State Effort in Controlling Oil Spills

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STATE EFFORT IN CONTROLLING OIL SPILLS

by

Victor Alan Bell

May 11, 1977
ABSTRACT

In light of the growing demand for imported oil, the accelerated offshore development program and the recent series of tanker incidents, many states have enacted, or plan to enact, legislation to protect their coastal lands and waters from oil pollution. The purpose of this paper is to outline present state legislation that deals with controlling oil pollution, and stating how this legislation would coexist with existing and proposed federal legislation and the International Conventions. The results of this study point to areas where state legislation would be useful and where overlapping or unnecessary legislation does exist.
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Introduction - The Problem

According to the National Academy of Sciences man dumps approximately five million tons of petroleum into the earth's water each year. It has been estimated that between one-third and one-half of this oil is caused by activities generally characterized as "marine transportation," with oil tankers being the single largest contribution. It seems that with the demand for oil increasing and off-shore production accelerating, during the next decade the contribution from these sources will probably increase.

Oil pollution from tankers originates from two main sources: 1) tanker accidents and 2) normal tanker operations including tank cleaning and de-ballasting. Tanker accidents, which contribute about one-fifth of the oil pollution from ships, are most often related to human error or carelessness and that connected to normal tanker operation is intentionally.

The damage to the environment from these discharges of oil is serious and substantial. The short-term and long-term effects of oil pollution have been assessed with these assessments leading to the general conclusion that oil spills must be reduced. Major short-term effects of oil spills in
coastal areas include:

1. Mortalities to seabirds;
2. Damage to benthic and intertidal organisms;
3. Damage to plant life, algae and salt marshes.

While short-term effects have been carefully studied, the long-term effects are less well-known. The National Academy of Sciences estimates that about one year's input of oil is continuously contained in the ocean. This is considered by some to have a more deleterious effect to coastal and estuarine area biota than large spills.

Even if one questions the extent of the biological damage caused by oil pollution or its potential danger, the conclusion that oil pollution should be avoided is evident. To this extent government at all levels International, Federal, and State are seeking ways to prevent oil spills. Each level of government has its own series of schemes, with each relating to its own interest, and these sometimes conflict with their primary goal to prevent oil pollution.

This paper is mainly concerned with state effect to control oil spills. States are often the most affected by oil pollution, where the impacts from a major oil spill could
be devastating to a state's economy its impact on the Na-
tion as a whole would be quite less and its international
ramification would be minimum.
II. Approaches to Prevent Oil Pollution

One can identify two broad approaches to prevent oil pollution. One would be an emphasis upon stringent government anti-pollution regulations and their strict enforcement. The other would be to persuade the oil industry to prevent oil pollution because it would be in its own best (economic) interest, either through increase-liability law or by making the oil too costly to spill. Either of these two approaches would necessitate the oil industry to make technical improvements which will be discussed in the next section.

A. Stringent Government Anti-Pollution Regulations

This approach to controlling oil spills is quite straightforward. It would imply strict government regulations on the different aspects of oil transport. This could include standards for ship design and construction, higher licensing standards for seamen, better port-side control of ship traffic or any of the technical improvements discussed in the next section. These regulations could be enacted by government at different levels (International, Federal, or State) and be designed to fix their needs. (Restriction to state regulations will be discussed in detail in the following
sections). If conscientiously implemented these safety regulations could dramatically reduce oil pollution.

B. Liability

This approach would encourage the oil industry to prevent oil spills in order to maximize their profits. By making the oil more valuable, it becomes too valuable to lose. By placing strong liability laws on the industry, they must pay the costly clean-up bills and compensate those suffering pollution damage. This should encourage the industry to try to minimize possibly enormous liabilities thereby seeking to prevent oil spills. Ideally, liability would incorporate the cost of oil pollution into the normal operating cost of the industry. Liability laws could be enacted at any level of government as with stringent government anti-pollution regulations.
III. Technical Improvements

Technical improvements can be divided into two broad subsections, those improvements that would prevent oil discharge through normal operations and those that would prevent or minimize oil spills through tanker accidents. Since this paper is mainly concerned with the prevention of accidental oil spills, I have only listed and briefly explained these in the first subsections. The second subsection is explained in detail.

A) Technical improvement to prevent normal operational discharge:

1) Load-on-Top (LOT) - A method devised to limit the discharge of oil from tankers caused by pumping only ballast water from tankers caused by pumping oily ballast water and oily tank washings overboard. In the LOT system, ballast water carried in cargo tanks is first allowed to settle to the bottom and then most of it is pumped overboard. The remainder of the oily ballast and washwater is transferred to a "slop tank" which provides further settling of the water from the oil before the separated water is discharged. Fresh cargo oil is always loaded on top of residual oil left in the slop tank.

2) Segregated Ballast - A term describing the provision of separate tanks for ballast water only, through eliminating the need to carry ballast in cargo oil tanks.
Tankers must carry about one-third or more of their total capacity in ballast when on a return (empty) leg of a voyage. Usually sea water is used for ballast. This may be loaded into cargo tanks, or when segregated ballast is provided, into separate ballast tanks. A segregated ballast provision thus adds to the total volume required in a tanker.  

B. Technical improvement to prevent oil spills through accidents:

1) **Ship Improvements** - This is divided into four areas: a) double bottom or double hulls, b) inert gas systems, c) improved controllability, and d) improved maintenance.

a) **Double Bottom or Double Hulls** - Double bottom generally refers to two separate, but continuous and watertight plating structures along some length and width of a ship's bottom. Double hulls would incorporate both double bottoms and double sides. It is generally accepted that double bottoms will prevent most oil spillage which results from limited intensity hull ruptures due to grounding. For double hull tankers, the same would apply for collisions as well as grounding.  


