HJR 72

No. 1

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: HJR 72
PUBLISH DATE: HOUSE 1/31/90

FISCAL NOTE

REQUEST: House Transportation Committee

Revision Date:
Title: ~~requirements~~ relating to the carriage of oil in double hull tankers
Sponsor: cotten, Kubina, menard, Davis
Requestor: House Transportation Committee

Agency Affected: Revenue Dept
BRU:
Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-0	-0-	-0-	-0-

CAPITAL	-0-	-0-	-0-	-0-	-0-	-0-

REVENUE	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY	-0-	-0-	-0-	-0-	-0-	-0-

ANALYSIS: (Attach a separate page if necessary)

Prepared by: [signature] House Transportation Committee Phone: 465-4858
Division: House Transportation Committee Date: 1/30/90

Approved by Commissioner: Richard [signature] Date: 1/30/90
Agency:

Distribution (by preparer):
- Legislative Finance
- Legislative Sponsor
- Requestor
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- Impacted Agency(ies)

February 5, 1990 SENATE JOURNAL p. 2327

HJR 72

CS FOR HOUSE JOINT RESOLUTION NO. 72 (Resources) by the Resources Committee,

Relating to requirements for the carriage of oil in double-hulled tankers.

was read the first time and referred to the Resources Committee.

February 5, 1990 SENATE JOURNAL p. 2334

HJR 72

Senator Fahrenkamp, Chair, moved and asked unanimous consent that the five-day notice and publication requirements be waived on CS FOR HOUSE JOINT RESOLUTION NO. 72 (Resources) (Relating to requirements for the carriage of oil in double-hulled tankers) for the Resources Committee meeting on February 7. Without objection, it was so ordered.

February 8, 1990 SENATE JOURNAL p. 2375

HJR 72

The Resources Committee considered CS FOR HOUSE JOINT RESOLUTION NO. 72 (Resources) (Relating to requirements for the carriage of oil in double-hulled tankers) and recommended do pass. The report was signed by Senator Fahrenkamp, Chair, and concurred in by Senators Kerttula, Halford, Frank, Eliason, Zharoff and Sturgulewski.

Previous zero fiscal note from the House Transportation Committee.

CS FOR HOUSE JOINT RESOLUTION NO. 72 (Resources) was referred to the Rules Committee.

Shipbuilders Council of America
1110 Vermont Avenue, N.W.
Washington, D.C. 20005-3553
202-775-9060

January 12, 1990

Stan

To The Editor:

Your January 9 article, "Double Bottom Doubts" presents several arguments for why Congress should not mandate double bottoms and double hulls on oil tankers entering U.S. ports as a solution to preventing catastrophes such as the EXXON VALDEZ oil spill. Several of those arguments are based on incorrect facts and deserve to be clarified for your readers.

The article cautions Congress on not mandating a technological solution when there may be more cost-effective ways to deal with the problem of safety. Your example of a less costly alternative is to require tankers to have internal vacuum pumps that could hold oil in if the hull of a ship is ruptured. This option would certainly be cheap, and in fact, is the alternative strongly endorsed by the oil industry. The question is would it be an effective alternative.

Naval architects and other experts in the field of tanker designs have recommended vacuum pumps as an added safety feature, but they are by no means being recommended as a substitute or viable alternative to a double bottom or hull. In the case of a collision, a vacuum pump would provide no protection in reducing or preventing a spill. Any time a tank is ruptured on its side, the pump could not possibly maintain air tightness in the tank which is how this system works. It has been estimated that a vacuum pump would be effective in less than 10 percent of tanker accidents. By comparison, a double hull would be effective in 90 to 96 percent of all collision incidents and 70 to 96 percent of all groundings. No other technology or safety feature can provide anywhere near the protection of a double hull.

The Coast Guard conducted an analysis following the VALDEZ accident and concluded that as much as 60 percent of the oil spilled would have been prevented if the ship had a double bottom. That estimate is based strictly on actual tanks punctured. It does not take into account the amount of oil from those punctured tanks which would not have been lost because it would have been trapped in the empty space between the two hulls. Although your article referred to this study, it is troubling that a 60 percent reduction was treated as "no big deal". Sixty percent of 11 million gallons is 6.6 million gallons. I doubt very seriously that pollution prevention of 6.6 million gallons of oil would be considered a little thing by the people of Alaska and elsewhere who have witnessed the vast destruction to Alaska's wildlife, marine life, and its coastal waters. A spill of 6.6 million gallons would constitute the third largest oil spill disaster ever in American waters!

Eight of eleven oil tanks on the EXXON VALDEZ were punctured.

Since the Coast Guard study, naval architects and engineers have examined the actual ship and estimate that only three of the eleven tanks would have been punctured with a double bottom resulting in a 75 percent spill reduction. The reason for fewer tanks actually being punctured is based on the fact that a double bottom ship comes much harder aground which prevents ship movement resulting in additional tank damage after the initial impact. The oil industry has long argued that because a double bottom makes the ship ground firmer that it could cause the ship to capsize, or sink, or at a minimum make salvage more difficult. Studies, and actual case analysis, by the Coast Guard and Office of Technology Assessment have determined just the opposite. A firm grounding is beneficial in the salvage operation. Had the EXXON VALDEZ come off Bligh Reef, for example, it would have sunk according to the Coast Guard.

The less oil spilled and the slower the rate of discharge, the more time available for cleanup response. The VALDEZ lost its 11 million gallons of oil in five hours. If it had been a double hull ship, the actual oil lost would have occurred over a 12 to 24 hour time period. This would have allowed more time for response and would have reduced the overall cleanup effort by 75 percent.

The mere suggestion that mandating double hulls is premature ignores the benefits of double hulls, and the long history of this issue. Former President Jimmy Carter instructed the Coast Guard to make double bottoms mandatory in 1976 and to negotiate that requirement internationally. The International Maritime Organization, IMO, a United Nations affiliate, rejected the U.S. proposal because of oil industry opposition world wide. The same situation exists today. In 1978, the oil industry's more cost-effective alternative was to require segregated ballast tanks. Segregated ballast tanks only cover 40 percent of a ship's periphery. As the EXXON VALDEZ illustrated, segregated ballasts provide very little oil spill prevention in a grounding. In the case of a collision, they do provide some protection if the point of contact occurs in that 40 percent area where a ballast tank is located. Today, as in 1978, the oil industry is arguing that there is a better, more cost-effective solution - vacuum pumps. Even though vacuum pumps, as I mentioned earlier, are inexpensive and do provide some benefit, IMO rejected them two years ago as ineffective.

The Alaska Oil Spill Commission, in its December 8 report, recommends double hulls for tankers and several additional design upgrades such as auxiliary thrusters, a navigation display system, an automated cargo control system, and centralized bunker tanks. The Commission's analysis shows that with all of these features incorporated into tankers, the increase in capital construction cost would be ten percent. Over the fifteen year life of a 250,000 dwt tanker such as the VALDEZ, the increased capital cost would result in an increase in the cost of a gallon of gas at the tank of only $0.0013 or .1 percent of a penny.

This cost increase does not factor in the operational savings that would be realized with a double hull tanker. For example, the oil in the bottom of the cargo tanks on a single hull tanker cannot be pumped out for lack of pressure. This results in wasted cargo carrying capacity. With a double hull tanker, all the oil could be offloaded because the portion at the bottom would be drained from below in the space between the two hulls.

A double hull tanker would also lower the cost of vessel insurance.

Tanker safety and double hulls have been studied exhaustively. The argument to wait for the completion of yet another study by the National Academy of Sciences only postpones long overdue safety upgrades. Now is not the time for study, but for decisive concrete action. It is interesting to note that the Committee on Tank Vessel Design, which was formed to do the study for the National Academy of Sciences, does not even include a shipyard representative. One would think that a panel dedicated to the study of ship designs would benefit from the experience and expertise of a shipbuilder. The panel will, nevertheless, include at least two representatives from the oil industry.

Since the late 1970s, there have been no safety upgrades to oil tankers. This record clearly illustrates industry's lack of dedication to safety and its unwillingness to impose self-discipline. The only way to provide the maximum protection to our environment is for Congress to endorse the House passed version of the oil spill bill which mandates double bottoms and double hulls. Anything short of a legislative mandate will result in a less than acceptable alternative.

Sincerely,

John J. Stocker
President

Mr. Stanford Erickson
General Manager
THE JOURNAL OF COMMERCE
110 Wall Street
New York, NY 10005

Double Bottom Doubts

A STRONG BILL TO COVER THE COST OF cleaning p oil spills stands on the verge of congressional passage. he most controversial issue facing the House-Senate conference committee when it meets this week is whether nkers entering U.S. ports should be required to have uble bottoms and, eventually, full double hulls. The need r greater tanker safety is unquestioned, but Congress hould be wary of mandating a specific technological solu-ion when there may be more cost-effective ways to deal ith the problem.

A double bottom is a second underside on a tanker, eparated from the outer hull by an air space as much as 8 feet thick. A double hull is an upward extension of this tructure to cover the entire hull. According to U.S. Coast Guard studies, double hulls help keep a vessel's oil tanks ntact even when its outer hull is ruptured in an accident, liminishing the size of oil spills and preventing many of hem.

When it approved the oil spill legislation last Novem-er, the House provided that all tankers entering U.S. ports must have double bottoms within seven years and the nore-costly double hulls within 15 years. The Senate man-dated that all new tankers be built with double hulls, unless the secretary of transportation determines that they will not enhance safety, but it imposed no requirements on the estimated 8,800 tankers now in service around the world.

Just under 600 of those tankers now have double hulls; 12 of them operate under the U.S. flag.

The debate over the merits of double bottoms is an old one. Back in 1978, the United States pushed the Interna-tional Maritime Organization, a United Nations affiliate, to require all tankers to have them. When resistance from other countries killed that initiative, Congress backed off from requiring them on ships in U.S. waters, mandating instead that smaller tankers have either crude oil washing systems, which clean tanks in an environmentally safe manner, or segregated ballast tanks, which form a buffer between the cargo tanks and certain parts of the hull.

As international interest in enhancing tanker safety has increased over the last decade, other nations have taken the lead on double hulls. Scandinavian countries are considering requiring all tankers entering their ports to have double hulls. In an effort to achieve the same end through economic means, Finland, at year's end, started taxing single-hulled tankers calling at its ports 30 cents a barrel, while charging double-hulled tankers only a fraction as much.

