VIRGIN ISLANDS TRADE

Current Activities and Trends

All trade with the U.S. Virgin Islands is exempt from cabotage laws until declared otherwise by Presidential proclamation (46 app. U.S.C. 877).[1] This has led a number of ship operators and others to employ foreign-flag vessels in trades there when it made economic sense

For example, about 8 percent of Alaskan North Slope crude oil is transported in noncoast-wise-qualified (foreign-flag) vessels to the Virgin Islands where it is refined and then the refined products are shipped onward to the U.S. mainland. An oil refinery on St. Croix receives crude oil shipments from both Alaska and overseas and produces oil products mainly for shipment to the U.S. east coast. As the Jones Act has been interpreted, both legs of the Alaska to Virgin Islands to U.S. east coast voyage are exempt from cabotage and maybe accomplished with foreign-flag vessels because crude oil is considered to be manufactured or processed into a new and different product in the Virgin Islands.[2] If the coast-wise laws were changed and made applicable to the Virgin Islands, then both legs of this voyage would have to be in coast-wise-qualified vessels.

Because of the above possible effect on the petroleum trade in the Virgin Islands and because a number of other trades would be affected by changes in cabotage policies in this instance, OTA investigated some of the costs and benefits of such changes.

In addition to the petroleum trade, two other trades are a significant factor in the Virgin Islands—general cargo (mostly imports), and cruise (and passenger) shipping. The economy of the Virgin Islands is closely tied to these maritime activities. The major industry there is tourism and a large portion of tourists (about two-thirds in 1987) arrive via cruise ships. In addition, a whole range of general cargo and consumer goods must be brought to the Virgin Islands to support other sectors of the economy. Also, inter-island passenger movements are recently being served more and more by a fleet of high-speed ferries.[3]

As noted above, the Virgin Islands economy has benefited from having its maritime sector exempt from cabotage laws. The exemption allows the inter-island ferries to be foreign-built. It allows foreign-flag cargo ships to carry consumer goods from the U.S. mainland. And, it was a major factor in the decision by Hess Oil to build a large oil refinery there.[4]

Table 2 illustrates the current situation regarding the three major maritime trades. For the general cargo trade, it can be seen that part is shipped via Puerto Rico (where cabotage laws are applied)--usually aboard U.S. flag ships or tug-barge units; part is carried aboard foreign-flag vessels direct with mainland U.S. ports. One foreign-flag operator began offering direct service to the U.S. mainland in 1976 with a fleet of small, shallow-draft, roll-on/roll-off (Ro/Ro) vessels as well as some larger, heavy-lift ships uniquely suited to the Caribbean trade. This operation has grown and is considered highly efficient.

With regard to cruise shipping, all the major cruise ships calling at the Virgin Islands are foreign-flag and the 1.2 million cruise ship passenger arrivals in 1987 and 1988 is almost twice the number of arrivals in 1985. These passengers account for a major portion of the over $600 million in annual visitor expenditures estimated by the Virgin Islands port Authority.

The petroleum trade shown in table 2 is also economically significant for the Virgin Islands. Table 3 shows the past 10-year trends in the refined product portion of this trade and the participation by U.S. and foreign-flag operators. In 1987 the petroleum product trade was about 60 percent of the tonnage shipped in 1977, and U.S.-flag vessels

[1] James B. Fritz, Chief, Carrier Rulings Branch, U.S. Customs Service, Review of Maritime Administration report contained in letter to Peter Johnson, OTA, Nov. 14, 1988.

[2] See *American Maritime Association* v, *Blumenthal*, 592 F. 2d 1156 (DC Cir. 1978), cert. den. 441 U.S. 943 (1979).

[3] "1988 Virgin Islands Port Authority Directory, " Virgin Islands, 1988.

[4] Fritz, Op. cit., fOOmOte 1.

Table 2—Virgin Islands Maritime Trade

Freight (general cargo) services:
● All regular services: fully trailerized/containerized
. Part of service: is transshipped through Puerto Rico to U.S. mainland
—two vessel sailings per week
—three trailer barge sailings per week
. Part of service: direct to ports in Florida
—six weekly sailings by roll-on/roll-off or lift-on/lift-off vessels
. In 1987: 1.1 million tons of general cargo was handled through Virgin Island ports
Passenger services:
● In 1987: 1.2 million cruise ship passenger arrivals (two-thirds of total tourists to Virgin Islands) on 1,300 cruise ship port calls
Petroleum trade:
● Principal trade is crude oil to the Hess Oil Refinery in St. Croix and oil products from it to the U.S. mainland.
. In 1988: Approximately 25 to 30 million barrels of oil were shipped in and out.

SOURCES: 1988 Virgin Islands Port Authority Director; U.S. *Trade With P.R. and* U.S. *Possessions*, Bureau of Census, FT800/May 1988.

carried about 44 percent of the tons shipped. The U.S.-flag participation in this trade has varied between 20 and 50 percent over the past 10 years. The crude oil shipments to the Virgin Islands is currently about 5.7 million tons per year and moves exclusively in large, foreign-flag tankers (21 to 28 voyages per year).

Impacts

If cabotage laws are applied to maritime trade with the Virgin Islands, there will obviously be impacts on both the island's economy and on ship operators either engaged in that trade or suddenly in a position to participate. The data available to OTA are not complete enough to make precise estimates of these impacts but can be used to make general conclusions.

Changes in any of the maritime sectors discussed above would affect the island's economy. Responding to an OTA inquiry, the Executive Director of the Virgin Islands Port Authority said "the loss of said [cabotage] exemption would have a devastatingly negative effect on the economy of the territory-we are totally opposed to such a concept. "[5] Presumably the negative effects could include: increased costs of imported consumer goods, consequent increase in costs of tourist services, reduction in tourist arrivals from cruise ships, increase in cost of other passenger-vessel services, and increased costs of certain major industries such as the Hess Oil Refinery. If these cost increases are substantial, they could affect commercial decisions to locate in the Virgin Islands or to invest in future enterprises.

