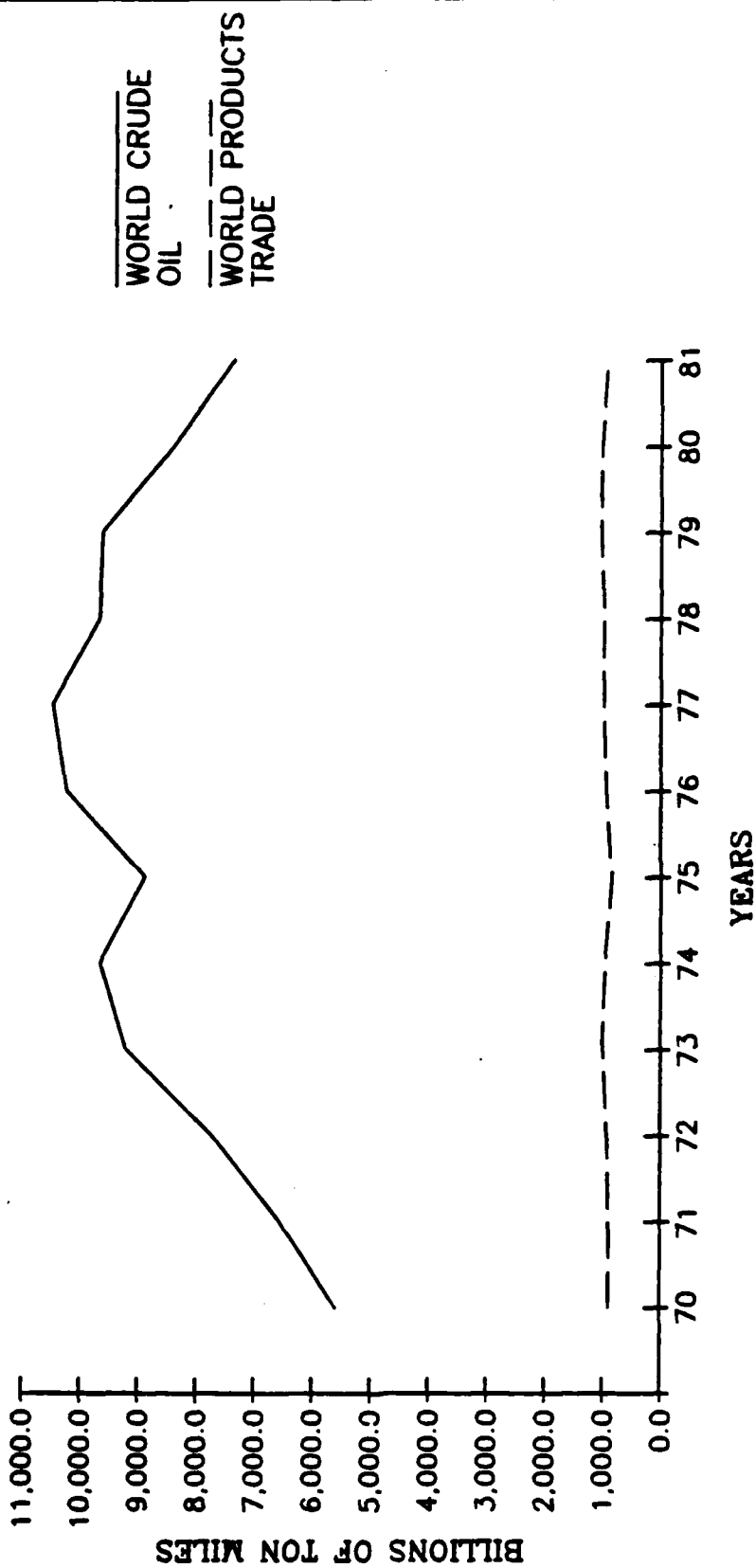


Exhibit 8

COMPOSITION OF U.S. PERSISTENT
OIL TRADES

1970-1981

Millions of
Short Tons

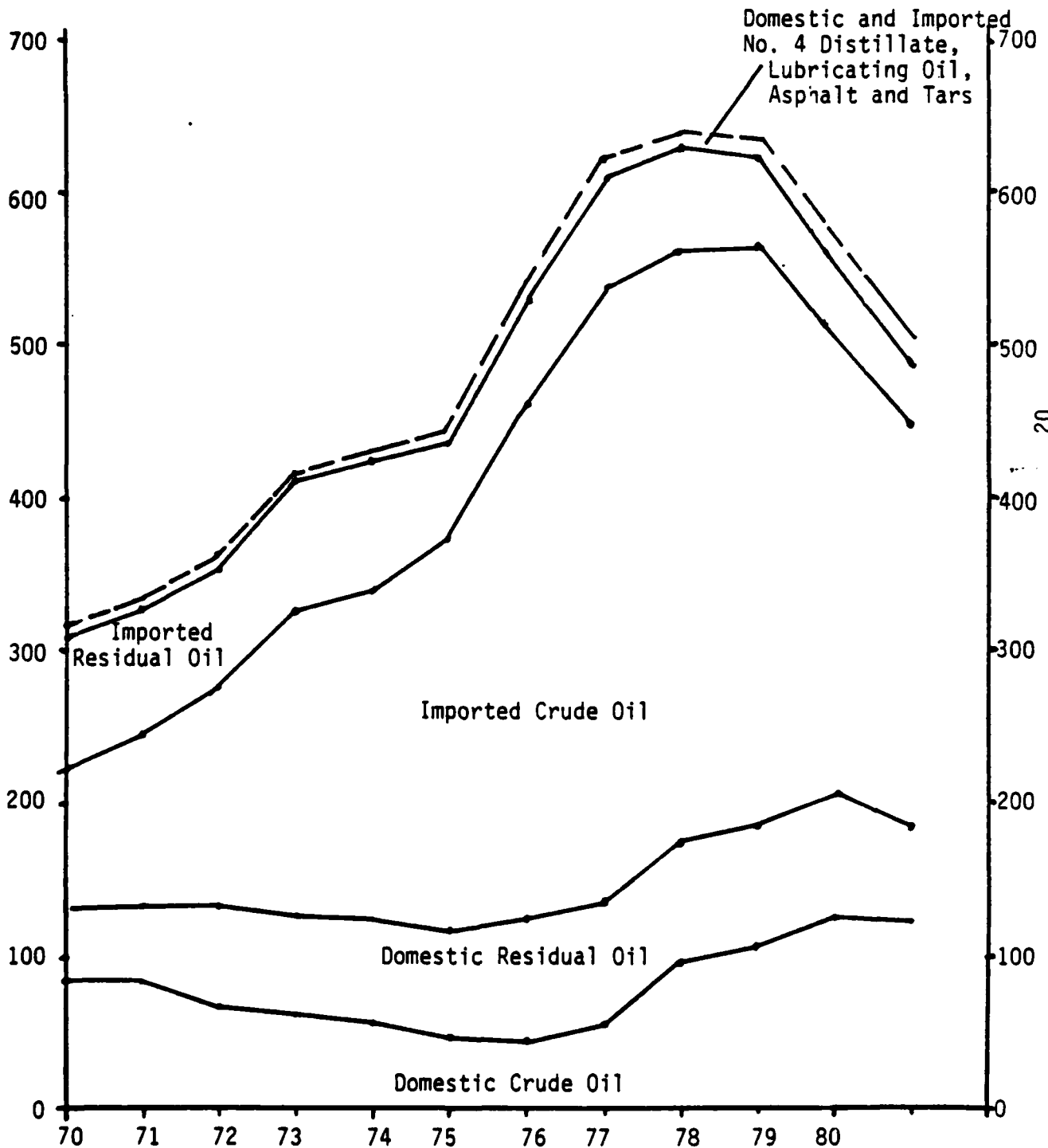


Exhibit 9

SELECTED MAJOR U.S. DOMESTIC PERSISTENT OIL TRADES

Calendar Year 1981

From	To	Metric Tons Per Year	Comment
Crude Oil/Unfinished Oil			
Valdez, Alaska	Pacific Coast	42,786,111	Alaskan crude oil
Valdez, Alaska	Panama Transshipping	27,425,694	
Panama Transshipping	Gulf Coast	19,998,958*	Via Canal (Panama Pipeline in 1983)
Panama Transshipping	Atlantic Coast	3,573,958*	Via Canal (Panama Pipeline in 1983)
Panama Transshipping	Puerto Rico/Virgin Islands	2,382,638*	Via Canal (Panama Pipeline in 1983)
Valdez, Alaska	Hawaii	1,723,611	
Alaska, South Slope	Pacific Coast	4,309,027	
Gulf Coast	Atlantic	734,155	
Delaware Bay	Delaware River	3,993,892	Tankers via Panama
New York Bay	New Jersey Ports	1,353,491	Tanker to barge lightening
Atlantic Coast	Gulf Coast	73,027	Tanker to barge lightening
Valdez, Alaska	U.S. Virgin Islands	6,387,500	Foreign-flag tankers used
Subtotal		88,786,508	
Residual Fuel			
Atlantic Coast	Atlantic Coast	10,734,798 (1980)	
Gulf Coast	Atlantic Coast	9,471,000	
Gulf Coast	Gulf Coast	6,064,268 (1980)	
Pacific Coast	Atlantic Coast	477,000	
Pacific Coast	Pacific Coast	10,221,254 (1980)	
New York Harbor	New York Harbor	17,638,841	
Delaware River	Delaware River	8,672,075	Tanker to barge lightening
Subtotal		63,279,236	Tanker to barge lightening
No. 4 Distillate Fuel Oil			
Gulf Ports	Atlantic Ports	659,000	
Asphalt, Tar Pitch			
Gulf	Gulf	271,103 (1980)	
Atlantic	Atlantic	991,899 (1980)	
Pacific	Pacific	302,031 (1980)	
Gulf	Atlantic	552,000	