Double hulls would help reduce the number of spills stemming from low-impact accidents. But they would not necessarily reduce the number of large-scale catastrophes. In the case of the Exxon Valdez, which spilled 11 million gallons of oil despite segregated ballasts, a full double hull would not have reduced the spill by more than half, accord-ing to a Coast Guard analysis.

And in some cases, double hulls actually may make spills worse. Flooded double bottoms make ships more difficult to salvage. Seawater in between the hulls increases instability and weight, which under some circumstances causes a ship to capsize or sink. Vaporized oil between the hulls can pose a fire hazard to salvage workers' cutting torches.

The limited protection double hulls afford doesn't come cheap. Installing one adds from $5 million to $20 million to the $90 million cost of an average new tanker. The Coast Guard estimates the costs in the lower end of that range; tanker operators figure it to be near the high end.

Mandating double hulls is premature, because there may be more efficient ways of enhancing tanker safety. One alternative is to require tankers to have internal vacuum pumps that could hold oil in if the hull is ruptured. Another lower-cost alternative is to reduce current allow-able tanker loads by about 20% by limiting storage of oil above the waterline. This would reduce the internal pres-sure that forces oil into the water when the hull is rup-tured.

At the behest of the Coast Guard, a panel of the National Academy of Sciences is examining tanker safety. The interim report, due in June, is expected to yield information about the relative costs and benefits of double hulls and other alternatives.

Congress should not prejudge the results of that study by mandating double hulls at this time. In the wake of the disastrous Exxon Valdez spill, there is good reason to require enhanced safety features for oil tankers. But Con-gress should allow tanker operators to adopt or develop the most cost-effective technology to reduce spills, rather than mandating a specific technological fix.

The following information was taken from:
An Assessment of Tanker Transportation Systems in Cook Inlet and Prince William Sound

Prepared for: Alaska Oil Spill Commission

Prepared by: Engineering Computer Optecnomics, Inc.

Section V.8 - Cost of Improved Tankers

Figure V - 6 illustrates the increased cost of improved tankers based on the improved 70,000 deadweight ton Cook Inlet crude carrier and the improved 250,000 deadweight ton Prince William Sound crude carrier. Both of these crude carriers incorporate the engineering subsystems discussed within this section, with cost data verified by U.S. shipyards, and are governed by the following factors:

- Single ship bid from U.S. shipyard (Nov. 1989) with a 1992 delivery;
- Service speed is 14 knots;
- Designed for ice operations in Cook Inlet/Prince William Sound;
- Main propulsion - diesel engine(s); and,
- Hydraulic unit for auxiliary thruster and cargo pumps.

Figure V - 6 also shows that the construction cost of a 70,000 deadweight ton, single hull tanker, is approximately 85 million dollars, whereas the cost of an improved B/15 double hull tanker (separation between the inner and outer hulls is the tanker's beam divided by 15), of the same deadweight, is 93 million dollars. This 8 million dollar increase in construction cost equates to a cost increase of 9.4 percent for the Cook Inlet crude carrier.

From the same graphic, it is shown that the cost of a 250,000 deadweight ton, single hull tanker, is approximately 175 million dollars, whereas the cost of an improved B/15 double hull tanker, of the same deadweight, is approximately 192 million dollars. The computed cost increase of 17.2 million dollars equates to a cost increase of 9.8 percent for the Prince William Sound crude carrier.

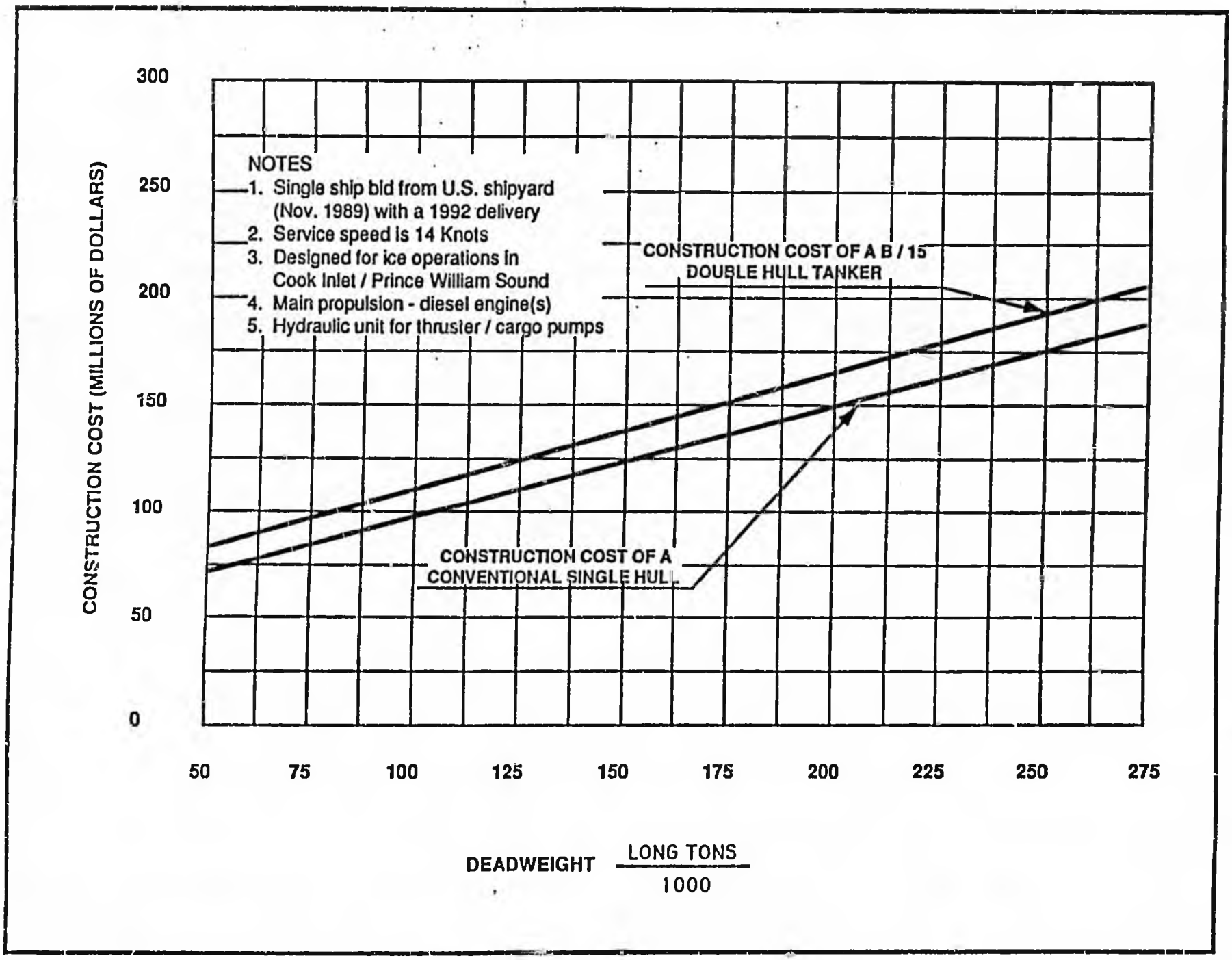

NOTES
1. Single ship bid from U.S. shipyard (Nov. 1989) with a 1992 delivery
2. Service speed is 14 Knots
3. Designed for ice operations in Cook Inlet / Prince William Sound
4. Main propulsion - diesel engine(s)
5. Hydraulic unit for thruster / cargo pumps
CONSTRUCTION COST OF A B / 15 DOUBLE HULL TANKER
CONSTRUCTION COST OF A CONVENTIONAL SINGLE HULL
CONSTRUCTION COST (MILLIONS OF DOLLARS)
300
250
200
150
100
50
0
50
75
100
125
150
175
200
225
250
275
DEADWEIGHT LONG TONS / 1000

FIGURE V - 6

FEDERAL REGULATION AND OVERSIGHT

Congress has mandated a comprehensive system to protect the safety of oil and gas transportation, but for lack of enthusiasm and underfunding enforcement has been a failure. The quality of federal oversight of oil transportation in Alaska was typified by the U.S. Coast Guard, whose safety and regulatory efforts gradually declined for most of the decade leading up to the *Exxon Valdez* disaster.

The Coast Guard supported safe traffic monitoring systems and design standards, including double-hulled tankers, when the trans-Alaska pipeline system was approved in 1973. But by 1978, after strong industry opposition to double hulls in international regulatory forums, the Coast Guard backed off its support. The Coast Guard also imposed stringent safety inspections and vessel monitoring practices during the early years of tanker operations after the opening of the pipeline in 1977. Inspection and monitoring efforts waned noticeably after parallel state inspections were stopped in 1979, and gradually thereafter as Coast Guard funding and resources for these activities declined.

Some federal agencies performed admirably in events surrounding the spill — notably the U.S. Army Corps of Engineers and the U.S. Navy in cleanup response efforts and the Coast Guard itself in successful measures to salvage the ship and the unspilled cargo. As a rule, however, federal authority must be reinvigorated in several ways if it is to provide significant leadership in the safety and oversight of maritime oil transportation.

"Figure out what 25 percent of the nation's oil is worth."

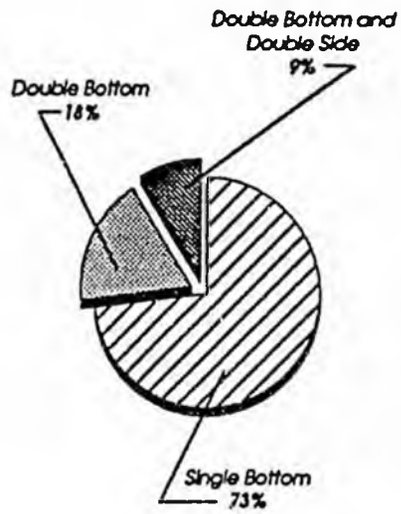
Rep. George Miller, California
House Committee on Interior and Insular Affairs hearing, May 1989

Recommendation 28
Double hulls and vessel design

Double hulls and other technological advances in tank vessel design should be required on an accelerated timetable, including prohibition of nonqualifying vessels, regardless of flag registry, in all U.S. waters.