One U.S.-based ship operator who has benefited from foreign-flag vessels between the U.S. mainland and the Virgin Islands now employs over 250 people in the United States mainland and 110 in the Virgin Islands. This operator uses the Virgin Islands as a base for his network of Caribbean shipping service, which has seen substantial recent growth. Such an operation is a typical example of seafaring jobs apparently lost to foreign competition in exchange for benefits to a domestically owned firm who would usually employ U.S. citizens in most of the management and shore-based positions. This operator believes that he can offer a more efficient service in this way and, at the same time, contribute effectively to what he considers the U.S. maritime industry.[6]

Other firms, also engaged in the same type of trade with the Virgin Islands, take the opposite stand and would advocate changes in cabotage laws to include coverage of the Virgin Islands because they believe it to be in the best interests of the United States. They believe that such a change would put all ship operators serving the Virgin Islands on an equal competitive footing and that resulting economic impacts on the Virgin Islands would be minimal.[7]

A very rough estimate of seagoing jobs involved with two of the Virgin Islands trades-petroleum products and general cargo service-can be made with available data. For the petroleum products trade, the Maritime Administration estimates that existing U.S.-flag operators employ about 1(K) in seafaring jobs and that these firms carry just under one half of the trade.[8] Therefore, if all trade was in U.S.-flag vessels, 100+ new jobs would be created for U.S. seamen. There is also a possibility of

[5] John E. Harding, Executive Director, Virgin Islands Port Authority, letter to Peter Johnson, OTA, Oct. 19, 1988.

[6] Eugene A. Yourch, Executive Secretary, Federation of American Controlled Shipping, to peter Johnson, OTA, Oct. 26, 1988.

[7] Jack M. Park, Vice President, Crowley Maritime Corp., to Peter Johnson, OTA, Dec. 29, 1988.

[8] U.S. Maritime Administration, "Extension of Cabotage to All Commercial Activities in the Exclusive Economic Zone," report prepared for OTA, August 1988.

Table Summary of Ship Voyages in the Virgin Islands/U.S. Refined Petroleum Product Trade, Calendar Years 1977-87

Year	Tonnage index[a]	Tonnage by flag (percent)		Number of vessels in trade (voyages)	
		U.S.	Foreign flag	U.S.	Foreign flag
1977	1.00	(26)	(74)	53 (180)	154 (534)
1978	0.99	(20)	(80)	50 (200)	127 (598)
1979	0.94	(41)	(59)	71 (277)	112 (419)
1980	0.80	(48)	(52)	59 (222)	64 (373)
1981	0.77	(31)	(69)	46(150)	139(431)
1982	0.68	(29)	(71)	24(124)	126(323)
1983	0.62	(43)	(57)	17(159)	89(228)
1984	0.63	(51)	(49)	27(154)	58(207)
1985	0.58	(47)	(53)	34(175)	80(191)
1986	0.49	(48)	(52)	21 (140)	76(168)
1987	0.60	(44)	(56)	27(165)	88(220)

[a]1977 tonnage used as base.
NOTE: This table does *not* include crude oil shipments from Alaska to the Virgin Islands, all of which takes place in foreign-flag vessels.
SOURCE: Department of the Treasury, U.S. Customs Service, Bills-of-Ladings Covering Shipments.

additional U.S. seafaring jobs if crude oil shipments from Alaska to the Virgin Islands were subject to cabotage laws. For the general cargo trade, the current operators of foreign-flag vessels with a total of about six weekly sailings would probably require somewhat less than 100 seafaring jobs, and these may be translated, under the right circumstances, to new jobs for U.S. seamen. The data for cruise vessel operations are not sufficient to make similar partial conclusions.

OTA concludes that relative costs and benefits to different sectors of the economy due to changes in the Virgin Islands cabotage laws would not lead to clear support for any one position. It is not even clear that extension of cabotage to the Virgin Islands would result in a substitution of U.S. flag-ship operations for current foreign-flag operations—the economics could force other options (such as merely a reduction in refinery throughput). If the results were the employment of U.S.-flag substitute vessels, these vessels would be a militarily useful type (e.g., product tankers and heavy lift or roll-on/roll-off cargo ships) and could benefit national security. However, at least one foreign-flag operator points out that, as a U.S. based and owned company, his vessels could also be enlisted to meet defense sea-lift requirements.

OFFSHORE LIGHTENING

Current Activities and Trends

The United States imports over 7 million barrels per day of crude oil and petroleum products to serve the Nation's energy demand.[9] Many of these imports come from countries in the Middle East or Africa where long transport distances favor the use of very large tankers that, because of their deep draft, cannot enter U.S. ports. It has become common practice to transfer the oil from the large tankers to smaller ones offshore and then bring the oil in these smaller tankers to ports on the U.S. gulf or Atlantic coasts where major refineries or terminals are located. This type of operation is known as 'lightening. " In recent years, about 100 foreign-flag shuttle tankers have been engaged in these lightening operations in U.S. offshore waters.[10] Other kinds of offshore lightening operations have also been done with foreign-flag vessels on a much smaller scale. Some in the U.S. maritime industry have argued that vessels engaged in lightening within the EEZ should be subject to cabotage laws.

Under present law, if the above lightening of imports is done within U.S. territorial waters (now a 3-mile zone), the shuttle tankers must be coast-wise-qualified (U.S. flag). However, if the lightering takes

[9]U.S. Department of Energy, Energy Information Office, "Annual Energy Outlook 1989, With Projections to 2000," Washington, DC, 1989.
[10]U.S. Maritime Administration, op. cit., footnote 8.