US shipyards say that with today's costs double bottom and double hull can be built for about three to five percent more than the equivalent single-skin tankers.

As of 1975, 34 tankers are in operation, under construction, or under contract that have either double hull or double-bottom, yet no regulation exists that require this.

b) Inert Gas Systems - Inert gas systems is a method of filling empty space in cargo tanks on a tanker with an inert gas in order to eliminate danger of an explosive atmosphere created by petroleum fumes mixing with air. The "inert" gas used is usually boiler exhaust gas which contains only insignificant amounts of the free oxygen necessary for an explosive mixture. Inert gas systems also reduces corrosion of steel. Both the corrosion of steel and combustion or explosion of hydrocarbon vapors are only possible in the presence of sufficient oxygen. Inert gas systems reduces a higher proportion of carbon dioxide and lowers the proportion of oxygen.

It is felt that inert gas systems can substantially reduce the risk of tank explosions and the resulting major casualties.
Both IMCO and ICS have recommended the use of an inert gas system with the use of high-capacity tank-cleaning machines. MARAD requires inert gas systems on all subsidized tankers of 100,000 DWT and greater.  

c) Controllability - Ship controllability is the ability of the operator to control the ship according to the ship's inherent hydrodynamic characteristics and as modified by both the local environment in which the ship is operating and any peripheral equipment either on board or on shore, which furnishes information and/or control to the operator.

The most important aspects of controllability is stopping distance. Stopping distance increases with both ship size and approach speed. A supertanker going 16 knots would require about three nautical miles to stop, where a smaller tanker say 17,000 DWT would require less than one mile. Basically, stopping distance is governed by ship size, speed of approach, loading condition, astern thrust, time lag in reversing the propeller, added hydrodynamic resistance, added nonhydrodynamic retarding force, and use of tugboats. Thus, to minimize stopping distance for a given ship, the following could be considered:
1. Approach speed reductions;
2. Ability to deliver more astern thrust;
3. Ability to deliver astern thrust more rapidly, i.e., more quickly reverse the propeller;
4. Added hydrodynamic resistance such as might be provided by parachutes and brake flaps;
5. Added nonhydrodynamic retarding forces, such as a rocket motor; and,
6. The use of tugboats.  

Some of these considerations would have an impact on other controllability aspects, for example one could loose steerageway with reduced speed.

The following ship improvements could be used to improve stopping distance; these are ranked by the ones that can deliver more astern power and deliver it the fastest; at slow and moderate speeds 1) double astern power, 2) controllable-pitch propeller, 3) slow-speed diesel, and 4) ducted propellers.

At high approach speeds, 1) controllable-pitch propeller, 2) double astern power, and 3) ducted propeller. Other braking devices producing additional resistance do not at this time appear practical. These include water parachutes, water brake flaps, bow flaps and splayed twin rudders.

Low speed maneuverability is another important aspect of tanker controllability. That is when a tanker's speed
through the water reaches a certain minimal level, and external forces such as wind and current become more dominant, there is insufficient directional control afforded by the rudder called loss of steerageway. This makes a tanker vulnerable to collisions.

In order to afford a tanker more turning movement at the low speeds or in shallower water (shallow water also reduces controllability), the following concepts are considered: 1) lateral thrusters, 2) twin screw propulsion systems, 3) twin rudders, and 4) use of tugboats.

In a case studied on a single screw, single rudder 60,000 DWT tanker at a rudder angle of 30 degrees, the turning movement at a ship's speed of three knots is less than twenty percent of the turning movement for eight knots. If a 1,500 hp lateral thruster is employed the turning movement generated at three knots is two and one-half times greater. Lateral thrusters have advantages over tugboats which is what is mainly used today. They can deliver lateral thrust about equal to that of a tug, but the thrusters are more easily controlled and can relay orders more efficiently than a tug. Conventional thrusters, however, cannot deliver
thrust to affect forward or astern motion of a ship which a tugboat can. Lateral thrusters would increase ship's cost by about two percent. 12

Twin screw propulsion can also result in improved maneuverability. A single screw has a higher hydrodynamic efficiency and/or lower in cost. Since twin screw requires a more complex power plant they would raise the ship's cost by about eight percent. Twin screws on a large tanker would have one main advantage for controllability: if a rudder was located behind each, one engine could be reversed to avoid forward acceleration as the other thrusts ahead to provide flow over its associated rudder. Also twin screw systems would provide greater reliability.

D) Improved Maintenance

Another important ship improvement would be improved maintenance. Oil tankers sinking from structural failures and thereby using their cargo of oil to the sea contribute about 25,000,000 gallons of oil each year. During the 1969-1972 period, 16 oil tankers with an average age of 17 years sank because of structural failures. The older a tanker is the greater the chance of it having a structural failure,
in fact a 15-year old tanker has over three times the probability of having a structural failure as compared with a tanker of less than 10 years of age.13

A significant portion of tanker accidents has been the result of hull failures, which in most cases have resulted in total ship loss. High stresses in rough water are common to all tankers and can result in fatigue cracks and are not detected during the early stages of their development.14

Marine inspection procedure could discover these potential structural problems. This inspection if properly done would provide a good handle on the structural adequacy of a tanker and could prescribe special operational limitations on it.

2) Personal Training and Licensing - Human error is a major cause of tanker collision or grounding. The Argo Merchant grounding off the Massachusetts coast can be attributed to human error. Noël Mostert reported in Supership: "Shell Oil, in a detailed study of 40 serious tanker accidents that involved pollution, found that the common link between them all was that "people make silly mistakes"!15 The need
for improved personnel training and licensing is self-evident in view of the tanker industry's past record.