Subtotal		2,117,033	
Lubricating Oils			
Gulf	Atlantic	1,303,000	
Gulf	Pacific	319,000	
Atlantic	Gulf	199,000	
Subtotal		1,821,000	

*These are transshipment flows via Panama.

Sources: TBS analysis of DOE/EIA Petroleum Supply Annual data, and U.S. Army Corps of Engineers and Maritime Administration data.

OIL SPILL DATABASE

- OIL SPILL DATABASE SHOWS U.S. HAS BEEN FORTUNATE SO FAR:
 - 146 PERSISTENT OIL SPILLS FROM SEAGOING TANKERS AND BARGES WORLDWIDE OVER 11-YEAR 1970 TO 1980 PERIOD, WHERE SETTLED CLAIMS OR PROVABLE DAMAGES EXCEEDED \$250,000 (SEE FIGURE 10)
 - THESE SPILLS ACCOUNTED FOR APPROXIMATELY 77 PERCENT OF P&I CLUB COMPENSATION PAID OR ESTIMATED OUTSTANDING FOR TOVALOP AND CLC INCIDENTS
 - APPROXIMATELY 15,250 SPILLS OVER SAME TIME PERIOD BELOW \$250,000
 - OF 146 SPILLS, 27 PERCENT WERE IN U.S. WATERS, 18 PERCENT IN JAPAN, AND 29 PERCENT IN NORTHERN EUROPE. ABOUT 20 MAJOR SPILLS WORLDWIDE IN RECENT YEARS (SEE FIGURE 12).
 - OF DOLLAR CLAIMS AMOUNT (IN CONSTANT 1982 DOLLARS), 16 PERCENT WERE IN U.S. WATERS, 7 PERCENT IN JAPAN, AND 62 PERCENT IN NORTHERN EUROPE. WORLDWIDE CLAIMS AMOUNT FLUCTUATES WIDELY FROM YEAR TO YEAR (SEE FIGURE 13)
 - FIVE SPILLS IN 11 YEARS HAVE COST OVER \$20 MILLION; NONE WERE IN U.S.
 - HIGHEST COST U.S. SPILL WAS \$16.7 MILLION IN 1982 DOLLARS (SEE FIGURE 11)
 - ALTHOUGH U.S. SHARE OF WORLDWIDE CLAIMS AMOUNT IS FAIRLY HIGH, AVERAGE COST OF U.S. SPILL IS RELATIVELY LOW (FIGURES 14 AND 15)
 - NO STATISTICALLY VALID RELATIONSHIP FOUND BETWEEN CLAIMS AMOUNT AND VARIOUS PARAMETERS SUCH AS VESSEL SIZE, SPILL SIZE, ETC.
 - HINDCASTING APPROACH THEREFORE ADOPTED: FUTURE BASED ON PAST EXPERIENCE