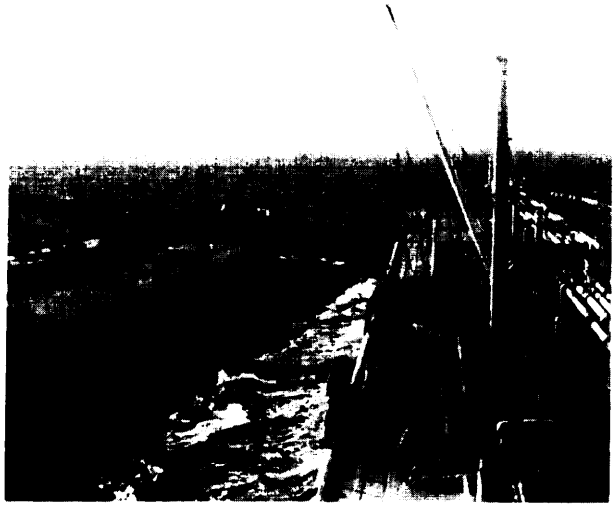
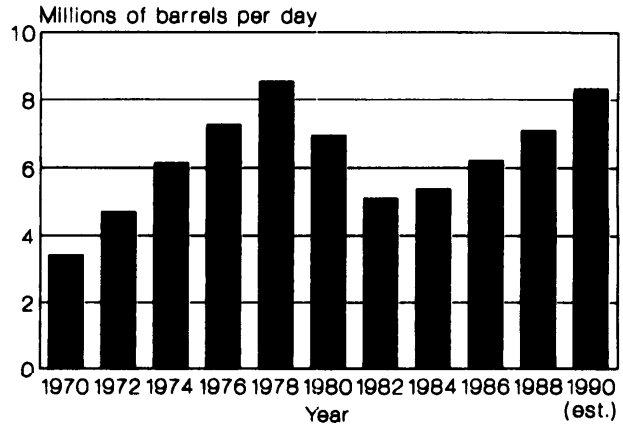


Photo credit: OMI Petrolink cap.

An offshore lightering operation using foreign-flag shuttle tankers to unload larger vessels in the EEZ and transport oil to U.S. ports. Cabotage laws do not apply to these vessels.

Figure 1—U.S. Oil Imports, 197040



SOURCE: Office of Technology Assessment Energy Information Oflke, Department of Energy, 1989.

place outside territorial waters, they may be foreign-flag. Crude oil importers and others have found it economically beneficial to employ foreign-flag lightering vessels and conduct the lightening outside U.S. territorial waters. If cabotage laws were extended to cover these operations within the EEZ, it could have the effect of requiring the use of U.S.-flag vessels or force the operators to alter their practices to avoid such restrictions.

Oil imports to the United States peaked in 1977 and then decreased until 1983 when they began to grow again. As shown in figure 1, 1988 imports averaged 7.1 million barrels per day and by 1990 projections indicate imports to be about 8.3 million barrels per day—approaching the record highs of the late 1970s. The Department of Energy's most recent forecast is for imports to grow to 11 million barrels per day by 2000.

U.S. imports are from a variety of foreign sources. Those that influence offshore lightening activity are generally from the Middle East and Far East, where voyage distances make it most economical to use very large crude carriers (VLCCs) and ultra large crude carriers (ULCCs). Figure 2 shows that, in 1980, over 35 percent of imports were in that category, while the 1985 percentage had decreased to 20 percent but is rising again. Generally, as total imports grow, so will the share of imports from the Middle East because that region has, by far, the greatest capacity for production growth.

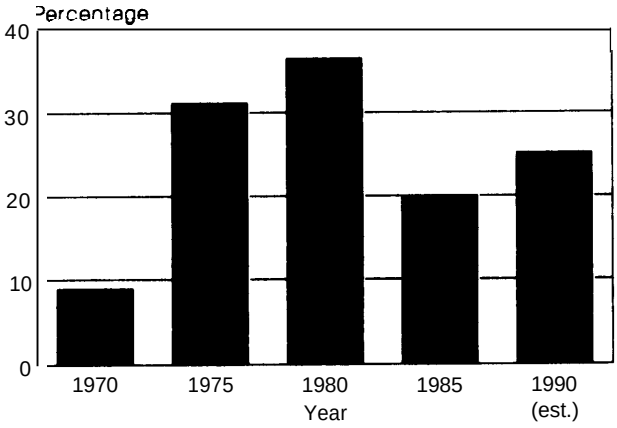
These factors point toward current and future growth in offshore lightering as a likely trend. Fearnleys indicates that, in 1987, 20 percent of oil imports to the United States were in vessels over 200,000 deadweight tons (dwt).[11] These vessels would have to be lightered unless they used an offshore port to unload. If imports actually grow to 11 million barrels per day by 2000, and assuming 20 to 30 percent of these imports are in VLCCs or ULCCs, the market for offshore lightening could double by 2000--from about 1 million barrels per day in 1988.

The American Institute of Merchant Shipping reported to OTA that approximately 80 to 90 foreign-flag tankers in the 80,000 dwt range periodically engage in offshore lightening.[12] These vessels lighter crude oil from VLCCs and ULCCs, carrying crude from the Persian Gulf and West Africa to the U.S. east and gulf coasts. The lightening is generally done 60 miles or more offshore. Most of the

[11] *World Bulk Trades*, 1987 (OS1O, Norway: Fearnleys, November 1988).

[12] Ernest J. Corrado, President, American institute of Merchant Shipping, Washington, DC, letter to Peter Johnson, OTA, Oct. 31, 1988.

Figure 2—Percent of U.S. Oil Imports From the Middle and Far East



SOURCE: Energy information Office, Department of Energy, 1989.

Table 4--Vessels Engaged in U.S. Offshore Lightening, 1987

Area of operation registry	Number of vessels	Number of voyages
North Atlantic coast:		
Liberia	7	11
Panama	2	5
Bahamas	2	4
Greece	1	2
Singapore	1	1
Subtotals	13	23
Gulf coast:		
Liberia	41	534
United States	19a	55b
Panama	15	51
Bahamas	10	185
Japan	5	31
Greece	5	13
United Kingdom	3	5
Singapore	3	4
Cyprus	2	15
France	2	3
Subtotals	105	896
Pacific coast:		
Panama	1	1
South Korea	1	1
Japan	1	1
Bahamas	1	1
Poland	1	1
Subtotals	5	5
Totals	123	924

a Includes 9 barges.
b Includes 16 barns.
SOURCE: Maritime Administration, 1986.

foreign-flag tankers used in the lightening service are chartered in the spot market after delivering a long-haul cargo to a U.S. port. Many of the vessels are secured for only one lightening operation of 3 to 4 days, or until they can contract another long-haul cargo. Although several lightening vessels are maintained by some companies on long-term contract, there is generally insufficient lightening business to support their operation full time. Consequently, while waiting for lightening business, the vessels undertake short voyages, typically delivering crude oil from Mexico to the U.S. gulf coast.

