“HIGH RISK, HIGH REWARD”

Search and Rescue
And
The Oil and Gas Industry

Off Canada’s East Coast

A SARSCENE PRESENTATION

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Canada

By

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1. BACKGROUND:

Twenty years ago, Canadians awoke to the news that the world's largest mobile offshore drilling unit (MODU) sank during a fierce winter storm off the East Coast of Newfoundland. Considered unsinkable, the mighty *Ocean Ranger* was more than 100 metres high and as long as two football fields, but poor training, inadequate safety equipment, design flaws and 160-kilometre-an-hour winds sealed the fate of the *Ocean Ranger*. Eighty-four lives were tragically lost on that dreadful night, but many valuable lessons were learned.

For centuries, people have worked under the harsh conditions of the North Atlantic; aboard trans-ocean or coastal trading ships, harvesting fish from vessels large and small, and now onboard drilling rigs, offshore supply vessels and fixed production platforms. Many Canadians continue to earn a living on the high seas and the offshore oil and gas industry has learned the terrible consequences of taking this harsh environment for granted. The development of the offshore oil and gas industry in hostile waters has been made possible by many achievements often compared with those of the space industry. Many Canadian oil and gas fields are currently being exploited far from land and several new fields are being explored in ever deeper and wilder waters such as the Flemish Pass, which is located over 500 kilometres east of St. John's.

As in every major industry, accidents do and will continue to occur and the offshore oil and gas industry has a duty to respond to these accidents in an effort to ensure the safety of its workforce. When preventative safety measures fail, and when an accident does occur and escalates beyond the first response capabilities of the industry, the federal search and rescue system has a duty to respond. In such scenarios, the capabilities normally available to industry are soon overwhelmed and working together as a team, industry and government are potentially faced with the need to respond to a large number of persons in distress.

1.1 MAJOR SEARCH AND RESCUE INCIDENTS:

1.1.1 The Sinking of the Mobile Offshore Drilling Unit (MODU) Ocean Ranger

Early on the morning of 15 February 1982, the MODU Ocean Ranger capsized and sank in the Atlantic Ocean, 315 kilometres east of St. John's, Newfoundland & Labrador with the loss of 84 lives. Of the 69 Canadians onboard, 56 were residents of Newfoundland & Labrador.

In winter 1982, three semi-submersible drill rigs were operating off Canada's East Coast; the Sedco 706, the Zapata Ugland and the Ocean Ranger were all engaged in the exploratory drilling program at the site of the Hibernia oil field.

On 12 February, the Atlantic Weather Center in Bedford, Nova Scotia identified a weak disturbance in the Gulf of Mexico which was forecasted to reach the Hibernia oil field early on 14 February. On 13 February, the weather system intensified and by early evening wind speeds of 70 knots and seas of 22 feet were recorded at the oil field. A mere 12 hours later, reports indicated wind speeds of 90 knots and seas of 37 feet.

Wind and sea conditions further deteriorated and at approximately 1900 (L) on 14 February, the Sedco 706 was struck by a 70 to 80 foot rogue wave which caused structural damage below the main deck. The Zapata Ugland was also struck by several large waves which washed over her helipad but did not cause any major damage.

The Ocean Ranger did not fare so well. At approximately 2000 (L) a large wave struck the rig and stove in a port hole in the ballast control room. The resultant influx of water short-circuited the ballast control panel and caused several valves to open allowing seawater to enter the rig. Over the next few hours, conditions onboard the Ocean Ranger deteriorated as further down-flooding occurred and by 0130 (L) on 15 February the Ocean Ranger radioed the Sedco 706 that they were preparing to abandon ship.

At 0150 (L), the Offshore Supply Vessel (OSV) Seaforth Highlander was approximately 1200 feet from the Ocean Ranger when a distress flare from a lifeboat was spotted. Over the next 30 minutes, a rescue effort was mounted, but due to the severe sea conditions, the lifeboat crew could not be evacuated and all hands onboard were lost when the damaged lifeboat suddenly capsized while alongside the Seaforth Highlander.