Figure 10

CLAIMS PAID OR ESTIMATED PROVABLE DAMAGES VERSUS VESSEL SIZE

•\$180MM

•\$72MM

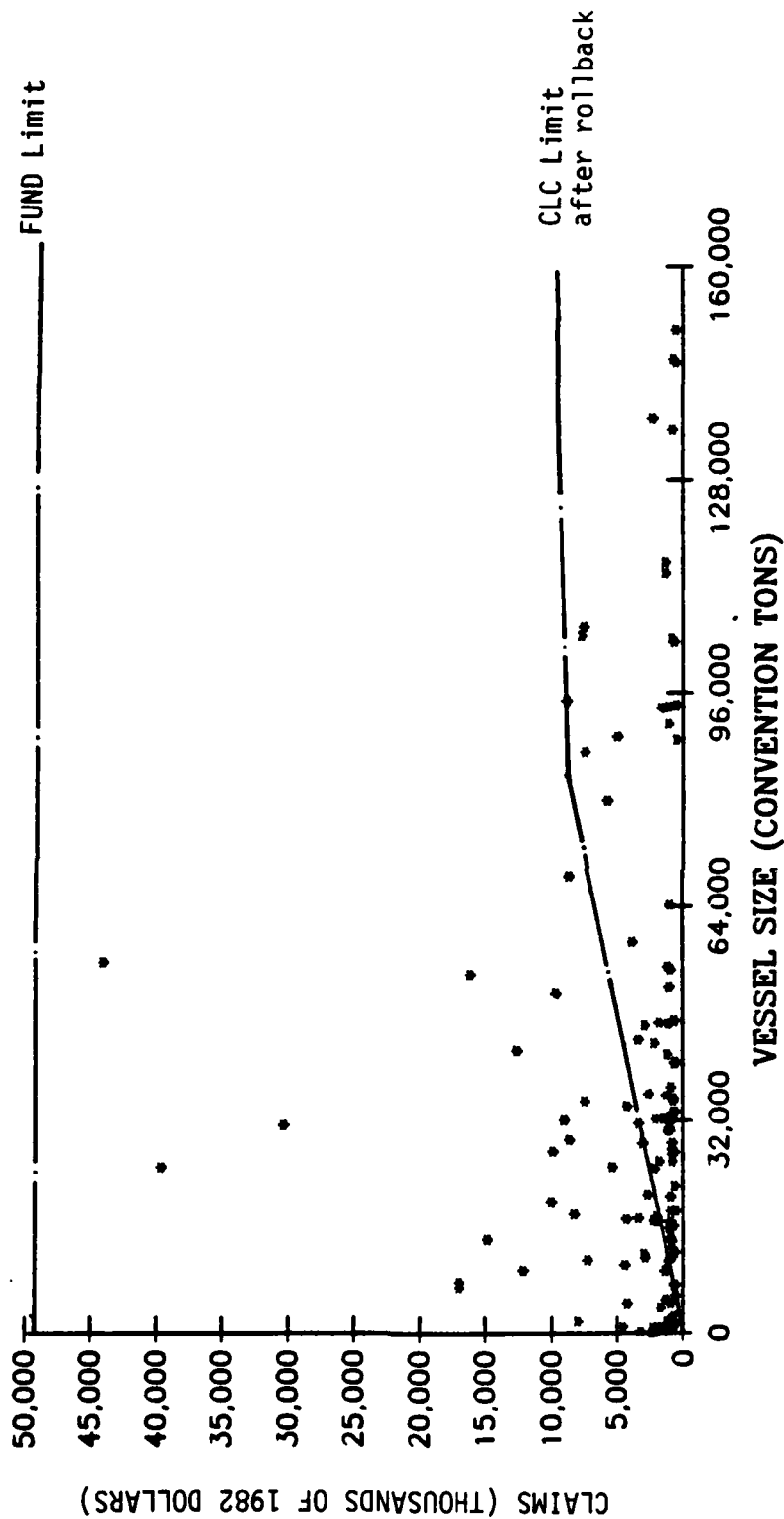


Figure 11

CLAIMS PAID OR ESTIMATED PROVABLE DAMAGES VERSUS VESSEL SIZE U.S.

