

**Intentional oil pollution:  
changing preferences, capacities  
and institutional characteristics<sup>1</sup>**

**Ronald B. Mitchell  
University of Oregon  
September 10, 1993**

**Draft not for citation**

The almost forty year history of international regulation of intentional oil pollution is the history of the shift from a lead activist nation (the U.K.) with a mildly-strong commitment to environmental protection, medium-strong power (by itself) to influence other actors, and little empirical knowledge of the relative adequacy of various regime alternatives to a new lead activist nation (the U.S.) with radically stronger preferences for environmental protection, dramatically stronger power resources available for influencing others, and more than a decade and a half of experience with one set of (failed) policies. The latter nation wanted and was able to create a much stronger institution, which, while having no more specific rules, had significantly wider scope and significantly stronger decisionmaking rules and greater rights and duties available to those committed to change rather than the status quo.

The long and dynamic history of attempts to control intentional oil pollution from tankers provides rich empirical evidence. Numerous amendments to these conventions and changes to the associated institutions allow us considerable insight into the influence that heterogeneity of preferences and heterogeneity of capacities have on institutional specificity, scope, decision-making and allocation.

Description of problem

When most people think about oil pollution, they conjure up images of tanker accidents - like the *Exxon Valdez*.<sup>2</sup> However, the tanker practice of discharging waste oil has regularly put far more oil in the ocean than have accidents. Analysts estimated in the 1970s that a million tons of oil entered the ocean each year from intentional discharges, while only a third that much came from accidents.<sup>3</sup> Since the 1920s, international diplomats have sought to reduce the environmental impact of discharges during the oil transportation process.<sup>4</sup> After a tanker delivers its cargo, a small fraction ("clingage") adheres to the tank walls like the residue visible after a milk bottle has been emptied. This clingage becomes mixed with water through two shipboard operations. First, the clingage mixes with the sea water that tankers place in their cargo tanks to ballast themselves on the return voyage. Second, tankers clean their tanks with sea water en route to prepare for their next cargo. For an average tanker, these processes generate some 300 tons of oil/water mixtures per voyage.<sup>5</sup> The easiest and cheapest, and hence customary, method of disposal was to discharge these mixtures overboard while at sea. With thousands of tanker voyages per year, however, this disposal method soon became more than a minor problem. While scientific uncertainty remains regarding the extent of damage to marine life caused by the low-concentration, chronic oiling from discharges, their dramatic impact and that of accidents on seabirds and resort beaches have provided sufficient impetus for regular international efforts at regulation.<sup>6</sup>

Oil pollution arises from economic and socio-political problems at the individual and national levels: oil transporters and oil consumers benefit from lower production costs while beachgoers and birdlovers suffer, and governments and citizens of flag states benefit from higher revenues while citizens of coastal states suffer.

International norms and institutions do not provide the opportunities that can exist domestically to overcome the externalities and commons problems involved.

Nations face a classic collaboration problem in which "each actor would rather share in such use of the resource that leads to depletion than to see its own restraint allow either the continued existence of the resource for others' use or the disappearance of the resource because the others show no restraint."<sup>7</sup>

Such discharges had caused sufficient environmental and aesthetic damage by the 1950s, that in 1954 nations agreed to the International Convention for the Prevention of Pollution of the Seas by Oil (OILPOL), the first international treaty to regulate oil pollution.<sup>8</sup> This initial agreement limited the maximum oil content (parts oil per million parts water) of a tanker's discharges when made near shore, and the treaty entered into force in 1958. In that year, the Inter-Governmental Maritime Consultative Organization (IMCO) came into existence and all subsequent oil pollution regulations have been conducted under its auspices or those of its successor, the International Maritime Organization's (IMO). In 1973, the comprehensive new International Convention for the Protection of Pollution from Ships (MARPOL) incorporated OILPOL's discharge standards but also required new large tankers to install specific equipment that reduced the need to make such discharges, by preventing the use of cargo tanks for ballast, known as segregated ballast tanks (SBT). The 1978 Protocol to MARPOL also required installation of tank-washing systems that used crude oil rather than water (crude oil washing or COW) to further reduce the mixing of oil and water and required older tankers to retrofit with SBT or COW by 1985.<sup>9</sup>

**WEAK LEADERS AND FEW FOLLOWERS:**  
**THE 1954 AGREEMENT AND 1962 AMENDMENTS**

**The 1954 OILPOL Convention**<sup>10</sup>

The first signed international agreement regulating intentional oil pollution was negotiated at a conference hosted by the British in 1954. Oil pollution had been on the international agenda since the 1920s. The U.S. had convened a governmental conference in 1926 that drafted a treaty to regulate intentional discharges. The U.K. provided the impetus for a similar effort in 1935 under the auspices of a League of Nations Committee of Experts. While both produced draft conventions, neither was ever signed or took effect. After World War II, growing demand for crude oil, shipped from the Middle East but refined in Western countries, meant that more tankers were discharging the more persistent crude (vs. refined) oils after tank cleaning and ballast operations.<sup>11</sup> Complaints of spoiled beach resorts and of large numbers of dead sea birds grew rapidly in the U.K. and elsewhere in Europe.<sup>12</sup> The U.K. continued to lead the call for international regulation. Particular interest groups rather than the public at large continued to be the major source of pressure for action by the U.K.. NGOs including bird protection societies, hotel and tourist organizations, and local governments banded together to form the U.K. Advisory Committee on the Prevention of Pollution of the Sea by Oil (ACOPS).

In response to such pressures, the U.K. established the Committee on the Prevention of Pollution of the Sea by Oil, the Faulkner Committee.<sup>13</sup> Its 1953 report concluded that the persistence of crude oils made the pre-war zone system merely a "palliative." It recommended an international ban on discharges above 100 parts per million (ppm) by all ships (tankers and non-tankers) throughout the ocean.

Until international agreement was reached, U.K. registered ships should be banned from discharges over 100 ppm "within a wide zone around the United Kingdom."<sup>14</sup> In contrast, the U.S., feeling it had solved its pollution problems through unilateral measures and voluntary compliance by industry with the zone system, had lost interest in international regulation.<sup>15</sup> As the U.S. delegate phrased it, "The pollution problem in the United States today is less critical than it was a quarter century ago, notwithstanding we are consuming three times as much petroleum and products today as we did in 1926."<sup>16</sup> Denmark, France, Japan, Norway, Sweden, and most developing states -- lacking domestic concern over coastal pollution, believing oil evaporated and biodegraded if discharged far from shore, or seeking to protect their maritime interests -- saw any regulation as unnecessary, but accepted zones as a means of placating the U.K. and averting unilateral action.<sup>17</sup>

The British belief that zones were inadequate, and the desire to avoid encumbering their domestic shipping and oil interests, led them to press for international action. They were also under pressure to do so from ACOPS, which held a conference in 1953, inviting environmental groups, national governments, and oil and shipping interests.<sup>18</sup> At the conference, the British government announced they would host the inter-governmental conference recommended in the Faulkner report.<sup>19</sup>

Thirty-two countries attended the governmental conference of 1954 in London. While many European nations did consider oil pollution a problem, most developing and Soviet bloc nations still did not.<sup>20</sup> Both the size and biological effects of the oil pollution problem were debated.<sup>21</sup> The U.K. proposed to limit discharges throughout the ocean, essentially requiring all tankers to stop discharging waste oil

at sea, rather than merely discharging far from shore as under a zonal approach.<sup>22</sup> Tankers, it was contended, could eliminate oil pollution if they "refrained from cleaning their cargo tanks and mixed oily ballast residues with new cargo oil" or practiced retention on board.<sup>23</sup> Oil and shipping companies objected because discharging slops at sea could be done while underway, while retention on board required lengthy port delays to discharge slops. Governments resisted the complementary requirement to provide expensive reception facilities to receive these slops. Most countries felt such costs were unwarranted given that they themselves were not experiencing severe costs from oil pollution. The U.K. attempted to increase concern, even flying delegates to its beaches to demonstrate the problem, but "if domestic experience had little effect on states' policies, this predictably had even less."<sup>24</sup>

The failure to agree to limit discharges throughout the ocean left the final 1954 OILPOL agreement reflecting "the fact that most governments were still not willing to accept any important control costs themselves or even to impose such costs on their industries."<sup>25</sup> The convention's primary rule system consisted of a prohibition against discharges above a specified limit within specified zones, defined as 100 ppm and 50 miles.<sup>26</sup> The convention imposed no restrictions on discharges outside the zones, or on total discharges, thus relying on redistribution of discharges outside the zones to mitigate environmental damage. With respect to reception facilities, the final agreement required states to "ensure (their) provision" so as to meet the needs of non-tankers but did not require equivalent measures for tankers, ensuring that tankers had limited alternatives to discharging at sea.<sup>27</sup> Even these weak reception facility clauses led several countries to lodge objections.

