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Deepwater Horizon: Lessons for the Offshore

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This paper reviews the regulatory framework governing offshore oil and gas operations on the continental shelf. Offshore exploration comprises both marine and industrial elements, regulated through a complex web of national (coastal state) regulation and international conventions, the latter primarily directed towards the marine aspects of operations. Following the Deepwater Horizon disaster of 2010, the adequacy of current regulatory approaches came under increased scrutiny. It is argued in this paper that the growing complexity of the industry, coupled with increasing activity in deepwater and Arctic environments, requires development of a more robust system of international regulation.

L'article examine le cadre réglementaire qui régit les activités gazières et pétrolières sur le plateau continental. L'exploration extracôtière comporte des éléments marins et des éléments industriels régis par un ensemble complexe de règlements et de conventions nationales (États côtiers), ces dernières visant principalement les aspects maritimes de ces activités. À la suite de la catastrophe de la plateforme Deepwater Horizon en 2010, le caractère adéquat des régimes réglementaires actuels a fait l'objet d'exams de plus en plus approfondis. L'auteur allègue que la complexité croissante de l'industrie, jumelée à l'intensité de plus en plus grande des travaux en eau profonde et dans l'Arctique, exige l'élaboration et la mise en place d'un système de règlements internationaux plus stricts.

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Introduction

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Introduction

Despite this predominantly industrial focus the activity takes place at sea. The unique nature of this industrial-marine endeavour, together with the constant evolution of new technology, has presented a challenge to agencies established to set standards and govern the design and activities of more traditional craft.... Despite the newness and diversity of the industry, one trend has become clear for both the participants and the regulators: offshore drilling has emerged as an industrial activity that takes place in the marine environment rather than as a marine activity undertaken for industrial purposes.¹

This quotation from the Report of the Royal Commission on the *Ocean Ranger* Marine Disaster of 1982 still rings true today. The dynamic between the industrial and marine elements of the industry continues to be influential. In some respects, it is a confusing aspect of the regulation of this industry.

There are two other influences in the offshore industry, regulation by the coastal state in which the industry is carrying on business, and an umbrella of International Conventions which apply to the offshore. The influence of the coastal state is due to the fact that oil and gas operations involve a long-term commitment to carrying on business in proximity to a coastal state. Accordingly, the coastal state takes considerable interest

1. Royal Commission on the Ocean Ranger Marine Disaster: *The Loss of the Semisubmersible Drill Rig Ocean Ranger and its Crew*, vol 1 (Ottawa: Minister of Supply and Services Canada, 1984) at viii [*Ocean Ranger*].

in the way in which the activities are carried on, whether in its territorial waters, 200 mile Exclusive Economic Zone (EEZ) or beyond in the waters of an extended continental shelf.² International conventions apply because of the maritime connection to the industry.

There are thus four interests at play in the offshore industry. The marine component is sensitive to the fact that the work takes place for the most part on ships.³ The industrial component is driven by the nature of the work, drilling a hole in the ground with a view to creating a production facility. The coastal state interest is in ensuring that the work is carried out safely with appropriate regard to benefits accruing to the coastal state. International conventions share subject matter relevancy to the activities of the offshore industry.

This paper examines the complexity of the regulatory regime governing the operation of offshore oil and gas drilling and production, using the Reports from the *Deepwater Horizon*⁴ as a starting point for the discussion. The paper criticizes the patchwork quilt of regulation and argues that as the industry becomes increasingly complex, better international regulation is required. The Arctic is also discussed in light of the *Deepwater Horizon* Reports.⁵

I. *The role of conventions*

Compared to the offshore industry, regulation of the marine industry has been straightforward and, in many cases, international reaction to disasters at sea has been swift. The *Titanic* sank in 1912 and by 1914 the first steps

2. Article 82 of the *UN Convention on the Law of the Sea* 10 December 1982, 1833 UNTS 397, 21 ILM 1261 (entered into force 16 November 1994) provides that the coastal state pay a royalty to the international seabed authority for production taking place on the extended continental shelf. Canada has exploration licenses on its extended continental shelf. Russia, the United States and Canada are currently mapping the seabed of the Arctic Ocean in order to make extended continental shelf claims. See Wylie Spicer QC & Tanya Bath, "The Canadian Arctic: The Changing Seascape of Offshore Oil and Gas Exploration Issues" (2010) 48 *Alta L Rev* 255.

3. Wylie Spicer, "Some Admiralty Issues in Offshore Oil and Gas Development" (1982) 20 *Alta L Rev* 153 [Spicer, "Admiralty Issues"].

4. The reports are: National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling, Report to the President* (January 2011), online: National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling <http://www.oilspillcommission.gov/sites/default/files/documents/DEEPWATER_ReporttothePresident_FINAL.pdf> [President's Report]; National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Macondo, The Gulf Oil Disaster, Chief Counsel's Report 2011*, online: National Commission on the Deepwater Horizon Oil Spill and Offshore Drilling <<http://www.oilspillcommission.gov/chief-counsels-report>> [Chief Counsel's Report]; United States Coast Guard, *Report of Investigation into the circumstances surrounding the explosion, fire, sinking and loss of eleven crew members aboard the mobile offshore drilling unit, Deepwater Horizon, in the Gulf of Mexico April 20–22, 2010*, vol 1, online: Bryant's Maritime Consulting <http://www.brymarconsulting.com/wp-content/uploads/Misc/JIT_Report_Vol_1.pdf> [Coast Guard Report].

5. Spicer, "Admiralty Issues," *supra* note 3.

had been taken to put in place an international convention focussing on safety of life at sea.⁶ The 1978 sinking of the *Amoco Cadiz* resulted in the 1982 *Paris Memorandum of Understanding on Port State Control*,⁷ which is seen as one international attempt to better regulate flags of convenience due to the ability of a port to detain a vessel that it finds is not complying with international safety standards. The Paris MOU, SOLAS and other international conventions cast a very wide net over the worldwide marine industry. Its regulation is not focussed on a relationship with a coastal state.

The responses of the offshore industry to disasters have rarely taken place at the international level. There has been an absence of an enforceable international regime in the offshore industry. There is extensive regulation, but it is in large part driven either by business or by the coastal state rather than by an agreement among countries involved concerning the appropriate international standards to be enforced. The usual players in advancing international maritime issues have played a relatively small part in the offshore. Many of the international conventions dealing with maritime matters are, however, applied in the offshore, such as SOLAS and the *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers*.⁸ The International Maritime Organization (IMO) and similarly, the National Maritime Law Associations and the

6. *International Convention for the Safety of Life at Sea*, 1 November 1974, 1184 UNTS 2, Can TS 1980 No 45 (entered into force 25 May 1980) [SOLAS Convention]. SOLAS has become an integral part of the safety regime for shipping throughout the world. In Canada, its many aspects are recognized in regulations made pursuant to the *Canada Shipping Act, 2001*, SC 2001, c 26.

7. The *Paris MOU* was agreed to in 1982 to coordinate port inspections. Canada is one of the twenty-seven countries that inspect vessels in accordance with the Paris MOU. There are also other port state control systems that regulate other ports in the world, including the Tokyo MOU, the Caribbean MOU and US Coast Guard port state control. The purpose of these MOUs is to better regulate safety of vessels.

8. *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers*, 7 July 1978, 1361 UNTS 2, Can TS 1988 No 36 (entered into force 28 April 1984) [STCW]. This convention is the first to establish basic requirements on training certification and watch keeping for seafarers at an international level. As noted on the IMO website, the previous standards for such activities were established by individual governments without reference to practices in other countries and "as a result standards and procedures varied widely, even though shipping is the most international of all industries": <[http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-on-Standards-of-Training,-Certification-and-Watchkeeping-for-Seafarers-\(STCW\).aspx](http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-on-Standards-of-Training,-Certification-and-Watchkeeping-for-Seafarers-(STCW).aspx)>. In the context of the development of international regulation of the offshore industry, this comment by the IMO concerning seafarers is noteworthy.