The loss of oil from the *Exxon Valdez* wreck would have been substantially less if the vessel had had a double hull of appropriate design. A U.S. Coast Guard study undertaken after the accident indicated that up to 60 percent less oil — about 6 million gallons — would have entered the water if the *Exxon Valdez* had been equipped with a double hull. Double hulls already are required for chemical tankers and gas carriers to provide maximum protection to cargo tanks. A study for the Alaska Oil Spill Commission by ECO, Inc., of Annapolis, Maryland, says double hull design "provides the highest probability of surviving damage, either from a collision or grounding, with no loss of cargo."

Hull designs of the 93 tankers registered for Alaska trade.



Technical measures to reduce risk of accident and oil spillage have been advocated by naval engineers and others over the past two decades, but this advocacy has not produced significant voluntary changes in the way the industry does business. Suggestions regarding multiple screws, horsepower enhancement and other design overbuilding proposals to enhance safety have received only a negative response. Required changes are necessary, particularly as the size and carrying capacity of modern supertankers has increased.

Recommendation 29
Mandatory traffic control

Mandatory traffic control systems should be installed in due course in Cook Inlet, Prince William Sound and all waters of the U.S. where an equivalent or greater risk occurs.

Any of several common practices relating to positive vessel traffic control would have prevented the *Exxon Valdez* from straying so far off course as to run aground on Bligh Reef. The wreck would not have occurred if there had been a traffic control system covering operations to Hinchinbrook Entrance, as was promised by owners of the trans-Alaska pipeline system at the time the system was approved. The wreck would not have occurred if Loran C retransmit or radar had provided reliable coverage to Hinchinbrook Entrance, as was promised by the owners. And the *Exxon Valdez* wreck would not have occurred if the Coast Guard had not, according to regular, informal practice, given permission to the vessel to move outside established tanker lanes.

The *Exxon Valdez* wreck would have been less likely if the vessel had been traveling at lower speed and would not have occurred if the captain had

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

P.O. Box Y, State Capitol
Juneau, Alaska 99811-3100
Mail Stop 3100
(907) 465-3991

July 7, 1989

MEMORANDUM

TO: Representative Mike Davis

ATTN: Barnaby Dow

FROM: Karla Hartk Hart
Legislative Analyst

RE: Oil Tankers: Regulation and a Profile of Tankers Operating in Alaska
Research Request 89.352

You asked for a profile of oil tankers serving Valdez, including their age, size, history of repairs and the number with double bottoms. For purposes of comparison, you requested similar information for Japanese, South Korean and Norwegian tankers. This information is presented following an introduction which provides background on the regulatory and legal basis for standards imposed on oil tankers.

Tanker Regulation and Industry Controls

Cabotage laws are laws designed to reserve to a nation's own ships the coastwise trade between a nation's ports. The chief cabotage law of the United States, known as the Jones Act, provides that merchandise transported between points in the United States must be transported in vessels built in the United States, documented under the laws of the United States, and owned by citizens of the United States--all requirements for U.S. flagging (registry). For the most part, the cabotage laws consider ports in the U.S. territories and possessions to be U.S. ports.[1]

Flags of convenience (FOC) shipping, or open registry of vessels, allows ships to fly the flag of the country in which they are registered, with corporate or individual ownership by a national of another country. Such registry has been used by many owners, particularly owners domiciled in developed countries, for the tax, regulatory, and cost advantages attained. Nations which allow open registry have laws limiting requirements regarding disclosure of ownership, earnings, and profits as well as operating information. These laws also permit large flexibility of manning, insurance, classification, and operating

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[1]Ernst G. Frankel, Regulation and Policies of American Shipping, Auburn House Publishing Company, 1982, p. 59.

procedures. In 1982, Liberia controlled roughly three-quarters of the FOC tonnage. Tankers are the majority of the FOC ships;[2] however, due to the Jones Act, few of the tankers operating in Alaska are FOC ships.

Ship classification is an international marine industry means of self-regulation. Classification societies are non-governmental organizations which establish and administer vessel standards for the design, construction, and periodic survey of merchant ships and other marine structures. Classification certifies adherence to established standards, thus representing that a vessel possesses the structural and mechanical fitness required for its intended service. Classification is voluntary, although it may be essential for underwriting or selling a vessel. Classification societies also act on behalf of many governments in certain inspection functions. Major international classification societies, such as the American Bureau of Shipping and Lloyd's Register of Shipping (United Kingdom), offer worldwide representation and have fairly similar standards. There is greater variation among the smaller classification societies and various classification societies have different total loss experiences.[3] Additional information on classification is found in the American Bureau of Shipping brochure (Attachment A).

A large number of U.S. government departments have jurisdiction over various aspects of regulation, advocacy, control, and supervision related to the U.S. shipping industry.[4] Because some overlap in the jurisdiction of these federal agencies has occurred over time, it is sometimes difficult to define the exact responsibility of each particular federal agency.[5]

States are limited in their ability to regulate tankers. In a 1978 U.S. Supreme Court decision, Dixie Lee Ray v. Atlantic Richfield Company, the court found that the Washington State requirement that tankers either satisfy safety design standards prescribed by state statutes or use tug escorts was invalid under the supremacy clause of the federal constitution. Title II of the Ports and Waterways Safety Act (46 USCS Section 391a) mandates federal regulations be issued to set minimum standards for tanker design and to protect the marine environment; thus, states cannot impose stricter design requirements. As we

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[2]Frankel, Regulation and Policies of American Shipping, pp. 74-75.

[3]Thomas Tucker, vice-president, American Bureau of Shipping, personal communication, June 1989.

[4]Federal agencies with important roles in U.S. maritime transportation include the Department of Commerce (National Oceanic and Atmospheric Administration), Department of Transportation (Office of the Secretary, U.S. Coast Guard and Maritime Administration), Department of Defense, Department of State, Department of Energy, Environmental Protection Agency, Federal Maritime Commission, Interstate Commerce Commission, Federal Trade Commission, and Department of Justice.

[5]Frankel, Regulation and Policies of American Shipping, p. 13.

discussed, you may wish to have the Division of Legal Services evaluate the extent to which Alaska may impose standards upon tankers if you are considering legislation.

Tankers Participating in the Alaska Trade

A list of the tankers transporting North Slope crude oil is not readily available. Tankers operating in Alaska must file proof of financial responsibility with the Alaska Department of Environmental Conservation (DEC) (AS 46.04.040). As of August 25, 1988, there were 95 tankers with approved proof of financial responsibility through June 30, 1989. Of these, two were liquid natural gas tank vessels (excluded from this memorandum) and an unknown number were used for carrying refined fuel products. The DEC does not collect details on the trade of each vessel; however, roughly two-thirds of the tankers have filed proof of financial responsibility which is limited to the Trans-Alaska Pipeline System trade. On the two occasions I have contacted Alyeska Pipeline Service Company personnel in Valdez (September 1987 and April 1989) they were unable to provide a listing of tankers which pick up crude oil at the marine terminal.

The export ban on Alaska North Slope crude oil effectively limits tankers operating out of Valdez to those of U.S. flag, with the exception of tankers carrying oil to an Amerada Hess refinery on St. Croix in the U.S. Virgin Islands (which is exempted from the Jones Act). Presently, nine Liberian flagged tankers have proof of financial responsibility on file with the DEC.

The rating, size, age, type, hull, flag, classification society, casualties, and ownership details for each of the 93 tankers involved in the Alaska trade are provided in Attachment B. Of these tankers, 18 percent (17) have double bottoms and an additional nine percent (eight) have double bottoms and double sides. Attachment C, a March 5, 1989 Anchorage Daily News article entitled "Rough seas leave mark on vessels laden with oil," provides further information on the condition of tankers operating in Alaska.

Comparison of Tankers

Using published data, the 93 tankers with FY 89 proof of financial responsibility in Alaska are compared in the following table with tankers having Japanese, South Korean and Norwegian owners.[6] In summary, tankers serving Alaska are slightly smaller and significantly older, with a lower rating and more casualties than the Japanese, South Korean and Norwegian owned

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[6]Japan and South Korea were selected because of the potential for exporting Alaska crude oil directly to those nations. Norway was selected because it has ownership of a large fleet of tankers and is a northern seagoing country with offshore oil activities.

tankers. Information on which of these foreign-owned tankers have double bottoms is available through Lloyd's Registry in London, whom I did not contact.

Table 1
Comparison of Oil Tankers

	Number of Tankers	Mean MDWT	Mean Age	Mean Rating	Tankers With Highest Rating	Mean Number of Casualties/Tanker Total	Mean Number of Casualties/Tanker "Important"
Alaska Trade	93	106	18	2.9	7%	5.8	0.5
Japan Owned	212	121	9	4.0	38%	0.5	0.1
South Korean Owned	16	111	14	3.5	6%	0.1	0.1
Norwegian Owned	152	111	11	3.4	23%	0.2	0.2

Note: MDWT = thousand deadweight tons

Source: Arthur McKenzie, 1989 Guide for the Selection of Tankers, The Tanker Advisory Center, Inc., New York.

Ratings from one (low) to five (high) are assigned to each tanker to suggest the probability that the vessel will perform satisfactorily for a prospective charterer. The assigned ratings are reviewed annually by the Tanker Advisory Center. Important factors in assigning each rating include the vessel's age, flag, classification society, layup date, parent owner, size of the owned tanker fleet, changes in ownership, and the number, type, frequency and severity of reported casualties.[7]

A casualty is any reported event which probably results in an insurance claim, fine or detention by port authorities. Worldwide, about 13 percent (plus or minus two percent) of the tankers each year sustain a reported casualty. Approximately two to three percent of these vessels annually sustain an important casualty, including damage probably rendering a vessel unseaworthy, breakdown requiring a tow, explosion/fire in cargo tanks or pumproom, cargo spill, a death, a fine, or detention by authorities. It has been documented that over eighty-five percent of all marine casualties are caused by human

[7]Arthur McKenzie, 1989 Guide for the Selection of Tankers, Tanker Advisory Center, Inc., New York.

error, not by vessel structural or mechanical failures.[8] During the past two decades, less than 0.5 percent of the oil carriers were, on average, total losses annually.[9]

A comparison of the casualties of tankers serving Alaska with those of other tankers requires caution. The extreme weather conditions encountered by tankers transporting oil from Valdez may be such that Japanese tankers, for example, might suffer significantly higher casualty rates than presently experienced if they too were operating in the Gulf of Alaska.

Additionally, the reporting of casualties may not be consistent for vessels of different flags of registry. The vast majority of tankers in the Alaska trade are of U.S. registry. The tankers of Japanese, South Korean and Norwegian ownership represent a wide variety of flags--including flags of convenience. McKenzie notes that it is not possible to either prove or disprove a bias in the reporting of casualties.[10]

* * *

I hope this information is helpful. If you have questions, please call.