If one looks at the aviation industry a good example can be made. In contrast to the tanker industry, the aviation industry has shown significant progress in improving overall safety. The aviation industry has a much greater structure to its training and licensing procedures than the marine industry. The aviation industry places a much greater importance on training and also has a larger emphasis on retraining, follow-up training, and use of simulation. In licensing, the Federal Aviation Administration gives licenses for different classes of planes, but the industry sets its own standards in qualifying their crews for different types of aircraft—747, DC-8, DC-10, etc. On the other hand, the marine industry has little or no requirements on performance, periodic proficiency checks to maintain a license or restrictions as to size and type of ship the individual is licensed to operate. With improved training and licensing it is felt that great improvements in safety could be derived.

3) Improved Information and Control Systems - These improvements are divided into six subsections: a) navigational
aid systems, b) communication systems, c) information systems, d) control systems, e) vessel traffic systems, and f) collision avoidance systems.

a) Navigational Aid Systems - These systems are those that permit a tanker to establish its navigational position. These include: 1) improved aid to navigation like buoys, ranges, and structures; 2) dual radar systems, 3) satellite navigation systems; 4) LORAC-C or OMEGA; and 5) other. The importance of this is obvious, by more routinely and more accurately established navigational positions, one eliminates grounding which could occur because of unknown or erroneous navigational positions like in the case of the Argo Merchant grounding.

The first group, i.e., lights and buoys, are used to guide a ship to a desired point, or along a certain path, or to warn him of a hazard. The other systems are for position fixing. The dual radar concept stems not only from the redundancy and reliability concern, but also from the fact that two types of radar are being used. A 3 cm radar for high resolution for shorter work and a 10 cm radar with longer range.
For long-range navigation the two most feasible systems would be LORAN-C or OMEGA and satellite navigators. At this time satellite is limited to the availability. LORAN-C and OMEGA have the advantages of being cheaper, more accurate and more available. At this time LORAN-C has almost total US coverage and would seem to be major navigation aid in the future.

b) Communication Systems - The Bridge to Bridge Telephone Act of 1971 requires all merchant vessels operating in US navigable waters to have bridge-to-bridge communications. It is important to have good communications, any traffic system built would require it.

c) Information Systems - These systems include those that give information such as ship speed, rate-of-turn, etc. Because of increases in ship size, these systems have become more important to ship safety.

d) Control Systems - These fall into two broad categories: engine/propeller control and rudder control. Between the two, all directional and magnitude operator inputs to control surfaces (propellors, rudders, thrustes, etc) are made. The importance of these are the speed in which
commands can be executed.  

e) **Vessel Traffic Systems (VTS)** - A VTS is an integrated system encompassing the technologies, equipment, and people employed to coordinate ship movements in or approaching a port or waterway. Regardless of its level, its objective is to reduce the probability of ship collisions and groundings.

These traffic systems can be anything from a basic communication link, to traffic separation, to surveillance and advisory services, to vessel traffic control.

Since ports and waterways are historically more dangerous (i.e., more collisions and groundings happen in this area) it is felt that UTS can make significant contributions to improved ship safety.

f) **Collision Avoidance System (CAS)** - These systems utilize a digital computer to automatically process radar data and display encounter situations in a form enabling the ship to be maneuvered to avoid potential groundings and collisions. These systems alarm deck officers of dangerous situations, therefore reducing the possibility of human error.
MARAD currently required a CAS on all US subsidized ships; it is estimated that the unit would cost approximately $90,000. 19
IV. International and Federal Jurisdiction Over Oil Spills

To understand where a state could have jurisdiction over oil pollution or where it would feel the need for state regulation, one must first understand the international and federal regulatory authority that presently exists.

A. International

International law is a body of principles, customs, and rules that are recognized as effectively binding obligations by sovereign states. The principle of freedom of the seas is the major legal concept concerning jurisdiction over vessel related matter. This concept recognizes minimum national control over the oceans. This concept gives nearly exclusive flag-nation control over vessels. According to this generally recognized principle, a vessel is subject to the jurisdiction of the nation whose flag it flies for almost all matters, including pollution control and vessel safety. In coastal waters or ports, a coastal-nation can exert control over another nation's vessels for certain purposes.

The breakdown of authority between flag-nation and coastal nation is important to the understanding of who sets
the rules and what are the respective rights and duties of each. According to the 1958 Convention on the High Seas, all nations have the right to freedom of navigation on the high seas which is defined by the convention as all parts of the ocean beyond the generally recognized limits of the territorial sea. For the US the territorial sea now is set at three miles, but the revised single negotiating test would extend it to 12 miles. The Convention on the High Seas defines the jurisdictional authority and related duties of the flag-nation over its vessels in Article 5:

1. Each state shall fix the conditions for the grant of its nationality to ships for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the state whose flag they are entitled to fly. There must exist a genuine link between the state and the ship; in particular, the state must effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.

In regard to vessel safety and pollution prevention the duties of the flag-nation are defined in Articles 10 and 24.

Article 10:

1. Every state shall take such measures for ships under its flag as are necessary to ensure safety at sea with regard interalia to:

a) The use of signals, the maintenance of communications and the prevention of collisions;
b) The manning of ships and labor conditions for crews taking into account the applicable international labor instruments;
c) The construction, equipment and seaworthiness of ships.

2. In taking such measures each state is required to conform to generally accepted international standards and to take any steps which may be necessary to ensure their observance.