Comité Maritime Internationale (CMI)⁹ have not been very successful in advancing the Convention agenda, although efforts have been made.

The *Deepwater Horizon* highlighted the difficulties inherent in regulating the offshore industry, and should stand as a signpost for better international regulation. The reports that emanated from the *Deepwater Horizon* stimulate discussion in a number of areas and demonstrate the complexity of the regulatory framework. The reports explain the obligations of the *Deepwater Horizon* flag state and its consequent responsibilities with respect to its management, including the rules and obligations of the vessel classification societies. The reports criticize the owners of the *Deepwater Horizon*, the oil company operator and contractors working onboard. Ambiguities in the command structure onboard the vessel are discussed, as are the applicability of various of the international conventions including the *International Safety Management Code (ISM Code)*,¹⁰ the *STCW Convention*, the *Mobile Offshore Drilling Unit Code*¹¹ and others.

It is striking in reviewing the President's Report in *Deepwater Horizon* that there is virtually no reference to the maritime aspects of the situation and no commentary, positive or negative, as to whether better international regulation is called for. The same comments can be made of the Chief Counsel's Report. The absence of consideration of the marine issues in these reports lead to the conclusion that the industry still considers itself as industrial but taking place in a marine environment. I believe this assessment is incorrect. A preferred characterization would be that it is

9. The CMI is the oldest world organization exclusively concerned with the uniformity of maritime law. Its members are the national maritime law associations of many countries. The CMI has cooperated with IMO since the stranding of the *Torrey Canyon* in 1967. The CMI worked with IMO in generating the international convention on civil liability for oil pollution damage, a consequence of the *Torrey Canyon* stranding. The CMI continues to draft conventions for consideration by IMO. The CMI has been involved in the drafting of conventions for structures operating in the offshore.

10. The purpose of the *ISM Code* is to provide international standards for the safe management and operation of ships and for pollution prevention. SOLAS adopted the *ISM Code* in 1994. As of 1 July 2002, it became mandatory for self-propelled mobile offshore drilling units (MODU); SOLAS Convention, *supra* note 6 at chapter IX (amended 2000). One of the requirements of the *ISM Code* is that each ship/MODU must have a Safety Management System (SMS). This is among the systems that are reviewed and audited to ensure compliance with the *ISM Code*. Responsibility for this in the case of the *Deep Water Horizon* was delegated by the flag state to Det Norske Veritas (DNV), a vessel classification society.

11. *Code for the Construction and Equipment of Mobile Offshore Drilling Units*, 1989, adopted by Resolution A.649(16) on 19 October 1989 [*MODU Code 1989*]; *Code for the Construction and Equipment of Mobile Offshore Drilling Units*, 2009, adopted by Resolution A1023(26) on 2 December 2009. [*MODU Code 2009*]. These are the two relevant MODU Codes. The 1989 version was adopted by IMO by Assembly Resolution A.649(16) for MODUs constructed after 1 May 1991. The 2009 MODU Code was adopted by Resolution A.1023(26) for MODUs constructed after 1 January 2012. The 1989 Code applied to the *Deepwater Horizon*.

a marine and industrial industry (marindustrial perhaps) taking place in a marine environment.

II. *The Deepwater Horizon facts*

In order to help situate this paper, it is worth recounting some of the facts concerning the *Deepwater Horizon*. She flew the flag of the Republic of the Marshall Islands (which became a signatory to the *United Nations Convention on the Law of the Sea*¹² in 1991). It was a foreign-flagged mobile offshore drilling unit (MODU). The regulatory regime in the United States requires only limited oversight of foreign flag vessels engaged in Offshore Continental Shelf (OCS) activities.¹³ The flag state had delegated all of its inspection and investigative responsibilities to the American Bureau of Shipping (ABS) and Det Norske Veritas (DNV), the vessel classification societies.¹⁴ The Minimum Safe Manning Certificate (MSMC) issued by the flag state listed the *Deepwater Horizon* as a self-propelled MODU rather than as a dynamic positioned vessel [DP]. This was a mistake on the part of the flag state,¹⁵ and as a result the STCW Convention did not apply to the *Deepwater Horizon* when it was on station. The *Deepwater Horizon* was built according to the provisions of the *MODU Code 1989*.¹⁶

The worldwide deep water rig fleet has grown significantly in recent years. In 2008 there were 103 deep water rigs, being forty-six moored semi-submersibles and drill ships and fifty-seven DP vessels. By 2010 the fleet had grown by twenty-five per cent and due to the attraction of ever deeper waters, the number of DP vessels rose to eighty-one, whereas moored rigs grew only two per cent to 48.¹⁷ DP vessels are also in high demand in harsh environments. Deep water and harsh environment opportunities exist in many locations including the Gulf of Mexico, Brazil, West Africa, the Arctic Ocean and offshore eastern Canada. Drilling in these environments is more complex and carries greater risk. Drilling and producing safely in these waters adds to the urgency of appropriate regulation. The deep water

12. *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 397, 21 ILM 1261 (entered into force 16 November 1994) [UNCLOS]. For an interesting discussion of the relationship between UNCLOS and the IMO conventions see Anna Mihneva-Mitova, "The Relationship Between United Nations Convention on the Law of the Sea and the IMO Conventions" (2005), online: United Nations <https://www.un.org/depts/los/nippon/unff_programme_home/fellows_pages/fellows_papers/natova_0506_bulgaria.pdf>.

13. Coast Guard Report, *supra* note 4 at iv.

14. *Ibid* at iv, ix, xviii.

15. *Ibid* at 27, 114.

16. *Ibid* at 121.

17. See online: <www.pennenergy.com>. Rowan Companies Inc, a long-time presence in the jack-up drilling rig market, announced on 1 June 2011, that they entered into a contract with Hyundai for the construction of two ultra-deep water drill ships.

fields of Africa and Latin America are forty-eight per cent of worldwide deep water fields. It is predicted that the deep water capital expenditures in Africa will overtake those of Latin America by 2015.¹⁸

The Chief Counsel's Report identifies the following issues directly connected to deep water operations:

Because of the complexities of deepwater operations, developing a major deepwater oil field can cost enormous sums of money—far more than shallow water development. To make such developments economically viable, oil companies must identify highly productive reservoirs and then install high-productivity wells and production systems. ...Good shallow water wells produce at rates of a few thousand barrels of oil a day. By contrast deepwater wells commonly produce more than 10,000 barrels per day.¹⁹

The *Deepwater Horizon* was insured for USD \$560 Million, the lease rate was \$533,000 per day “[making it] the single greatest expense of drilling the well.”²⁰ The *Deepwater Horizon* herself was a DP vessel drilling in deep water. A DP vessel has many advantages, not the least of which is being fully self-propelled. Some of the disadvantages are that it can fail to keep position in extreme weather, its position control requires a human operator, and it requires more personnel to operate.²¹ These characteristics have an impact on manning issues.

III. *The role of the flag state*

The nationality of a vessel is defined by the flag that it flies. A vessel is subject to the laws of its flag state. Most MODUs qualify as vessels for the purpose of ship registration. In the early days of the offshore industry, there was some debate about this point.²² This debate has not only disappeared but the ship registries of many countries now include

18. Infield, the Energy Analysts, *Deepwater & Ultra Deepwater Market Report To 2015*, online: <www.infield.com/news/deepwater-market-report_2015/32> [*Deepwater Market Report*].

19. Chief Counsel's Report, *supra* note 4 at 7.

20. *Ibid* at 245.