Attachments

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[8]American Bureau of Shipping, "Classification: Promoting the security of life and property on the seas," undated brochure (1981?), 16 pp.

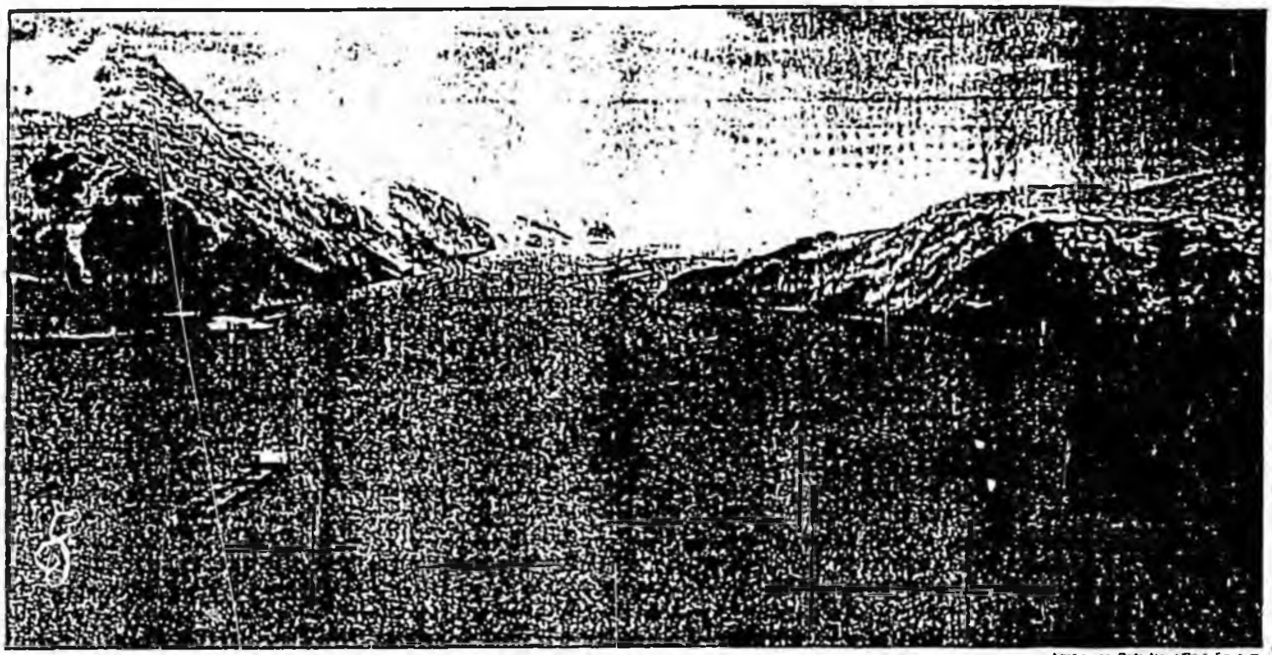
[9]McKenzie, 1989 Guide for the Selection of Tankers, pp. 2 and 8.

[10]McKenzie, 1989 Guide for the Selection of Tankers, p. 3.

ichorage Daily News

GES ANCHORAGE, ALASKA, SUNDAY, MARCH 5, 1989

VALDEZ TANKER FLEET HAS TAKEN A BEATING



Anchorage Daily News/Paul Souders

The oil tanker Exxon Long Beach sails through the Valdez Narrows for Prince William Sound after loading at the port facility in Valdez.

Anchorage Daily News map

Rough seas leave mark on vessels laden with oil

By PATTI EPLER
Daily News reporter

A decade of sailing the world's roughest seas has taken its toll on the giant tankers that carry millions of gallons of North Slope crude oil from Valdez to the Lower 48.

The Valdez fleet now includes some of the world's worst tankers, according to one ranking, and a rising frequency of spills and hull cracks is causing concern about how safe Alaska waters are from a devastating oil spill.

Two January oil spills in Port Valdez have sharpened focus on the issue of the tanker fleet's soundness and prompted shipping industry scrutiny of the vessels.

Records and reports obtained under the Freedom of Information Act, a search of state files and interviews with shippers and government officials reveals:

- An increasing number of structural failures — mainly hull cracks — has prompted the Coast Guard and the American Bureau of Shipping to put the Alaska fleet under closer review. Coast Guard records show the number of hull cracks in tankers has doubled since 1984.
- About 20 percent of the fleet is rated undependable by a former tanker officer who provides the only rating service for potential charterers.

Please see Page A-9, TANKERS

...ner merge ...media giant

...c., would have a total value ... including long-term debt, and annual revenue of ... billion.

The deal would create a media giant, making it a substantial force in both the production and distribution of movie and television programming, as well as in magazines and book publishing.

The merger would insure Time Warner ... as one of a handful of global media giants able to produce and distriuute information in virtually any medium.

The agreement is subject ...

Please see Back Page, GIANT

WEATHER

Sunny today with north winds to 20 mph; stronger gusts ... near the inlet. High near 25. Clear tonight and not as windy. Low ranging ... above to 5 below zero. Outlook for Monday: Continued sunny. High near 25.

High Saturday	25
Low Saturday morning	14
9 p.m. temperature	[illegible]
Barometer	29.82
Humidity	43%
Wind	[illegible]
Normal high March 4	29
Normal low March 4	13
Record high March 4 (1984)	[illegible]
Record low March 4 (1954)	[illegible]

STATE, NATIONAL WEATHER FORECASTS PAGE A-2

INDEX

FOR HOME DELIVERY CALL 257-44...

For ... delivery of missed paper ... call before 10 a.m.

...ase raises issue of computer security

Protecting computer data ... become a $3 billion-a-year ... is that each ... locking up data threatens to ...

these conflicting concerns. Private companies are also moving more assertively to ... computer systems.

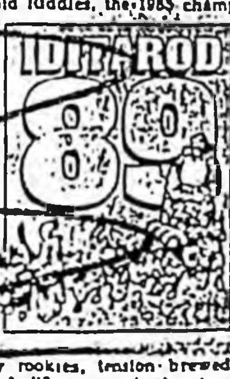
... classified, but about such topics of national security as nuclear weapons and the ... computer chips.

The first day is a tough one

By ...
Daily News reporter

Libby Riddles parked her truck on Fourth Avenue to await the start of the Iditarod Trail Sled Dog Race early Saturday morning and tried to remember if she'd ever been ... on a March day in Anchorage.

"I ... the first day so much and in the past it's been a real headache," said Riddles, the 1985 champ from ... Creek. "So this year I really concentrated on preparing and making the pre-race less neurotic. I think it worked."



Riddles slowly sipped coffee out of a Styrofoam cup. Conversation had to be yelled over the ... of hundreds of barking dogs, but she was at ease to the last drop.

"The last cup of cappuccino before I hit the trail," said Riddles, who was starting her fifth Iditarod ...

For others, particularly rookies, tension brewed. What had they forgotten? What would the trail

A tugboat trails the tanker Exxon Long Beach through the Valdez Narrows, about three-quarters of mile wide at its narrowest. The tug is required in case the tanker loses power.

TANKERS: Wear of rough seas shows in the cracks of steel hulls

Continued from Page A-1

• Tanker owners and operators have paid only token fines for oil spills caused by hull cracks, equipment problems or general sloppiness. The Coast Guard, which has the main authority over tankers, hasn't fined a tanker more than $1,000 in at least four years. And the state Department of Environmental Conservation has issued more than 150 notices of violation to tankers in the past five years but only once has tried to collect money for one of [illegible]

• Alaska tankers have a higher rate of structural failures than any other class of U.S. commercial ship, mainly due to the rough weather they encounter.

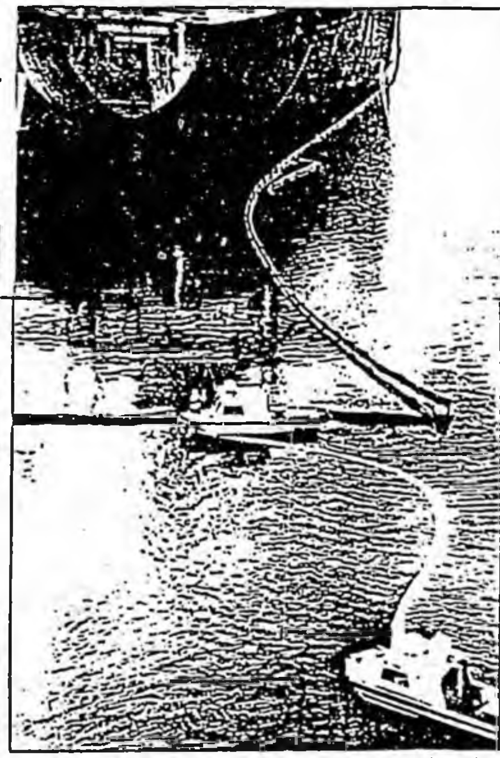
The Gulf of Alaska, a place the textbooks call "the mother of storms," can generate seas as tall as a five-story building and winds up to 150 miles per hour. Even the relatively benign 28-foot swells that are routinely storm-driven shoreward across the vast North Pacific can bend the steel hull of a heavily loaded tanker like a wire coat hanger.

"If you bend a coat hanger once a day, it's going to take a long time to break," says Coast Guard Lt. Cmdr. Tom Purtell, author of a recent report on the structural soundness of American shipping. "But if you bend it once a minute you might get it to fail in a day.

"It's the same stresses for a ship. How many times can you flex a piece of steel before whatever imperfections are in it come to fail? A ship exposed to the extremes of the environment persistently is going to suffer a higher frequency of failure."

> *"How many times can you flex a piece of steel before whatever imperfections are in it come to fail?"*
>
> — Coast Guard Lt. Cmdr. Tom Purtell

U.S. Coast Guard Cmdr. Steve McCall says that overall the Valdez tanker fleet is still in good shape.



Crews on two small boats clean up oil spilled into Valdez Harbor while the tanker Mobil Arctic loads oil. Alyeska officials said the oil may have been left over from a January spill.