This estimate is supported by data collected and analyzed by the Maritime Administration (MARAD) who reported that in 1987, 110 tankships, ranging from 4,900 to 136,800 dwt, were engaged in offshore lightening. MARAD's Office of Trade Analysis and Insurance, Division of Statistics, receives computer tapes from the Bureau of the Census which it uses to generate reports of individual landings by each shuttle vessel. Table 4 summarizes these data for 1987. It shows the total number of foreign-flag tankers, by registry, area of operation, and number of lightening voyages for 1987.

The focus of this lightering activity is in the gulf coast. The North Atlantic and Pacific coasts are a distant second and third. The industry has reported to OTA that lightening appears to be a good business opportunity in the gulf coast. One west coast operator, however, did not see lightering as a profitable opportunity .[13]

One of the major lightening firms in the gulf repot-ted the following to OTA:

> The Persian Gulf Oil share of imports has been increasing. It generally arrives in very large crude carriers (VLCCs) and ultra large crude carriers (ULCCs), from 250,000 deadweight tons to 500,000 deadweight tons. These vessels draw from 70 to 90 feet of draft when fully laden and cannot approach closer to the U.S. gulf coastline than about 50 to 60 miles because of the shallow water along the coast. Most U.S. gulf ports cannot accommodate vessels drawing more than 40 feet fresh water, except for Corpus Christi, Texas, which can take 45 feet fresh

[13] Yourch, op. cit., footnote 6.

water. However, most VLCCs and ULCCs are too large to enter port, regardless of draft considerations.

These vessels are lightered by a series of smaller ships of about 80,000 deadweight tons each. The VLCC is lightered of its cargo after which it proceeds back to load another cargo. It does not enter a U.S. port.

West African oil typically arrives in vessels of about 140,000 deadweight tons capacity. These vessels will lighter off only enough cargo to enable them to reach 40 feet draft, after which they enter port to pump off their remaining cargo.

Most of the lightening vessels used in the Gulf of Mexico are chartered in the spot market. These ships have usually just delivered a cargo to a U.S. Port and accept lightening business only until they can fix another long haul cargo. Typically, lightening vessels are fixed for a period of from 3 days upwards to a term commitment of 30 or 60 days. Many vessels are fixed for only one lightening operation or about 3 to 4 days.

The availability of numerous foreign ships that have completed their voyages in the U.S. gulf coast ports helps to make lightening economically viable. Although we maintain one or two vessels on long term contract, there is often insufficient lightering business to support their operation so that suitable short distance voyages must be found to fill the gap.[14]

The Cost of Lightening

It is difficult to determine the cost of these lightening operations because detailed and comprehensive industry data are not available and MARAD has not prepared independent estimates. From discussions with industry representatives, OTA believes that about two-thirds of offshore lightening is done by independent operators (contractors) and one-third is done by major oil companies for their own account. One independent operator reported to OTA that current lightening costs were about $0.17 to $0.22 per barrel including vessels and equipment. Another reported that the added costs of moving a lightening operation from (about) 50 miles offshore to 200 miles offshore would be about $0.07 per barrel, but the added cost of lightening (at 50 miles) using U.S.-flag vessels as opposed to foreign-flag vessels would be about $0.16 per barrel.

Seafaring Jobs

The number of seafaring jobs associated with foreign vessels in lightening operations can only be roughly estimated from the limited data available. Table 4 shows about 100 foreign-flag vessels engaged in lightening in 1987 and over 900 voyages. If you assume 5 to 7 days per voyage, including down time and an average of 20-person crews for each vessel, then about 250 to 350 seafaring jobs would be involved. Another way to estimate seafaring jobs associated with lightening, confining the above, is as follows: One lightening operator reported to OTA that 3 of their vessels would transport somewhat over 100 million barrels per year. At current lightening rates and 20-person crews, this translates into about 200 seafaring jobs.[15]

Other Lightening

While not on the same scale a.. oil imports lightening, other lightening of vessels too large to enter U.S. ports also takes place. Many of these operations involve exports of bulk cargo. Large bulk carriers used in the U.S. export of grain and coal from east coast and Gulf of Mexico ports often cannot be fully loaded at dock and are fully loaded offshore using lightening barges or vessels. In addition, when developed harbors are not available, such as in the case of a new mining operation in northern Alaska, the product is "transferred from shallow-draft barges to deep-draft bulk carriers offshore. OTA has no data on the extent of foreign operators in these trades, but it is considered minor at present.

Impacts

The extension of cabotage laws to any offshore lightening activity within the 200 EEZ would undoubtedly have a major impact on the petroleum lightening industry. If these operators switched to the use of (coast-wise-qualified) U.S.-flag vessels, the demand for U.S.-built tankers and U.S. operators would increase. Considering the above estimates of lightening volume, the resulting demand would be approximately the equivalent of eighteen 80,000 dwt

[14]Robert Carson, OMI Petrolink Corp., Houston, TX, letter to Peter Johnson, OTA, Feb. 8, 1989.

[15]Ibid.

shuttle tankers and 200 to 350 seagoing jobs. In comparison to the existing Jones Act fleet, this is over 18 percent of the tanker tonnage and about 9 percent of the jobs.

In reality, however, more numbers of tankers and personnel are used in current operations than are needed because operators follow the practice of "voyaging out" to short Mexican or Caribbean trades to fill the time lost waiting for lightening trips. It is difficult to envision higher cost U.S.-flag vessels finding employment in short foreign trades and, therefore, U.S.-flag lightening operations may experience large amounts of down time.

The most likely consequence of extending cabotage laws to lightening in the EEZ, however, would be a move by shippers to another alternative-not employing U.S. vessels. Several, in the industry, reported to OTA that there are a number of alternatives much more attractive, economically, than using U.S.-flag vessels for lightening.

Even the American Institute of Merchant Shipping (AIMS), one of the foremost proponents of the Jones Act, made the following statement:

> Rather than investing in new U.S.-flag tankers if the Jones Act were extended to the EEZ to cover lightering, numerous alternatives could be used. First, and most probable, the lightering operations would move beyond the EEZ. It is simply more economical to continue lightening further offshore than to invest in new Jones Act qualified tankers, Second, crude oil could be imported in smaller crude carriers that do not require lightening. Third, deepwater ports such as the Louisiana Offshore Oil Platform (LOOP) could be built to accommodate the larger crude carriers without lightening. Fourth, transshipment terminals in the Caribbean area could be used in lieu of lightening. Therefore, although AIMS is one of the foremost proponents of the Jones Act, we do not favor its extension to cover lightering activities within the EEZ because no new trades for U.S. flag vessels would be created and the cost of oil to U.S. consumers would be increased.[16]

OTA concludes that an extension of cabotage law to include lightening operations within the EEZ would not result in substantial incentives to build and operate U.S.-flag shuttle tankers for this trade. A more likely result would be changes that would be less costly (such as lightering beyond 200 miles) and would still employ foreign vessels. These changes would extract a cost—increases in lightening costs may range from 25 to 50 percent (or from $0.05 to $0.10 per barrel). And, these costs would normally be passed to the consumer.