Enforcement was based on language modified from the 1935 draft text, requiring ship masters to record all ballasting, cleaning and discharge operations in a newly-developed Oil Record Book.<sup>28</sup> Port states could inspect these books but not delay the ship and were limited to providing evidence to flag states for prosecution of violations.<sup>29</sup> All states were to ensure that penalties for violations on the high seas, i.e., outside the territorial sea boundary, where they had exclusive prosecutorial jurisdiction, were equivalent to those within territorial seas. Reporting to the Secretariat was required of all states on reception facilities installed and any reports dealing with treaty application, and flag states on actions taken on violations referred to them for prosecution. In 1958, the convention received the requisite ten ratifications, with five from major shipping states, and the first international rules regulating oil discharges entered into force.<sup>30</sup>

This initial compliance system did not look promising. Since no existing monitoring devices could reliably measure the 100 ppm standard set for discharges, even conscientious captains could not assure compliance except by making all discharges outside the zones. Many captains could have done this with little additional cost in time or fuel, since those going from Europe to the Middle East could deballast and clean their tanks in the still legal discharge area in the central Mediterranean.<sup>31</sup> Yet, whatever the cost, the benefits of compliance were all but nil, since the definition of compliance and the inherent difficulty in monitoring tanker behavior in 50 mile coastal zones made successful detection of violations extremely implausible. Likewise, the evidentiary and incentive-related obstacles posed by exclusive flag state jurisdiction made prosecution, let alone penalization, appear unlikely.<sup>32</sup> In 1961, after three years of operation, the Inter-Governmental Maritime Consultative Organization (IMCO) summarized responses from the Contracting

Parties noting that they "indicate the Convention is obviously not perfect, since it is the first international instrument attempting to control oil pollution, but that it has created a framework for further progress."<sup>33</sup>

### The 1962 Amendments

In the years after signature of the 1954 agreement, the amount of oil transported by (and discharged at) sea increased rapidly. Concern over pollution increased, especially among states surrounding the Mediterranean. Dissatisfied with the results of OILPOL, ACOPS sponsored a conference of eleven countries in 1959 that recommended extending the 1954 zones and globally banning operational discharges.<sup>34</sup> This conference helped provide the impetus for IMCO to prepare the amending conference that parties to the 1954 Conference had urged take place after a few years of experience with the rules. IMCO sponsored the conference in 1962. Thirty-eight states attended. Essentially a new scientific consensus had emerged, prompted by French and German studies showing that crude and fuel oils persisted long enough that zones would not prove effective over the long term.<sup>35</sup> While they rejected the ACOPS recommendation for wider coastal zones globally, several countries gained extended zones including the whole of the North and Baltic Seas.<sup>36</sup> Discharges below 100 ppm remained legal within these zones. Industry raised few objections to these extensions; whether the zones were 50 or 100 miles, experience had shown that enforcement never extended beyond a country's three mile limit.

By 1962, the British had modified their 1954 proposal to make it more acceptable: they proposed that only new tankers over 20,000 tons be banned from discharging anywhere in the ocean. The rule implicitly required new tankers to practice retention on board and monitor all discharges wherever they occurred, although

oil content monitors and oily-water separators were not explicitly required. The U.S. strenuously objected to the U.K.'s 1962 proposal because, as tanker companies admitted, devices and procedures that would have allowed a tanker to monitor its own compliance with the oil content standard did not exist.<sup>37</sup> Japan, Norway, and the Netherlands also opposed the proposed restriction on new tankers as expensive in itself, and involving competitive disadvantages for compliant states.<sup>38</sup> The provision was adopted, however, with the support of the Commonwealth and Soviet bloc states that had supported Britain during the 1954 Conference.<sup>39</sup> Compliance with the global discharge prohibition also required that ports provide reception facilities to receive slops generated and retained on board. In response, the parties expanded the scope of the 1954 reception facility provision to include oil loading ports but weakened the substantive requirement so that governments need only "promote" their provision. The clear implication was that industry should shoulder this burden as well.<sup>40</sup>

Changes in enforcement and reporting were also considered. Parties adopted a clause from the 1935 agreement that penalties be severe enough to discourage violations. They considered but rejected proposals to increase the enforcement jurisdiction of coastal and port states and to require coastal states referring alleged violations to flag states to forward the information to IMCO. The Conference recommended, but did not require, that IMCO "produce reports for which the Contracting Governments should contribute information" on oil pollution, Convention effectiveness, reception facilities, enforcement, and violations.<sup>41</sup> Provision was also made to allow future amendments to occur within the IMCO structure rather than requiring a conference, laying the groundwork for the 1969 amendments.<sup>42</sup> The 1962 Amendments entered into force in 1967.

As late as 1975, a British oil pollution expert did not think "there was a tanker over 20,000 [tons] in the world complying with the 1962 Amendments."<sup>43</sup> No significant increase in reception facilities occurred. However, the rules did induce increased research into alternative means to reduce discharges: the U.S. developed segregated ballast tanks, the Soviet Union developed chemical washing techniques, and British oil companies developed LOT.<sup>44</sup>

Oil companies recognized that expensive equipment requirements were needed for new ships to comply with the general prohibition, and that explicit requirement of the needed oily-water separators and oil content meters was in the offing. After direct British governmental prompting, Shell developed LOT.<sup>45</sup> While this only required them to "discover" that "most crude oil cargoes are compatible," thus removing their major objection to mixing residues from one delivery with subsequent cargoes, it took the threat of expensive international equipment rules to induce the discovery.<sup>46</sup> By reducing the frequency of tank cleaning, consolidating slops via retention on board techniques, and discharging slops with the next load of cargo, oil companies could reduce equipment requirements and reception facility discharge time while decreasing oil lost due to clingage.

Many governments liked LOT because it reduced total oil discharges and the need to build reception facilities. However, since oil companies designed LOT to avoid equipment costs, it required tanker operators to determine by sight when to stop discharging water from beneath oil slops. Oil companies admitted that, in practice, this would frequently produce discharges exceeding 100 ppm by large amounts, violating the 1954 and 1962 discharge limits.<sup>47</sup> Nonetheless, by 1964, Shell had

allegedly gotten LOT adopted by some 60% of tankers, including most American and European ships.<sup>48</sup>

IMCO used a diplomatic conference for the 1962 Amendments, but shortly thereafter established ongoing fora for evaluating the operations of existing rules and negotiating revisions to them. The Subcommittee on Oil Pollution and its successor, the Subcommittee on Marine Pollution, recommended treaty amendments through the Maritime Safety Committee and the IMCO Council to the IMCO Assembly. The Assembly had the power to adopt amendments and "recommend" them to governments for ratification. While OILPOL's amendment procedures allowed diplomatic and institutional processes to alter the treaty in 1962 and 1969, these amendments took five and nine years, respectively, to garner the ratifications needed to enter into force. When they did, they only bound those parties that had explicitly ratified the amendments.

### **Analysis**

The 1954 OILPOL Convention and its 1962 Amendments reflect a confluence of factors. First, the U.K., as the main nation pushing for international action in both instances, had preferences that left a wide gap between itself and the next most activist nation. In 1954, the U.K. was pushing for very low discharge limits throughout the ocean. In 1962, they succeeded in getting a watered down version of this limit in place, but only for ships built after entry into force of the amendments. And the ships were not required to install the equipment that would have been required for captains to separate the oil and water and monitor their discharges. Indeed, availability of such equipment was years away. The U.S., had already put in place unilateral policies that it felt were sufficient to address its coastal pollution

problem. Most other powerful states - the Nordic countries, France and Japan - did not view oil pollution in general, or their own coastal pollution in particular, as sufficiently harmful to warrant international action. The U.K.'s 1954 proposal for a total discharge prohibition received support only from two other major maritime states - Germany and the Netherlands - that both had felt the consequences of pollution from major North Sea traffic.<sup>49</sup> The 1962 proposal passed by applying only to larger new ships, a strategy that involved few immediate costs and attenuated all costs over a long period of time.

Second, the U.K. wielded insufficient unilateral power to get other states to agree to establish the strong institution it desired. Its threat to impose unilateral regulations carried little weight with other states. It garnered what support it could via diplomatic pressure, mainly on Commonwealth and Communist countries.<sup>50</sup> Indeed, only states that viewed pollution as a serious problem or were Commonwealth or Communist states supported a total discharge prohibition.<sup>51</sup> Germany and the Netherlands wielded some power in the oil transportation market but had weaker preferences than the U.K. and the three states together did not constitute an overwhelming force in the market. The other supporting states had little power to contribute in the effort to create a strong institution. In contrast, most of the powerful states - France, Greece, Italy, Japan, Norway, and the U.S. - opposed a strong treaty as either unnecessary or a costly policy with few benefits. By the 1962 Amendments, the Netherlands now opposed the stricter rules, while France and Italy supported the British position. However, the united opposition of the U.S., Japan, the Netherlands and Norway, limited the scope of the provision to new ships and blocked the necessary corollary measures of requiring on-board equipment and in-port reception facilities.

These forces produced weak institutional arrangements. They reflected the preferences of the "status quo," rather than activist, states. Even on paper, the discharge standards did not require reductions in discharges, but only their redistribution farther from shore. While they were clear and specific, they failed to correspond to the capacities of existing technologies to measure the oil water standard established. Reliance on international law's traditional distribution of exclusive enforcement jurisdiction to flag states left "status quo" states with the duty to transform even these weak rules into practice, a duty they proved unlikely to fulfill. Not surprisingly, during the first years of the treaty, very little evidence became available on compliance levels, but the anecdotal evidence that did strongly suggested that enforcement was exceedingly difficult even for the U.K., Germany, and the few other countries attempting to enforce the rules, and that violations were commonplace in many areas.<sup>52</sup>

Since those countries favoring the status quo held a controlling share of power in the oil transportation markets, the treaty text produced a weak institution and little change occurred in subsequent behavior. An activist state wielded enough power, especially over Commonwealth partners, to get these states to accept a compromise, albeit a weak one. Such power did not extend, however, to getting other nations to actually conduct the monitoring and enforcement needed to get tankers to change their behavior, however. Nor did it remove the legal barriers that prevented a slowly growing set of states from expressing increasing environmental concern from conducting effective monitoring and enforcement. Finally, the absence until 1965 of any forum for specific discussion of the treaty meant that ongoing evaluation and refinement did not occur.

1954 OILPOL Convention

Based on: M'Gonigle and Zacher, 1979, 90.

**Preference  
for stronger  
institution**

**Strong**

Ireland	Australia	Germany	U.K.
New Zealand			
India			
Poland			
Israel	Canada	Netherlands	USSR
Portugal	Brazil	Sweden	
Venezuela			
Finland			
Belgium		Norway	
Chile	Spain	Italy	Greece
Yugoslavia	Denmark	France	U.S.