21. International Marine Contractors Association, online: IMCA <<http://www.imca-int.com>>. “Introduction to Dynamic Positioning,” online: <<http://www.imca-int.com/media/73055/imcam103.pdf>> at 1.1; Lambros Klaoudatos, “Station Keeping for Deep Water Mobile Offshore Drilling Units: an Economic and Operational Perspective” (2005), online: Center for Maritime Economics and Logistics <http://maritimeeconomics.com/sites/maritimeeconomics.com/files/downloads/Lambros_KLAUDATOS.pdf> at 61. See also Det Norske Veritas, “DNV Rules for Classification, Dynamic Positioning Systems” (January 2011), online: DNV Managing Risk <<http://exchange.dnv.com/publishing/ruleship/2011-01/>>.

22. Michael Summerskill, *Oil Rigs: Law and Insurance* (London: Stevens & Son, 1979) at 1–9; Spicer, “Admiralty Issues,” *supra* note 3 at 153–161; *Stewart v Dutra Const Co*, 543 US 481, 125 S Ct 118 (2005).

MODUs as a category of vessel eligible for registration. The registries specifically outline the manning requirements for these vessels in their bulletins concerning safe manning.²³

The manning requirements specified in the vessel registries as they relate to MODUs are not identical (some are more specific than others). The *Deepwater Horizon* flew the flag of the Marshall Islands, which has a specific recitation of manning requirements for MODUs. The classification of the *Deepwater Horizon* as a “self propelled mobile offshore drilling unit” meant that insofar as the flag state was concerned, a master was not required when the unit was on location and only the offshore installation manager was required. If it had been properly characterized as a “dynamically positioned unit and drilling ship,” a master would have been required notwithstanding that the *Deepwater Horizon* was on location.²⁴ One might ask whether such an obvious mistake should have been identified by the vessel owner and the crewing requirements treated as for the same as for a DP vessel.

The Coast Guard Report criticizes the flag state for failing to ensure that the responsibilities of the classification societies had been adequately carried out. This criticism, while new to the offshore oil and gas industry, is not new at all to the marine industry:

Several of the conclusions arising from *Deepwater Horizon* casualty can be linked directly to RMI’s [the flag state] failure to ensure that *Deepwater Horizon* was in compliance with all applicable requirements.... Having never inspected the vessel except through Recognized Organizations, RMI entrusted all flag state inspection duties to Recognized Organizations and did not conduct sufficient oversight of those classification societies to detect mistakes and accurately determine the condition of its vessel prior to the casualty. Such oversight is crucial because there is always a potential conflict of interest in the work of Classification Societies, as they are paid by the vessel owner and only perform the work the owner requests. This casualty raises serious questions about the model under which a flag of open registry may rely entirely on Classification Societies to do its inspection and investigative work.²⁵

23. Bahamas Information Bulletin 115, paragraph 1.2 and 7.4 Maritime Authority, online: <http://www.bahamasmaritime.com/includes/tng/pu5b/tNG_download4.php?page=38&KT_download1=0a40143f59d215f8d02f3bbb0f79fcff> [Bahamas Bulletin]. Liberia Marine Notices MAN 001 at 4.5 and MAN 004, online: <<http://www.liscr.com/liscr/Maritime/Documents/tabid/87/Default.aspx#notices>>, and Republic of the Marshall Islands Marine Notice 7-038-2 at 2.2.5, online: <<http://www.register-iri.com/forms/upload/MN-7-038-2.pdf>>.

24. *Ibid* at 2.2.5.

25. Coast Guard Report, *supra* note 4 at 106-107.

The above criticism speaks to the inter-relationship between the classification society and the relevant ship registry, in particular, the responsibilities of open registries. This criticism also starkly raises duties that should be assumed by open registries.

UNCLOS deals with the nationality and registration of ships. The word “ship” is not defined in *UNCLOS* but includes MODUs.²⁶ Article 91 sets out the conditions for a state to grant the right to fly its flag:

Every State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships shall have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship.

Article 94, “Duties of the Flag State,” provides in part that:

Every state shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.

The Article goes on to specify these obligations including those necessary to ensure safety at sea, the seaworthiness of the ship and the training and competence of the master, officers, and crew.

The relationship between Articles 91 and 94 has been the subject of considerable comment and some litigation. The genuine link requirement is contained in Article 91 and not 94, which deals with the effective exercise of flag state jurisdiction. One writer has suggested that:

[T]he criterion of the effective exercise of jurisdiction and control means that a flag State must be in a position to exercise effective jurisdiction and control over a ship at the time that it grants its nationality to that ship. To demonstrate this, a flag State must be able to show that the necessary mechanisms for effective exercise of jurisdiction and control are in place at the time when the ship is granted its nationality.²⁷

The International Tribunal for the Law of the Sea commented on the genuine link question in the *M/V Saiga No. 2*:

26. *UNCLOS*, *supra* note 12. See also, Myron N Nordquist, ed, *United Nations Convention on the Law of the Sea, 1982, A Commentary* (London: Martinus Nijhoff, 1995) at 101 referring to the work of the *UNCLOS* Drafting Committee and discussions of the meaning of ship/vessel.

27. Robin R Churchill, “The Meaning of the ‘Genuine Link’ Requirement in Relation to the Nationality of Ships” (2000), online: International Transport Workers’ Federation <<http://www.itfglobal.org/seafarers/icons-site/images/ITF-Oct2000.pdf>> at 71.

[T]he purpose of the provisions of the Convention on the need for a genuine link between a ship and its flag state is to secure more effective implementation of the duties of the flag state, and not to establish criteria by reference to which the validity of the registration of ships in a flag state may be challenged by other States.²⁸

The importance of the “genuine link” issue in the context of the *Deepwater Horizon* is the potential to insist on a flag state taking greater responsibility for the ships that fly its flag.²⁹ Two-thirds of the world’s gross tonnage, 652 m gt, is registered in countries with open registries, these being registries that will register ships owned by foreign entities. Although there is certainly a commercial interest for countries providing open registries, there is no relationship of national interest in the ships flying these flags. The Marshall Islands is one such registry.

IV. *The role of the classification society*

The Coast Guard Report took issue with the relationship between the flag state and the classification society, criticizing the flag state for never having inspected the vessel except through the medium of the classification societies (referred to as “Recognized Organizations”):

As the coastal state, the United States only intervenes by detaining or restricting operations on those foreign-flagged vessels that have blatant deficiencies under International Conventions or applicable U.S. regulation. The Coast Guard relies heavily on the flag state, such as the RMI [Marshall Islands] to ensure that foreign-flagged MODUs operating on the U.S. Outer Continental Shelf (OCS) are actually in compliance with all applicable international laws and regulations. The inadequate oversight over *DEEPWATER HORIZON* by the RMI and its recognized organizations, along with the failure of Transocean’s SMS [safety management system], created an unsafe environment that allowed the *DEEPWATER HORIZON* catastrophe to occur. These failings also raise questions with regard to the level of safety provided by “open registries.”³⁰

The *Deepwater Horizon* reports stopped short of criticizing the classification societies directly. Their role was, however, noted for the

28. *M/V “Saiga” (No 2) Case (Saint Vincent and the Grenadines v Guinea)*, International Tribunal for the Law of the Sea, 1 July 1999, online: World Courts <http://www.worldcourts.com/itlos/eng/decisions/1999.07.01_Saint_Vincent_v_Guinea.pdf> at para 83.

29. Nivedita M Hosanee, “A Critical Analysis of Flag State Duties as laid down under Article 94 of the 1983 United States Convention on the Law of the Sea” (New York: United Nations Division for Ocean Affairs and the Law of the Sea, 2009), online: United Nations <http://www.un.org/depts/los/nippon/unnnff_programme_home/fellows_pages/fellows_papers/hosanee_0910_mauritius.pdf> at 19, 22.