OIL AND GAS EXPLORATION AND DEVELOPMENT

Current Activities and Trends

The offshore oil and gas industry has become a significant marine activity in U.S. offshore waters over the past 25 years. While oil and gas exploration has taken place in all regions of the EEZ, the most significant regions today (and the only EEZ regions with petroleum production) are the Gulf of Mexico and offshore California.

A variety of types and sizes of vessels are engaged in offshore oil and gas activities. These include: mobile drilling rigs; production platforms and facilities; supply vessels; tugs and other support vessels; seismic vessels and various barges for pipe laying; launching structures; and other work. During 1988, about 250 mobile drilling rigs were located in U.S. offshore waters. In addition, over 900 U.S. flag supply vessels and other support craft were available in 1988, and most of them were in U.S. waters, Over 3,500 oil and gas production platforms are installed in the Gulf of Mexico and 20 large platforms are operating in the Pacific EEZ.[17]

Only the transportation aspect of this industry is covered under current cabotage laws that require U.S. built and operated vessels. However, the Outer Continental Shelf Lands Act (OCSLA) extends the laws of the United States to the subsoil and seabed of the OCS and to all installations and other devices permanently or temporarily attached to the seabed for the purposes of exploring for, developing, or producing resources of the seabed.[18] The effect of that

[16] Corrado, op. cit., footnote 12.

[17] U.S. Congress, Office of Technology Assessment, "An Analysis of Buy-America Proposals for Offshore Drilling Rigs and Production Facilities," OTA staff paper, Washington, DC, June 1988.

[18] The outer Continental Shelf Lands Act of 1953, as amended (43 U.S.C. 1333(a)).

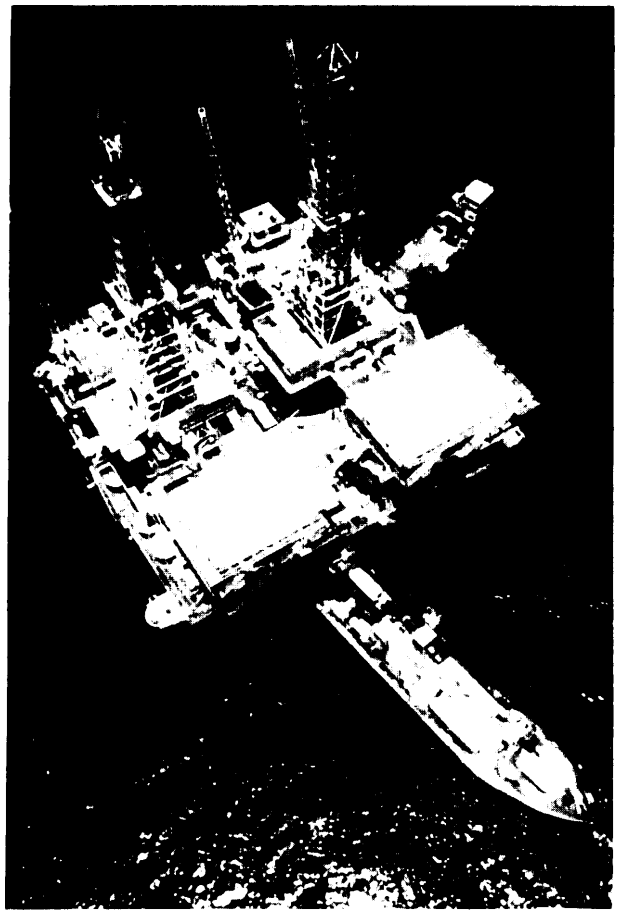


Photo credit: Shell Oil Co

This supply ship must be U.S.-flag to be used in transportation from a U.S. port to this offshore platform on the Outer Continental Shelf under current cabotage laws.

extension is to make all drilling rigs, production platforms, and any other installation that is in contact with the seabed (anchored and/or resting on the bottom) equivalent to ''points in the U.S. unde the cabotage laws.'' When these platforms o installations are defined as ''points in the U.S.,'' any coast-wise trade with these points becomes subjec to the provisions of the U.S. cabotage laws. On notable exception to this definition of ''points in th U.S.'' is: a point on the OCS where there is no installation or device or artificial island (i.e., a ''pristine site'') is NOT considered a coast-wis point. Consequentlv. for example. a drilling o production platform may be transported from a U.S. port to a "pristine site" on the OCS and the transportation vessel would not be subject to cabotage laws.[19]

All transportation of merchandise or passengers between OCS sites considered to be "points in the U. S." as defined in the OCSLA, or between these points and any other U.S. points, must take place in U.S. built, owned, and coast-wise-documented vessels. Of the various types of vessels employed in offshore oil activities, the ones most commonly involved in the coast-wise trade as defined above are tugs, supply boats, crew boats, and most launch barges. Exceptions to this policy for certain launch barges, however, have been enacted into law.

In contrast to the above, vessels engaged in nontransportation activities in the offshore oil industry (drilling rigs, seismic vessels, anchor handling vessels, crane barges, production platforms, etc.) are not subject to cabotage if they do not engage in transportation.

If cabotage policies were extended to cover all transportation activities within the EEZ, the effect on the offshore oil and gas industry would be minimal except for the case where movements of rigs, equipment, or platforms to ''pristine sites" are concerned. As stated above, U.S. Customs Service interpretations of the OCSLA excludes "pristine sites" from its definition of 'points in the U. S." The same would hold true for points on the high seas not presently considered "points in the U. S." It should also be noted that, if cabotage laws are amended, consideration should be given to also amending the OCSLA because there is a difference in the definitions of coast-wise locations between the concept of the OCS and that of the 200-mile EEZ.