**Weak**

**Weak**

**Strong**

**Capability to influence institution**

Institutional Characteristics:

**Operational specificity**

Discharge standards are clear but unrelated to tech. compliance ability

General enforcement obligations

Compliance level generally poor

No dedicated, high-level forum to discuss conflicts

Highly institutionalized (treaty, organization)

**Scope**

Limited to intentional oil pollution

No economic linkages (as sanctions/incentives) provided

Participation always open

**Decision-making rules**

Conference diplomacy or through Sub-Committee (open to all members) making recommendation to Assembly and Assembly adopting

Entry-into-force depends on qualified majority ratification

**Allocation rules**

Compliance rights and duties apply equally to all member countries, with "no more favorable treatment" clause for non-member countries

Inspection and enforcement rights and duties were based on traditional categories in international law of flag, port, and coastal states; no changes made in the treaty

Ambiguous responsibility for providing reception facilities

No compensation rules

**POWER, LEARNING AND ENVIRONMENTALISM:**  
**THE LATE-1960S THROUGH THE PRESENT**

In the wake of the 1962 Amendments, two major changes occurred in the political context within which international oil pollution regulation was shaped. First, the oil transportation industry, especially the oil companies, that had been "strangely silent" previously, realized that strict international regulation, if not yet heard, was on its way.<sup>53</sup> Their mobilization, especially that of British-based Shell oil, was sufficient to effectively re-channel U.K. diplomatic efforts towards policies that seemed to meet environmental concerns through industry-preferred, least cost, methods. Second, the U.S. became an increasingly strong advocate for international environmental protection, bringing with it both stronger concern and a greater capacity to convert that concern into international rules and behavioral change. These changes began in the mid-1960s, but became most manifest during the conferences in the 1970s.

**The 1969 Amendments**

Since the 1920s, pressure to reduce oil pollution rested on the belief that "once the stuff is in the sea, it is there for ever."<sup>54</sup> By the late 1960s, however, the evidence was "overwhelming" that natural processes made oil "unobjectionable" over time.<sup>55</sup> Nonetheless, by then, it had become "axiomatic that the less oil discharge into the sea, the better."<sup>56</sup> In this context, the grounding of the *Torrey Canyon* in 1967 provided a major new impetus to oil pollution control. The accident raised public concern in many European countries and major international agreements to

address tanker accidents were quickly signed. Growing environmentalism was also raising broader concerns over all ocean pollution.

ACOPS again hosted a conference that helped push operational discharges onto the international agenda. Their Rome conference of 1968 occasioned a major proposal by Shell to scrap the existing zonal system and the implicit equipment requirements of the 1962 amendments in favor of promotion of voluntary adoption of LOT, or what Shell called the Clean Seas Code.<sup>57</sup> The issue of modifying international regulations to legitimize LOT and eliminating equipment requirements had already been raised in IMCO's newly established Subcommittee on Oil Pollution (SCOP) in 1965.<sup>58</sup> The British, who had been the major force for reduced oil pollution up until the 1962 conference, now began working much more closely with their oil companies. In 1968, they proposed to the IMCO Subcommittee that all governments promote LOT. At the same time, growing domestic environmentalism was leading the U.S. to seek stronger international controls.<sup>59</sup>

These conflicting efforts to modify the convention came to a head in the Subcommittee during 1968. On one side, oil and shipping companies, supported by the U.K., Norway, the Netherlands and France, sought to have LOT legitimized to avoid the 1962 Amendments' equipment costs. Indeed, as late as 1967, "an effective oil-monitoring system still had not been developed and oily-water separators were not always effective."<sup>60</sup> To make the LOT procedure legal required abandoning definitions of discharges in oil content (ppm) terms. To prove LOT's value, oil companies conducted joint research with the British government which showed that by controlling the rate rather than the oil content of a discharge, essentially equivalent environmental protection could be achieved.<sup>61</sup> A rate metric, i.e., volume

discharged over a given distance, had the advantage that tankers already had the machinery necessary to assess compliance on board. The oil companies also sought reduction in the prohibition zones from 50 to 15 miles.

On the other side, however, environmental states, led by the U.S., were seeking to strengthen the discharge regulations. After much oil industry lobbying, the opponents of LOT were willing to accept the legitimization of LOT. They eliminated the 1962 requirement imposing equipment-dependent standards on new tankers. However, they required, in exchange, industry acceptance of more stringent standards overall. The final amendments constituted a compromise. The 50 mile zones were retained. Outside the zones, all tankers would need to keep discharges below a new limit defined in terms of rate (60 liters per mile or 60 l/m) rather than oil content.<sup>62</sup> Within the zones, only discharges of "clean ballast" - those leaving no visible trace - would be allowed. Therefore "any sighting of a discharge from a tanker...would be much more likely to be evidence of a contravention."<sup>63</sup> Finally, the U.S. seized on the oil industry's claim that LOT could make the convention "automatically enforced world wide": they forced agreement on a requirement that total discharges be limited to 1/15,000th of a tanker's cargo capacity. Even absent precise measurements, these rules allowed port authorities to assume that any tanker with clean tanks had blatantly violated the agreement.<sup>64</sup>

The clean ballast, the rate metric, and the total discharge limits would all improve the primary rule system by increasing the ability, if not the incentives, of tanker operators to monitor their own compliance. The clean ballast and total discharge limits would, in addition, improve the compliance information system by making independent detection of violations possible.<sup>65</sup> The final bargain involved

environmental states agreeing to redefine the primary rule on discharges so that compliance would not require installing expensive equipment in exchange for oil companies agreeing to standards that would reduce oil pollution if complied with, and that were more enforceable. This represented significant movement towards defining the discharge standards in terms that corresponded to existing capacities of oil companies to monitor their own behavior and governments to verify that behavior.

The IMCO Assembly adopted these amendments in October 1969, dramatically changing the underlying principle of oil pollution regulation. The 1926, 1935, 1954 and 1962 rules had all permitted discharges except in prohibited zones. In contrast, the new rules prohibited discharges except under certain conditions.<sup>66</sup> And, for the first time, international rules required that oil entering the ocean be reduced rather than merely redistributed. However, ratifications were so slow that the 1969 Amendments only entered into force in 1978.

### **The 1973 International Convention for the Prevention of Pollution from Ships**

The growing environmental interest of the late 1960s became manifest in the early 1970s with the UN Conference on the Human Environment and the London Dumping Convention. Concern over oil pollution increased as sea-borne oil trade went from 264 million tons in 1954, to 1695 million tons in 1973 (see Figure 3-B). Even if each tanker had discharged significantly less cargo than previously, the problem would have increased. Countries such as Greece and Italy that had previously opposed strict regulations adopted more environmentalist stances as they experienced more operational pollution and greater calls for environmentalism at home.<sup>67</sup>

These forces had their strongest impact in the U.S. which pushed for regulations stricter than the 1969 Amendments. While the LOT system had only been legally legitimized in 1969, oil companies had allegedly been using it since 1964. And the U.S. believed this experience proved it was far less effective than the oil companies alleged. The U.S. was especially concerned regarding the ease with which tanker crews could violate and the massive resources and diligence needed to detect violations.<sup>68</sup> Therefore, in the early 1970s, the U.S. proposed supplementing the existing performance standards with equipment standards. These included requirements for existing tankers and ports to install the equipment necessary to comply with the 1969 performance standards, such as oil discharge monitors, oily-water separators, dedicated slop tanks and reception facilities. They also went beyond this and required new tankers over 70,000 tons to install SBT. In addition, to reduce spills during accidents they proposed that new ships have double bottoms. The last two proposals were especially expensive.

The domestic pressures behind the U.S.'s international efforts also found expression in Congressional passage in 1972 of the Ports and Waterways Safety Act. It required the Coast Guard to unilaterally adopt strict equipment standards by 1976 unless other countries agreed to rules similar to those the U.S. was proposing. The Coast Guard was also to deny entry to any ships violating such rules.<sup>69</sup>

At the same time, Canada began an "aggressive diplomatic campaign" for protection of coastal state environmental rights.<sup>70</sup> Motivated by both environmental and territorial concerns, Canada worked with other developed coastal states like Australia and New Zealand to persuade developing states to attend the 1973 Interna-

tional Conference on Marine Pollution. The Conference and the International Convention for the Prevention of Pollution from Ships (MARPOL) it produced were far broader in scope than previous agreements. They applied to oil platforms as well as ships, included refined as well as crude oil, and used five annexes (including Annex 1 for oil) to address liquid chemicals, harmful packaged substances, sewage, and garbage discharged by ships. This broader perspective on pollution had been foreshadowed in IMCO's renaming of the Subcommittee on Oil Pollution as the Subcommittee on Marine Pollution in 1969 and in the creation of the Marine Environment Protection Committee in 1973 as a full committee answering directly to the IMCO Assembly.