30. Coast Guard Report, *supra* note 4 at 89-90 [footnote omitted].

attention of Congress, in the *Deepwater Horizon* Congressional Research Service Issues for Congress:

Some have questioned the credibility of classification societies, because the societies are paid by vessel owners. Classification Societies typically have a for-profit side of their business, selling technical expertise to vessel owners, and they compete with each other.

In order to properly understand the issues around Classification Societies, it is necessary to briefly review the history. Initially it was the insurers of vessels that utilized Classification Societies in order to ensure themselves of the characteristics of the vessel they were to insure. Over the centuries this role has changed substantially so that at the present a Classification Society is hired by a ship owner to render opinions concerning the ship's compliance with the rules of the Classification Society and secondly, the Classification Societies are utilized by flag states to ensure the compliance of vessels flying their flags with regulations concerning *inter alia* the safety of ships.³¹

Classification societies began by performing the private functions contracted to them by insurers and, latterly, ship owners, the role they have now taken on as the de facto representative of a flag state is very much a public role.³² It is this public function that connects the classification societies to Article 94 of *UNCLOS*.

In 1968 a number of the classification societies formed the International Association of Classification Societies (IACS),³³ of which there are currently thirteen member societies. The formation of IACS was partly responsive to the proliferation of classification societies and a concern expressed by the members of IACS that certain classification societies were not upholding the expected standards of classification societies.

As already noted, the Marshall Islands delegated many of their responsibilities to the relevant classification societies. In 1986, the United Nations adopted *The United Nations Convention on Conditions for Registration of Ships*.³⁴ This convention was an attempt by the international community to regulate the activities of the ship registries. The Convention

31. Curry L Hagerty & Jonathan L Ramseur, "Deep Water Horizon Oil Spill: Selected Issues for Congress" (Congressional Research Service, 30 July 2010), online: Federation of American Scientists <<http://www.fas.org/sgp/crs/misc/R41262.pdf>> at 17 [Hagerty & Ramseur].

32. An excellent analysis of the public/private role of the classification society is contained in Anthony M Antapassis, "Liability of Classification Societies," online: (2007) 11:3 Electronic Journal of Comparative Law <<http://www.ejcl.org/113/article113-22.pdf>>.

33. The role of which is described at International Association of Classification Societies Ltd, online: IACS <<http://www.iacs.org.uk>> [IACS].

34. *United Nations Convention on Conditions for Registration of Ships*, 7 February 1986, 26 ILM 1229.

includes requirements on a flag state respecting manning that are very similar to Articles 91 and 94 of *UNCLOS*. This convention is not yet in force. Unlike *UNCLOS*, it does contain a definition of “ship” which seems quite restrictive and may well not include MODUs:

Ship means any self-propelled sea-going vessel used in international seaborne trade for the transport of goods, passengers, or both with the exception of vessels of less than 500 gross registered tons.³⁵

Due to the proliferation of open registries, IMO expressed its concern about the delegation of flag state duties to classification societies. IMO Resolution A.739 (18) addresses “Guidelines for the Authorization of Organizations Acting on Behalf of the Administration.”³⁶ This was an attempt by IMO to better regulate the delegation by a flag state to a classification society in connection with the monitoring of certain important conventions.³⁷ This resolution, in Appendix 1, specifies “[m]inimum standards for recognized organizations acting on behalf of the Administration.” These standards were an attempt by IMO to better regulate the relationships between flag states and classification societies.

Classification societies are used in many different countries, upon many different grounds, and according to many different legal systems.³⁸ Their success in defending themselves has not been uniform. These suits for the most part have alleged breach of the obligations arising out of the private function of a classification society in issuing certificates. The purpose of discussing classification societies in this paper is to point out their role in the complex regulatory framework governing the offshore. The flag state/classification societies relationship is historically an important link in international efforts to secure safety in the shipping world. By virtue of the designation of MODUs as vessels capable of registration, this marine regulatory system plays an important part in the offshore.

35. *Ibid*, Article 2.

36. International Maritime Organization, Assembly 18th session, Resolution A 739(18) adopted on 4 November 1993, “Guidelines for the Authorization of Organizations Acting on Behalf of the Administration” Res A.739(18) (1993).

37. Including those related to SOLAS. Similar concerns gave rise to the *Paris MOU*, *supra* note 7.

38. Barbara Vaughan, “The Liability of Classification Societies,” online: University of Cape Town <<http://web.uct.ac.za/depts/shiplaw/assign2006/vaughan>>; Sean Diederich Durr, “An Analysis of the Potential Liability of Classification Societies: Developing Role, Current Disorder & Future Prospects,” online: University of Cape Town <<http://web.uct.ac.za/depts/shiplaw/theses/durr.htm>>; Machale A Miller, “Liability of Classification Societies from the Perspective of United States Law” (1997) 22 Tul Mar LJ 75; BD Daniel, “Potential Liability of Marine Classification Societies to Non-Contracting Parties” (2006) 19 USF Mar LJ 183.

V. *Who is in charge of the mobile offshore drilling unit*

Concern about who is in charge has been part of the offshore industry for a very long time. The issue was discussed in the Inquiry Report into the 1965 *Sea Gem* disaster.³⁹ This was one of the first rigs to work offshore in the North Sea. The *Sea Gem* was a converted barge with ten support legs. During preparation to move the rig to a new location, the legs collapsed and thirteen crew members died. Amongst other recommendations, the report identified the necessity for a master or person of unquestioned authority offshore.

As a consequence of this report, the requirement for an offshore installation manager (OIM) was created in the UK through the *Mineral Workings (Offshore Installations Act), 1971*⁴⁰ section 4 of which contains extensive requirements related to the OIM.

The *Ocean Ranger* Report of 1984 attracted attention to the command structure onboard the rig:

For a time the question was simply 'who should be in charge, the master or the tool pusher?' To residents of the Atlantic Provinces with their long seafaring history and traditions there is only one answer to that question. Rigs like the *Ocean Ranger* are self-propelled, have a crew and go on long ocean voyages. The mere thought of replacing the traditional marine crew with industrial personnel is foreign to the mind of a seafaring community.⁴¹

And from the same report:

The role and responsibility of the master became evident from the testimony of the five former masters of the *Ocean Ranger* who appeared before the Royal Commission. The master was placed in the difficult position of having responsibility for marine matters without the authority to ensure that these responsibilities were properly discharged.⁴²

The US Coast Guard Report on the *Ocean Ranger* also identified this issue and made a number of recommendations to ensure that the person in charge

39. JR Adams, *Inquiry into the causes of the accident to the drilling rig, Sea Gem* (London: Ministry of Power, 1967) [*Sea Gem Inquiry*].

40. *Mineral Workings (Offshore Installations) Act 1971*, 1971 (UK), c 61, s 4 (repealed SI 1995/738, reg 22, Sch 1 Pt 1).

41. *Ocean Ranger*, *supra* note 1 at 150.

42. *Ibid* at 37.

be properly identified and familiar with and trained in the appropriate marine regulations.⁴³

Since the *Ocean Ranger* Report, a great deal has changed in the regulation of manning and training of persons working on MODUs. In 1999 IMO passed “Recommendations on Training of Personnel on Mobile Offshore Units,”⁴⁴ which applies to vessels “which can be readily relocated and which can perform an industrial function involving offshore operations.”⁴⁵ The OIM is defined as “a competent person appointed in writing by the owner as the person in charge, who has complete and ultimate command of the unit and to whom all personnel on board are responsible.”⁴⁶ The specialized requirements for OIM include knowledge, experience and competence in areas that relate both to the maritime and industrial aspects of the operation of a MODU.⁴⁷

Canada requires that a person seeking to become an OIM shall have extensive experience in all aspects of MODU operation.⁴⁸ The Offshore Petroleum Boards on the Canadian east coast require an operator to meet the standards of training and qualifications set out in the Canadian Association of Petroleum Producers (CAPP) Manual, which requires that the OIM:

[I]s the person in charge of the installation at all times. [He/she] is responsible for the safety of onboard personnel, the integrity of the installation and the conduct of the operation in accordance with applicable regulations and policies.