Two other OSV's in the area, the Boltentor and Nordetor also responded to the Ocean Ranger's distress call. While enroute, radar contact with the Ocean Ranger was maintained by the Nordetor until approximately 0300 (L) and at approximately 0315 (L) the mighty Ocean Ranger sank below the waves of the storm tossed Atlantic.

All three OSV's continued their search effort throughout the night but were unsuccessful in recovering any survivors from the Ocean Ranger.

By 0930 (L), the weather had moderated enough to allow for air search and rescue resources to arrive on scene and assist in the search effort. Search efforts continued

until the evening of 19 February and over this five day period, only 22 bodies from the 84 person crew were recovered. Autopsy results indicated that in all cases the cause of death was drowning while in a hypothermic condition.

The tragedy of the Ocean Ranger continues to be a major influence on our offshore industry. Government has continually examined the safety issues that contributed to this disaster and has implemented numerous changes to enhance the safety of our offshore workforce. Major legislative and regulatory changes were made to the Atlantic Accord Acts by the federal and provincial governments to establish strict safety guidelines that must be followed from the initial design of an offshore project to the actual implementation of safety systems during the operations phase of development. These regulations govern the necessary requirements of offshore safety.

1.1.2 The Capsize and Sinking of the MODU Rowan Gorilla I[1]

The Rowan Gorilla I was a self-elevating MODU, commonly referred to as a "jack-up". She was built in Vicksburg, Mississippi in 1982 and commissioned in 1983. At 297 feet long and 292 feet wide, with jack up legs of 504 feet in length the Rowan Gorilla was one of the largest rigs of this type ever built.

Upon the commissioning of the Rowan Gorilla I, the owners decided to move her to Eastern Canada to engage in drilling operations for Canadian interests.

By the fall of 1988, offshore drilling activity had diminished to the point where the owners of the Rowan Gorilla I decided to relocate the rig outside of Eastern Canada. Throughout November and December 1988 preparations were made for the rig move and on 08 December 1988, the Rowan Gorilla I departed Halifax, Nova Scotia under tow by the Tug Smit London enroute to the North Sea.

On 12 December, the weather deteriorated with the wind increasing to 40 knots and the seas building to over 20 feet and the rig began to pitch and roll in the heavy seas. Due to the excessive motion of the rig, fractures began to develop and some flooding occurred in two preload tanks.

On 13 December, weather conditions further deteriorated and wind speeds of 50 to 65 knots and seas of over 30 feet were now being experienced. In addition, more steel plate fractures were being detected onboard the Rowan Gorilla I. By 2300 (L) the tug and tow could no longer make headway due to the severe weather conditions and concerned for the safety of his vessel, the master of the Smit London turned the tow and ran with the seas.

By daylight on 14 December, 40 foot waves were routinely crashing over the stern of the Rowan Gorilla I and down-flooding in the damaged tanks became more severe. At 0220 (L) on 15 December, the towing wire parted. The winds were now sustained at

[1] United States Coast Guard – Marine Casualty Report 16732/02 HQS 92

over 60 knots and the seas had built to over 45 feet. Onboard the rig, several containers broke loose and weather deck structures were carried away by the shifting containers further increasing the down-flooding of the rig.

At daylight on 15 December, the master of the Smit London manoeuvred his vessel close to the Rowan Gorilla I, but due to the severe sea conditions, they were unable to reconnect the tow. Aboard the Rowan Gorilla I, the crew worked frantically to stem the flooding and save their rig.

By 1000 (L) it was evident that the Rowan Gorilla I was now in imminent danger of sinking and after weighing all available information, at 1228 (L) Joint Rescue Coordination Center (JRCC) Halifax was contacted and an emergency declared.

At approximately 1330 (L) the Rowan Gorilla I was struck by two 60 foot waves and the stern of the rig settled below the ocean. The order to abandon the rig was issued and all crew evacuated the rig by means of the starboard lifeboat. Due to the severe sea conditions, any effort to evacuate the crew from the lifeboat could not be attempted until the weather abated.

At 1605 (L), the Rowan Gorilla I capsized on its legs and sank.