Article 24:

Every state shall draw up regulations to prevent pollution of the sea by the discharge of oil from ships... taking into account existing treaty provisions on the subject.

When a vessel is on the high seas it is the duty of its flag-nation to see that the vessel does not pollute. Until recently each maritime nation set its own standards for its vessels, therefore without the benefit of international standards.

In 1959 the Intergovernmental Maritime Consultative Organization (IMCO) was established. IMCO was set up under the auspices of the United Nations to deal with traditional maritime problems. Recently IMCO began dealing with pollution focusing on liability, construction standards, and discharge. IMCO's history is characterized by delay. Although a United Nations convention called for its creations
in 1948, it took until 1959 for enough countries to ratify the convention to establish the agency. IMCO typically experienced a five-to-ten year lag between the adoption and ratification. IMCO's conventions are often weak by the US standards because of the need of ratification by several nations with varying interests tends to produce compromise provisions or nearly obsolete because of the time lag involved.

IMCO has many international conventions that deal with all aspects of marine transportation. Below I have outlined those that deal with the prevention of oil pollution arising from accidents and casualties at sea.

1. International Regulations for Preventing Collision at Sea

1960 and 1972:

The 1960 provisions sets out basic rules which regulate the behavior of vessels at sea in respect to other vessels in order to prevent collisions, and to deal with: 1) lights and shapes 2) sound signals and behavior in restricted visibility 3) steering and sailing rules and 4) sound signals for vessels in sight of one another. The 1972 provisions prescribe in a comprehensive way the manoeuvring procedures and actions to be taken by ships under various
circumstances for the purpose of avoiding collisions with reference to the need for avoiding hampering the safe passage of vessels restricted in their ability to manoeuvre due to their draught. Only the 1960 provisions are presently in force.

2. **International Convention on Load Lines 1966**

   The Load Line Convention prescribes the minimum freeboard to which the ship is permitted to be loaded.


   The 1954 - 1969 convention deals only with quantity of oil which a tanker may discharge and where these discharges could occur.

   The 1971 amendment was the first one whose aim was to minimize the amount of oil which could escape as a result of maritime accidents, particularly those including very large tankers.

4. **The 1973 Convention for the Prevention of Pollution from Ships**

   The 1973 convention reduced the permitted discharges and set up a concept of "special areas" where discharges
are to be completely prohibited. In regard to constructional aspects of oil tankers, two important provisions have been incorporated in the 1973 convention. First, new oil tankers i.e. those for which the building contract is placed after December 31, 1975, of 70,000 deadweight tons and above will be required to be fitted with segregated ballast tanks sufficient in capacity to provide adequate operating draught without a need to carry ballast water in cargo oil tanks. This requirement does not, however, call for the fitting of double bottom tanks. Second, new oil tankers will be required to meet subdivision and damage stability requirements so that they can survive after collision or stranding damage at any loading condition.

The 1973 convention also has provisions for the inspection of ships. With the exception of very small ships. Ships engaged on international voyages are required to carry onboard valid international certificates required by the convention. Such certificates may be accepted at foreign ports as prima facie evidence that the ship complies with the requirements of the convention. If, however, there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with
the particulars of the certificate, or if the ship does not carry a valid certificate, the authority carrying out the inspection may detain the ship until they satisfy themselves that the ship can proceed to sea without presenting unreasonable threats of harm to the marine environment.

Only the 1954 and 1969 amendments are in force. The 1971 amendments and the 1973 convention are not yet in force and it is expected to be a number of years before they are ratified.

In the area of liability IMCO has two important conventions neither of which are in force.

1. International Convention on Civil Liability for Oil Pollution Damage - 1969

Under this convention liability for oil pollution damage is placed on the owner of the ship transporting the oil. The liability is strict, with the only defenses being "an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable and irresistible character, . . . by an act or omission done with intent to cause damage by a third party, . . . or by the negligence or wrongful act of any government or other authority responsible for the maintenance of lights or other navigational aids
in the exercise of that function". The liability of the
shipowner is limited in respect to each incident. This lim-
itation is based on the tonage of the ship being $160/ton
or $16.8 million which ever is less. The convention con-
tains provisions determining the courts which have juris-
diction in cases where pollution damage occurs in more than
one state, and provisions relating to the recognition and
enforcement of the judgements of competent courts in the
other contracting states. Shipowners of contracting states
are required to carry insurance or other acceptable guaran-
tee to cover their liability under the convention.

2. International Convention on the Establishment of an
International Fund for Compensation for Oil Pollution
Damage - 1971

Under the 1971 Fund Convention, an International Oil
Pollution Compensation Fund is established first, to ensure
adequate compensation for victims of pollution damage who
are unable to obtain any or adequate compensation under the
1969 Liability Convention. Second, to provide some relief
to shipowners in respect to additional financial burdens
imposed on them by the 1969 Civil Liability Convention.
However, a shipowner is only able to benefit from the 1971
Convention if his ship complies with certain international
conventions establishing the safety and anti-pollution standards. A state which has suffered oil pollution damage and which has not been fully compensated for it under the 1969 Convention will receive compensation from the Fund. The Fund, supported by cargo owner fees, supplements the Civil Liability Convention up to $36 million, including reimbursement for cost exceeding $120/ton or $10 million to shipowners.

The seven international major oil companies in an attempt to stop or at least slow down individual nations from imposing absolute or unlimited liability and perhaps to better their public relations set up liability and fund agreement similar to the 1969 Civil Liability Convention and the 1971 Fund Convention. Both of these agreements are in force and will be outlined below.