43. United States Coast Guard, *Marine Casualty Report: Mobile Offshore Drilling Unit (MODU) Ocean Ranger, ON 615641, Capsizing and Sinking in the Atlantic Ocean on 15 February 1982 with multiple loss of life* (20 May 1983), online: United States Coast Guard <<http://www.uscg.mil/hq/cg5/cg545/docs/boards/oceanranger.pdf>> at 139 found that: “Tool pushers were well-trained in the drilling operations aspects of a MODU. There was no indication that they were familiar with or trained in the Coast Guard Regulations or the marine aspects of the rig in order to properly discharge their duties as a ‘Person in Charge.’”

44. International Maritime Organization, Assembly 21st session, Resolution A 891(21) adopted on 25 November 1999, “Recommendations on Training of Personnel on Mobile Offshore Units (MOUs).”

45. *Ibid* at 2.1.

46. *Ibid* at 2.1.8.

47. *Ibid* at 6.2.

48. Transport Canada, “The Examination and Certification of Seafarers—Revision 4—TP, 2293 E (2004), Transport Publication TP 2293 E c 54—Offshore Installation Manager (OIM), MODU/self-elevating,” online: Transport Canada <<http://www.tc.gc.ca/eng/marinesafety/tp-archive-tp2293-menu-3161.htm>>.

The OIM is designated by agreement between the operator and the owner of the installation. The person so designated must fulfill all the qualification and training requirements for the position, and have a letter of appointment issued by the operating company.⁴⁹

The offshore industry is replete with training courses for OIMs. The International Marine Contractors Association (IMCA), in its guidelines for the operation of DP vessels, describes the responsibility of the master/OIM:

The master/OIM is finally responsible for the safety of his vessel/platform and all personnel onboard or working from her. The master/OIM has ultimate authority in extreme circumstances, and after due consideration with a drilling supervisor, to forbid the start or order the termination of drilling operations on grounds of safety to personnel or the installation.⁵⁰

The Coast Guard Report⁵¹ criticized what it saw as a dual command organizational structure (created by the mistake in flagging), which had the potential to create a situation “where it was unclear who was in charge” on the vessel.⁵² The Report goes on to conclude that:

The master apparently did not know that he had the authority to activate the Emergency Disconnect System, a critical step that could have cut off the flow of flammable gasses to the MODU.⁵³

Deepwater Horizon was built according to 1989 MODU Code,⁵⁴ which requires operating manuals to be onboard that contain the necessary information to safely operate the MODU.⁵⁵ For emergency operations, information must be in a manual that will provide “guidance for the person in charge in determining cause(s).”⁵⁶ The Code is also quite specific concerning the responsibilities of the person in charge in the case of an emergency:

49. Canadian Association of Petroleum Producers, *Atlantic Canada Offshore Petroleum Industry, Standard Practice for the Training and Qualifications of Personnel* (Calgary: Canadian Association of Petroleum Producers, 2008), online: Canada–Nova Scotia Offshore Petroleum Board <<http://www.cnsopb.ns.ca/pdfs/raw.pdf>> at 108.

50. International Marine Contractors Association, *Guidelines for the Design and Operation of Dynamically Positioned Vessels*, (London: International Marine Contractors Association, 2007), online: International Marine Contractors Association <<http://www.imca-int.com/media/73055/imcam103.pdf>> at 3.6.1.

51. Coast Guard Report, *supra* note 4.

52. *Ibid* at 28.

53. *Ibid* at 101.

54. *MODU Code 1989*, *supra* note 11.

55. *Ibid* at 14.1.1.

56. *Ibid* at 14.1.4.6.

The person on each unit to whom all personnel on board are responsible in an emergency should be clearly defined. This person should be designated by title by the owner or operator of the unit or the agent of either of them.⁵⁷

Similar requirements are contained in the 2009 MODU Code.⁵⁸

Continuing issues involving command responsibilities and flag state requirements demonstrate a lack of international consensus.

VI. *Differing methods of regulation*

Regulation proceeds in many ways:

- Industry associations band together to create codes of conduct by which they govern themselves and/or the standards/products of the association.
- Coastal states issue regulations to govern offshore activities. They may also issue “guidelines” to assist in the interpretation of their regulations. All of this is pursuant to statutory authority.
- International organizations produce guidelines to assist in the governance of the trade in question.
- The United Nations adopts Conventions to regulate activities worldwide.

The offshore industry is subject to all of the above methods. There is little consistency on what goals are to be accomplished by all this regulation. *Deepwater Horizon* illustrates the lack of an international consensus. A few examples:

1. The classification societies have assumed inspection responsibilities for a number of flag states. Many of these flag states are parties to *UNCLOS* and are governed by Article 94. As noted earlier, this Article requires the flag state to take measures to ensure, amongst other things, the “seaworthiness of ships.” This responsibility is delegated by the flag state to a classification society. The IACS recognizes this role and refers to Article 94.⁵⁹ In another part of the IACS website, dealing with the private role of the society to issue certificates of class, it states that the certificates “should not be construed as a warranty of safety, fitness for purpose or seaworthiness of the ship.” It is well understood that the obligation to render a ship seaworthy is not one that can be delegated by

57. *Ibid* at 14.8.1.

58. *MODU Code 2009*, *supra* note 11 at 14.9.

59. IACS, *supra* note 33.

the owner.⁶⁰ Thus, a certification from a classification society does not in and of itself establish seaworthiness. This law developed in the context of common-law contractual obligations arising from the private role of a classification society in its relationship with a vessel owner. The public role of the classification society, however, comes from Article 94 which establishes a legal obligation on the part of the flag state. It is interesting that the potential conflict of interest for a classification society fulfilling both a private and public role is recognized by the Newfoundland Offshore Certificate of Fitness Regulations which prohibit a certifying authority (classification society) from issuing a certificate of fitness “if [they] ha[ve] been involved, otherwise than as a certifying authority or a classification body, in the design, construction or installation of the installation.”⁶¹ The legal obligations consequent on the private/public role of the classification societies needs, in some fashion, to be clarified.

2. The proliferation of DP vessels has engendered extensive commentary. As noted in the Coast Guard Report, the manning of an American flag MODU would require the presence of a Master/OIM at all times whereas a foreign flag MODU is not subject to the same requirement.⁶² In November of 2009, the US Coast Guard issued a notice of proposed rule making with respect to 46 CFR in order to implement certain amendments to the STCW Convention and Code.⁶³ Although the definitions of “on location” and “underway” were not part of the proposed amendments, the IADC sought to amend these definitions in order to render a DP vessel “on location” with the consequent manning obligations. The change to the definition of “on location” proposed was:

On location means an immobile offshore drilling unit is bottom bearing or moored with anchors placed in the drilling configuration.

to

On location means an immobile offshore drilling unit is bottom bearing, moored with anchors placed in the drilling configuration, or, when utilizing dynamic positioning, it is maintaining station at the drilling location.⁶⁴

60. *Charles Goodfellow Lumber Sales Ltd v Verreault*, [1971] SCR 522; *Scottish Metropolitan Assurance Co v Canada Steamship Lines Ltd*, [1930] SCR 262; *E&S Barbour Ltd v Canadian National Railway Co* (1961) 46 MPR 331 (NL Sup Ct), aff'd [1963] SCR 323.

61. *Newfoundland Offshore Certificate of Fitness Regulations*, SOR/95-100, s 5.