Tankers have made more than 11,300 voyages up and down the West Coast since the trans-Alaska pipeline began operating in 1977, creating the so-called TAPS trade. Despite early fears of catastrophic oil spills, the shippers' environmental record has been very good. Two major spills happened when tankers ran aground — one off the coast of Washington in 1980 and one last year near Honolulu — and two in the Gulf of Alaska from hull cracks, both involving the same tanker, the Stuyvesant.

Since 1977, there have been about 4,0[illegible] oil spills in Port Valdez, nearly all less than a barrel in size, according to oil company and state records.

Over time, the worst ships are being scrapped from the fleet because, as Alaska oil production declines and pipelines carry more oil from the West Coast to the east, fewer ships are needed, shippers say.

But with no new tankers being built, state and federal officials and some tanker owners are concerned repeated stress on remaining tankers could result in more major spills.

"Overall, I think (the fleet) is in very good condition," says Cmdr. Steve McCall, head of the Coast Guard's Valdez office. "Whether or not another 10 years from now it'll be a real problem, we don't know."

Now, the New York-based Tanker Advisory Center gives about 20 percent of the Valdez tanker fleet its lowest rating and another 13 percent rate only fair. More than 30 percent are rated very high.

Arthur McKenzie, a former tanker officer who runs the center to advise a demand charterers of a tanker's [illegible] record to [illegible] generally considers the [illegible] as tankers to be in good shape.

Still, about 18 of the 60 tankers that regularly call at Port Valdez have earned his lowest rating, based mainly on their age, ownership and the number of casualties — collisions, strandings, groundings, machinery and structural problems — they've had.

According to his 1987 ratings guide, which included information on 2,200 tankers worldwide, one regular visitor to Port Valdez — the Cove Leader, which spilled about 2,500 gallons of crude into the port earlier this year — had more casualties on its record than all but one other tanker. Two other Cove ships that frequent the Valdez trade also had higher numbers of casualties than most other ships in the field.

Last April, the Coast Guard decided to look for any trends of structural problems in the U.S. ocean-going commercial fleet, much the same as the Federal Aviation Administration is trying to pinpoint a pattern of problems with the nation's airlines. The Coast Guard examined the records of 603 ships, including 263 freighters and 330 tankers, and reviewed casualty reports from 1980 through 1986.

Purtell, who headed the study, and his investigators noted a strong trend in the number of cracks being reported in tankers plying the North Pacific. "While TAPS tankers made up only 13 percent of the entire fleet, they accounted for 52 percent of all the structural failures during 1984 through 1986," their report said.

The investigators were surprised to find that younger ships actually had three times as many structural failures as ships more than 20 years old, the age generally considered "old" by the Coast Guard. Most of the Alaska tankers were built in the past 20 years.

"The real intention of that report is to acknowledge the TAPS trade as an extreme service that really requires a higher degree of attention," says Purtell.

As a result of the study, Coast Guard headquarters has told all offices to give "special consideration" to the TAPS tankers. When in dry dock, the ships are to be given an especially thorough structural inspection and checked for internal fractures that could spread to the hull. Requests to stay longer in dry dock by tanker operators could signal a problem.

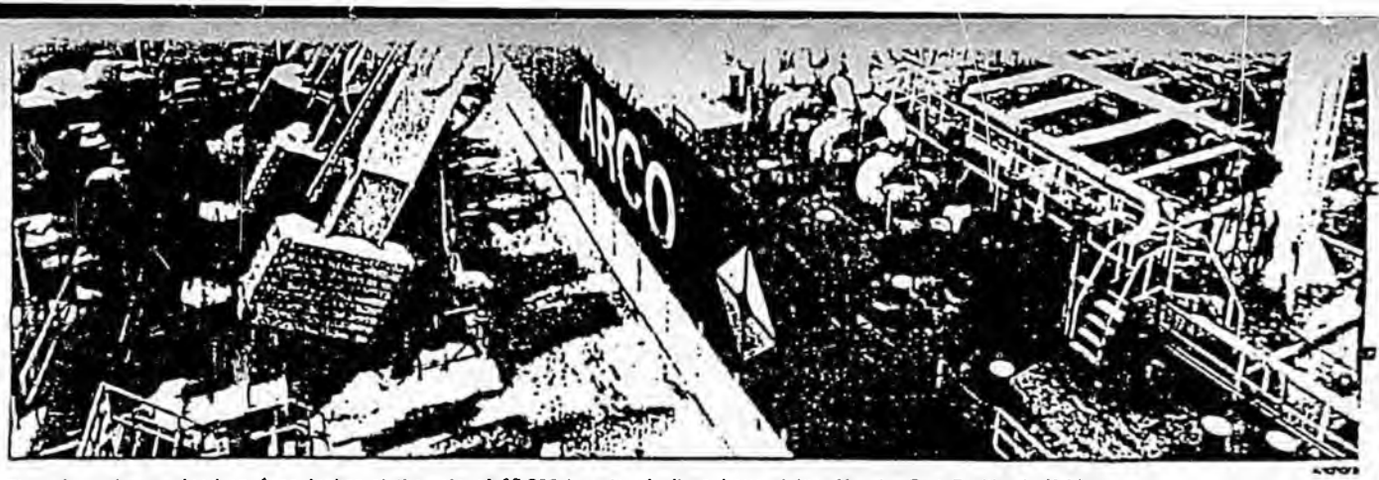
In January, two tankers calling at Port Valdez sprang leaks from hull cracks within a two-week period. People began asking if the tanker fleet was getting old, and the American Bureau of Shipping decided to investigate.

"In this case, we looked into it rather thoroughly," says Tom [illegible], vice president of the New Jersey-based organization that oversees design and construction standards for the U.S. shipping industry. "We determined it was a problem unique to the (Alaska) service." The bureau has alerted all West Coast surveyors and inspectors to be on the watch for stress problems with the fleet.

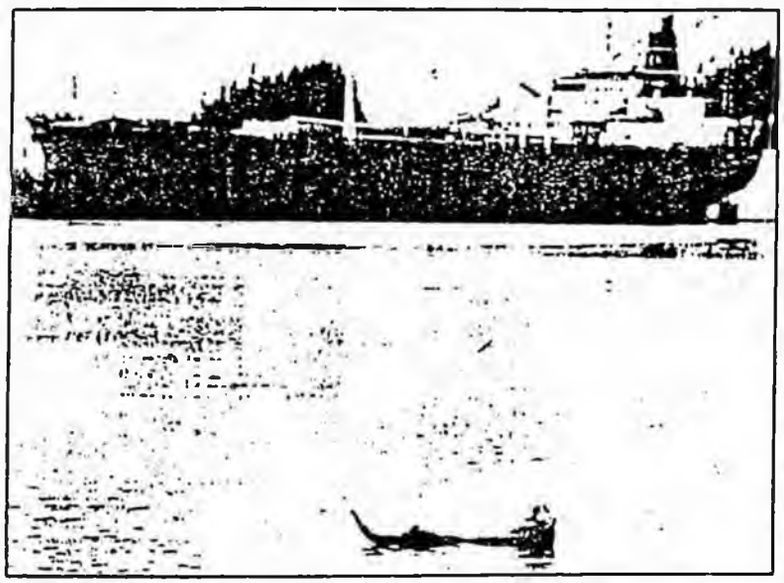
Bureau inspectors examined the two ships, the Champion Pass and the Cove Leader, researching original designs and performance records. They ruled out construction flaws, he says.

Instead, the bureau believes constant stress and strain on TAPS tankers comes from the relentless [illegible] of Alaska storms. [illegible]

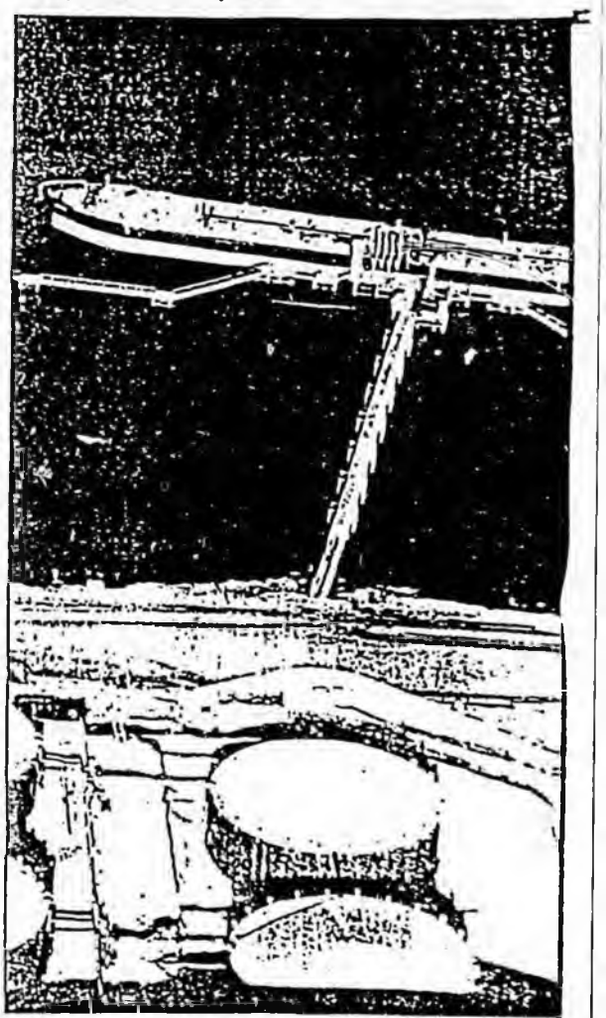
Please see Page A-12
TANKERS



Three huge booms load an Arco tanker at the rate of 95,000 barrels of oil an hour at the Alyeska Port Facility in Valdez.



A sea otter floats in Valdez Harbor. In background an oil tanker sits in port.



A tanker finishes loading North Slope crude stored at Alyesk

TANKERS: Fleet shows the wear

Continued from Page A-9

cane-force winds are common, and the Navy has measured seas up to 40 feet high, says Gary Hufford, chief regional scientist for the National Weather Service.

Geographic and oceanographic conditions also combine to produce long, rolling swells, 12 feet high in winter, eight feet in summer. "That's a phenomenal height," Hufford says.

Across this environment sails the oil tanker, unable to venture too far off course to avoid the weather. The tankers "are taking all those big waves right on the beam," notes Hufford. "They're always getting pounded from the side."

Tanker operators describe a process called "hogging and sagging" to explain what happens to the long, heavy tankers when a wave passes under. As the wave lifts the ship, bow and stern "hog" — go down in the water. When the wave passes, the middle "sags" as the bow and stern come back up.