1. **TOVALOP - Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution**

TOVALOP was established in January, 1969, and came into force in October of the same year. At this time about 90 percent of the world's tankers are enrolled. According to A.S.M. Hetherington the administrator of TOVALOP "One of the objectives in setting up TOVALOP... was if possible, to deter governments from legislating unilaterally in the
first place but, if this could not be done, then at least to try to persuade them by example to legislate sensibly". 

TOVALOP provides for reimbursement of an owner's clean-up costs whether he is negligent or not. The parties also agree to pay national and local governments for public clean-up of spills for which they were at fault. The limits of liability are $100/gross rated ton or $10 million which ever is less. Also a tanker owner must prove financial ability to cover this voluntary liability to join TOVALOP.

2. CRISTAL - Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution

CRISTAL requires its signatures to contribute to a fund covering pollution damages that exceed TOVALOP's limits up to a total of $30 million per spill. It also reimburses tanker owners regardless of fault for clean-up costs above $125/gross rated ton or $10 million. CRISTAL applies to public and private damages due to spills of CRISTAL cargo, from TOVALOP tankers, in cases where the Civil Liability Convention would impose liability.
B. Federal

Once a vessel enters the territorial sea or the contiguous zone of a coastal nation it becomes subject to increased control by that nation. It is the sovereign right of the coastal state to protect its waters, shorelines, and natural resources.

In this section I have reviewed the federal statutes, programs and regulations that deal with oil spills, within the next section I have dealt with the question of where states can control oil spills.

Federal action that deals with oil spills can be divided into two subgroups: 1) that which deals with construction and operation of vessels and 2) that which deals with the compensation of damages caused by oil pollution (liability). As discussed in Section II either of these areas can be used to prevent oil spills.

1) Construction and Operation Laws and Regulations

The most important recent law governing the construction and operation of vessels carrying oil is the Ports and Waterways Safety Act of 1972. This Act is divided into two titles. Title I - Ports and Waterways Safety and Environmental
Quality - provides the United States Coast Guard to have authority for controlling vessels in the nation's port, coastal waters and waterways in the following areas:

a) Establish, operate, and maintain vessel traffic services and systems for ports, harbors, and other waters subject to congested vessel traffic;

b) Require vessels which operate in an area of a vessel traffic service or system to utilize the system and to carry any devices necessary for its uses;

c) Control vessel traffic in areas which it determines to be especially hazardous, or under conditions of reduced visibility, bad weather, vessel congestion, etc., by:

1. Controlling times of entry, movement or departure;
2. Establishing UTS;
3. Establishing vessel size and speed limitations and vessel operating conditions; and,
4. Restricting vessel operation in hazardous areas or conditions, to vessels which have particular operating characteristics and capabilities.

d) Direct the anchoring, mooring, or movement of a vessel;

e) Require pilots where State laws have not;

f) Establish procedures for the handling of oil;

g) Prescribe minimum safety equipment.
h) Establish water or waterfront safety zones; and,
i) Establish procedures for examinations to assure compliance with these minimum safety requirements. The most important of these is the right to set up vessel traffic control systems and therefore have a greater control over vessels entering or leaving US waters. 24

Title I also carries this following statement:

"Nothing contained in this title supplements or modifies any treaty or federal statute or authority granted thereunder, nor does it prevent a state or political subdivision thereof from prescribing for structures, only higher safety equipment requirements or safety standards than those which may be prescribed pursuant to this title". 25

This is the only statement carried by the Act which discusses state rights. It gives the state only the right to deal with structures and therefore precludes state involvement in any of the requirements of the Act. The Act does state that the secretary shall consider the port environment, local conditions etc. when making any rule or regulation regarding that port, but does not mention any state laws.

Title II, Vessels Carrying Certain Cargoes in Bulk, directs the Coast Guard to develop new regulatory standards for vessels carrying oil in bulk. This title requires ships,
both foreign and domestic to have certification of inspection and a certification of compliance of the rules and regulations for protection of the marine environment. The Act provides for rules and regulations to be established in the following area: 1) for ship inspection both foreign and domestic 2) vessel design and construction, alteration and repair, and 3) officers and tankermen certifications.

Under the Ports and Waterway Safety Act the Coast Guard has established the following rules and regulations in regard to technical improvement to prevent oil spills:

1) Has required all new vessels of 70,000 DUT ordered after 1/8/76 and all foreign vessels ordered after 4/1/77 to have segregated ballasts;

2) That all vessels involved in international voyage carry the following equipment:
   a) Radiotelegraph and radiotelephone;
   b) Radar;
   c) Magnetic compass and gyrocompass;
   d) Up-to-date charts, sailing directions, coast pilots light lists, notices to mariners, tide tables, current tables and, all other nautical publications.

3) Directs the usage of out-pilots; and,

4) Has set up vessel traffic systems in a number of ports including Houston, New Orleans, Valdez and New York. The Coast Guard is now proposing that LORAN-C be added to the
list of required equipment. 29

Present Coast Guard rules and regulations in this area are inadequate to many states. Many states feel that these rules must include the application of many of the technical improvements discussed in Section II and feel that the federal government is moving too slowly in this area. Many state laws emphasize this and I will discuss this in the following sections.

2) Liability

The most important act in regard to federal liability is the Federal Water Pollution Control Act (FWPCA) Amendment of 1972 which incorporated the Water Quality Improvement Act (WQIA) of 1970.