The U.S. proposals provided the basis for most of the conference's discussion on oil tankers, however. Despite U.S. pressure, the final agreement maintained essentially the same performance standards.<sup>71</sup> The zones remained at 50 miles, though special areas were designated in the Mediterranean, Baltic, Black and Red Seas and in the Persian Gulf, but not the North Sea.<sup>72</sup> Outside the zones, discharges below 60 l/m remained legal (see Table 3-3). Inside the zones, the negotiators provided a dual definition of "clean ballast": no "visible trace" as under the 1969 Amendments or less than 15 ppm, a reversion to an oil content metric.<sup>73</sup> Total allowable discharges were kept at 1/15,000 of cargo capacity for existing tankers, although new tankers were limited to 1/30,000.<sup>74</sup> Within the special areas, reception facilities were to be required on a fixed schedule independent of the treaty's date of entry into force while outside these areas the requirement would become operative a year after entry into force. The Conference also agreed, for the first time, to incorporate a requirement for annual reporting on penalties and enforcement "in a form standardized by the Organization."<sup>75</sup>

The far more controversial aspects involved the equipment standards. The final outcomes required equipment for compliance with the discharge standards - oily-water separators and monitoring devices - on all new tankers delivered after 1979<sup>76</sup> and on existing tankers from three years after the treaty entered into force. The segregated ballast tank requirement for new tankers initially evoked strong opposition from states with large shipping interests and from oil companies. Two factors reduced resistance to the SBT requirement. First, it promised to defuse unilateral U.S. adoption of the even more expensive double bottoms. Second, the recent construction boom meant the cost of building new tankers with SBT was far off in the future. While the oil industry had initially opposed the SBT requirement, "with the American submission, the handwriting was on the wall, and the oil companies began intensive negotiations to consider its adoption."<sup>77</sup>

Large increases in oil transported by sea, and a corresponding increase in discharges prompted new concern in many coastal states. Developed states with long coastlines and small shipping industries -- like Australia, Canada and New Zealand -- supported the U.S. SBT proposal. Italy, traditionally opposed to stringent requirements joined the environmental ranks as they experienced increased coastal pollution. Developing states -- such as Egypt, Argentina, and India -- lent their support as they faced growing pollution from developed countries' ships, and saw few direct costs to their own small-sized tanker fleets. They also supported SBT as a means to reduce oil wastes generated and thereby deflect growing pressures to require them to build expensive reception facilities. In an era of detente, Soviet bloc countries saw support as having low economic costs and both political and environmental benefits.<sup>78</sup> This diverse coalition was large enough to pass the requirement.

In contrast, countries with large independent shipowning interests - Denmark, Germany, Greece, Norway, and Sweden - less capable than oil company owned fleets to pass on the costs involved, and those with shipbuilding interests - France and Japan - concerned of new requirements causing deferrals in ship orders opposed mandatory SBT.<sup>79</sup> The seven major oil companies initially resisted SBT, but with five based in the U.S., they would face either strict unilateral rules or less stringent international rules, and, through OCIMF, eventually supported the 1973 SBT rule. Independent shippers, through ICS, however opposed SBT to the end, contending that entry into force and enforcement of the 1969 Amendments would "effectively eliminate oil pollution arising from operational discharge."<sup>80</sup> Finally, while states were required to "ensure provision" of reception facilities in all tanker ports, this left ambiguous whether states or industry was responsible for constructing them.<sup>81</sup> Table 3-4 details the final equipment requirements.

The Conference also sought to improve implementation, enforcement and compliance. Continuing ratification delays were addressed through a tacit acceptance procedure that permitted entry into force of certain amendments unless more than one-third of the signatories explicitly objected. The conferees also applied construction standards to ships built after set dates, regardless of the number of ratifications.<sup>82</sup> Compliance with the equipment standards was to be established by initial surveys by national governments and ship classification societies documented in an International Oil Pollution Prevention (IOPP) Certificate. States were given expanded rights to inspect the IOPP certificates of ships entering their ports and to determine whether they met the equipment requirements. If found in violation, governments were obligated to "take such steps as will ensure that the ship shall not

sail until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment."<sup>83</sup> Negotiators hoped that providing more environmentalist port states with such enforcement powers would improve compliance. While much more drastic increases in port state and coastal state enforcement powers were discussed during the conference, they were defeated due to the political power of the major flag states coupled with the desire of many states to make these jurisdictional decisions in the Law of the Sea context.<sup>84</sup>

The 1973 MARPOL conference made significant changes to the compliance system. The U.S. interpreted the low compliance rates and enforcement difficulties of discharge standards as evidence of the inherent flaws in such primary rules that would prevent development of an effective compliance system. The conference's acceptance of an SBT requirement involved a new primary rule system that created a fundamentally different regulatory structure. These standards shifted responsibility for compliance from tanker captains to tanker owners. The rule also shifted the site of potential violation from the open ocean to the shipyard. This primary shift alone created a significant change in the compliance information and non-compliance response systems. However, the negotiators went farther and also directly improved these systems. Given the new equipment standard, provisions explicitly provided new rights that allowed the compliance information system to "piggyback" on the existing information infrastructures of classification societies and government inspections of tanker certificates and tankers' actual conditions. The new convention also provided specific rights of detention that posed a significant deterrent threat, should any country choose to use them. Finally, it also made more modest improvements to reception facility requirements and reporting requirements that were essentially

based on the notion that greater specificity about what and when obligations were to be met would increase reporting and reception facility compliance.

A final factor influencing oil pollution control during this period was the dramatic run-ups in oil prices during the 1970s. Before the first oil crisis in 1973, oil prices had remained essentially constant since 1950 (see Figure 3-C). The shock caused the value of the oil tankers were discharging at sea to triple overnight, causing the benefit of using oil waste reduction and retention technologies like LOT, SBT and COW to jump dramatically. Whether a company would adopt one of these technologies would depend on whether the oil retained, at the new price of oil, now outweighed the technology's cost.

In 1973, IMCO increased the status of marine pollution by creating the Marine Environment Protection Committee (MEPC), a full committee of IMCO which meets every eight months.<sup>85</sup> More importantly, MARPOL incorporated a "tacit acceptance" provision that gave the MEPC authority to adopt technical treaty amendments that automatically took effect unless more than one-third of the parties objected.<sup>86</sup> Since MARPOL took effect, tacit acceptance has become the primary means used to revise oil pollution regulations.

### **The 1978 Protocol to the 1973 Convention**

The 1973 MARPOL Convention failed to gain quick ratification both because of the strong resistance that the new equipment and reception facility requirements generated, and because adoption of Annex I addressing oil pollution was legally linked to adoption of Annex II on chemical pollution which imposed even higher costs on states. Then, just as the *Torrey Canyon* incident had motivated earlier

agreements, a series of accidents in December 1976 and January 1977, combined with activist pressures, including law suits by the Center for Law and Social Policy,<sup>87</sup> to produce unilateral U.S. action and put oil pollution back on the international agenda.

In response to the accidents and Congressional pressure, the Carter Initiatives were proposed. These included double bottoms and other systems to prevent accidental spills but also addressed operational pollution by requiring that the Coast Guard unilaterally require SBT on all tankers above 20,000 tons and annual tanker inspections, unless international negotiations produced stronger standards. Under direct threats that "if IMCO tailors its moves to suit and protect the U.S., we will accept; if not, we reserve the right to impose our own rules," IMCO called the Tanker Safety and Pollution Prevention Conference in 1978.<sup>88</sup> This Conference produced a Protocol that became integral to the 1973 MARPOL agreement, together known as MARPOL 73/78.

At the 1978 Conference, the U.S. proposed to expand the application of the 1973 SBT rule from new tankers over 70,000 tons to new and existing tankers over 20,000 tons. Various alternatives were proposed. The most important of these, pressed by the oil industry and the U.K., involved requiring existing tankers over 70,000 tons to install COW. As had occurred with LOT in the 1960s, the oil industry reevaluated its technological options and COW, available since the late 1960s, became far more attractive in light of U.S. pressures for SBT and rising oil prices. Especially for cargo owners, such as oil companies, COW was far more attractive than SBT because it had lower capital and operational costs and reduced the waste of increasingly-valuable cargo. To address the concerns over accidental

pollution that had led to an expensive U.S. proposal for double bottoms, opponents proposed placing segregated ballast tanks in protective locations.

The support that, in 1973, had greeted the U.S. proposal for SBT on large, new ships evaporated with the 1978 proposal to expand it to all ships. The high costs of retrofitting revealed how little countries were willing to pay for environmental protection. A few states with very heavy pollution supported the SBT retrofit proposal. Support also came from states with large independent fleets, which had many tankers laid up during the tanker over-supply conditions caused by the decreased demand for oil at post-1973 prices. Norway, Sweden, and Greece saw required SBT retrofits as a way to reduce each existing tanker's (and the fleet's) cargo capacity, allowing their laid up tankers to reenter the world market.<sup>89</sup> Most states, however, including Soviet bloc and developing ones, saw SBT as too costly, preferring the cheaper COW. The oil and shipping industries, and countries representing them like the U.K., also preferred COW.<sup>90</sup> Given the "power and determination" of the U.S., supporters of the COW alternative recognized the need for compromise.<sup>91</sup> In contrast to the debates of the late 1960s, even the U.K. no longer trusted exclusive reliance on performance standards. The final compromise required new crude tankers over 20,000 tons to install SBT and COW, while requiring existing tankers over 40,000 tons to either install SBT or COW.<sup>92</sup> Existing tankers were sure to choose the cheaper COW option. In the only instance of efforts to devise differential allocation rules, a proposal was made for the smaller tankers of developing states to be exempted from the new equipment regulations. The proposal was handily defeated, however.<sup>93</sup> If only because the regulations ultimately targeted companies rather than countries, the usual basis for an incapacity argument was largely undercut in this issue area.

While the Protocol left performance standards unchanged, it added language requiring regular unscheduled inspections to verify compliance. The IOPP Certificate and Oil Record Book were modified. In addition, to speed entry into force, the negotiators de-linked ratification of Annex I on oil pollution from Annex II on chemicals. As with the 1973 rules, applying the equipment requirements to ships delivered after June 1982 (regardless of the entry into force date), removed incentives for countries to delay ratification to slow the rule's impact. Ratifications from the requisite fifteen states with not less than half the world's merchant tonnage led to entry into force of the combined MARPOL 73/78 in 1983.