There could be a substantial impact on the offshore oil and gas industry, however, if cabotage policies were extended to cover all activities in this sector, not just those involving transportation. The fleets of vessels possibly affected could include offshore platforms, mobile drilling rigs, seismic vessels, anchor handling vessels, and others. While many of these are now U.S. owned and operated, there is no requirement for them to be. Many U.S. vessels of these types also operate around the world

[19]Fritz, op. cit., footnote 1.

and in the coastal waters of other nations. The ownership and registry mix of such vessels operating in the U.S. EEZ, as well as the EEZ of other nations, can vary substantially over time, and it is difficult to make an accurate projection of this mix.

To a large extent, the questions of cabotage law extension to include the two principal offshore oil and gas sectors not engaged in transportation are addressed in a recent OTA staff paper, An Analysis of Buy-America Proposals for Offshore Drilling Rigs and Production Facilities, published in June 1988.[20] That report also included a review and outlook of the U.S. offshore oil industry. Some pertinent findings from that OTA report are:

- Trends--U.S. rig and platform builders have experienced serious reductions in their business over the past 5 years caused mainly by a major slump in offshore oil and gas exploration and development work, though overseas competition for the construction of rigs and platforms has continued to grow. Substantial foreign content is now evident in some of the largest and most technically advanced equipment.
- Outlook--There is a reasonable indication of a gradual upturn in U.S. offshore oil and gas exploration and development activities over the next few years and of a recovery from the extremely low levels of 1987. The Gulf of Mexico is the region with the greatest near-term potential for increased OCS activity.
- Mobile Drilling Rigs—At the present time, no mobile drilling rigs are being constructed in the United States, and only a few are being built overseas (Far East shipyards). The oversupply of mobile drilling rigs in the world fleet makes it unlikely that new rig construction activity will soon revive. Near-term rig construction potential in the United States appears to be focused on upgrading or modifying existing rigs and in building a few specialized designs for deepwater or harsh environment applications.
- Production Platforms and Facilities—Using a number of assumptions about future OCS development investment, OTA projected that between $130 million and $650 million per year will be invested in OCS platform and facility fabrication over the next decade. The possibility of foreign construction of those platforms could have the effect of putting at risk several thousand direct labor jobs in the U.S. fabrication industry-one of a number of important industry sectors engaged in OCS development. A significant number of indirect and induced jobs would also be affected. The jobs most at risk appear to be those associated with construction of deepwater production systems--employing the more advanced technologies and representing about one-half of the future market.

Geophysical Survey Vessels

Considering the above observations and the present status of cabotage coverage in offshore oil and gas activities, one other sector could be subject to analysis-geophysical survey vessels.

In reply to an OTA inquiry, the International Association of Geophysical Contractors (IAGC) conducted a survey of its members and compiled the following information on current activities and trends in the industry. In general, members consider the condition of the industry operating in U.S. offshore waters to be poor and the outlook to be for no growth until oil prices rise significantly .21

About 30 geophysical survey vessels are now operating in U.S. waters and the operators employ approximately 600 persons in seagoing positions aboard those vessels. This is an international industry and those same companies operate over 40 vessels in foreign waters and employ over 2,700 persons in both merchant marine and scientific positions aboard a total of 71 vessels, The IAGC survey indicated that 82 percent of the persons employed aboard seismic vessels in the EEZ in November 1988 were U.S. nationals.

The vessels currently operating have been built in both the United States and abroad-60 percent of those in U.S. operations have been built in the United States. A considerable amount of U. S.-manufactured scientific equipment is used aboard these survey vessels, even if built abroad. The range

[20] OTA, op, cit., footnote 17.

[21] Nathan S. Bergerbest, Counsel t. the International Association of Geophysical Contractors, letter to Peter Johnson, OTA, &c. 19, 1988.

of replacement costs for these vessels, including scientific gear, is from $7 million to $14 million each.

A specific exclusion from cabotage laws for geophysical survey vessels is provided under the Oceanographic Research Vessel Act (ORVA- 46 U.S.C. app. 441-445, see sec. 443).

Impacts

The direct effects of extending cabotage law to the U.S. offshore oil and gas activities not now covered would vary depending on the specific activity.

Drilling Rigs and Platforms

Many proponents of extending cabotage to offshore oil and gas activities do not include drilling rigs and platforms in the same category because they have historically been considered outside of the traditional maritime industry. If they were included, however, the impacts would most likely be the same as those considered in the OTA "Buy America" study.[22] In that study OTA found strong disagreements about the effects of implementing "Buy America" legislative proposals for OCS vessels, platforms, and facilities but reasonable agreement about industry trends without such legislation. Existing U.S. platform fabricators-the one industry segment that OTA investigated in detail-remain viable and competitive in the Gulf of Mexico region but face an uncertain future in the face of low-cost, Far East competition. Current trends "indicate a growing international participation in all aspects of OCS development activities that probably can only be deterred by some form of government intervention. The remaining question is the general policy question about the nature and extent of government intervention that can be justified by a threatened direct loss of jobs in one industry sector compared to a range of less quantifiable but possibly significant negative effects in other sectors of the economy.

Restrictions on low-cost foreign construction for OCS development projects, as "Buy America" proposals suggest, could have both positive and negative effects on different sectors of the industry. Platform fabricators believe it would result in saving U.S. jobs. Major oil companies believe it would result in discouraging investment in some major projects because of unreasonably high development costs. OTA's analysis indicates that in some cases, the cost of the platform could make the difference between a profitable project and an unprofitable one. In other cases a higher cost platform would reduce but not eliminate profitability and in still others even a lower cost platform would not make a project profitable. If OCS projects are discouraged it could have a negative impact on many other sectors of the offshore industry.

There is also a more general and philosophical controversy about "Buy America" legislation. Opponents contend that any restraint of free trade has disadvantages to the United States--especially to consumers. They also point out that domestic content regulations invite retaliation by foreign entities and could affect U.S. exports. Proponents contend that U.S. firms have already lost significant market shares and will not survive in direct competition with countries with very low wage rates and subsidies. They also point out that many foreign governments already protect their domestic industries with similar restrictive measures.