This Act imposes strict liability with limits of $14 million or $100/grt, with exceptions for acts of war, God, third parties, and governmental negligence. The Act also created a fund of $35 million from the Treasury to support government clean-up. Although the WQIA authorized $35 million for the fund, Congress has only appropriated $20 million during its five-year existence, the fund has been steadily depleted. 30 Primary responsibility for administering the liability aspects of this act rest with the Coast Guard; they
oversee the discharger's clean-up effort and initiate government clean-up when necessary. The Coast Guard has encountered difficulty in recovering government clean-up costs for most major spills. 31

Important to this study is the fact that the FWPCA does not pre-empt the state from enacting their own liability laws. The Act states:

"Nothing in this section shall be construed as pre-empting any state or political subdivision therefrom, from imposing any requirement or liability with respect to the discharge of oil or hazardous substance into any waters within such states".

Because of the relative weakness of the federal liability laws and the framework behind them, many states have used the section and enacted their own liability laws.
V. State Jurisdiction to Control Oil Pollution

To understand how a state can legislate to control oil spills one must first understand where its jurisdiction lies. The framework for the division of powers between the federal and the state legislatures is contained in four parts of the United States Constitution: Article I on the powers of Congress, Article III on maritime jurisdictions, Article VI which makes certain federal laws supreme over state ones and the Tenth Amendment which reserves certain unstated powers to each state. The following rules apply to areas where overlaps between the federal and state legislatures exist.

Rule One-- The "Constitution . . shall be the supreme Law of the Land". (Article VI) By court interpretation, this means that neither Washington nor state lawmakers can pass valid laws which exceed some limitation in the Constitution itself.

Rule Two--The "Laws of the United States (federal enactments and decisional rulings) shall be the supreme Law of the land . . and every State shall be bound thereby." (Article VI) This means that any valid federal law which conflicts with a state law will override that state law, unless some unusually higher state right has been given to that state by some other part of the Constitution.

Rule Three--The federal legislature has power to enact all "necessary and proper" laws to carry out federal functions under the Constitution, which include, among others, these four powers related to oil spill rules, namely, power to:
1) lay uniform taxes;
2) regulate commerce which goes to or comes from outside
any single state;

3) Define and punish "Piracies and Felonies committed on the high seas, and Offenses against the Law of the Nations"; and

4) "exercise exclusive Legislation" over areas owned by the federal government by purchase from a state, and provide for the general welfare. (Article I).

Rule Four--Treaties which bind the United States are also "the supreme Law of the Land". (Article VI). Thus, federal laws to carry out obligations under international oil pollution conventions, or similar treaty arrangements.

Rule Five--Federal judges shall have power to handle "all Cases of admiralty and maritime Jurisdiction". (Article III). This clause has been interpreted as permitting Congress to give exclusive jurisdiction over admiralty matters to federal courts, and to inversely authorize the federal government to legislate in matters which affect any "navigable waters" of the United States.

Rule Six--All powers which the Constitution neither delegated to the federal government nor prohibited to the States are "reserved to the States". (Tenth Amendment). This means that some unspecified kinds of state actions have been reserved to the states, and a pollution abatement measure might conceivably be held by a court to rest on such a power independently of federal laws.

These above six rules give the Congress the opportunity to take over practically all of the rule-making functions in the area of oil spill control. Therefore, state action can only take place when one of the following circumstances occur:

1. The absence of federal action. For example, the Ports and Waterways Safety Act allows the federal
government to establish traffic lanes, and no traffic lanes were established in a certain state harbor, and the state's license to operate a terminal in this harbor is conditional on observance of sea lanes, the state would have the right to laid down these lanes.

2. Where a federal law was not intended to pre-empt state legislation or bar state action: a good example of this in the Federal Water Pollution Control Act where at the end of Section 311 it states:

"Nothing in this section shall be construed as pre-empting any state or political subdivision therefore from imposing any requirement or liability with respect to the discharge of oil or hazardous substance into any waters within such state".

3. In special state claims, the state has an inherent right to take action in a given set of critical circumstances.33

With these above set of rules and provisions in mind I have taken four states which have oil spill laws on the books and will attempt to outline these laws and show how they fit into the existing federal regulations.
A) Alaska

Under the Harbors, Navigation and Shipping Statutes, Alaska sets up specific regulations for the control of oil tankers within their coastal waters. The legislation states that "because of the danger of spills, the legislature finds and declares that the marine transportation of crude oil ... by tankers or other carriers so engaged in the coastal waters and inside coastal waters of the state creates a great potential hazard to important natural resources of the state and to jobs and incomes of those dependent on these resources". The legislature also points out that they felt that Alaska has a greater than usual likelihood of long-term damage due to oil spills because of its "relatively confined saltwater environment with irregular shorelines". Because of this, the legislature points out that it is therefore important that large tankers have sufficient capability for rapid maneuvering.

The following safety and maneuverability equipment is mandated by this Act:

1) LORAN-C;
2) Collision avoidance systems; and,
3) Two radars in working order, one of which operating at all times.
Any tanker of 40,000 DWT or more must be escorted by tugboat if the tanker lacks any of the following:

1) Lateral thrusters;
2) Controllable pitch propellers or astern horsepower equal to 40 percent of rated horsepower; or,
3) Redundent boilers, an auxiliary propulsion source or other back-up equipment that the Department mandates.