•\$16.7MM

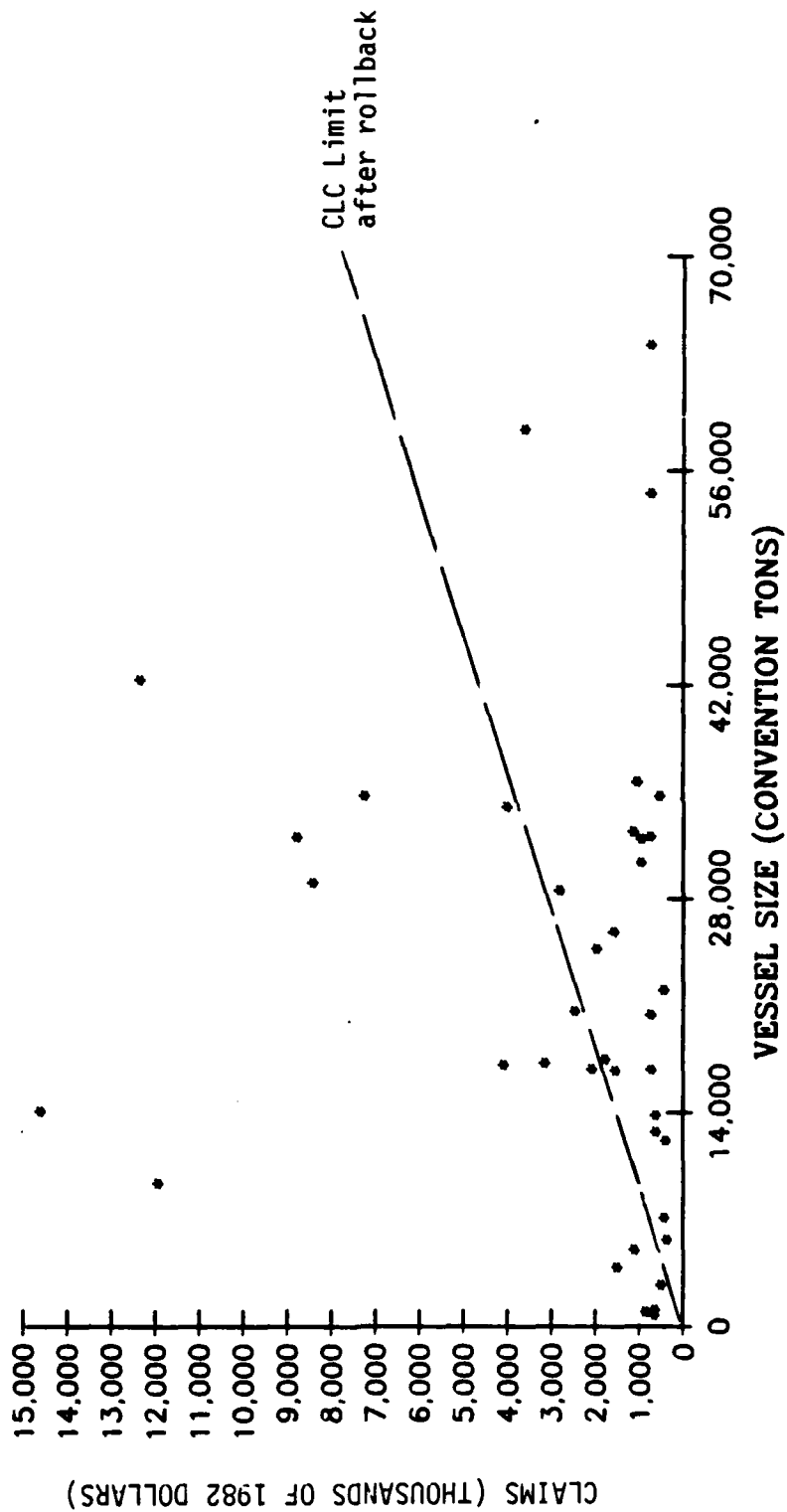
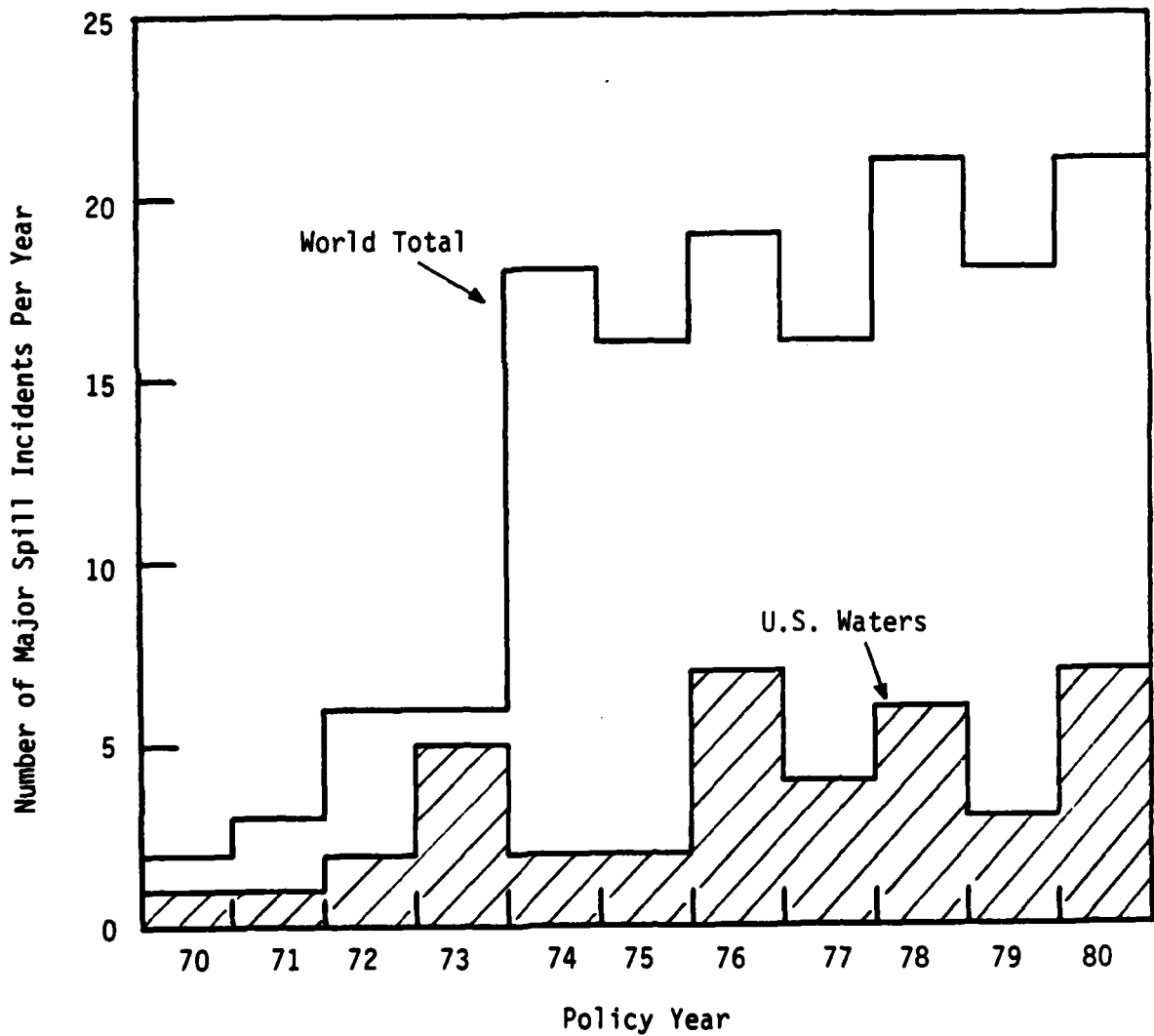