Tankers are designed to be flexed over and over again without failing, but the repetition of stress or concentration of stresses in one area seems to be causing cracks to appear more frequently than anticipated, much as in the wire coat hanger analogy, according to tanker operators, the Coast Guard and others.

"The trouble with any trade route that is basically north to south," says Roger Gale, BP Oil Co.'s manager of marine operations, "is how do you dodge something that is crossing over you? You either have to stop and wait until it passes or go like hell. And most of the ships don't have that kind of speed."

The key to lessening stress on a tanker is the skill of the ship's master in steering through the rough seas. "The real issue here is do the people on board the ship know when to slow down a little bit, change the course a little bit," says Gale. "It's amazing how a few degrees change in course to shift the wind can make the ship ride a little bit easier."

About 75 tankers a month call at Alyeska's pipeline terminal in Port Valdez. The two largest — the ARCO Independence and the ARCO Spirit — are as long as an aircraft carrier and twice as heavy when loaded. At 262,000 deadweight tons each — the sum of cargo and fuel — those two are medium-sized in terms of today's supertankers; the biggest now runs more than 500,000 tons.

Each of the two ARCO ships can carry 2 million barrels, or 84 million gallons, of crude oil. The 21 cargo tanks on each ship are so big that the crew sometimes paddles around in rafts to inspect the tanks.

The Coast Guard requires tankers to be dry-docked and inspected about every two years. A Coast Guard inspector as well as an American Bureau of Shipping surveyor examines each tanker while it's out of the water.

The big tanker operators — Arco, Exxon Corp. and BP — say catching small cracks before they become big ones is the best way to prevent oil spills. The companies spend millions of dollars a year on inspection and maintenance, and have staffs of marine engineers and inspectors to keep their fleets in good shape.

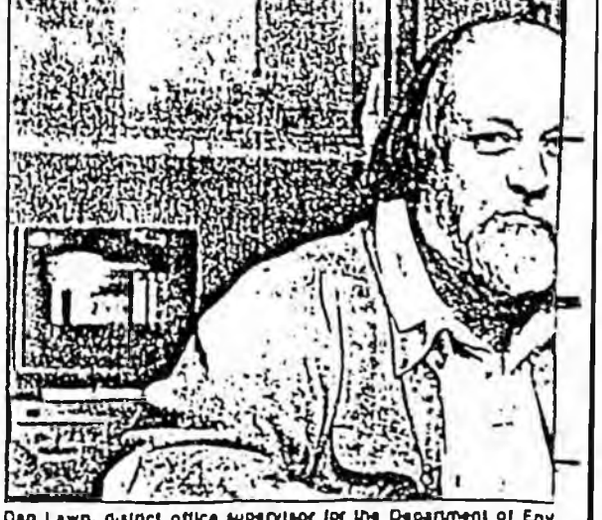
BP is Alaska's largest oil producer and it's biggest shipper. Arco and Exxon each own about 10 tankers that sail to Valdez; BP, which is prohibited from owning ships under the Jones Act because it's a British company, charters 22 tankers that move its Alaska crude to the West Coast and Panama.

BP keeps abreast of its rented fleet through its port captains, former tanker officers who check the ships at most ports they enter. A staff of marine superintendents and engineers inspect the tankers about once a year to look for cracks and pits and other potential problems, according to Gale and Fred Garibaldi, vice president of transportation for BP Oil.

They point out that no oil company wants to see its oil spilled into the ocean — the loss of the cargo as well as cleanup costs run into the millions of dollars before it's settled.

Several independent tanker companies own ships regularly hired under short-term or one-time charters for the Valdez trade. And some operators and of-

Please see Page A-11, / TANKERS



Dan Lawn, district office supervisor for the Department of Env

is hard on the hulls

Continued from Page A-10

ficials are concerned that the smaller companies, with less money to spend on expensive inspection and maintenance programs, may need more of a push from regulators like the Coast Guard to maintain sound ships.

A check of state Department of Environmental Conservation records shows the state issued more than 150 "notices of violation" to tanker operators in the past five years for oil spills caused by general sloppiness in operations as well as hull fractures. But in that time, the state has only once — in August 1984 — followed through with its threat to seek monetary penalties for oil spills. That case involved a 2,500 gallon spill from the ARCO Anchorage and the state collected its costs of $1,495.

Usually, DEC sends the notice to the tanker operator, waits for an explanation of why the spill occurred, then suspends the case, threatening to reopen cases should similar incidents occur.

Although similar incidents involving the same tanker have occurred, according to DEC's records, the DEC has never reopened a case.

For instance, the Thompson Pass, which in January was responsible for the largest oil spill in Port Valdez history, had received nine notices of violation from DEC prior to the most recent spill. Four of those were for hull cracks — the same problem that occurred in January and allowed 70,000 gallons of crude oil to spill. In 1981, according to a letter in DEC's files, the Coast Guard was especially concerned because similar fractures were found in all six sister ships to the Thompson Pass.

DEC records show the state used to collect at least its costs for investigating an oil spill, but hasn't routinely attempted to do even that since the early 1980s.

Dan Lawn, head of the DEC's Valdez office, says he doesn't have the staff, money or time to pursue cases against companies when most spills are so small. He thinks the tanker companies pay attention to the notices and are bothered by them, even though the state takes no follow-up action.

Larry Dietrick, the DEC's director of environmental quality, says even though state law allows for hundreds of thousands of dollars in penalties, the DEC's oil spill regulations have limited fines to a "dollars-per-barrel" penalty rate, with $63 per barrel about the most the state can assess. So, he says, the state wouldn't have been able to collect much money from the tanker spills, unless it could prove negligence or some serious disregard for the environment.

The DEC had not been aware of the recent Coast Guard report on hull cracks in the TAPS tankers until the Coast Guard supplied it to the Daily News.

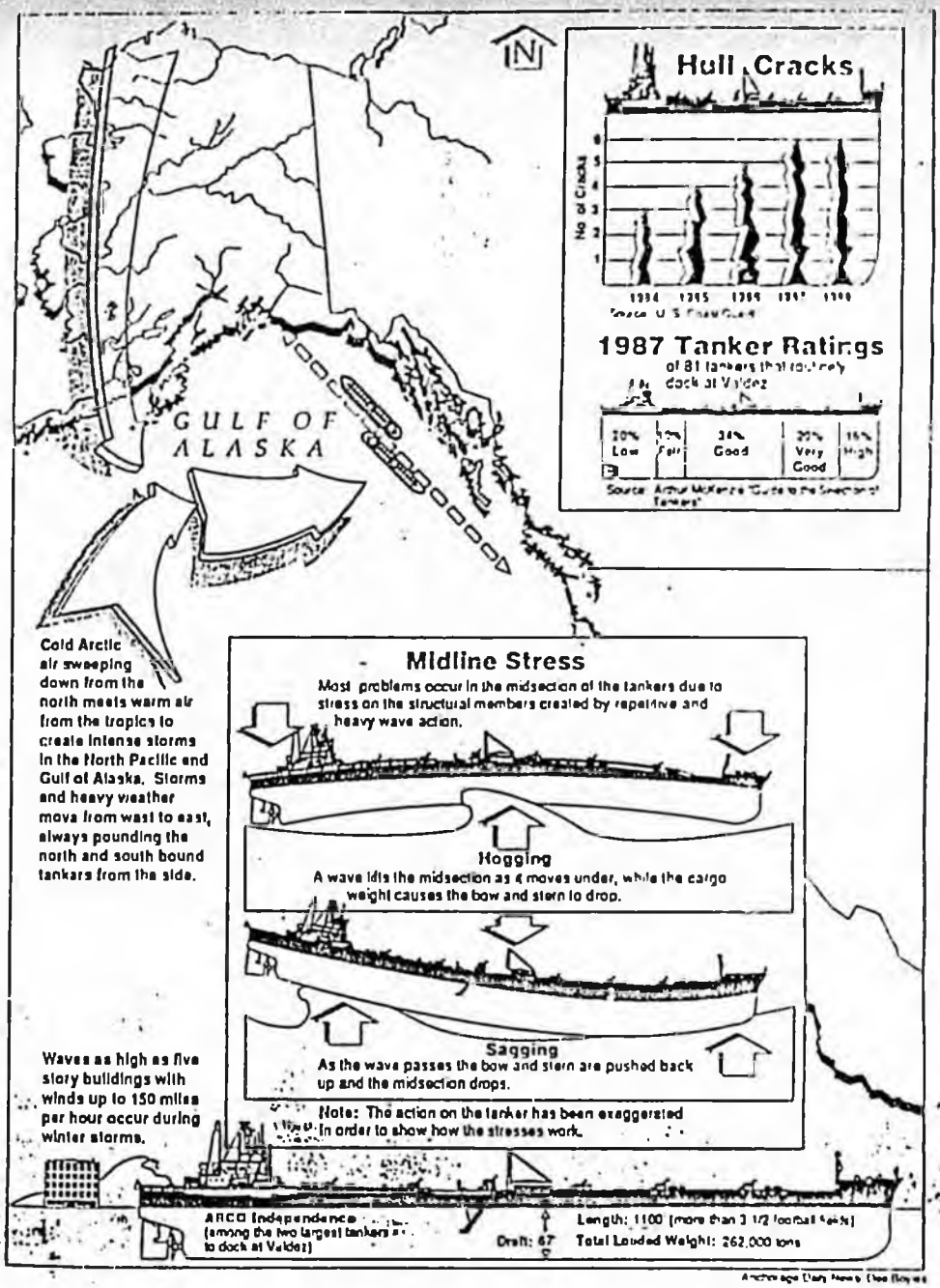
Dietrick says the DEC will review the report and likely pay more attention to tankers that sustain hull cracks. However, no increase in staff or funding is planned for the Valdez office, he says.

The Coast Guard is required by law to assess a fine for an oil spill. Coast Guard records show that for the past four years the fines have averaged only a few hundred dollars per incident, and none has been more than $1,000.

In fact, tanker operators pay as big a penalty for hydraulic fluid being washed overboard in a heavy rain as they do for a hull crack. Coast Guard officials say they are limited to a $5,000 penalty under the federal Water Pollution Control Act.

Cmdr. Craig Eisenbeiss, a Coast Guard hearing officer who spent four years as head of the Valdez office, says structural problems historically may have been viewed as something beyond the control of the operator.