Essentially, the 1978 Protocol merely added a new technology (COW) to the compliance system already established under the original 1973 MARPOL convention. However, the 1978 Conference provides good insight into the strength of states' commitments to reducing oil pollution. The U.S. sought to extend the SBT requirements established in 1973 to essentially all tankers, rather than merely large new ones. Most states regardless of level of development or other factors opposed the U.S. position as too costly, with some forty states preferring COW to four undecided to only eleven favoring a requirement to retrofit SBT.<sup>94</sup> Most states, clearly had limits as to how far they were willing to go to prevent oil pollution and to force the costs of pollution prevention onto their industries. Maritime states and the industries they represented continued to have strong incentives to avoid standards that imposed costs on those industries, suggesting that they also had strong incentives not to implement and enforce existing agreements with vigor.

### **The 1980s**

Since stringent regulations now existed on paper, some nations and the now-renamed International Maritime Organization (IMO) sought to redirect their focus to compliance. By 1981, the frequent changes in and proliferation of oil pollution regulations and the problem of adopting new regulations before entry into force of old ones was inhibiting compliance. This led the IMO Assembly to resolve that the MEPC should consider amendments only "on the basis of clear and well-documented compelling need."<sup>95</sup> While this has not prevented amendments, they have been largely technical in nature. All have been adopted through the Marine Environment Protection Committee and have entered into force via the tacit acceptance procedure of the 1973 Convention.

The long delay in ratification of MARPOL 73/78 meant that several amendments to the agreement were proposed before it even entered into force. These amendments were agreed to during regular meetings of the Marine Environment Protection Committee in 1981, 1982, and 1983 and adopted in September 1984.<sup>96</sup> The changes sought to improve the existing equipment requirements or, at the request of shipping interests, remedy implementation problems that had become evident with initial experience with MARPOL 73/78. They improved specifications for the MARPOL oil monitoring, separating and filtering equipment whose details had plagued IMO for years, waived equipment requirements under strict conditions and, again modified the oil record book. Since 1984, IMO has adopted several other amendments to MARPOL. In 1987, the Gulf of Aden was designated a special area. In 1990, Antarctica was also designated a special area and guidelines for MARPOL surveys were harmonized with those for other IMO conventions.<sup>97</sup> In 1991 and 1992, U.S. pressures in the wake of the *Exxon Valdez* spill produced amendments requiring new tankers to be built with double hulls or equivalent spill

protection construction and all tankers to carry plans for dealing with any oil pollution emergency.<sup>98</sup>

After 1978, enforcement concerns also grew in Europe. The *Amoco Cadiz* spilled 223,000 tons of oil off France on 16 March 1978. The spill prompted the Commission of the European Communities to start working on directives on oil pollution enforcement and France to call a 1980 conference that led the maritime authorities of fourteen European states to adopt a Memorandum of Understanding (MOU) on Port State Control.<sup>99</sup> The MOU promulgates no new primary rules, and, for ten years, addressed inspections exclusively to equipment and certificate violations. Only reluctantly in 1992, did member states amend the MOU to include inspections for compliance with operational discharge requirements.<sup>100</sup> The agreement seeks to improve enforcement of IMO agreements on many maritime issues, oil pollution being just one. It is essentially a "nested" regime that forms one component of the MARPOL compliance information system and non-compliance response system. It requires each member state to inspect 25% of the ships entering its ports and to report certificate and equipment deficiencies as well as detentions to a central computer processing facility. Inspectors in each country can thereby access recent data on violations of any ship arriving in a port.<sup>101</sup> The MOU represented a major change in the structure of the enforcement problem for the countries involved. It seeks to resolve the classic collaboration problem posed by enforcement among a set of actors with relatively equally power: the costs of enforcement accrue to the enforcing state, while the benefits accrue to the whole of Europe. The MOU strategy has involved developing a compliance information system to process and disseminate tanker data with sufficient speed and accuracy that all enforcement authorities have incentives to keep the system accurate and up to date. This process,

in turn, seeks to improve enforcement and thereby increase compliance with MARPOL's rules.

The European MOU has begun to influence port state enforcement in many other countries. In November 1992, the maritime authorities of ten Latin American countries signed a translated but otherwise almost identical MOU.<sup>102</sup> In 1992, Poland became the first new member since the MOU started. Russia and Croatia have applied for membership. Canada, Japan, and the U.S. have "cooperating maritime authority" status with the MOU, and maintain their own rigorous enforcement programs and data collection systems.<sup>103</sup> IMO is fostering development of similar agreements elsewhere, especially in the Asia-Pacific region.<sup>104</sup>

### Governments

The preceding discussion has discussed the factors influencing public and industry positions on oil pollution control. Governments mediate between these interests and international negotiation on oil pollution as well as bringing their own concerns over sovereignty and broader jurisdictional issues to bear. Several factors determine a government's position on oil pollution control in general, and the compliance system supporting it in specific.

First, domestic pressure for stringent regulation depends on both the susceptibility of a nation's shoreline to oil pollution and the level of domestic concern. The former depends on both the size of the country's coastline and the location of that coastline to the major oil transportation routes (see Figure 3-A). The latter, as already discussed, is a function of NGO activism, recent tanker accidents, and general environmental concern.

Second, the size and political strength of domestic interests in the tanker-owning and tanker-using trade influence whether public and NGO pressures translate into government support for strong environmental rules. The success of oil and shipowning companies at getting governments to protect their interests depends on their power relative to public concern. These factors control not only the positions governments take in international negotiations, but also influence whether the government has an interest in effectively implementing treaties already in force and exercising control over their industries. Oil and shipping interests may wield sufficient economic and political power in some, especially developing, states that they can counterbalance other pressures on governments to take strong environmental stances, both in negotiations and in enforcement.

Third, a nation's position vis-a-vis the oil transportation trade - importer vs. exporter, coastal state vs. port state - can place it in materially different positions with respect to both current diplomatic proposals and to implementation strategies. The burdens of enforcing rules limiting total ballast voyage discharges and supplying reception facilities fall almost exclusively upon oil exporting states, since they have the ports where tankers arrive after their ballast voyage. In contrast, procedures related to equipment, certification, and discharge record-keeping can be controlled in either loading or delivery ports. Coastal states along major trade routes, may find themselves facing significant oil pollution but lacking any ability to control the ships responsible.

Fourth, a nation's level of development dramatically influences the governments preference for stringent regulation or not in two ways. Developing

states lack strong environmental constituencies pushing for environmental control because other welfare issues assume greater national priority. Developing states also lack the resources to dedicate to compliance and enforcement, such as providing reception facilities or inspecting and prosecuting discharge violations.

Finally, legal concerns over sovereignty have also influenced states' positions on compliance issues. These were especially marked when governments viewed resolution of enforcement jurisdiction in the MARPOL context as influencing larger jurisdictional issues, especially in the Law of the Sea negotiations. Many developing coastal states wanted to increase their power by expanding coastal state enforcement jurisdiction since "many more ships would pass through their 200-mile economics zone than would ever enter their ports."<sup>105</sup> Some developed states proposed allowing port states to prosecute violations occurring outside their territorial seas. Maritime states, seeking to protect their shipping interests (and navies) from foreign interference, opposed proposals to limit flag state enforcement jurisdiction and to increase boarding and seizure rights of coastal states as hindering freedom of navigation. The final MARPOL bargain avoided these contentious issues: it reiterated all states' rights to enforce within their jurisdiction, but left the definition of jurisdictional limits to the Law of the Sea.

With respect to monitoring and enforcement, domestic public concern provides a major necessary condition for any state to monitor and enforce rules to limit intentional discharges. States with low domestic concern over oil pollution, even if pressures during negotiation can garner their support for stringent pollution controls, do not establish and consistently fund the Coast Guards and marine police needed to effectively monitor and enforce. Even states with high public concern must over-

come the pressures that any interested oil or shipping concerns have in opposing such activities. Flag-of-convenience states deriving large revenues from registries may have few incentives to monitor and enforce. States may also lack the financial resources and administrative capacity to effectively implement the terms of an agreement.<sup>106</sup> While political realities in developing states often place environmental concerns below other elements of social welfare, even if such concern did develop, governments often lack the resources and personnel needed for aerial surveillance programs or to follow through on prosecutions of violations referred by another state.

#### International organizations

OILPOL was the product of a diplomatic conference in 1954. Initially undertaken by the British, Secretariat duties were handed off to IMCO upon its establishment in 1958. IMCO is a specialized U.N. agency that has a large mandate to address all international shipping issues including safety, working conditions, load lines, and other standards for all types of vessels involved in international movement.

Several international organizations have been established at the regional level to deal with responses to large oil pollution incidents and other matters affecting the marine environment, such as the United Nations Environment Programme's Regional Seas Programs. Some of these organizations have conducted studies on the provision of reception facilities in their region.<sup>107</sup> However, no international organization other than IMO, has sought to promulgate any regulations on intentional discharges. The MOU on Port State Control, described above, is the only other international body which has taken any significant interest in intentional discharges.

1973 MARPOL Convention

Based on: M'Gonigle and Zacher, 1979, 121.

**Preference  
for stronger  
institution**

Strong

Egypt Bulgaria			U.S. USSR
Romania Argentina India	Australia Canada South Africa	Italy	
Belgium Finland New Zealand		Netherlands France	Liberia Greece U.K.
	Denmark	Sweden Norway Germany	Japan

Weak

Weak

Strong

**Capability to influence institution**

Institutional Characteristics:

**Operational specificity**

Extremely detailed & specific rules on equipment, including tanker size and type specifications; dates for contract, keel-laying, and delivery.