This Act also gives the Department of Environmental Conservation the right to adopt and maintain a comprehensive traffic regulation. But it states that this will not conflict with traffic regulations contained in federal navigation laws or regulations promulgated by the US Coast Guard. The Department also has the right to regulate maximum and minimum speed for vessels and can prohibit vessels under certain weather conditions. 35

In this area Alaska has gone well beyond the rules and regulations established by the federal government under the Ports and Waterway Safety Act, but justified this by saying that they have an inherent right to take this action because of the great danger to their state from oil spills. It is questionable as to if this will hold up in the courts, but it is apparent that Alaska feels that these provisions are necessary.
In the area of liability Alaska has "strict liability for the discharge of hazardous substance". The extent of this is equal to the FWPCA with its only defense being act of war, God, third party, and government. Damages include, but are not limited to, injury to or loss of persons or property, real or personal, loss of income, loss of the means of producing income, or the loss of an economic benefit. 36

As with all state liability laws the state has the right to act because no pre-empting of state laws exists. The limitation of Alaska's liability is equal to that of the federal, but it seems to be more comprehensive.

One of the most interesting things about Alaska's status is its "Coastal Protection Fund". This establishes a $30 million fund which has an annual risk charge for each classification of certificates. This is based on equipment on board, i.e., inert gas system, segregated ballast, etc., passed safety record, and other safety features. This system provides incentives for the oil industry to place new equipment aboard its vessels and therefore make it more cost effective.

b) Florida

Passed in 1970 and amended in 1974 The Oil Spill Prevention
and Pollution Control Act founds and declares "that the highest and best use of the sea coast of the state is as a source of public and private recreation". 37

The Act gives the Department of Natural Resources the power to adopt and enforce reasonable regulations in so far as they relate to discharges of pollutants into their waters.

The Department also can adopt regulations on: 1) operation and inspection requirements for terminal facilities, vessels, etc., and 2) set minimum weather and sea conditions for vessels. The Act also requires that any person discharging pollutants must immediately undertake to remove and stop the discharge. 38

In this area, the Florida Act is well within any regulated setup by the Ports and Waterway Safety Act and there seems to be no conflict.

Florida's Spill Prevention Act set up liability with the same limitations, defenses, and financial responsibility requirements as the FWPCA. (The 1970 Act was much stronger but was amended). Its $35 million coastal protection fund is based on a 2¢/barrel excise tax which pays all otherwise unpaid clean-up and damage costs.
When Florida first attempted to implement this Act it met resistance. National and international shipping insurance and other affected industries tried to stop Florida from using this Act. They tried to establish federal pre-emption, with the charge that Florida's Act invaded the federal government's maritime jurisdiction. The law's constitutionality was challenged in court (Askew vs. American Waterways Operators). Claims used were that vessels and terminal facilities could not purchase the necessary insurance. The US District Court in March of 1971 enjoined Florida from enforcing the Act, then on April 18, 1973, the Supreme Court unanimously overturned that ruling and affirmed that Florida had the authority to enact its own oil pollution liability legislation.

C) New Jersey

New Jersey's Spill Compensation and Control Act of January, 1977 is the new state oil pollution act. The Jersey legislature finds that the New Jersey land and water constitutes a unique and delicately balanced resource and that its protection is in the best interest of the state. It also finds that the storage and transfer of oil is a hazardous undertaking. Therefore, finding that the discharge of oil
is a threat to the economy and the environment of the state.\footnote{41}

The Act imposed unlimited liability for clean-up costs plus damages liability of $150/ton up to $50 million for a vessel. The Act also set up the N.J. Spill Compensation Fund based on a tax of 1¢/barrel which is to create a $50 million fund. The only defenses are act of God, government, third party and sabotage.

The New Jersey Act legislates larger liability than the FWPCA and could be challenged in court because of its unlimited liability for clean-up cost aspects. In the Askew Case, the court declined to rule on whether the state's imposition of unlimited clean-up liability conflicted with FWPCA's limited clean-up liability provisions.\footnote{42}

\textbf{D) Washington}

The status of the State of Washington states that "because of the danger of spills, the legislature finds that transportation of crude oil . . . by tankers on Puget Sound and adjacent water creates a great potential hazard to important natural resources of the State . . .". The legislature also stated "that certain areas of Puget Sound and adjacent waters have limited space for maneuvering a large
oil tanker. Using these findings the following restrictions were made:

1) Any oil tankers greater than 125,000 DWT shall be prohibited from proceeding beyond a point east of a line from Discovery Island light to south of New Dungeness light;

2) Tankers of 40,000 to 125,000 DWT may proceed beyond this point if such tanker possesses all of the following standard safety features:

   a) Shaft horsepower in the ratio of one horsepower to each 2½ DWT;
   b) Twin screws;
   c) Double bottoms, underneath all oil;
   d) Two radars in working order, one of which must be collision avoidance radar;
   e) Such other navigational position location systems as may be prescribed from time to time by the Board of Pilotage Commissioners and that a 40,000 to 125,000 DWT in ballast or if under the escort of a tag of at least five percent horsepower ratio this shall not apply.

Washington tanker laws are declared pre-empted by the Ports and Waterway Safety Act of 1972 (PWSA) by the US District Court (Atlantic Richfield vs. Evans). The court stated that the purpose of the original Tank Vessel Act and of Title II of DWSA, was to establish a uniform set of regulations governing the types of ships permitted within the coastal waters of the United States and the condition under which they would operate.
Washington asserts that the law is not pre-empted because, 1) they can be avoided if the tanker has a tugboat escort and 2) the Tanker Law is part of a comprehensive coastal management plan.

On December 9, 1976, the US Supreme Court referred the Tanker Law to the next full conference of the Supreme Court.

It is clear that the Washington Tanker Law goes well beyond the regulations of the Ports and Waterways Safety Act. Only after the US Supreme Court acts on this case will a clear answer be made in this area.

Washington liability laws hold "any person owning or having control over oil" polluting state waters is liable for state clean-up costs and damages to persons or property, public or private. The only defenses are act of war and government which is stronger than FWPCA. No specified limits are set up and set size is set on their fund.
VI - Future Proposal: Where do the States Fit in it?