Figure 12

MAJOR SPILL INCIDENTS BY
YEAR, 1970-1980

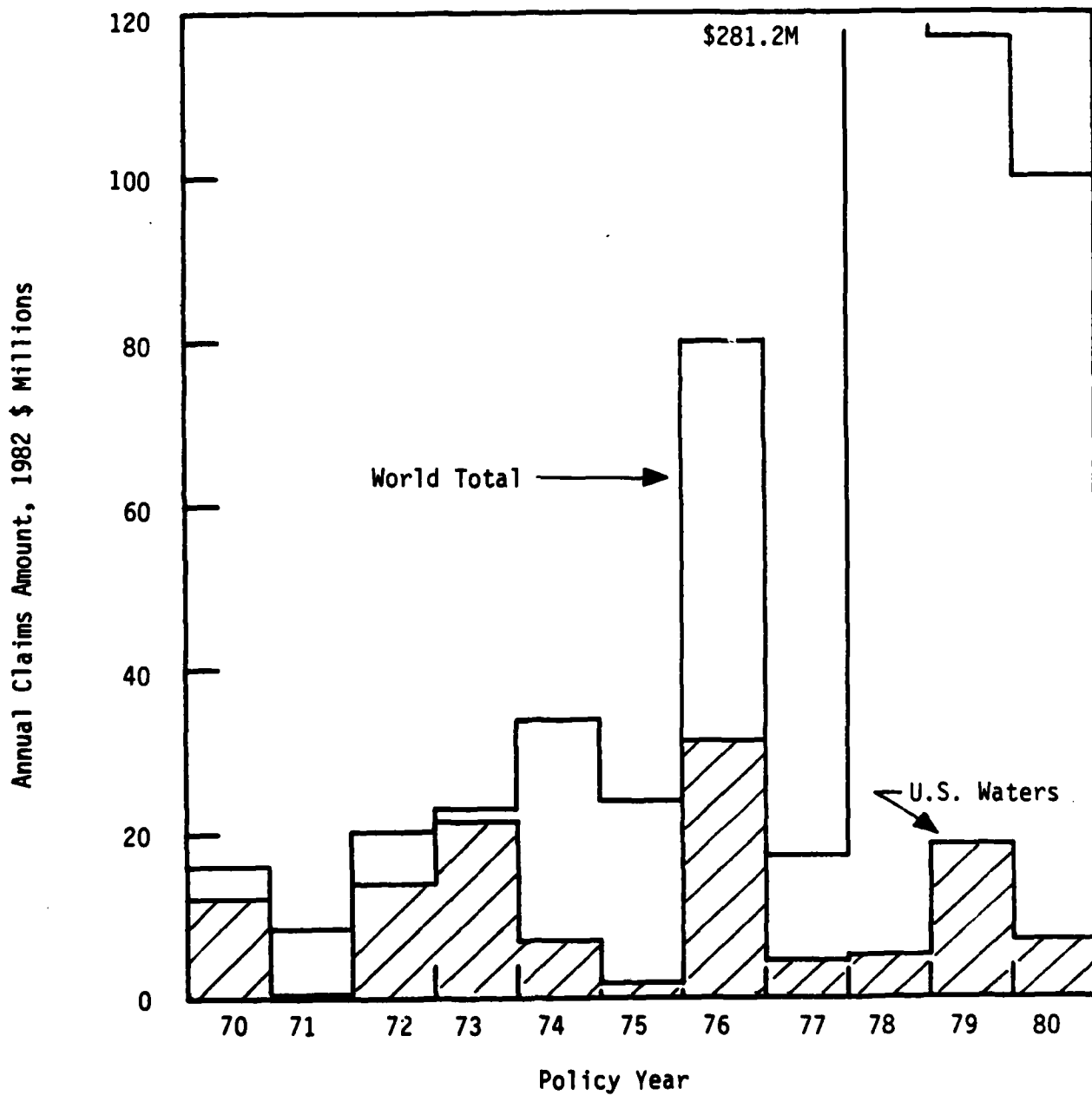


Note: Policy year ends on February 20th of following year.

Source: TBS analysis.

Figure 13

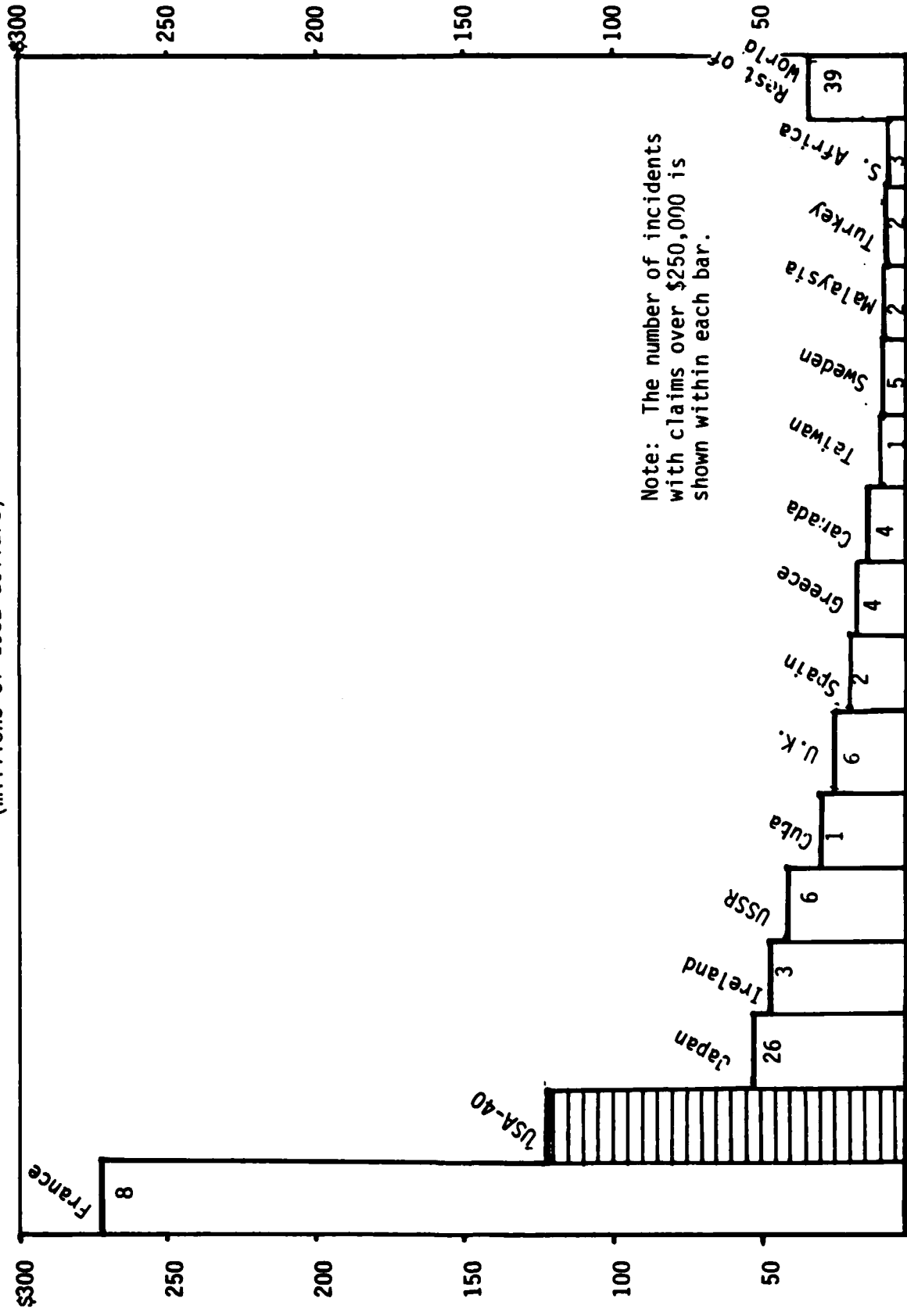
MAJOR SPILL CLAIMS AMOUNTS
BY YEAR, 1970-1980



Note: Policy year ends February 20th of following year.

Source: TBS Analysis.