All-but-universal compliance with equipment standards but continuing non-compliance with discharge standards

Remaining ambiguity with respect to reception facilities

**Scope**

Much wider scope of treaty in general because of expansion to other forms of ship-generated pollution

Linkage at economic level with ability for tanker to trade (because of detention provision) and implicit linkage of classification and insurance to compliance

**Decision-making rules**

Simultaneous (not in MARPOL) creation of MEPC as quasi-legislative body with respect to amendments no longer needing approval of Assembly

Entry-into-force is automatic in 16 months except for parties who object - Tacit acceptance provision

**Allocation rules**

Legal enforcement rights unchanged but administrative enforcement - via detention and barring from entry - greatly enhanced

1978 Convention

Based on: M'Gonigle and Zacher, 1979, 137.

**Preference  
for stronger  
institution**

**Strong**

Egypt	Cyprus	Norway	U.S.
Kenya	Spain	Sweden	Greece
Morocco			
Venezuela			
Portugal			
		France	
Kuwait			Japan
			USSR
Belgium, New Zealand			Liberia
Finland, Mexico			
Romania, Tunisia			
Turkey, India	Australia		
Chile, Argentina	Brazil	Germany	
Nigeria, Indonesia	Canada	Netherlands	
Poland, Thailand	Denmark	Italy	U.K.

**Weak**

Weak

Strong

Capability to influence institution

Institutional Characteristics:

**Operational specificity**

Maintained specificity

Equal compliance

**Scope**

Broadened significantly to include existing tankers, but less stringent for them

**Decision-making rules**

No change from 1973

**Allocation rules**

No change from 1973

### Analysis

The period since 1969 of development of an effective institution for intentional oil pollution control stemmed from changes in both the distribution of preferences and in the distribution of capacities. The role exchange between the U.S. and the U.K., with the former becoming more activist from the late 1960s on, established a context in which the most activist state was not only more strongly committed to environmental protection but more capable of transforming that commitment into institutional characteristics.

Certainly a crucial element of the greater U.S. capacity was its strong power in the international oil markets. In contrast to the U.K.'s unilateral efforts in the 1950s, the U.S. has been able to convert unilateral threats of action into institutional arrangements that largely reflected its own preferences. The Port and Waterways Safety Act of 1972 and the Carter Initiatives of 1977 were directly responsible for both the holding and results of the 1973 and 1978 Conferences. Indeed, the U.S. holds the distinction of being the only state that has passed legislation more stringent than that called for in MARPOL. While the U.S. has not wielded hegemonic power in oil markets - never controlling more than 20% of tanker registries, tanker construction, or oil imports - it has been sufficiently powerful that other nations and their tankers were willing to accept, and more importantly implement, considerably more stringent regulations than they had when the U.K. had been the lead activist state.

The fragility of support for a strong institution is evident in the progress of the MARPOL agreement out of the 1969 Amendments. The 1969 Amendments

reflected a serious effort to refine the discharge standard system. However, the compromise neither fully reflected the U.S.'s preference for more stringent standards nor the oil companies' preference for greater flexibility and less regulation. What they did reflect was a political compromise that legalized the LOT process, as desired by oil companies, but required tanker captains conduct the process carefully enough that the alleged benefits were realized. They were a compromise between an activist country that saw a strong need for strong requirements and the inherent problems with the current policy strategy and other states that sought simultaneously to respond to growing public calls for action and avoid the economic costs that such action would entail. The Amendments started a transition to a significantly stronger institution for regulating intentional oil pollution. In contrast to the 1954 and 1962 rules, they required reduction rather than redistribution of oil discharges. For the first time, the regulatory standards were written to correspond to existing capabilities of captains to monitor their own behavior and, to a lesser degree, authorities to independently verify compliance. They were much wider in scope, applying to the behavior of all tankers throughout the ocean. They created a new set of responsibilities, requiring in-port inspections, albeit limited to shipping companies and flag states, to verify compliance with total discharge limits.

By 1973, the pressures for international regulation had grown tremendously. The U.S. had become even more committed to getting effective rules in place that would allow for monitoring and enforcement. The preferences of other states had not remained static over this period. As noted, the *Torrey Canyon* in 1967, the *Amoco Cadiz* in 1978, and numerous other accidents had raised environmental concerns about tankers throughout much of the developed world. A wide array of countries had switched from positions of strong opposition to formation of an effec-

tive institution, to one of "fence-sitting" in which support or opposition was based on a willingness to accept regulations and other institutional changes to placate both the U.S. and domestic environmental concerns, but only so long as they did not involve significant costs to domestic economic interests. Thus, the total degree of heterogeneity of preferences had decreased despite an increase in the strength of the activist state's preference for a strong institution.

Equally important, the U.S.'s capacity to convince other states of the need for equipment requirements had grown appreciably due to more experience with the apparent failure of even the improved discharge standards to cause tanker operators to change their behavior. In 1969, oil companies could claim without fear of contradiction that almost 80% of tankers were efficiently practicing LOT and making few if any discharges. By 1973, data had begun to become available that showed such claims to be false. States that had previously professed support for environmental protection but supported industry preferences for the low-cost alternative of LOT, found it harder to contend that this alternative was equally effective. During the 1969 Amendments, the U.S. accepted refinements to a strategy it already viewed as inadequate as a necessary compromise with status quo states and the industry. By 1973, however, the U.S. was both more committed to strong regulation, and had more evidence to undercut the arguments of those contending that further refinements were still needed. Thus, the failure of the 1969 Amendments to produce any significant change in tanker operator behavior provided the foundation for moving the target of regulation to tanker owners. Information thereby proved a crucial source of the U.S. increased capacity to press the international community to accept a completely new equipment-based approach to controlling tanker discharges.

MARPOL greatly increased the scope of regulation as well, with four additional annexes addressing many other ship-generated pollutants. At the same time, the SBT rules of the 1973 agreement were, in many ways, limited in scope - they applied only to large new tankers. Here again, however, past experiences provided the foundation for a more effective institution: new tankers were defined against specific dates that were not tied to entry into force of the agreement. The long delays in ratification of the 1954 and 1962 rules provided strong arguments for such an approach while undercutting arguments claiming that entry into force would be prompt. Indeed, the 1969, 1973 and 1978 rules all took even longer to enter into force than had the previous rules. This learning from past experience also manifested itself in more effective and efficient decision-making rules, with the formation of the Marine Environment Protection Committee as a quasi-legislative body and adoption of the "tacit acceptance" provision in MARPOL. Together these changes increased both the speed and scope with which agreed-upon rules took effect. Adoption of both the tacit acceptance provision, the equipment regulations, and their "fixed date" approach, depended directly on experience with the 1954 and 1962 rules. This experience identified the problem, pointed towards the real source of the problem and hence its solution, and undercut the arguments of those opposing the solution.

States also were willing to accept a requirement that they detain ships posing "a threat to the marine environment." While many states may have been little concerned about this as an obligation, its greater power proved to be as a right: detention was an administrative sanction that involved none of the sovereignty issues of, but was radically more costly than, legal prosecution and fines. Port states were finally also to be allowed to inspect ships coming into their ports. This was a less

radical change than it would first appear, however, since any evidence regarding violations outside territorial seas that was collected during such an inspection still had to be turned over to flag state governments for prosecution and penalization.

The detention provision, along with the explicit and implicit involvement of tanker construction companies, classification societies and insurance companies in the monitoring of compliance with the equipment provisions, linked oil pollution to other issues. For the first time, economic and pollution issues became linked, although not at the state, but at the corporate, level. A tanker's ability to trade now rested on its compliance with rules in an environmental treaty. While treaty rules had required severe fines since 1954, actual fine levels remained insufficient to deter discharge violations, given the benefits involved in quicker turnaround time in port, etc. In contrast, detention could involve costs of some \$10,000 per day, and being barred from delivering one's cargo in a port could be far more expensive. Whereas the poor verification and enforcement possible under the discharge system did not allow economic activity to be made credibly contingent on compliance, the equipment system's compliance system did.

The greater scope, specificity, and improved decision-making rules of the 1973 Agreement reflected lessened heterogeneity of preferences as compared to the pre-1969 period. By 1978, however, the gap between activist and status quo state positions had widened again with the U.S. pushing for measures that would increase the scope and stringency, and hence the costs, of the regulations. Not surprisingly, the support for the U.S. in 1973 evaporated in 1978. In 1973, states had supported the U.S. position either because it involved few costs to them, e.g., developing states, or because installing SBT on large new tankers involved future and limited

costs. Given strong U.S. pressure, including potential U.S. unilateralism, supporting limited SBT requirements was relatively painless. In contrast, in 1978, the U.S. proposal involved the immediate and universal cost of installing SBT on all tankers, including retrofitting existing ones. As had happened in 1954 and 1962, the lead activist state had taken a position that was far out in front of the bulk of states wielding the balance of power. The solution agreed to therefore reflected a greater deal of compromise by the U.S. than it had been required to make in the 1973 negotiations. The 1978 rules did broaden the scope to include existing and smaller tankers, but provided existing tankers with choices among technologies that significantly reduced the costs of the politics involved. The high costs of retrofitting quickly revealed the conditionality of the support for environmental protection that the 1973 agreement had appeared to reflect.

The greater degree of implementation, both in the lack of objections to entry into force under the tacit acceptance provisions and in greatly improved port state enforcement under the MOU and similar arrangements, suggest that the degree of heterogeneity of preferences for environmental protection has decreased again over the 1980s. This trend can be seen reflected in the adoption of greater equipment requirements for tankers to address accidental pollution, largely in response to the U.S. unilateral efforts (via OPA-90) to address the public outcry over the *Exxon Valdez* disaster. While these new international requirements have followed the now-common pattern of threats of U.S. unilateralism producing an international agreement that is reflective of, but weaker than, the U.S. position, their relatively speedy negotiation within the MEPC and immediate entry into force suggest that some of MARPOL's changes to decision-making rules have made for an institution more flexible and responsive to the preferences of the actors it serves.