Upon receiving the Mayday, JRCC Halifax tasked several Canadian Coast Guard (CCG) and Canadian Forces (CF) sea and air resources as well as several vessels of opportunity.

Throughout the evening and night of 15 December the Smit London maintained contact with the lifeboat. By the morning of 16 December, sea conditions had moderated to approximately 15 feet but were expected to build later in the day. Based on this information, it was decided that a rescue of the Rowan Gorilla's crew from the lifeboat would be attempted. At 1000 (L) an inflatable boat was launched from the Smit London to rendezvous with the lifeboat. At 1100 (L) the transfer of the now exhausted crew commenced and an hour later, all personnel were now safely onboard the Smit London.

1.2 STATISTICS:

1.2.1 Offshore Oil & Gas Industry SAR Activity, Halifax SRR (1997 to 2002)[2]

The statistics identified below were generated from data maintained by Joint Rescue Coordination Center (JRCC) Halifax and Maritime Rescue Sub Center (MRSC) St. John's, for maritime search and rescue incidents that occurred within the Halifax Search and Rescue Region (SRR). These statistics are not intended to be an all-inclusive description of the SAR activities within the Halifax SRR. It should also be noted that SAR incidents are classified based on a post-incident dispassionate assessment of what actually occurred, not the perceived level of distress during the incident.

The incidents identified below involve only oil and gas exploration and production platforms, engaged in activities on Canada's East Coast, in which the federal SAR system responded. Search and rescue incidents involving offshore supply vessels (OSV's), seismic vessels, and oil industry aircraft are not included in these statistics:

Date	Unit Assisted	Type of Incident	Classification:
1997/08/14	Rowan Gorilla III (MODU))	Mechanical Failure	ALERT
1997/10/30	Hibernia (GBS)	Gas Leak	DISTRESS
1997/12/18	Hibernia GBS	Gas Leak	ALERT
1998/10/28	Rowan Gorilla III (MODU)	Other	POTENTIAL DISTRESS
1998/06/25	Hibernia (GBS)	Fire	ALERT
1998/02/28	Hibernia (GBS)	Other	ALERT
1998/02/15	Hibernia (GBS)	Other	POTENTIAL DISTRESS
1999/03/21	Hibernia (GBS)	Fire	ALERT
1999/03/27	Hibernia (GBS)	Electrical Failure	ALERT
1999/10/25	Hibernia (GBS)	Mechanical Failure	ALERT
1999/03/11	Hibernia (GBS)	Electrical Failure	POTENTIAL DISTRESS
2000/01/04	Thebaud (MODU)	Other	ALERT
2000/07/21	Thebaud (MODU)	Other	ALERT
2000/10/27	Hibernia (GBS)	Fire	ALERT
2000/09/15	Henry Goodrich (MODU)	Fire	POTENTIAL DISTRESS
2000/02/21	Hibernia (GBS)	Power Failure	ALERT
2000/01/20	Rowan Gorilla III (MODU)	Weather	ALERT
2000/06/01	Venture (MODU)	Other	ALERT
2001/01/05	Galaxy II (MODU)	Mechanical Failure	POTENTIAL DISTRESS
2001/07/21	Rowan Gorilla V (MODU)	Fire	ALERT
2001/04/09	Venture (MODU)	Other	ALERT
2001/04/25	Thebaud (MODU)	Other	ALERT
2001/03/17	Henry Goodrich (MODU)	Fire	ALERT
2002/01/19	Sante Fe Galaxy II (MODU)	Other	ALERT
2002/05/05	Erik Raude (MODU)	P.I.W.	DISTRESS
2002/08/06	Terra Nova (FPSO)	Electrical Failure	ALERT
2002/04/19	Henry Goodrich (FPSO)	Iceberg	POTENTIAL DISTRESS

[2] Canadian Coast Guard Statistical Information on Search and Rescue (SISAR), version 8.1

1.3 LEVELS OF ACTIVITY:

1.3.1 Offshore Nova Scotia[3]

Nova Scotia's first offshore well was drilled in 1967 with the first offshore discovery being made off Sable Island in 1971. Canada's first offshore project, Cohasset-Panuke, commenced oil production in 1992 and completed production in December 1999. Over the life span of the project, Panuke produced more than 44 million barrels of crude oil, was a significant contributor to the Nova Scotia and Atlantic Canada's economies and proved to be the cornerstone for the development of offshore oil infrastructure on Canada's East Coast. In 2001, PanCanadian Energy (now EnCana Corporation) announced plans to develop the Deep Panuke discovery well at a cost of $1.0 billion.