62. Coast Guard Report, *supra* note 4 at 27.

63. *Implementation of the 1995 amendments to the international convention on standards of training, certification and watchkeeping for seafarers*, 46 Fed Reg Parts 10, 11, 12, 15 (1978) (to be codified at 46 CFR).

64. IADC correspondence to US Department of Transportation (16 February 2010), online: <<http://www.iadc.org/committees/offshore>>.

These changes would affect US flag DP vessels. They were not adopted.

In an Appendix to the Coast Guard Report, the US Coast Guard identified a number of “potential legal issues associated with vessels employing dynamic positioning systems.”⁶⁵ Their conclusion as to the current state of U.S. law was that a DP vessel:

[I]s an underway, self-propelled vessel, and subject to all the regulatory requirements of ‘traditional’ vessels. While operating in DP mode, a vessel cannot be considered ‘on location.’⁶⁶

One can inquire whether it is sensible international regulation for different flag states to treat the status of DP vessels in different ways. As noted in the Coast Guard Appendix:

Vessels flagged by countries that are parties to international safety conventions to which the U.S. is also a party and offering the same privileges to U.S. flagged vessels are generally granted reciprocity. As such, while a U.S. registered MODU equipped with a DP system must be under the command of a Master (who also holds an Offshore Installation Manager endorsement), the manning requirements of a foreign registered MODU are not subject to the same requirement.⁶⁷

The MODU does the same work wherever it is located.

3. IMO is responsible to ensure “safe, secure and efficient shipping on clean oceans.”⁶⁸ IMO is responsible for developing drafts of international conventions having to do with the maritime industry. Conventions become enforceable upon being agreed to by a requisite number of countries. IMO is the most knowledgeable maritime organization worldwide but unfortunately has no enforcement arm of its own. This has led to it being described as:

[A] typically idealistic construct for bringing order to the world—a democratic assembly of 162 member nations, all of them determinedly equal, who work with the assistance of a technical staff in the consultations of accredited non-governmental groups to establish regulatory packages known as conventions, which the individual member states are then free to adopt (or not) in their sovereign maritime laws. The enforcement of those laws is a separate question, and it is spotty, because the arrangement allows the IMO no enforcement powers of its own.⁶⁹

65. Coast Guard Report, *supra* note 4 at Appendix I.

66. *Ibid* at I-10.

67. *Ibid* at I-7 [footnotes omitted].

68. International Maritime Organization, “Frequently Asked Questions,” online: IMO <<http://www.imo.org/About/Pages/FAQs.aspx>>.

69. William Langewiesche, “Anarchy At Sea,” *Atlantic Monthly*, (September 2003), online: *Atlantic Monthly* <<http://www.wesjones.com/anarchy.htm>>.

IMO, however, does frequently issue “recommendations” that reflect its knowledge and its concerns about maritime issues. Whether a government chooses to take up the recommendation is a matter for a government. IMO has issued a number of recommendations/resolutions concerning mobile offshore units.

4. The coastal state regulation of offshore drilling moves between performance-based regulation or prescriptive regulation with elements of both in many cases. The Pembina Institute review of the offshore regulatory regimes of the Canadian Arctic, the U.S., the U.K., Greenland and Norway describes these different ways of regulating:

Prescriptive regulation sets specific technical or procedural requirements with which regulated entities must comply. Performance-based or goal-based regulation identifies functions or outcomes for regulated entities but allows them considerable flexibility to determine how they will undertake the functions and achieve the outcomes. Each of these approaches has strengths and limitations. There is evidence of a general increase in the use of performance-based or goal-based regulation because of the greater flexibility for innovation and cost effectiveness when compared with traditional prescriptive requirements. Nonetheless, prescription may be the more appropriate approach where compulsory requirements are needed to ensure compliance with standards, provide greater certainty regarding requirements, and facilitate monitoring and enforcement.⁷⁰

Of the jurisdictions reviewed, Dagg et al concluded that it was only the U.S whose overall regulatory approach was mainly prescriptive.

One of the benefits for the regulator in a goal-based regulation system is that it shifts the responsibility for defining operational requirement from the regulator to the operator. In Canada the *Canada Oil and Gas Drilling and Production Regulations*⁷¹ are very much goal oriented. The NEB has also issued draft safety plan guidelines to assist operators in meeting the requirements of the regulations.⁷² As far as the Canadian Arctic is concerned however, there is one remaining prescriptive rule in place. This is the same Season Relief Well (SSRW) requirement, which has been in place in the Canadian Arctic since the 1970s.⁷³ It requires that an operator

70. Jennifer Dagg et al, “Comparing the Offshore Drilling Regulatory Regimes of the Canadian Arctic, the U.S, the U.K., Greenland and Norway” (June 2011), online: The Pembina Institute <<http://pubs.pembina.org/reports/comparing-offshore-oil-and-gas-regulations-final.pdf>> at 20.

71. *Canada Oil and Gas Drilling and Production Regulations*, SOR/2009-315.

72. National Energy Board Safety Planning Guidelines (31 March 2011), online: National Energy Board <<http://www.neb-one.gc.ca/clf-nsi/rpblctn/ctsndrgltn/rgltnsndgdlnsprsnttthrc/drllngprdctnrgltn/sftplngdln-eng.pdf>>.

73. Interestingly, it is not in fact a regulation but is a policy of the NEB.

be able to demonstrate to the NEB that they can drill a relief well in the same drilling season.⁷⁴

Other aspects of international regulation remain prescriptive. The Coast Guard Report criticized the IMO MODU Code for its adherence to prescriptive standards and suggested that a “performance-based analysis” could have served better.⁷⁵

This variety of approach to regulation highlights the absence of an international consensus. Lee Hunt, the President of IADC, has noted:

[W]e have experienced situations where regulations issued by one government department simply lead to conflicts with another, in the process wasting valuable resources without achieving desired benefits. A lack of ‘joined up’ government creates vexing situations for contractors, whereby adherence to one set of legislation or regulation may incur non-compliant legal action with another agency. Typically these situations arise when Mobile Offshore Drilling Units move from being compliant with national and international maritime legislation as a vessel, to coastal state legislation where they are regarded as a temporary oil and gas facility... These conflicts are likely to grow as IMO continues to expand its body of regulation while national oil and gas industry regulators continue a parochial approach without effective co-ordination.⁷⁶

SINTEF,⁷⁷ in its review of *Deepwater Horizon* identified a similar issue:

The oil industry is global, and various actors and facilities move between countries, adapting to national regulations if required. However, the design standards very often have a common basis, e.g. represented by the American API standards. There are however a number of differences, related to, for example, type of regulatory regime (balance between prescriptive requirements and functional requirements) and regulations. There are also differences between standards since the Norwegian petroleum industry has developed their own NORSOK Standards. Furthermore, there are differences with respect to operational practice and safety culture.⁷⁸

74. There is extensive material available on the SSRW at <www.neb-one.gc.ca>; see also Spicer, “Admiralty Issues”, *supra* note 3 at 277-278. In July 2014 the NEB announced that it had agreed to review alternatives to this requirement in the context of two projects: <<http://www.neb-one.gc.ca/clf-nsi/rthnb/nws/nwsrls/2014/nwsrls24-eng.html>>.

75. Coast Guard Report, *supra* note 4 at 42.

76. Lee Hunt, “The Major Health, Safety, Environment and Regulatory Issues and Concerns” (4 April 2005), online: OGP <<http://info.ogp.org.uk/safety/downloads/IRF.pdf>> at 2-3.

77. SINTEF is the largest independent research organization in Scandinavia. Its material is accessible online: <www.sintef.no>.

78. RK Tinmannsvik et al, “The Deepwater Horizon accident: Causes, lessons learned and recommendations for the Norwegian petroleum activity: Executive summary” (May 2011), online: SINTEF <<http://www.sintef.no/upload/Konsern/Media/Deepwater%20Horizon%20-%20SINTEF%20-%20Executive%20summary.pdf>> at 9.