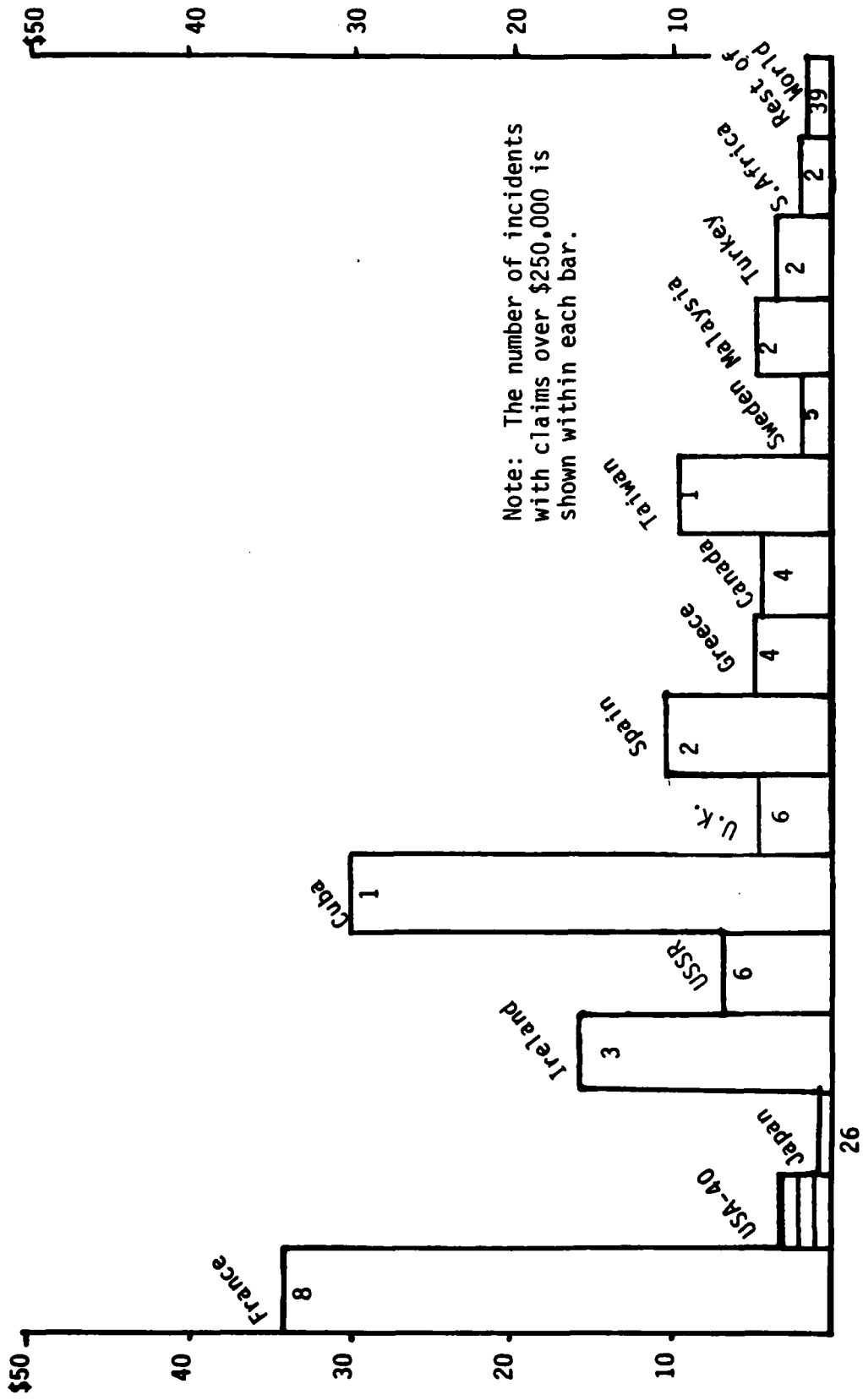
TOTAL CLAIMS AMOUNT, BY COUNTRY OF SPILL,
 FOR MAJOR OIL POLLUTION INCIDENTS DURING 1970 TO 1980 PERIOD
 (millions of 1982 dollars)



Note: The number of incidents with claims over \$250,000 is shown within each bar.

Figure 15

AVERAGE CLAIM AMOUNT PER INCIDENT, BY COUNTRY,
 FOR MAJOR OIL POLLUTION INCIDENTS DURING 1970 TO 1980 PERIOD
 (millions of 1982 dollars)



Note: The number of incidents with claims over \$250,000 is shown within each bar.

TRANSPORT COST DATABASE

- OIL TRANSPORT COST DATA ESTABLISH THAT:
 - TOTAL P&I INSURANCE PREMIUMS AGAINST ALL LIABILITIES REPRESENT ABOUT ONE TO TWO PERCENT OF TANKER AND TANK TUG-BARGE UNIT OPERATING COSTS
 - ALTHOUGH INSURANCE COSTS PER GRT ARE OFTEN HIGHER FOR SMALL VESSELS, THEY ALSO HAVE A HIGH EXPOSURE, CARRYING A LARGE ANNUAL VOLUME OF OIL ON NUMEROUS SHORT VOYAGES CLOSE TO LAND
 - OIL COMPANY PAYMENTS TO FUND AND CRISTAL REPRESENT ONLY ABOUT 0.1 PERCENT OF DELIVERED VALUE OF OIL
 - ANY INCREASE IN POLLUTION INSURANCE COSTS WOULD BE FULLY PASSED ON TO OIL RECEIVERS AND OIL CONSUMERS, EVEN IN PRESENT DEPRESSED MARKET
 - EXAMPLE: RECENT HIGHER PANAMA CANAL COSTS WERE IMMEDIATELY REFLECTED IN HIGHER CHARTER RATES
 - EXAMPLE: WORLDSCALE IS REVISED ANNUALLY TO REFLECT AVERAGE OPERATING COSTS OF TANKERS; SPOT CHARTER RATES ARE FIXED WITH REFERENCE TO WORLDSCALE
 - EXAMPLE: HIGHER POLLUTION INSURANCE COSTS, UNLIKE SPECIAL ANTI-POLLUTION FEATURES ADDED TO A VESSEL, WOULD IMMEDIATELY APPLY TO VIRTUALLY ALL TANKERS IN WORLD FLEET
 - U.S. OIL TERMINALS, WHICH WOULD MAKE PAYMENTS UNDER FUND, ARE MAINLY OWNED BY OIL MAJORS, INDEPENDENTS OR PUBLIC UTILITIES, ALL OF WHICH WOULD PASS COSTS ON TO OIL CONSUMERS

Exhibit 16

SUMMARY OF INTERNATIONAL TANKER REVENUES AND COSTS

(millions of dollars)

Deadweight	Total Cost	Operating Cost	Total P&I Premium Cost	Total P&I Cost as % of Operating Cost
7,500	\$2.143	\$1.837	\$0.033	1.8
20,000	5.565	4.400	0.061	1.4
37,500	9.185	6.380	0.072	1.1
60,000	9.556	6.734	0.081	1.2
90,000	9.177	7.342	0.085	1.2
120,000	10.550	8.210	0.094	1.1
265,000	18.676	14.416	0.124	0.9

Source: TBS analysis.