McCall, the Coast Guard's current Valdez commander, notes that companies pay a heavy price to clean up spills, a penalty in itself.



Letters

We Can Build Tankers That Won't Spill Oil

To the Editor:

The Exxon Valdez is a recently delivered, modern, crude-oil carrier of about 150,000 tons cargo capacity, built in a United States shipyard in compliance with Coast Guard and other regulatory-body requirements. It was operated under the American flag by a presumably competent marine operating subsidiary of a major oil company. The immediate cause of its grounding March 24 appears to be human error and will be the subject of extensive investigations and hearings.

It is quite possible and well within ship design and construction technology to build oil tankers that will not leak oil in case of grounding or collision or, in the very rare case of a severe collision at high speed, would leak very little oil. This means mandating construction of oil tankers with a double hull, i.e., an inner bottom and fore-and-aft bulkheads about 6 to 8 feet from the outer hull for the full length of that part of the hull used for cargo. The space between the inner and outer hull would be empty when the tanker is loaded and used for ballast on the return voyage. This type of construction is required for ships carrying liquid natural gas, about 50 of which are operating, many of them about the size of the Exxon Valdez.

Two of the largest L.N.G. carriers have suffered severe grounding casualties while fully loaded. Despite severe bottom damage, not a single gallon of cargo was lost, nor was there significant pollution of the sea or air. If these had been fully loaded single-hull oil tankers, the loss of oil would have been of the magnitude of the Exxon Valdez casualty.

A simple calculation indicates that the increase in gasoline price at the pump for double-hull tankers would be about half a cent per gallon.

In view of the horrendous environmental destruction and enormous cost of the cleanup efforts that are the result of major oil spills, and the inevitability of human error, this must be an acceptable price to pay for environmentally secure oil transportation. EDMUND G. TORNAY

New York, April 3, 1989

The writer is a naval architect.

Now Try the Pipeline

To the Editor:

Our technology to prevent oil spills is so advanced that the likelihood of a major oil spill from tankers carrying Alaskan oil south to the United States is practically nil. That is the gist of the voluminous response the oil companies wrote to my March 11, 1973, letter to you recommending a single pipeline land route, rather than their combined pipeline-tanker land-sea route.

The all-overland route would have carried Arctic oil through Canada's Mackenzie Valley via Edmonton and obviated the use of tankers.

Whether or not Exxon is able to contain the March 24 oil spill in Prince William Sound and prevent a major environmental catastrophe to the shellfish, finfish, bird and marine mammal populations, the use of tankers to transport Alaskan oil to the lower 48 states is unnecessary and should be phased out as fast as a single overland pipeline route can be developed. JULIAN KANE

Hempstead, L.I., March 26, 1989

The writer is senior professor of geology at Hofstra University.

Fossil-Fuel Moratorium

To the Editor:

I would like to go on record as being completely opposed to your repeated editorial view that, despite the disastrous oil spill in Prince William Sound, the United States should continue to pump oil and ship it through these waters. The last paragraph of "Oil on the Water, Oil in the Ground" (editorial, March 30) correctly stated that "Washington can't afford to assume that the Exxon Valdez accident

David Suter

was a freak that will never happen again," but it neglected to say that another one or two "accidents" of this magnitude could wipe out the fishing industry of southeast Alaska.

The argument for continued exploration of the Arctic National Wildlife Refuge can be countered in several ways. First, there is absolutely no proof that oil exists under the tundra; second, the preliminary incursions into that area have already damaged the fragile vegetation covering the permafrost (I flew over this terrain three years ago and saw the evidence), and third, any large-scale oil drilling in the refuge will disrupt the migration of caribou, to say nothing of the effect on other wildlife.

It is becoming increasingly evident that we should put a moratorium on the use of fossil fuels. California is being forced to consider this option to prevent further pollution. So should we all. JUDITH P. SULZBERGER

New York, April 1, 1989

Preserve the Refuge

To the Editor:

The oil to be found in the Arctic National Wildlife Refuge, you say (editorial, March 30), would generate at least $10 billion in royalties for Alaska and the Federal Government. Your hypothetical offer of $10 billion in unspecified land somewhere in exchange for permission to the oil companies to devastate irreversibly a mere "few thousand acres" naïvely assumes that land is fungible. It's not, and it is the very uniqueness of an ecosystem such as the Arctic wildlife refuge that demands we preserve it, not waste it. We just don't know the effect that oil exploration would have on that fragile environment.

It will apparently take more crises like the fiasco in Prince William Sound before we understand we have a global responsibility to preserve what little remains of pristine wilderness. R. MATTHEW PETTIGREW JR.

Philadelphia, March 31, 1989

Cockamamie Reasoning

To the Editor:

In your March 30 editorial, you decide that the oil in the unspoiled part of Alaska is too valuable to keep underground. You reason it is worth $10 billion, and $10 billion is surely too much to give up for the absolute purity of the refuge. Just think of the sum as 20 B-1 bombers that don't work.

As for your cockamamie reasoning that the venture isn't too risky because there have been 10,000 runs from Valdez without a major spilling of oil: What difference does it make how much oil safely reaches its destination before missing its mark? The area is ruined as surely on the 10,000th try as it would have been on the first. PATRISHA McLEAN

Garrison, N.Y., March 31, 1989

May 5, 1989

MR. SPEAKER, THIS WEEKEND THE HOUSE INTERIOR SUBCOMMITTEE ON WATER AND POWER RESOURCES WILL BE IN VALDEZ TO CONDUCT HEARINGS ON THE DISASTER NOW SPREADING THROUGHOUT SOUTH CENTRAL ALASKA.

NEXT WEEK CONGRESS WILL HOLD HEARINGS IN WASHINGTON ON THE OIL SPILL.

TODAY, I AM ASKING FOR THIS BODY'S SUPPORT OF A JOINT RESOLUTION THAT WILL HELP ESTABLISH THE STATE'S PRESENCE DURING THE UPCOMING HEARINGS. HJR 41 CALLS ON CONGRESS TO INVESTIGATE THE EVENTS AND CIRCUMSTANCES THAT LEAD UP TO THE OIL SPILL AND TO EXAMINE CHANGES THAT WILL HAVE TO BE MADE TO INSURE SAFE PASSAGE OF OIL FROM THE PORT OF VALDEZ.

IN THIS MEASURE WE ARE CALLING FOR AN EXAMINATION OF THE COAST GUARD ABILITY TO ENSURE SAFE PASSAGE; TO ENSURE TANKER CREWS ARE PROPERLY CERTIFIED; TO ENSURE THAT OIL SPILL CONTAINMENT EQUIPMENT IS INCLUDED ON EACH VESSEL; AND TO EXAMINE CHANGES IN ENFORCEMENT THAT CAN HELP PREVENT THIS TRAGEDY FROM EVER HAPPENING AGAIN.

IN ADDITION, CONGRESS IS URGED TO EXAMINE THE CONDITION OF THE TANKER FLEET AS A WHOLE; TO EXAMINE THE BEST TECHNOLOGY, INCLUDING THE USE OF BOW THRUSTERS AND DOUBLE HULLED TANKERS.

IN A RECENT LETTER TO THE NEW YORK TIMES NAVAL, ARCHITECT EDMUND TOURNAY WRITES THAT DOUBLE HULLED TANKERS ARE IN USE TODAY FOR SHIPPING LIQUIFIED NATURAL GAS. SOME OF THESE SHIPS HAVE SUFFERED SEVER GROUNDINGS WHILE FULLY LOADED. DESPITE SEVERE BOTTOM DAMAGE, NOT AN OUNCE OF CARGO WAS LOST.

YEARS AGO, THIS BODY PASSED A MEASURE TO REQUIRE DOUBLE HULLED TANKERS. THAT MEASURE WAS STRUCK DOWN BY THE SUPREME COURT AS AN INFRINGEMENT OF FEDERAL LAW. MR. SPEAKER, WE NEED CONGRESS TO ACT TO AVERT ANOTHER TRAGEDY.

HJR 41 WILL LET THEM KNOW THAT TANKERS SAFETY IS A TOP PRIORITY HAS WE CONSIDER THE FUTURE OF TRANSPORTING OIL FROM ALASKA.

Alaska Center for the Environment

700 H Street, Suite 4 • Anchorage, Alaska 99501 • (907) 274-3621

Recommendations For Regulatory Change

I. Overview

II. Issues that need to be examined

A. Safety and vessel construction regarding marine transportation of oil.

The federal Ports and Waterways Safety Act (PWSA) regulates the design, construction, operation, and movement of bulk cargo vessels that carry oil and hazardous substances. The current regulations adopted under the PWSA are inadequate regarding the protection of the marine environment from spills. More stringent regulations must be adopted.

Strengthened vessel construction regulations should include:

1. Vessels that transport oil and hazardous substances must be double-hulled.

2. Vessels that transport oil and hazardous substances must be equipped with bow thrusters for maximum maneuverability.

3. Tanker size must be limited to a volume no larger than that which can be dealt with in a worst-case spill, as demonstrated by successful completion of simulation drills and attested to by impartial spill cleanup experts not associated with the oil companies, or running larger tankers at less than maximum capacity to achieve that result.

B. Bonding

The state and federal governments should require the posting of adequate bonds from terminal, pipeline and tanker operators which can be immediately used to initiate government-directed containment and cleanup operations. There are numerous precedents for this sort of bonding in other environmental regulatory statutes.

C. Oil Spill Contingency Plans

As the Exxon-Valdez incident indicates, there is a huge discrepancy between the response capability stated in contingency plans and the real operational performance when a spill actually occurs. Plans are drafted to comply with regulations, but unless the regulations require periodic compliance monitoring and enforcement, they are of minimal value. Similarly, the requirements become meaningless unless the responsible agencies are adequately funded to carry out their mandates.

We endorse the California Coastal Commission's use of a compliance representative who calls surprise drills to test contingency plan claims.

It is imperative that the government require successful completion of simulation drills, including immediate revision to upgrade any deficiencies and rerunning the drills until all kinks are worked out.

Backup equipment should be mandatory, so that when, as here, a barge is down for repairs, there is no interruption in response capability.

Mandatory stockpiles of all necessary equipment for containing the spill and cleaning oiled wildlife should be located around the state. Any contingency plan that calls for flying in equipment is inadequate and should be rejected.

Individual tankers should be required to have their own Spill Prevention, Control and Countermeasure Plans that include a spill response plan effective during the critical 24-48 period immediately following a spill.