Geophysical Vessels

Operators of geophysical survey vessels have problems and points of view similar to those of mobile drilling rig operators. Since they are involved in an international industry they too are concerned with access to foreign waters and the possibility of retaliation if the United States were to restrict foreign access to our waters. There is also a general downturn in the industry and an oversupply of vessels. Any policy that would increase costs for operators could affect their ability to obtain future business. Operators also note their close association with oceanographic research vessels and the need to maintain an international understanding of freedom for operations and access in the name of scientific research.

The benefits of extending cabotage law to geophysical vessels, in the short term, would most likely be some increase in seagoing jobs on those vessels operating in the EEZ. According to IAGC data, only 20 percent of those positions (roughly 600 in all) are occupied by non-U.S. nationals at present. It is unclear how the industry might restructure to

[22] OTA, op. cit., footnote 17.

comply with cabotage laws because so many operators conduct worldwide operations with significant flexibility of movement of vessels worldwide. Respondents to the IAGC survey indicated that some may split their fleets between U.S. and foreign operations and others might concentrate exclusively on foreign operations.

The longer term question of new vessel construction in the United States, if cabotage laws were applied, is very difficult to judge. Present demand for geophysical survey work in U.S. offshore waters is low and vessels are in oversupply. New buildings would follow growth in the U.S. offshore industry, but current prospects indicate that will be very slow.

Other Vessels

A number of special-purpose vessels are engaged in support activities in the offshore oil and gas industry. Those strictly engaged in transportation are usually covered by U.S. Customs Service interpretation of ''points in the United States''—but there have been exceptions. The exceptions stemming from Customs Service rulings about pristine locations have been of concern to some in the maritime industry. Other exceptions have been made (such as in the case of launch barges) by special laws because only a foreign vessel claimed to have the unique capability required.

It may be possible to avoid some technical exceptions if cabotage were extended to all transportation activities in the EEZ, but the unique capability problem may still remain. The Customs Service warns, however, that confusion may still prevail because the EEZ, by definition, extends out 200 miles while the extent of the OCS could be more or less in specific regions. The lawyers will have to work on this one.

Finally, one operator, responding to the OTA inquiry, advocates extending cabotage to icebreaking services in connection with OCS operations.[23] The future need for commercial icebreaking services will probably depend on the outlook for OCS development in the Arctic. At present no economically significant oil field has been discovered here, but exploration continues in some regions with heavy ice cover, If a discovery is made, icebreaking support will likely be part of a future development, and cabotage coverage for these vessels could benefit U.S. builders and operators. This is a very specialized business sector and, while foreign builders and operators could likely compete very well, the added costs of a U.S. requirement could only be determined on a specific-case basis.

COMMERCIAL CRUISE VESSELS

One of the more healthy and growing segments of the maritime industry is the commercial cruise vessel industry. Small commercial cruise vessels, ferryboats, and various other passenger craft now operate in domestic U.S. voyages and under the current policies of cabotage. However, major cruise vessels operating in the Caribbean and from the U.S. west coast to foreign ports are foreign built and operated ships. This is a very large industry, and it mainly seines the American tourist. Almost 3 million U.S. cruise vacationers depart from Florida and other ports annually, and the major carriers are in the process of building a significant number of large and luxurious vessels for this market.

Under current Customs Service policy, foreign-flag cruise vessels are permitted to embark passengers in a U.S. port, carry them on a cruise itinerary that includes one or more U.S. ports and at least one foreign port, and return them to the original port. If the interim foreign port is what the Customs Service has defined as a "distant foreign port" (i.e., outside of North America, Central America, and the Caribbean), then the passengers may disembark at a U.S. port other than the port of embarkation.[24]

Foreign-flag cruise vessels are also permitted to operate on a short, closed-loop voyage from a U.S. port and back to the same port with no intermediate ports calls, if the vessel proceeds beyond U.S. territorial waters (now a 3-mile zone). This type of voyage is commonly known as a "cruise to nowhere" and is very popular in the cruise industry. In many cases the vessels in this business also offer gambling to the passengers as an added feature. A "cruise to nowhere" entirely within U.S. territorial waters is prohibited to a noncoast-wise-qualified vessel.

[23] Park, op. cit., footnote 7.

[24] Fritz, op. cit., footnote 1.

Photo credit: American Canadian Caribbean Line, Inc.

This small U.S.-flag cruise ship is protected from foreign competition under current cabotage laws when operating between U.S. ports, but not when operating from a U.S. to foreign port.

A variety of proposals could be made to extend the concept of cabotage policy to cover certain operations of this cruise shipping industry. One of these could be to define the 200-mile EEZ as the zone that a "cruise to nowhere" would need to proceed beyond if it were made in a foreign-flag vessel. This would have the practical effect of requiring U.S. built and operated ships for this trade. Other changes that could be made include: revoking the current eligibility of foreign-flag vessels to carry passengers between the U.S. mainland and Puerto Rico in the absence of service by a qualified U.S.-flag vessel; requiring a foreign port call in any "cruise to nowhere"; not allowing the above mentioned "distant foreign port" exception; and a number of other possibilities. Because the cruise industry is significant and growing, there have been a number of proposals to extend cabotage policies to certain segments of it.

Status and Trends

The North American cruise industry has been defined to include vessels operating from North American ports principally serving the U.S. market; offering cruises ranging from 1-day round trips to 7-to 14-day Caribbean cruises, to transatlantic crossings on the Queen Elizabeth II. In a recent industry publication, the business status and outlook was described as follows:

> By the end of 1988, there were 118 cruise vessels sailing mainly from North American ports, offering some 79,933 berths for sale in the American market. Three million Americans are expected to cruise during this year, with most sailing in the Caribbean from ports in southern Florida.
>
> Since its modem-day inception in the United States some 20 years ago, the cruise industry has grown to a $4-billion-a-year business, generating significant revenue for local governments, and employment and business opportunities for travel agents, ports, airlines, and a vast array of service and supply companies.
>
> The cruise industry is also increasingly making its presence known to the American public through print and national network television advertising.
>
> Industry forecasts promise an expansive future with new ships on order or in the planning stages, and port developments projecting strong growth in the cruise berth capacity over the next 5 years.[25]

Of course, some analysts urge caution in accepting too rosy an outlook. Cruise operations are part of the larger tourist industry where demand is affected by consumer behavior as well as the general economy. Cruising is not considered a mature industry and some operators may overextend their projections and create an oversupply of vessels. In general, however, continued growth in cruising is likely with some uncertainty about market and price fluctuations. Recent analyses show the following:

. Growth Projections--Cruise market growth projections vary. There is presently overcapacity and most cruise lines operate at less than 85 percent of capacity utilization. With 11 percent capacity growth in 1988, the gap between supply and demand in the cruise market can be expected to widen. However, as

25" The North American Cruise Industry, 1988, " Cruise *Industry News*, New York, NY, May 1988, p.11.

berth capacity growth is reduced to an average of about 8 percent annually over the next 4 or 5 years, the gap may remain constant.