At this time the federal government is proposing legislation to deal with the prevention of oil spills.

Both avenues explored in this study are being considered, i.e., new tanker and vessel safety legislation and new comprehensive liability laws.

A) Proposed Tanker and Vessel Safety Legislation

A number of proposed bills have been introduced in both houses of Congress, of these the Tanker and Vessel Safety Act of 1977 (S.687) introduced by Senator Magnuson of Washington has one of the best changes for passage. This bill, as approved by the Senate Commerce, Science and Transportation Committee on April 26 of this year, is a complete reviewing of the 1972 Ports and Waterways Safety Act. The Ports and Waterways Safety Act is the basic federal tanker safety statute now on the books. As passed by the Committee, the bill contains the following major provisions. It would:

1) Establish more stringent construction and operation standards for all tankers entering US ports, regardless of the Flag-state of the tanker.

2) Provide clear authority for the Secretary of Transportation to bar substandard vessels from
operating in American waters.

3) Authorize the creation of a Marine Safety Information System to identify substandard vessels and to disclose the true ownership of the ships.

4) Mandate that all self-propelled vessels of 20,000 DWT or larger carrying oil in bulk be equipped with:
   a) Dual radar system
   b) Collision avoidance system
   c) A long-range navigation aid
   d) Adequate communications equipment
   e) A fathometer
   f) A gyrocompass
   g) Uptodate charts

   by no later than June 30, 1979.

5) Mandate that such vessels also be equipped, but no later than June 30, 1983, with a segregated ballast system, a gas inerting system, a transponder or other appropriate position-fixing equipment and a double bottom if the vessel is contracted for, or construction has actually begun, after January 1, 1978.

6) Call for an expanded inspection and enforcement program; and,

7) Authorize the promulgation of improved manning and qualification standards.

B) Comprehensive Liability Legislations

Most of the federal action dealing with oil spills has been in the area of comprehensive liability.

Many bills are being considered, the one’s of most interest are Representative Studd’s Bill (H.R. 47), Senator Magnuson Bill (S.1754) and the former Administration Bill (H.R. 9294 or S.2162). President Carter is also proposing
legislations, but information was not available at this time. The Ford Administration Bill would adopt the international conventionst (as discussed in Section III) supplements these with domestic schemes and pre-empts any state laws. This would establish the tank owner's liability limits at $160/ton or 16 million and the international fund would provide additional clean-up and damage compensation up to $30 million, on the international side. The domestic level liability limit would be $150/ton or $20 million with a $200 million federal fund. 47

The Studd 's and Magnuson Bill on the other hand rejects the IMCO regulation and sets up a uniform federal approach. The Magnuson Bill allows defenses for acts of war and governmental negligence, where as the Studd allows only acts of war. Both bills set unlimited liability for vessels in the event of gross negligence, willful misconduct or violation of safety or construction standards. Both Bills set up a $250 million fund. Neither Bills would pre-empt state laws.

It appears that some compromise between the Studd 's and Magnuson Bill will be eventually passed by Congress and should be signed by this administration.48
C) Where do the States Fit In?

With or without these proposed laws, where would the states stand and where should states be able to act?

The proposed Tanker and Vessel Safety Act would do alot to meet the goals of most states. As written, this Act contains most of the provisions that most state laws contain, but there is a problem of time. Some states may feel that 1979 would be too long to wait. Also, if the Tanker and Vessel Safety Act is written like the Ports and Waterway Safety Act was, there is a question of state pre-emption.

Any new liability law would also help confront alot of the states' fears. Neither the Studel or Magnuson Bill would pre-empt state laws and therefore would allow a state to act.

Logically, the federal government should be the principle level of government that deals with the prevention of oil spills. The federal government has jurisdiction over all navigable water, it has the most money and has the needed expertise. To this end the federal government should and has set up standards for vessel safety and design and liability.
States on the other hand are more familiar with their local environment and condition. They may feel that the federal laws are not adequate to deal with their area or problem and therefore feel they should have the right to act.

No matter what law the federal government passes it will not be in the full interest of all the states. States therefore must have some leeway in providing for stricter regulations when it sees a specific need, but these regulations must not be so restrictive that they would have a major impact on other states or the nation as a whole.
FOOTNOTES


2. Ibid.


5. US Congress, Office of Technology Assessment, Oil Transportation by Tankers: An Analysis of Marine Pollution and Safety Measures, July, 1975, pg. XVIII.

6. Ibid., page 42.

7. Ibid., pg. 39.

8. Ibid., pg. XVIII.

9. Ibid., pg. 53.

10. Ibid., pg. 54.

11. Ibid., pg. 48.

12. Ibid., pg. 51.

13. Ibid., pg. 56.


16. US Congress, Oil Transportation by Tanker, pg. 63.

17. Ibid., pg. 64.

18. Ibid., pg. 66.
19. Ibid., pg. 67.
21. US Congress, Oil Transportation by Tanker, pg. 73.
23. Ibid., Articles 10 and 24.
27. US Coast Guard, Regulation on Oil Spills, 33 CFR 155.
29. Ibid., 33 CFR 164, CGD 77-002.
30. Federal Water Pollution Control Act (FWPCA) as Amendment 1972.
32. FWPCA, Section 311.
34. Alaska Statutes: Title 30, Harbors, Navigation and Shipping.
35. Ibid.
36. Ibid.
38. Ibid.
39. Ibid.


44. Ibid.


47. Lipeles, *Oil*, pg. 17.