Regulations should provide for public comment on SPCC plans so that local expertise can be incorporated into the plan.

D. Evaluation of Cleanup Capability

In order to assess the existing oil spill response capability of potential polluters, a systematic evaluation of available cleanup resources needs to be done. This evaluation should inventory the equipment necessary for each stage of a complete response from the point of the spill to the point of disposal of the recovered oil and contaminated sand, vegetation, etc.

E. Research fund

A federal and industry-supported fund should be established to study habitat recovery and research the long-term effects on wildlife. Studies should be conducted by a qualified, independent institution.

F. Revitalization of Test Tank

Congress should provide funding for the currently defunct Oil and Hazardous Materials Simulated Test Tank to test the effectiveness of oil spill cleanup equipment.

G. Compensation and Liability

Congress should enact a comprehensive oil spill liability and compensation regime that includes international, national, and state components. This program should:

1. Fairly assign risks and internalize cost of handling and transporting oil among potential spillers.

2. Ensure rapid repair, restoration, and rehabilitation of damaged or destroyed natural resources. (See Superfund law for analog.)

3. Completely and quickly reimburse victims and compensate the public for loss of use and enjoyment of natural resources.

4. Provide more effective incentives to prevent oil discharges.

H. Other Concerns

1. There should be a fully equipped federal response center in or adjacent to Prince William Sound. Currently, the closest one is hours away by plane in Stockton, California.

The government should require the oil companies in Alaska to fund such a center, including establishment and training of a dedicated oil spill response team whose responsibility it would be to respond to spills throughout Alaska.

2. The Vessel Traffic System (VTS) for the Sound needs to be re-examined. Specifically, the VTS should incorporate an alarm feature that would sound when a vessel goes outside authorized lanes. The Coast Guard should be authorized, and required, to close the shipping lanes to all traffic when ice or other obstructions are reported. The Coast Guard should not allow deviation from the safe shipping lanes.

3. EPA Region X, and possibly EPA Headquarters, has decided in the last few years to put enforcement of Clean Water Act requirements for SPCC plans on a low priority when they react to cleanups. We need to focus on both preventive and response actions; and EPA must strictly enforce SPCC plan regulations.

4. EPA must take a stronger position with Alyeska. Historically, Alyeska is one of the worst polluters of air and water in Alaska, which renders the Sound even more susceptible to oil spill damage. EPA should revise the draft NPDES permit to match the more stringent state permit for allowable surface water discharges. In addition, EPA must step in and enforce the Clean Air Act as it applies to emissions from tankers and the terminal.

5. Seasonal drilling restrictions should be codified in federal law to protect endangered species and ensure effective spill cleanup. Specifically, exploration, drilling and transportation of oil should be prohibited during bowhead whale migration and during broken ice season unless industry can demonstrate (and independent experts are willing to confirm) its ability to detect, contain, clean up and dispose of oil spills in ice-laden waters.

6. Criteria should be established for effective oil spill response to be taken by the state, Coast Guard and/or EPA if a spiller fails to comply with containment and cleanup standards.

7. EPA should prepare an environmental impact statement to evaluate the impact of in-situ burning and chemical dispersants used as part of an oil spill response.

C. CURTIS

-- Draft --

Exxon Valdez-Related Actions/Demands

1. Ecologically sound and effective cleanup initiatives need to be carried out by federal and state government officials, Exxon/Alyeska, and private/non-profit concerns -- now and in the coming months/years. In addition, intensive scientific efforts are needed in two other related areas: (1) damage assessments of the impacted natural resources (the ecosystem and critters); and (2) in-depth ecological research into the long-term effects of the spill on the waters, ocean beds, marine life and their food chains, the beaches, coastlines and other affected areas.

2. There should be no exploration for or production of oil or gas in the Arctic National Wildlife Refuge. In addition to the Refuge, the Secretary of Interior needs to remove highly sensitive and controversial offshore areas from the Department of Interior's Outer Continental Shelf (OCS) Oil and Gas Leasing Program that are located offshore southern and northern California, in Georges Banks off the New England coast, the Florida Keys, Bristol Bay off Alaska, off the North Carolina coast, and in the coastal and nearshore waters, submarine canyons and the shelf-break zone of the mid-Atlantic.

3. Improvements are needed in oil tanker design, operating requirements and personnel/manning standards. Such improvements might well include: double bottoms for tankers; increased vessel space allocated to protectively located segregated ballast tanks (PL/SBT); upgraded vessel traffic service (VTS) in Prince William Sound, and other congested U.S. ports, harbors and traffic fairways; and increased Coast Guard inspection of Alaskan pipeline trade vessels. Complementing those measures, current personnel policies need to be significantly improved in order to reduce the risk of human error. These include: restrictions on eligibility for masters' licenses that would exclude anyone with a "driving while intoxicated" conviction or a history of alcoholism; more stringent and more frequent physical exams; more frequent license renewals; increased minimum manning requirements for vessels (e.g., a dedicated radar aide); more stringent retraining and refresher courses, as well as monitoring for alcohol and drug abuse on the job. Despite all of these types of measures, given that oil spills are still likely to occur, oil and other hazardous spill contingency plans need to be routinely tested (to determine response time, ability to deploy personnel, and working condition of necessary equipment). In addition, industry using the Port of Valdez and all other ports with heavy oil and other hazardous cargo traffic should be required to maintain an adequately staffed, full-time emergency response team.

4. A comprehensive regime for oil spill liability and compensation is needed, including legislative reform to prohibit Exxon from deducting oil-spill cleanup expenses.

5. Special measures should be taken to protect the health and welfare of Native Americans.

6. Reagan-Bush budget/Coast Guard budget - The environmental protection budget of the Coast Guard should be fully restored.

7. RCRA - oil industry exemption from RCRA regulation should be dropped...other oil-related spinoffs

8. "Worst case" scenario analyses should be conducted in all EISs under NEPA. This provision, which was dropped by the Reagan adimistration, should be restored.

9. Energy Efficiency/CAFE standards.

ALASKA STATE LEGISLATURE
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October 2, 1987

MEMORANDUM

TO:

ATTN:

FROM: Karla Hart
Legislative Analyst

RE: Double Hulls on Oil Tankers: Cost of Construction
Research Request 88.039

You requested an historical perspective on legislation requiring double hulls on oil tankers operating in Alaska waters (especially Cook Inlet), and you had questions regarding the cost difference in double hull versus single hull tanker construction.

Historical Perspective

Of overriding significance in any discussion of State legislation requiring design standards on oil tankers is the 1978 Supreme Court decision, Dixy Lee Ray v. Atlantic Richfield Company. The Supreme Court found that the Washington State requirement that tankers either satisfy safety design standards prescribed by State statutes or use tug escorts was invalid under the supremacy clause of the Federal Constitution. Title II of the Ports and Waterways Safety Act (46 USCS Section 391a), mandates federal regulations be issued to fix minimum standards for tanker design and to protect the marine environment; thus, states cannot impose stricter design requirements.

During the 1976 consideration of Alaska Senate Bill 406 relating to marine transportation of crude oil, amendments were presented which would have required tankers to have double hulls. Not much discussion of the double hull issue exists in the committee records on file at the Legislative Library, and that which does exist addresses the economics of double hulls rather than the performance. The double hull requirement did not appear in the final legislation, Chapter 266, SLA 1976.

At the national level, regulations requiring double hulls or bottoms were considered during the 1970s but never adopted.[1] Mr. Perinsky, Office of Costs, National Maritime Administration, believes the main reasons for not requiring either were economics and the adoption of regulations requiring other safety features in oil tankers.

Tankers Presently Operating in Alaska

Alyeska Pipeline terminal personnel in Valdez estimated that there are over one hundred tankers licensed to call in Valdez. Not all make regular visits. Approximately 75 tankers per month turn around in Valdez. Of those, Chuck O'Donnell, Marine Manager of Alyeska terminal, estimates that 25 percent are double bottomed. I was unable to locate a source that monitored or recorded which tanker vessels operating in Alaska had double bottoms or hulls.

According to staff at Exxon and Chevron, tankers which have double hulls or bottoms are not used exclusively for crude oil transporation. Exxon has a world wide fleet of 80 tankers. Two of these ships have double bottoms and both are used on the east coast to transport refined products. Mr. Paoli, Marine Engineering, Exxon Company International, also estimated that SOHIO had perhaps four double bottomed ships used to transport crude oil. Mr. Hilliard, Chevron Public Affairs office, said Chevron's 70,000 dead weight tons (DWT) tankers which call frequently in Valdez have single hulls. However, their 39,000 DWT double hull (double bottom with protectively located ballast tanks providing protection to the sides) tankers are also used to transport crude oil in Alaska, including Cook Inlet.

Construction Costs of Double versus Single Hull Tankers

You asked if retrofitting a double hull onto a single hull tanker was possible and, if so, what the cost would be. Mr. Cherrix, Chief of the Office of Naval Architecture, National Maritime Administration responded that yes, retrofitting a double hull was probably possible, although, he questioned the feasibility. Mr. Perinsky said that his office had never studied the cost of a retrofit. During the 1970s when the topic was raised, the cost was considered too high to be a serious alternative to other pollution controlling options. Neither source was aware of a double hull retrofit ever taking place.

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[1] The terms double bottom and double hull are not interchangeable. A double bottom tanker does not have protective spaces on the sides, only the bottom. A double hull is essentially two hulls with protective space continuing up the sides of the tanker.

Mr. Perinsky said there has been very little tanker construction in the United States in recent years. He was able to provide rough figures for the additional cost of double hull tanker construction from the first quarter of 1977.[2]

35,000 DWT	$38 million single hull +	$6 million double hull
56,000 DWT	$47 million single hull +	$9 million double hull
92,000 DWT	$59 million single hull +	$6 million double hull
265,000 DWT	$117 million single hull +	$36 million double hull

He stressed that these are rough estimates based on construction taking place at various shipyards in the United States at that time. Variations in cost reflect differences in construction and shipyards. For purposes of comparison, he was aware of a 40,000 DWT single hull tanker being constructed in the United States this year at a cost of approximately $68 million. The added cost of a double hull in 1977 was 10-31 percent above the single hull construction costs.

* * *

I hope this information is helpful. If you have additional questions, please call.

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[2]Mr. Perinsky used the term double hull in discussing the costs of construction. Based on later conversations with Exxon and Chevron, I believe these may be estimates for double bottoms rather than double hulls.