CASE STUDIES

CASE STUDIES REVEALED KEY CHARACTERISTICS IN PRACTICE:

- FUND AND CRISTAL HAVE BEEN CALLED UPON INFREQUENTLY--AVERAGE OF 6 CASES PER YEAR FOR FUND, 3 FOR CRISTAL
- FUND ADMINISTRATIVE COSTS ARE VERY LOW (\$370,000 BUDGET)
- FUND PAYS COMPENSATION MUCH MORE PROMPTLY THAN CRISTAL (EIGHT-MONTH AVERAGE VERSUS 29 MONTHS)
- P&I CLUBS GENERALLY SETTLE THIRD-PARTY DAMAGE CLAIMS PROMPTLY, WHETHER UNDER TOVALOP OR CLC
- LITIGATION AND DELAYS IN SETTLEMENT IN THE U.S. ARE OFTEN RELATED TO RECOVERY OF GOVERNMENT CLEANUP COSTS OR ATTEMPTS TO DENY SHIPOWNER'S LIMITATION
- LENGTHY DELAYS HAVE ALSO ARISEN IN FOREIGN COUNTRIES WHICH ARE NOT CLC MEMBERS AND HAVE NO DOMESTIC LEGISLATION LIMITING SHIPOWNER'S LIABILITY
- LEGAL COSTS CAN BE VERY HIGH--ABOUT \$40 MILLION SO FAR IN AMOCO CADIZ CASE

IV. RESULTS OF ANALYSIS

BENEFITS OF ADOPTION OF CLC AND FUND OUTWEIGH COSTS:

- COVERAGE GREATLY IMPROVED OVER PRESENT U.S. SITUATION. THIRD-PARTY DAMAGES BETTER COVERED THAN UNDER LLA, CLEANUP COSTS BETTER COVERED THAN UNDER FWPCA, FOR TYPES OF INCIDENTS INCLUDED IN REGIME. LIMITS NOT SUFFICIENT FOR "CATASTROPHIC" SPILL, BUT THREE TIMES AS HIGH AS COSTLIEST U.S. SPILL TO DATE.
- SPEED AND CERTAINTY OF SETTLEMENT GREATLY IMPROVED. FUND AVERAGES EIGHT MONTHS TO SETTLEMENT, VERSUS 29 MONTHS FOR CRISTAL. CERTAINTY OF RECOVERY ENHANCED DUE TO LIMITATION FUND ESTABLISHED BY SHIPOWNER.
- PREDICTABILITY AND CONSISTENCY IMPROVED. CLC AND FUND PROVIDE PREDICTABLE LIMITS AND COSTS FOR SHIPOWNERS AND OIL COMPANIES. THEY OFFER INTERNATIONALLY ACCEPTED NORMS APPROPRIATE TO INTERNATIONAL SHIPPING OPERATIONS.
- U.S. INFLUENCE IN INTERNATIONAL MARITIME FORUMS ENHANCED. ADHERENCE TO BOTH CLC AND FUND PRIOR TO 1984 DIPLOMATIC CONFERENCE WOULD ALLOW U.S. MAJOR ROLE IN REVISION PROCESS. ADHERENCE WOULD STRENGTHEN U.S. POSITION IN OTHER IMO LEGAL COMMITTEE DELIBERATIONS. ADHERENCE WOULD SUPPORT JAPAN WHILE ADVANCING U.S. INTERESTS.

- ADHERENCE WOULD SIMPLIFY U.S. LAWS REGARDING LADEN, SEAGOING VESSELS CARRYING PERSISTENT OIL BY REPLACING PORTIONS OF FWPCA, TAPA, DWPA, AND OCSLAA. WOULD NOT REMOVE INCONSISTENCIES OR RESOLVE FEDERAL-STATE PREEMPTION ISSUE FOR OTHER TYPES OF SPILL CASES.
- NET MONETARY COST OF ADHERING TO CLC/FUND IS MINOR: BASED ON 1970 TO 1980 EXPERIENCE, ABOUT \$3.1 MILLION PER YEAR. THIS IS DEFINED AS EXCESS OF U.S. OIL RECEIVER CONTRIBUTIONS TO FUND AND CRISTAL OVER ANTICIPATED U.S. SPILL COMPENSATION FROM FUND, BASED ON 1970-1980 SPILL EXPERIENCE. TO EXTENT U.S. ADHERENCE TO CLC AND FUND HASTENS DISBANDING OF CRISTAL, NET U.S. COSTS WOULD BE ONLY ABOUT \$0.2 MILLION PER YEAR.
- UNDER CLC AND FUND, COSTS OF OIL SPILLS ARE CORRECTLY ALLOCATED TO OIL USERS. FIRST LAYER OF LIABILITY BECOMES OPERATING COST OF SHIPOWNER, AND ADDITIONAL COSTS ARE DIRECTLY BORNE BY CARGO INTERESTS. IF U.S. ADOPTS CLC AND FUND, AND CRISTAL REMAINS IN EFFECT, COST TO U.S. OIL RECEIVERS WOULD GO UP BY ABOUT \$4.7 MILLION PER YEAR VERSUS CURRENT SITUATION UNDER CRISTAL. ALL COSTS WOULD BE PASSED THROUGH TO OIL PRODUCT CONSUMERS. WOULD REDUCE DRAIN ON U.S. TREASURY UNDER FWPCA 311(K) FUND CAUSED BY UNRECOVERED COSTS OF SEAGOING TANKER SPILLS. ADDITIONAL COST TO OIL CONSUMERS IS NEGLIGIBLE--ABOUT TWO-TENTHS OF A CENT PER BARREL.

NET MONETARY COST IS SMALL AND DEPENDS ON FUTURE DEVELOPMENTS (EXHIBITS 17 AND 18)

- INITIAL COST OF JOINING FUND IS ABOUT \$1.5 MILLION BASED ON 1981 OIL RECEIPTS.
- JOINING CLC AND FUND, WITH CURRENT LIMITS AND MEMBERSHIP, WOULD RESULT IN A NET MONETARY COST TO THE U.S. OF \$3.1 MILLION PER YEAR.
- IF CRISTAL DISBANDS, JOINING CLC/FUND WOULD HAVE A NET COST TO U.S. OF ONLY \$0.2 MILLION PER YEAR.
- IF ALL NATIONS JOINED FUND, U.S. COSTS WOULD BECOME \$3.3 MILLION PER YEAR.
- IF THE U.S. WERE TO INCUR TWO CATASTROPHIC SPILLS (TOTAL CLAIMS OF \$300 MILLION) IN ADDITION TO THE ACTUAL 1970-1980 SPILL EXPERIENCE OVER THE NEXT 11 YEARS, CLC/FUND MEMBERSHIP WOULD RESULT IN A NET BENEFIT OF \$2.4 MILLION PER YEAR.
- IF COSTS WERE TO BE 50 PERCENT HIGHER, IN REAL TERMS, THAN DURING 1970-1980, NET U.S. COST WOULD BE \$2.1 MILLION PER YEAR.
- IF THE U.S. DOLLAR WERE TO WEAKEN BY 25 PERCENT WITH RESPECT TO THE SDR, U.S. CONTRIBUTIONS AND EXPECTED COMPENSATION WOULD INCREASE IN DOLLAR TERMS, RESULTING IN A NET ANNUAL COST OF \$5.1 MILLION.
- HIGHER LIMITS FOR CLC AND FUND WOULD RAISE NET U.S. MONETARY COST. IN THE HIGHEST-COST ALTERNATIVE CONSIDERED, NET U.S. COST WOULD BE THREE TIMES THE AMOUNT WITH PRESENT LIMITS, BUT STILL ONLY \$8.0 MILLION.