### Conclusions

The story of international regulation of intentional oil pollution is one that reflects a shift from 1) a strong state pushing positions quite divergent from the majority of nations through 2) a period when a nation wielding significantly greater capacities, including learning, to influence the institution had preferences that did not involve costs sufficient to reveal the weakness of other states preference for a strong institution back to 3) a period when this same strong state lost its ability to influence the institution's characteristics because it had, as happened to the U.K. earlier, moved too far away from the mainstream preferences of other states.

At the 1973 Conference, the U.S. proved most successful in propagating its notions of how the institution should be shaped because of three factors. First, it brought to bear far greater exogenously-based power resources than had the U.K. in the 1950s. As evident in the different effects of U.S. threats in the Port and Waterways Safety Act of 1972 and the Carter Initiatives in 1977 and the effect of the U.K. Faulkner report in 1953, the U.S. was viewed as a much more powerful state. This power constituted a credible and potent threat that it would move unilaterally, a threat to both its own industry and to other nations. Second, the U.S. had a stronger preference for a strong institution that were not diluted by an effort to simultaneously appeal to both environmental and economic interests. Third, the U.S. could build on the greater knowledge of both the problem and the effectiveness of various solutions. By 1973, the effectiveness of discharge standards had been discredited by experience, laying the groundwork for equipment standards by undercutting opposing arguments. Fourth, the U.S. could take advantage in the 1970s of the broader base of support in most other countries for environmental action. While the

support did not run terribly deep, it was wide enough to produce agreement on measures which, over time, have produced a considerably stronger system for effecting protection of the ocean from intentional pollution.

ENDNOTES

---

<sup>1</sup> Portions of this chapter appear in Peter M. Haas, Robert O. Keohane, and Marc A. Levy, eds., Institutions for the Earth: Sources of Effective International Environmental Protection (Cambridge, MA: The MIT Press, 1993); and in Ronald B. Mitchell, "From Paper to Practice: Improving Environmental Treaty Compliance" Unpublished Ph.D. dissertation, Harvard University, Cambridge, MA, 1992.

<sup>2</sup> The *Exxon Valdez* wrecked in Prince William Sound, Alaska on March 24th, 1989.

<sup>3</sup> National Academy of Sciences, Petroleum in the Marine Environment (Washington, DC: National Academy of Sciences, 1975); National Academy of Sciences and National Research Council, Oil in the Sea: Inputs, Fates and Effects (Washington, DC: National Academy Press, 1985).

<sup>4</sup> For a history of oil pollution control from the 1920s through the 1970s, including drafted but unsigned conventions in 1926 and 1935, see Sonia Zaide Pritchard, Oil pollution control (London, England: Croom Helm, 1987).

<sup>5</sup> For comparison, the *Exxon Valdez* spilt 35,000 tons into Prince William Sound in 1989, and the *Braer* spilt 85,000 tons off the Shetland Islands in 1993.

<sup>6</sup> See, for example, National Academy of Sciences and National Research Council, Oil in the Sea; (GESAMP [IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Pollution], The State of the Marine Environment, GESAMP Reports and Studies No. 39 [New York, NY: United Nations, 1990], 2); and J. M. Baker, Impact of Oil Pollution on Living Resources (Gland, Switzerland: International Union for Conservation of Nature and Natural Resources, 1983), 40.

<sup>7</sup> Arthur A. Stein, "Coordination and Collaboration: Regimes in an Anarchic World," in Stephen D. Krasner, ed., International Regimes (Ithaca, NY: Cornell University Press, 1983), 129.

<sup>8</sup> International Convention for the Prevention of Pollution of the Sea by Oil, 12 May 1954, 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 3 reprinted in 1 I.P.E. 332, hereinafter cited as OILPOL 54. For an excellent analysis and history of oil pollution from the 1950s through 1978, see R. Michael M'Gonigle and Mark W. Zacher, Pollution, politics and international law: tankers at sea (Berkeley, CA: University of California Press, 1979).

<sup>9</sup> International Convention for the Prevention of Pollution from Ships, 2 November 1973, reprinted in 12 I.L.M. 1319 (1973), 2 I.P.E. 552; and Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 17 February 1978, reprinted in 17 I.L.M. 1546 (1978), 19 I.P.E. 9451, hereinafter together cited as MARPOL 73/78.

<sup>10</sup> This section relies heavily on Pritchard's exhaustive history of early (pre-1973) attempts at intentional oil pollution regulation in Oil Pollution Control. For the period since 1973, this section relies on the excellent analyses in M'Gonigle and Zacher, Pollution, Politics, and International Law and Sielen and McManus, "IMCO and the Politics of Ship Pollution."

<sup>11</sup> J. H. Kirby, "The Clean Seas Code: A Practical Cure of Operational Pollution," in

---

International Conference on Oil Pollution of the Sea (Rome, Italy: 1968), 203.

12. United Kingdom Ministry of Transport, Report of the Committee, 1.
13. United Kingdom Ministry of Transport, Report of the Committee, 1.
14. United Kingdom Ministry of Transport, Report of the Committee, 33.
15. Pritchard, Oil Pollution Control, 84.
16. International conference on pollution of the sea by oil, "General Committee: Minutes of 3rd Meeting Held on 30th April 1954," 4.
17. For a more extended discussion of the history of the 1954, 1962, and 1969 agreements, see Chapter 3, and also see Sonia Zaide Pritchard, Oil Pollution Control (London, England: Croom Helm, 1987).
18. M'Gonigle and Zacher, Pollution, Politics, and International Law, 84.
19. While IMCO - established under the United Nations in 1948 - was the obvious forum to hold such negotiations, it did not start operation until 1958.
20. For particular states' views of the seriousness of oil pollution during the 1954 Conference, see Pritchard, Oil Pollution Control, 98-9; and United Nations Secretariat, Pollution of the Sea by Oil.
21. For example, the Faulkner report itself concluded that there was no evidence that fish or shellfish beds were harmed by oil pollution (United Kingdom Ministry of Transport, Report of the Committee, 2-3). The French argued at the 1954 conference that their research had "produced no proof that its effects upon marine life were harmful" (International conference on pollution of the sea by oil, "General Committee: Minutes of 5th Meeting Held on 5 May 1954," 5). By this time, crude oil tankers clearly had become the major source of oil pollution.
22. M'Gonigle and Zacher, Pollution, Politics, and International Law, 90. While the final agreement addressed both tankers and non-tankers, the discussion here focuses exclusively on regulations relating to tankers, as they had become by far the major source of the problem.
23. Pritchard, Oil Pollution Control, 95.
24. M'Gonigle and Zacher, Pollution, Politics, and International Law, 87.
25. M'Gonigle and Zacher, Pollution, Politics, and International Law, 89.
26. Some wider zones were established near Australia, the North Sea states, and in the Atlantic off the European and U.K. coasts.
27. Pritchard, Oil Pollution Control, 108.
28. This had been recommended in the Faulkner report as an amendment to the Oil Pollution Act of 1922 as well (United Kingdom Ministry of Transport, Report of the Committee, 32).

- 
29. Pritchard, Oil Pollution Control, 112.
  30. "Major shipping states" were defined as those having an aggregate tonnage of over 500,000 tons.
  31. Kirby, "The Clean Seas Code," 203.
  32. For a description of how these problems had been noted as early as the 1926 Conference, see Pritchard, Oil Pollution Control, 23.
  33. OP/CONF/2 (1 September 1961).
  34. Pritchard, Oil Pollution Control, 119.
  35. Pritchard, Oil Pollution Control, 130-131.
  36. See Annex A of OILPOL 54/62. An intriguing French proposal to increase the speed of signatures by decreasing the size of prohibition zones off non-party states failed (Pritchard, Oil Pollution Control, 133). This effort at reciprocity received little serious consideration.
  37. Pritchard, Oil Pollution Control, 138.
  38. M'Gonigle and Zacher, Pollution, Politics and International Law, 95-96.
  39. Pritchard, Oil Pollution Control, 139.
  40. M'Gonigle and Zacher, Pollution, Politics and International Law, 93-94.
  41. Resolution 15 in IMCO, Resolutions Adopted by the International Conference on Prevention of Pollution of the Sea by Oil, 1962 (London, England: IMCO, 1962).
  42. Article XVI, OILPOL 54/62.
  43. M'Gonigle and Zacher, Pollution, Politics, and International Law, 99.
  44. Pritchard, Oil Pollution Control, 145. As James Kirby noted, "It was only our close study of the solution recommended by the [1962] conference of discharging oil ashore into slop facilities that really drove us towards the Load-on-top method" (J. H. Kirby, "Background to Progress," *The Shell Magazine* 45 (January 1965), 26).
  45. Largely based on two articles by James Kirby of Shell, it has been suggested that the Load-on-Top technique was not developed until 1962. See Kirby, "Background to Progress," and J. H. Kirby, "The Clean Seas Code." Shell does appear to have reevaluated the feasibility of combining slops with fresh cargo as a direct response to the 1962 Amendments requirement that slops be discharged ashore (Kirby, "Background to progress," 26). However, the process of consolidating tank cleaning and deballasting slops was described in the 1953 Faulkner report (United Kingdom Ministry of Transport, Report of the Committee on the Prevention of Pollution of the Sea by Oil [London: Her Majesty's Stationery Office, 1953]), and Moss states that by 1963, most U.S. tankers were already mixing crude oil slops "with the next cargo" -- the major innovation of load-on-top -- as part of normal procedure (Moss, Character and Control, 42).