The Sable Project commenced production from fields around Sable Island on 31 December 1999. As the first offshore natural gas development in Canadian history and the first commercial development of what appears to be significant gas reserves in Atlantic Canada, the Sable Project currently produces approximately 600 million cubic feet of natural gas per day.
The oil and natural gas industry continues to flourish in Nova Scotia waters; there are currently $1.5 billion in outstanding work commitments on 59 blocks of territory covering 7.8 million hectares.

Offshore Nova Scotia 6 Year Statistics:

	1996	1997	1998	1999	2000	2001
Capital Spending ($ Billions)	0.02	0.06	1.03	1.23	0.64	0.08
Wells Drilled						
Oil	--	--	--	--	--	--
Gas	--	--	--	6	6	5
Reserves at Year End						
Conventional Oil (million barrels)	--	--	--	--	--	--
Natural Gas (trillion cubic feet)	0	2.5	2.5	2.5	2.4	2.2
Production						
Conventional Oil (thousand barrels/day)	17.8	9.8	16.5	6.1	--	--
Natural Gas (billion cubic feet/day)	--	--	--	--	0.3	0.5

[3] Courtesy of the Canadian Association of Petroleum Producers

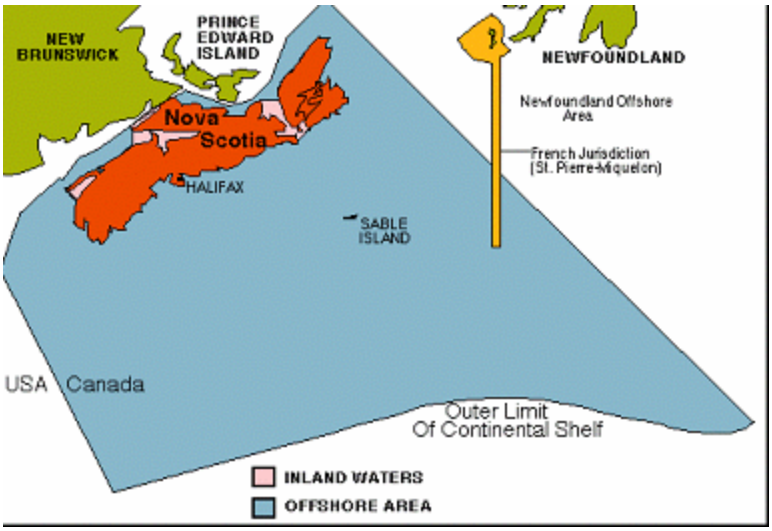


Figure 3 - Areas of Significant Oil & Gas Interests – Offshore Nova Scotia

1.3.2 Offshore Newfoundland & Labrador[4]

Oil and gas exploration has gone through three major cycles in the Canadian East Coast offshore during the 1970s, 1980s and 1990s. Canada's National Energy Program (NEP), enacted in 1980 and designed to develop Canada's self-sufficiency, resulted in a frenzy of activity during the 1980s on the Grand Banks, the Labrador Shelf and the Scotian Shelf. Under the NEP, companies with Canadian content received tax rebates of 80 cents on the dollar for drilling and seismic, and for the construction of seismic vessels and drilling rigs. The third and final phase kicked off during the mid- to late-1990s, and hasn't stopped.