5. The intent of the *STCW* is to globalize the standards for competency and experience for seafarers. The Coast Guard Report points out that seafarers assigned to MODUs are not required to receive any specialized training for crowd control, crisis management or human behaviour.⁷⁹ Those requirements are contained in the 1995 amendments to the *STCW*, which followed the capsizing and sinking of the passenger ferry *Estonia* in 1994.⁸⁰ The Coast Guard Report recommends similar training be provided to MODU crews.⁸¹ The Report also notes that “a master must achieve the competencies required by *STCW* II/2.”⁸² The report also states that “there are no such...professional competency standards [required by *STCW*] for the drilling crew [on a MODU] (OIM, tool pusher, driller).”⁸³ It is also noteworthy that the *STCW* generally applies to the maritime personnel of self-propelled MODUs proceeding on voyages but does not apply to non-self-propelled MODUs or to MODUs on station. However, when a MODU is on station, the *STCW* recommends that the flag state should take account of relevant IMO recommendations.⁸⁴

This regulatory maze and the different methods of achieving regulation have not led to a seamless web.

VII. *The Arctic*

The *President's Report* discussed the future of drilling in offshore Alaska:

Bringing the potentially large oil resources of the Arctic outer continental shelf into production safely will require an especially delicate balancing of economic, human, environmental, and technological factors. Both industry and government will have to demonstrate standards and a level of performance higher than they have ever achieved before. One lesson from the *Deepwater Horizon* crisis is the compelling economic, environmental and indeed human rationale for understanding and addressing the prospective risks comprehensively, before proceeding to drill in such challenging waters.⁸⁵

79. Coast Guard Report, *supra* note 4 at 124.

80. *STCW*, *supra* note 8 at Chapter V.

81. Coast Guard Report, *supra* note 4 at 124.

82. *Ibid* at 65; *STCW*, *supra* note 8.

83. Coast Guard Report, *supra* note 4 at 65.

84. *STCW*, *supra* note 8.

85. President's Report, *supra* note 4 at 305. See also World Wildlife Fund, “Lessons Not Learned, 20 Years After the Exxon Valdez Disaster,” online: World Wildlife Fund <http://awsassets.wwf.ca/downloads/wwf_20yearsafter_exxon.pdf>; World Wildlife Fund, “Not So Fast: Some Progress in Spill Response, But US Still Ill-Prepared for Arctic Offshore Development,” online: World Wildlife Fund <http://awsassets.panda.org/downloads/wwf_mms_reportanalysisnew_p3.pdf>.

In one of its only references to international regulation, the President's Report, in discussing the Arctic, points to the work of the Arctic Council and the necessity for international standards for Arctic oil and gas:

[T]he Commission recommends that strong international standards related to Arctic oil and gas activities be established among all the countries of the Arctic. Such standards would require cooperation and coordination of policies and resources. The Arctic Council has begun work in this direction, updating its voluntary Arctic Offshore Oil and Gas Operation Guidelines in 2009.⁸⁶

A more wide ranging comment might have stated that international standards related to oil and gas activities should be established among all countries. The need for international standards cannot be said to be restricted to the Arctic.

As a result of Deepwater Horizon, the Canadian National Energy Board conducted an extensive review of its Arctic drilling policy and published its Report in late 2011. As with the President's Report in the US, however, the NEB Report did not address the issue of international regulation of continental shelf activities in any substantive way.⁸⁷

Issues surrounding the future of drilling in the Arctic have been prominent since *Deepwater Horizon*. The Arctic is a "deep water" location.⁸⁸ Exploration wells in all likelihood will take multiple drilling seasons to complete. Hamilton identifies the technology needs that go along with this exploration:

The technology hurdles for deep water exploration drilling in the more severe ice environments involve keeping a floating drilling vessel on station and productively drilling as much of the time as possible, with occasional disconnects from the well to avoid unmanageable ice, all the while doing so with extremely high reliability to protect the sensitive Arctic environment from spills or loss of well control. The need for

86. President's Report, *supra* note 4 at 304. See also National Commission on the BP Deepwater Horizon Oil Spill on Offshore Drilling, "Offshore Drilling in the Arctic; Background and Issues for the Future Consideration of Oil and Gas Activities," online: <http://www.oilspillcommission.gov/sites/default/files/documents/Offshore%20Drilling%20in%20the%20Arctic_Background%20and%20Issues%20for%20the%20Future%20Consideration%20of%20Oil%20and%20Gas%20Activities_0.pdf>. Transocean filed an extensive response to the Coastguard Report, available online: <<http://www.deepwater.com/fw/main/Macondo-Well-Incident-1175.html>>.

87. *The Past is Always Present: Review of Offshore Drilling in the Canadian Arctic—Preparing for the Future* (December 2011), online: <<http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/rcteffshrdrlngvrw/fnlrprt2011/fnlrprt2011-eng.html>>. The voluminous material filed in connection with this review is also available online at: <<https://docs.neb-one.gc.ca/ll-eng/llisapi.dll?func=ll&objId=621169&objAction=browse&sort=name>> [Canadian National Energy Board Review].

88. Jed M Hamilton, "The Challenges of Deep Water Arctic Development" (2011) 21:4 IJOPE 241 at 241.

disconnection requires either Dynamic Positioning of a drill ship in ice, which does not now exist, or a disconnectable, turret moored system that allows the drilling vessel to move off location with riser connected and relatively quick re-connection.⁸⁹

These difficulties focus attention on various issues already discussed in this paper including flag state, classification societies and methods of regulation.

VIII. *Need for a convention?*

There have been ongoing discussions since the 1970s as to whether or not an international convention for offshore mobile craft is necessary. The CMI prepared a Draft Convention on Offshore Mobile Craft at its meetings in 1977. This draft was known as the “Rio Draft.”⁹⁰

The issue of an International Convention was considered again at the CMI conference in Australia in 1994. The “Sydney Draft” was the result.⁹¹ In its submission to this Conference in 1994, the Canadian Maritime Law Association (CMLA) articulated the relevance of an International Convention as being due to:

A renewed interest in offshore energy development, a growing body of jurisprudence related to a number of accidents involving offshore oil rigs and related offshore structures, commercial legal problems relating to offshore drilling units, a greater sensitivity to environmental and development issues and, last but not least, the increasing technical sophistication, great variety and considerable cost of offshore drilling units and structures.⁹²

The “Sydney Draft” was considered to be inadequate by the CMLA. In its submission to the Sydney Conference, it identified what it believed to be the most critical reasons for an international regime in the offshore:

89. *Ibid* at 245.

90. Accessible at <www.comitemaritime.org>.

91. Comité Maritime International, *Yearbook* (Antwerp: Comite Maritime International, 1994) at 180.

92. *Ibid* at 186.

An International Convention would discourage diverse, unilateral national initiatives, especially those developed in reaction to an accident and in the politically charged atmosphere of its aftermath. Furthermore, a uniform, comprehensive international regime, by creating a suitable framework for secured financing and making risk management more predictable, could well assist better returns from existing assets and facilitate greater private and public investment in offshore petroleum and mineral resource development.⁹³

The CMLA also noted that an international convention would be of assistance to all countries:

The fact that a number of coastal states have developed a good regulatory system for exploration and exploitation in the offshore, would mean that the best of these systems could be used as a guideline for an international system, which would be uniform, predictable and thus provide a minimum baseline. This does not mean that another regulatory system is superimposed on a good national system. International Conventions only become 'regulatory' when accepted by signatory states and incorporated it into their regulatory system. Accordingly, states with good existing systems have no difficulties in accepting international systems. On the other hand, smaller states, especially in the developing world, would have access to the uniform, known system.⁹⁴

No progress was made towards an international convention subsequent to the "Sydney Draft." The CMLA however continued to press the issue and in 2004 produced a draft Offshore Convention that contained a specific Article addressing issues of safety.⁹⁵ Although there was some academic activity urging the adoption of an international convention, nothing further had occurred up until the time of the *Deepwater Horizon*.⁹⁶

Following *Deepwater Horizon*, interest was once again revived. Judge Steven Rares of the Federal Court of Australia delivered a paper at the 2011 Biennial mini conference of the Maritime Law Association of Australia and New Zealand calling for an international treaty to deal with

93. *Ibid* at 191.