- Market Concentration—The most popular sailing region is the Caribbean, with mainly 7-day cruises originating from Miami, but also from Fort Lauderdale, Tampa, and San Juan, as well as from Cape Canaveral, New Orleans, Jamaica, and Barbados.

  More than 30,000 berths, or 45 percent of the total berth capacity in North America, are offered year-round in the Caribbean. In the winter season, more than 45,000 berths are offered, or nearly 60 percent of the market.[26]

With the exception of U.S. coastal and inland operations, the U.S.-flag sector of the cruise industry is principally within Hawaii. The berth capacity for this sector with one operator is about 1,600, or about 2 percent of the total. Another operator entered this trade in 1988 with one ship and 600 berths, but early in 1989 they filed for bankruptcy, This was the only growth projected by the industry for the next 5 years.

The west coast to Alaska summertime cruise trade has become a strong market sector in recent years but, because of U.S. cabotage law restrictions, almost all of the industry has chosen to use foreign-flag vessels and operate out of the Canadian port of Vancouver rather than be required to operate U.S.-flag ships,

Tables 5, 6, and 7, taken from a current industry evaluation, show the cruise vessels that may be introduced to the North American market through 1992. All of these vessels are planned to be foreign built and-with one exception—all will operate in trades exempt from U.S. cabotage laws. If the scenario in table 7 holds, the total growth in vessel berths over the next 4 years would be over 50 percent.

Table 5--New Cruise Ships Entering The Market, 1088-91 (Based on confirmed orders)

Year	No. ships	Market	Total berths confirmed
1988 (est.)	12	5-Caribbean 4-World 2-Mexico 1-Hawaii	7,560
1989 (proj.)	8	6-Caribbean 2-Unknown	4,560
1990 (proj.)	10	7-Caribbean 2-Mexico 1-Unknown	8,470
1991 (proj)	4	3-Caribbean l-Unknown	5,150

SOURCE: Cruise Industry News, 1988.

Table 6--Additional New Cruise Ships Entering The Market, 1990-92 (Based on cruise lines perceived needs)

Year	Additional no. ships	Market	Additional total berths
1990	5	3-Caribbean 1-World 1-Unknown	2,800
1991	6	5-Caribbean 1-World	8,500
1992	7	6-Caribbean 1-World	14,200

SOURCE: Cruise Industry News, 1988.

Table 7-Scenario Projections

Confirmed new berths	Total	Maximum scenario growth	Total berths
1987: NA	72,365	NA	72,365
1 968: 7,568(1 0.5%)	79,933	7,568 (1 0.5°/0)	79,933
1989: 4,560 (5.5%)	84,493	4,560 (5.50/')	84,493
1990: 8,470 (100/')	92,963	11,270 (13°/0)	95,763
1991 : 5,150 (6%)	98,113	13,640 (14%)	109,403
1992: O (O%)	NA	14,212 (13%)	123,615

NA= not applicable.
NOTE: If tha maximum growth scenario should materialize, It means that the projected growth rata of the industry would vastly exceed that based on confirmed orders.

SOURCE: Office of Technology Assessment, 1989

Impacts

It is difficult to envision all of the possible forms of cabotage extension to the cruise vessel industry because the nature of the tourist business itself is so directly integrated into the aspect of ship operations. The fact that Miami is such a major airline traffic hub, as well as a destination for millions of tourists in general, has contributed to the growth of the cruise port there. If cruise vessel operators out of Miami were faced with compliance with cabotage laws, they would undoubtedly seek alternatives-perhaps following the practice in the Pacific Northwest

[26] Ibid.

where passengers are transferred from the airport in Seattle to a cruise ship docked in Vancouver.

It may not be unreasonable, however, to consider a segment of the cruise industry-the "cruise to nowhere"- as a possible candidate for cabotage extension. This small, but significant, market is represented by several operators of 1-day cruises out of Florida ports. A recent industry study shows that 2 firms now operate 5 vessels with 4,300 berths in this segment. This represents about 5 percent of current industry capacity .[27]

Assuming about five vessels and 5 percent of the cruise market is represented by cruises to nowhere, a scenario for U.S.-flag, U.S.-built vessels could be postulated if cabotage laws covered these vessels.

In a 1987 study comparing U.S.-flag and foreign-flag cruise vessels, an 800-passenger cruise vessel was evaluated.[28] This vessel had a crew of 259 and would operate in the Caribbean cruise trade. The analysis assumed U.S. construction and a partial union crew for the U.S.-flag vessel. Construction costs were $120 million in U.S. yards v. $100 million in foreign yards. The increased per diem passenger costs calculated for the U.S.-flag vessel was 35 percent above the foreign-flag vessel.

Thus, if cabotage laws were extended to cruises to nowhere, a potential of over 1,000 seagoing positions could be postulated based on the current market share for these operations, and some several hundred million dollars of U.S. shipbuilding business would follow if operators built new U.S. vessels to fill this market as it exists today. Whether the increase of about one-third in per passenger cost would be sustainable in this market is not clear. This example is purely hypothetical and subject to much uncertainty.

[27] Ibid.

[28] John H. Leeper and John W. Boylston, "The Emerging Domestic Cruise Industry," *Marine Technology*, January 1987, pp. 26-42.

Photo credit: Shell Oil Co

The largest steel platform in the world—Shell Oil's Bullwinkle—being carried on a foreign-flag barge from a U.S. shipyard to the oilfield in the Gulf of Mexico EEZ. Transportation from a U.S. point to a "pristine site" on the Outer Continental Shelf has been determined exempt from cabotage laws.