The Hibernia oil field is situated 350 kilometres east southeast of Newfoundland in 90 meters of water, with a total oil reserve estimated to be in the area of 874 million barrels. Originally discovered in 1979 by Chevron Canada Resources, the $5.8 billion Hibernia field development came on production in 1997. Hibernia currently produces about 160,000 barrels/day from eighty directional wells that were drilled during the Hibernia development phase. The Hibernia Gravity Base Structure (GBS), often called the eighth wonder of the world, displays the mastery of offshore technology. Its massive 470,000-ton concrete base is imbedded two metres into the ocean floor and its outer shell is designed to withstand the impact of a six million ton iceberg.

The Terra Nova oil field is situated 35 kilometres east of Hibernia, with a total oil reserve estimated in the area of 370 million barrels. The $4.4 billion development of the Terra Nova oil and gas field by Petro Canada included the construction of a Floating Production, Storage and Offloading vessel (FPSO). The FPSO is a first-of-its kind, double hulled vessel that is capable, with short notice, of disengaging its nine anchors

[4] Courtesy of the Canadian Association of Petroleum Producers

and moving out of the path of and oncoming iceberg. The Terra Nova project currently produces about 150,000 barrels/day from twenty-four directional wells.

In addition to the Hibernia and Terra Nova Projects, several other world class oil and gas fields are being explored and developed on Newfoundland & Labrador's East Coast. At Hebron-Ben Nevis, situated due north of Terra Nova and operated by Chevron Canada Resources, the combined field is estimated to contain 300 million recoverable barrels of oil. The Husky Energy operated White Rose oil and gas field is estimated to contain an initial 230 million barrels of recoverable reserves and 1.7 trillion cubic feet of natural gas.

According to the Canada-Newfoundland Offshore Petroleum Board (C-NOPB), discovered reserves in the Grand Banks total 2.1 billion barrels and 5.1 trillion cubic feet of natural gas, with 413 million barrels of associated liquids.

To date, 127 exploration wells, 29 delineation and 37 development wells have been drilled in the Grand Banks, in an area totalling 900,000 square kilometres, with an additional 10.4 million acres held under 89 exploration and significant discovery licenses. Recently, industry has ventured into the deeper waters of the adjacent Flemish Pass Basin.

Offshore Newfoundland 6 Year Statistics:

	1996	**1997**	**1998**	**1999**	**2000**	**2001**
Capital Spending ($ Billions)	0.9	0.9	1.0	1.5	1.2	1.1
Wells Drilled						
Oil	--	--	--	9	8	9
Gas	--	--	--	2	5	4
Reserves at Year End						
Conventional Oil (million barrels)	848	939	908	868	1005	950
Natural Gas (trillion cubic feet)	--	--	--	--	--	--
Production						
Conventional Oil (thousand barrels/day)	--	20.9	65.2	99.8	144.7	148.8
Natural Gas (billion cubic feet/day)	--	--	--	--	--	--