94. *Ibid* at 189.

95. Comité Maritime International Newsletter (January/April 2004), online: Comité Maritime International <<http://www.comitemaritime.org/Uploads/Newsletters/2004/Binder1.pdf>> at 1. Article VIII addresses safety issues and requires the designation of "a single person to be in command" and further prohibits disciplinary action against such a person exercising their authority in good faith. This Article also requires adherence to the ISM Code.

96. See for instance Michael White, "Offshore Craft and Structures: A Proposed International Convention" (1999) *Aust Mining & Petroleum LJ* 21.

offshore spills.⁹⁷ Although this paper is focussed on liability for offshore spills, it once again brought attention to the argument that an international convention concerning offshore units was necessary.

The Congressional Research Service *Deepwater Horizon* issues document identified the possible role of an international convention:

Congress might consider whether a comprehensive international regime is warranted, considering plans for oil exploration in especially life-threatening and environmentally sensitive areas like the Arctic. While drafts of conventions have been issued and other nations support a comprehensive IMO regime for oil rigs, the United States is opposed. It can be argued that the IMO, whose primary concern has been cargo on cruise ships, does not have the expertise to prescribe technical standards for offshore oil rigs. Detailed standards do exist on a regional basis (examples include the Mediterranean Sea, the Baltic Sea and the Persian Gulf), and one could argue that different environments dictate different requirements. However, the global nature of the oil industry raises the question of whether an international convention on offshore rigs of all types would enhance their safety.⁹⁸

Conclusion

The *Deepwater Horizon Reports* identified failures and gaps at all levels of offshore regulation. There are many more interests involved in the drilling and production of an offshore well than there are in the safe conduct of an oil tanker. Unlike the voyage of a ship over deep water, there are many costs, risks and difficulties of drilling and producing in deep water. In addition, the numerous contractors with interests in the drilling/production inevitably add degrees of complexity to attempts at regulation. The industry is global but is treated differently depending on location and flag state. The industry should be recognized as a stand-alone entity rather than as an add-on to the international regulation of the marine industry. The patchwork of current regulation is not working. The industry requires an umbrella convention covering, under its wing, the many competing

97. Steven Rares, "An International Convention on Offshore Hydrocarbon Leaks", [2011] LMCLQ 361; See also Mikhail Kashubsky, "Marine Pollution from the Offshore Oil and Gas Industry: Review of Major Conventions and Russian Law (Part I)" (Nov/Dec 2006) 151 *Maritime Studies* 1; Jacqueline Allen, "A Global Oil Stain—Cleaning up International Conventions for Liability and Compensation for Oil Exploration/Production" (2011) 25 *A&NZ Mar LJ* 90. At its meeting of 16–20 April 2012, IMO's Legal Committee considered the issue of liability and compensation for trans-boundary pollution damage from offshore activities, and concluded that "bilateral and regional arrangements are the most appropriate way to address the matter and agreed that there was no compelling need to develop an international regime on the subject." International Maritime Organization, Report of the Legal Committee on the Work of its 99th Session LG 99/14, 24 April 2012 at para. 13.17, online: <<https://docs.imo.org/Shared/Download.aspx?did=72604>>.

98. Hagerly & Ramseur, *supra* note 31 at 38-39 [footnotes omitted].

issues at play. The industry could learn from the example of the marine industry and its network of conventions applicable worldwide.

DNV reviewed a number of major hazard incidents for the Canadian National Energy Board. Those reviewed were the Ocean Ranger, Chernobyl, Piper Alpha, Westray, Longford, Space Shuttle Columbia and Texas City. The conclusions are noteworthy:

The assessment of these accidents indicated that, although formal safety programs or management systems had been developed, they were not effectively implemented or reviewed on a regular basis to monitor [the] adequacy and effectiveness [of the programs]. Also, for most of the incidents an adequate hazard identification and risk assessment process had not been followed. The relevance of these issues become important because the basic responsibility for the safe operation of any activity lies with management of the organization which must ensure that all the applicable programs and systems are implemented, reviewed and updated on a regular basis to reflect any required improvements.

In addition, in most cases, the applicable regulatory oversight was not comprehensive or focused enough to ensure gaps were identified and the required corrective and preventive actions were developed and implemented.⁹⁹

The offshore industry is at an important juncture. Possible sources of hydrocarbons are being identified in deeper waters and on the offshore of countries which have not had a history of offshore activity.¹⁰⁰ Accidents offshore can easily cause consequences to the environments of countries other than the immediate coastal state. The complexities of drilling and producing in deep water or hazardous environments are many and increase the costs, risks and difficulties inherent in the industry.¹⁰¹ The commentary emanating from Ghana and Nigeria, both of which have extensive offshore holdings, indicates that there is much work to be done to attain a seamless

99. Det Norske Veritas, "Major Hazard Incidents Arctic Offshore Drilling Review Report" (February 2011), online: DNV Managing Risk <http://www.dnvusa.com/Binaries/NEB%20Report%20April%208_tcm153-455725.pdf> at i.

100. Deepwater Market Report, *supra* note 18.

101. The International Association of Oil & Gas Producers commissioned a report on deep water wells following *Deepwater Horizon*. This Report is accessible online: <www.ogp.org.uk/pubs1463.pdf>.

overall framework for the development of the offshore industry in those countries.¹⁰²

Thus far, the IMO and the CMI have not been successful in bringing forward internationally accepted standards for the offshore oil and gas business. The International Regulators Forum (IRF) is a group of nine regulators of health and safety in the offshore oil and gas industry. It is composed of offshore regulators from Australia, Brazil, Canada, Denmark, Mexico, the Netherlands, New Zealand, Norway, the United Kingdom and the United States. Among the objectives of the IRF is:

[T]o promote best sustainable safety performance globally and the concept that it is inseparable from and interdependent with best sustainable economic performance.¹⁰³

It might well be time for the IRF to take up the promulgation of internationally-accepted standards for the offshore which could obtain convention-like status through being adopted by the worldwide network of offshore regulators. Certainly the IRF could learn from the example of the marine industry and its network of international conventions.

102. Osei Bonsu Dickson, "The Legal and Institutional Framework for Administering Offshore Petroleum Resources in Ghana" (4 July 2011), online: Ghana Oil Watch <<http://www.ghanaoilwatch.org/index.php/ghana-oil-and-gas-news/942-legal-and-institutional-framework-for-administering-offshore-petroleum-resources-in-ghana>>; Raymond Obutey Odue, "Enhancing Safety in Ghana's Upstream Petroleum Industry" (2011), online: <<http://www.scribd.com/doc/59346483/ENHANCING-SAFETY-IN-GHANA'S-UPSTREAM-PETROLEUM-INDUSTRY>>.

103. *A Legacy of Safety: The International Regulators' Forum 1994–2013* at 32, quoting from IRF 2005 Safety Forum, online: <https://www.google.com/url?q=http://www.irfoffshoresafety.com/about/history/A-legacy-of-safety-IRF-1994-2013.pdf&sa=U&ei=N1jiU6moKM6syASmk4HgBg&ved=0CAkQFjAC&client=internal-uds-cse&usq=AFQjCNF_6kpSZK6eRm8JZ53MftxzIFPnqA>.