Exhibit 17

NET MONETARY COST AND ALLOCATION UNDER VARIOUS ALTERNATIVES

Projected Experience Based on 1970-1980 Data

(millions of 1982 dollars)

Alternative	Present Situation	(1) U.S. Retirées CLC & FUND	(2) U.S. Retirées CLC Only	(1) and CRISTAL Disbands	(1) and Whole World Joint FUND	(1) with Two Major U.S. Spills	(1) and Costs Increase 50%	(1) and Dollar Weakens 25%
Net U.S. Cost, \$/year	1,200,000 Benefit	3,100,000 Cost	1,300,000 Benefit	200,000 Cost	3,300,000 Cost	2,400,000 Benefit	2,100,000 Cost	5,100,000 Cost
Gross Contribution by U.S. OII receivers, cents per barrel	0.15	0.30	0.15	0.20	0.30	0.37	0.42	0.34
U.S. Spill Cost Allocation								
Shipowner	49%	45%	47%	45%	45%	16%	52%	50%
OII Company	51%	55%	53%	55%	55%	36%	48%	50%
Uncompensated	0%	0%	0%	0%	0%	48%	0%	0%
Total FUND Members Spill Cost Allocation								
Shipowner	20%	25%	26%	25%	29%	18%	20%	26%
OII Company	41%	45%	44%	45%	50%	39%	64%	43%
Uncompensated	39%	30%	30%	30%	21%	43%	36%	31%

Source: TBS analysis of 1970-1980 spill database.

Exhibit 18

NET MONETARY COST AND ALLOCATION OF COSTS
FOR REVISED CLC/FUND REGIMES

Projected Experience Based on 1970-1980 Data

(millions of 1982 dollars)

Alternative	CLC and FUND Current Limits	Low Increase	Modest Increase	Medium Increase	High Increase	Flat Tranche
Shipowner minimum, CLC	0	1	5	5	10	50
Shipowner maximum, CLC	15.4/9.2	20	20	35	50	50
FUND maximum	49.6	75	100	200	300	300
Rate per conv. ton, CLC	147/110	250	400	600	1,250	flat tranche
Ship size at CLC, max, conv. tons	83,636	80,000	50,000	58,300	40,000	0
Net cost to U.S. per year	3.1	5.0	6.0	7.7	8.0	7.2
Gross Contribution by U.S. Oil Receivers, cents per barrel	0.30	0.27	0.27	0.32	0.28	0.23
U.S. spill cost allocation, %						
Shipowner	45	68	78	80	94	100
Oil company	55	32	22	20	6	0
Uncompensated	0	0	0	0	0	0
Total FUND members spill cost allocation, %						
Shipowner	25	40	45	51	60	71
Oil company	45	40	39	49	40	29
Uncompensated	30	20	16	0	0	0

Source: TBS analysis of 1970-1980 spill database.

IT MAKES SENSE TO RATIFY BOTH CONVENTIONS AS SOON AS POSSIBLE

- UNDER EXISTING LEGISLATION (FWPCA), U.S. GOVERNMENT HAS PAID \$91 MILLION OVER THE 1971-1983 PERIOD FOR SPILL CLEANUP (LAND AND WATER) FROM CONGRESSIONAL APPROPRIATIONS. A PORTION OF THIS BURDEN WOULD BE ELIMINATED, IN THE CASE OF LADEN SEAGOING TANK VESSELS, ONCE CLC AND FUND ADOPTED. SHIPOWNERS, OIL COMPANIES, AND OIL CONSUMERS WOULD PAY RATHER THAN TAXPAYERS.
- PER BARREL COST OF ADHERING TO CLC AND FUND--ONE-SEVENTH OF A CENT PER BARREL-- IS EXTREMELY SMALL COMPARED TO THE 2 TO 5 CENTS PER BARREL FEES ESTABLISHED UNDER TAPA, OCSLAA, AND DWPA AND IN RELATION TO PROPOSED NEW FEDERAL TAXES OF AS MUCH AS \$5.00 PER BARREL.
- COST AND TIME INVOLVED IN LITIGATION WOULD BE REDUCED UNDER CLC/FUND. THOUGH NOT QUANTIFIABLE, THIS IS AN ACTUAL COST THAT IS SIGNIFICANT.
- CLC AND FUND COVER THAT PORTION OF AN OVERALL POLLUTION LIABILITY AND COMPENSATION REGIME WHERE INTERNATIONAL COOPERATION AND CONSISTENCY ARE MOST ESSENTIAL-- POLLUTION FROM SEAGOING TANK VESSELS' CARGO.
- PRESENT CLC/FUND COVERAGE WOULD REPRESENT SUBSTANTIAL IMPROVEMENT OVER EXISTING U.S. SITUATION. IF CRISTAL CEASES TO EXIST OR IN CASES OF NON-CRISTAL CARGOES, U.S. COVERAGE IS GROSSLY INADEQUATE. CLC/FUND WOULD PROVIDE FULL COVERAGE FOR U.S. SPILLS AS EXPERIENCED DURING 1970 TO 1980. IN EVENT OF TWO CATASTROPHIC SPILLS IN U.S. WATERS OVER 11 YEARS, CLC AND FUND WOULD COVER ONE-THIRD OF THE COSTS AT PRESENT LIMITS, AND U.S. COMPENSATION FROM FUND WOULD EXCEED CONTRIBUTIONS OVER THE PERIOD.
- QUITE POSSIBLE THAT U.S. INFLUENCE DURING 1984 DIPLOMATIC CONFERENCE, IF WE HAVE ALREADY RATIFIED CLC AND FUND, WOULD LEAD TO SUBSTANTIAL LIMIT INCREASES AND OTHER REVISIONS THAT WOULD IMPROVE COVERAGE.

- ADOPTING ONLY CLC DOES NOT PROVIDE THE COVERAGE AVAILABLE WITH FUND. SUCH A STEP WOULD BE COUNTER-PRODUCTIVE AS IT WOULD INDICATE LACK OF U.S. INTEREST IN FUND.
- LIKELIHOOD OF OBTAINING CLC/FUND REVISIONS SOUGHT BY U.S. AT 1984 CONFERENCE IS CRITICALLY DEPENDENT UPON RATIFICATION PRIOR TO CONFERENCE. A "WAIT AND SEE" APPROACH BY U.S. MIGHT CAUSE JAPAN TO REFUSE TO GO ALONG WITH HIGHER LIMITS, AS MAIN CONTRIBUTOR. ESSENTIAL TO RATIFY QUICKLY AND PARTICIPATE FROM POSITION OF STRENGTH IN 1984.