- 
46. Kirby, "The Clean Seas Code," 206.
  47. Accurate oil content meters were still not yet available.
  48. Kirby, "The Clean Seas Code," and M'Gonigle and Zacher, Pollution, Politics, and International Law, 97.
  49. M'Gonigle and Zacher, Pollution, Politics, and International Law, 91.
  50. M'Gonigle and Zacher, Pollution, Politics, and International Law, 91.
  51. Pritchard, Oil Pollution Control, 98-99.
  52. IMCO, Pollution of the sea by oil: results of an inquiry made in 1963 (London, England: Inter-Governmental Maritime Consultative Organization, 1964).
  53. M'Gonigle and Zacher, Pollution, Politics and International Law, 95.
  54. Sir Gilmour Jenkins in Kirby, "Background to Progress," 26. See also the U.S. Bureau of Mines study provided to the 1926 Conference and the Report on the Second Session of the League of Nations Committee of Experts of October 26, 1935, both cited in United Kingdom Ministry of Transport, Report of the Committee, 6-9, as well as the Ministry of Transport conclusions themselves.
  55. C. T. Sutton, "The Problem of Preventing Pollution of the Sea by Oil," *BP Magazine* 14 (Winter 1964), 9. This fact did not address, however, the environmental damage that oil could cause before it became "unobjectionable."
  56. Kirby, "The Clean Seas Code," 210.
  57. Kirby, "The Clean Seas Code."
  58. M'Gonigle and Zacher, Pollution, Politics, and International Law, 99.
  59. M'Gonigle and Zacher, Pollution, Politics, and International Law, 100.
  60. M'Gonigle and Zacher, Pollution, Politics, and International Law, 99.
  61. M'Gonigle and Zacher, Pollution, Politics, and International Law, 99.
  62. The 60 l/m rate posed few problems for tankers since it was "a figure within which any responsibly run ship, no matter how big, could operate" (Kirby, "The Clean Seas Code," 208).
  63. Resolution A.391(X) (1 December 1977), Annex, par. 5.
  64. Kirby, "The Clean Seas Code," 200 and 209, and William T. Burke, Richard Legatski, and William W. Woodhead, National and International Law Enforcement in the Ocean (Seattle, WA: University of Washington Press, 1975), 129. Imagine a new tanker that loads 150,000 tons of oil in Kuwait. It delivers 149,400 tons in Rotterdam, 600 tons (0.4%) remaining as "clingage" of oil to the tanks' sides. On its return voyage to Kuwait, it ballasts several tanks with sea water and cleans others

---

with sea water. It allows the oil to separate from the resulting oil-water mixtures and discharges the water overboard. If it arrives in Kuwait with less than 590 tons of oil residues ("slops"), it would clearly have discharged more than 1/15,000th of its 150,000 tons. The more likely scenario would involve arrival in Kuwait with completely clean tanks or negligible slops.

<sup>65</sup>. The concomitant changes to the compliance information system that would have made these changes effective were not made however. International law barred port states from the intrusive inspections necessary to verify compliance with the total discharge standards and no changes were made to the flag state enforcement prerogative.

<sup>66</sup>. Samir Mankabady, The International Maritime Organization: Volume I: International Shipping Rules (London, England: Croom Helm, 1986), 318.

<sup>67</sup>. M'Gonigle and Zacher, Pollution, Politics, and International Law, 118.

<sup>68</sup>. M'Gonigle and Zacher, Pollution, Politics, and International Law, 108.

<sup>69</sup>. (U.S. Public Law 92-340, Ports and Waterways Safety Act of 1972, 10 July 1972, Sec. 201[13]).

<sup>70</sup>. . Jesper Grolin, "Environmental Hegemony, Maritime Community, and the Problem of Oil Tanker Pollution," in Michael A. Morris, ed., North-South Perspectives on Marine Policy (Boulder, CO: Westview Press, 1988), 32.

<sup>71</sup>. The U.S. had sought measures beyond those needed to implement the 1969 amendments. They sought to widen the prohibition zones to 100 miles while restricting allowable discharges within them to 10 ppm, and to reduce rate limits outside the zones from 60 to 30 l/m (M'Gonigle and Zacher, Pollution, Politics, and International Law, 113).

<sup>72</sup>. The special areas in the Red Sea and Persian Gulf were designated as part of the 1973 Convention. However, only the 50 mile zones applied until sufficient states had provided reception facilities at all oil loading terminals (Annex I, Regulation 10, MARPOL 73/78).

<sup>73</sup>. The U.S. was seeking a 10 ppm definition (M'Gonigle and Zacher, Pollution, Politics, and International Law, 113).

<sup>74</sup>. Annex I, Regulation 9, MARPOL 73/78.

<sup>75</sup>. Article 11(f), MARPOL 73/78.

<sup>76</sup>. "New" tankers were defined as tankers with building contracts placed after December 31, 1975, or whose keel was laid after 30 June 1976, or whose delivery occurred after December 31, 1979 (Annex I, Regulation 1, par. 6, MARPOL 73/78).

<sup>77</sup>. M'Gonigle and Zacher, Pollution, Politics, and International Law, 109.

<sup>78</sup>. For an insightful argument for the impact of detente on Soviet bloc positions in negotiations on acid rain, see Marc Levy, "European Acid Rain: The Power of Toteboard Diplomacy," in Haas, Keohane, and Levy, Institutions for the Earth.

- 
79. M'Gonigle and Zacher, Pollution, Politics, and International Law, 114.
80. MP XIII/2(c)/7 (2 June 1972), 2. See also, IMP/CONF/8/4 (29 June 1973).
81. M'Gonigle and Zacher, Pollution, Politics, and International Law, 114-120.
82. This built on the approach of amendments adopted in 1971 limiting tank size to reduce the impact of accidental spills (Pritchard, Oil Pollution Control, 159).
83. Article 5(2), MARPOL 73/78.
84. M'Gonigle and Zacher, Pollution, Politics, and International Law, 231-234.
85. Resolution A.297(VIII), (1973); MEPC XII/13/3 (5 November 1979).
86. Article 16(2)(f) and 16(2)(g), MARPOL 73/78.
87. Attorneys from the Center for Law and Social Policy, representing 15 environmental groups, were among the U.S. delegates to the 1973 and 1978 conferences (Clifton E. Curtis, "Statement" in U.S. Senate, Committee on Foreign Relations, Hearings on Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, with Annexes and Protocols: June 12, 1980 [96th Congress, 2nd session] [Washington, DC: GPO, 1980], 9).
88. M'Gonigle and Zacher, Pollution, Politics, and International Law, 130.
89. M'Gonigle and Zacher, Pollution, Politics, and International Law, 123 and 135.
90. As discussed below, COW actually produced net savings for oil companies.
91. M'Gonigle and Zacher, Pollution, Politics, and International Law, 138.
92. "New" tankers under the Protocol were defined as tankers with building contracts placed after June 1, 1979, or whose keel was laid after January 1, 1980, or whose delivery occurred after June 1, 1982 (Annex I, Regulation 1, par. 26, MARPOL 73/78). Existing tankers, instead of retrofitting SBT or COW, could dedicate certain tanks to ballast for an interim period until 1985 for tankers over 70,000 tons and until 1987 for tankers over 40,000 tons. For a chart of the application of the various regulations, see Y. Sasamura, "Oil in the Marine Environment," in IMAS 90: Marine Technology and the Environment (London, England: Institute of Marine Engineers, 1990), 3-4.
93. M'Gonigle and Zacher, Pollution, Politics and International Law, 139, footnote 191.
94. M'Gonigle and Zacher, Pollution, Politics, and International Law, 136-7.
95. Resolution A.500(XII) (20 November 1981).
96. "First Amendments to MARPOL 73/78 Adopted," *IMO News* 4 (1984), 8.
97. IMO, Status of Multilateral Conventions and Instruments in Respect of Which the International Maritime Organization or Its Secretary-General Performs Depositary or Other Functions, as at 31 December 1990 (London, England: IMO, 1991).

---

<sup>98</sup>. "6 July deadline for new tankers," *IMO News* 2 (1993), 1; and "1991 MARPOL amendments enter into force," *IMO News* 2 (1993), 2.

<sup>99</sup>. *Memorandum of Understanding on Port State Control in Implementing Agreements on Maritime Safety and Protection of the Marine Environment*, 26 January 1982, reprinted in 21 I.L.M. 1 (1982), I.P.E. II/A/26-01-82, hereinafter cited as *MOU*. Member states include Belgium, Denmark, Finland, France, Federal Republic of Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. The 1982 MOU replaced a similar MOU signed in the Hague by eight North Sea states in 1978 (Secretariat of the Memorandum of Understanding on Port State Control, *The Memorandum of Understanding on Port State Control* [information pamphlet] [The Hague, The Netherlands: The Netherlands Government Printing Office, 1989]). For a full discussion of the MOU, its history, and its operation, see George Kasoulides, "Paris Memorandum of Understanding: A Regional Regime of Enforcement," *International Journal of Estuarine and Coastal Law* 5 (February 1990).

<sup>100</sup>. In 1989, member states felt that "control on compliance with operational [discharge] requirements did not strictly fit in the present framework of the MOU" (Secretariat of the Memorandum of Understanding on Port State Control's *Annual Report, 1989* [The Hague, The Netherlands: The Netherlands Government Printing Office, 1989], 16). Member states used "extreme caution" in moving towards inclusion of discharge standards in MOU inspections (Secretariat, *Annual Report, 1992* [The Hague, The Netherlands: The Netherlands Government Printing Office, 1989], 21).

<sup>101</sup>. See George Kasoulides, "Paris Memorandum of Understanding: Six Years of Regional Enforcement," *Marine Pollution Bulletin* 20 (June 1989), and George Kasoulides, "Paris Memorandum of Understanding: A Regional Regime of Enforcement," *International Journal of Estuarine and Coastal Law* 5 (February 1990) for extensive discussions of the Memorandum of Understanding on Port State Control.

<sup>102</sup>. *Acuerdo e Vina del Mar - Acuerdo latinoamericano sobre control de buques por el Estado rector del puerto*. 5 November 1992. Original signatories include Argentina, Brazil, Chile, Colom-