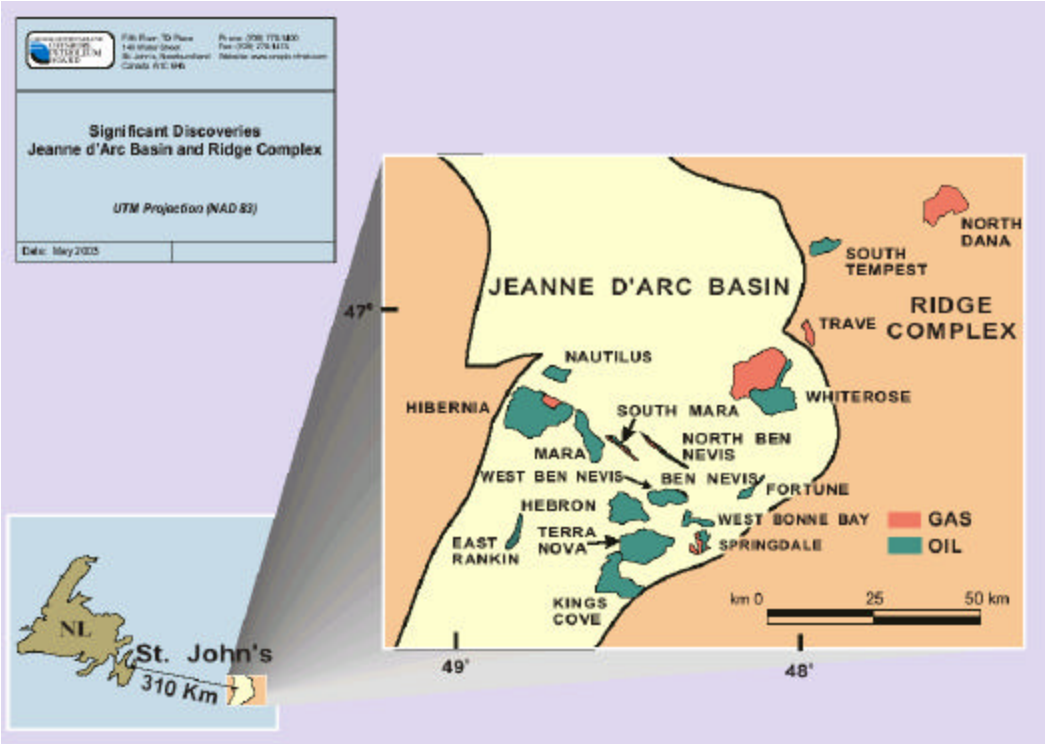


Figure 4 - Areas of Significant Oil & Gas Interests – Offshore Newfoundland & Labrador

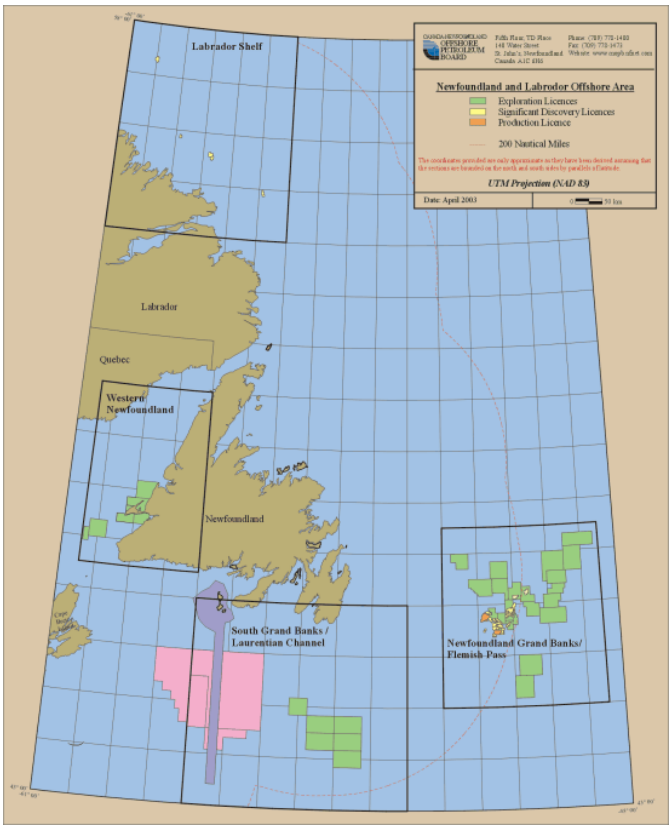


Figure 5 - East Coast Oil and Gas Interests

1.4 MUTUAL ASSISTANCE

1.4.1 Industry's obligation

The fundamental principle governing planning for and reacting to emergencies that affect persons at sea is that the initial response begins at the lowest level (i.e. individual and owner / operator) and escalates to the Canadian Search and Rescue system only when the emergency is beyond the immediate capacity of the first responders on scene.

While the probability of such an occurrence escalating beyond the self-help capabilities of the industry is a relatively low probability event, it is of a very high consequence. An effective response must be a well-planned and closely monitored large-scale operation. The provision of timely and effective support is critical to the saving and sustaining of lives and the limiting and prevention of environmental and property damage. It is also dependent on pre-established and practiced arrangements.

The safety of workers in the offshore oil and gas industry has become a major political and social concern since the Ocean Ranger disaster. The sudden occurrence of a disaster onboard an offshore installation may plunge a large number of persons into a feeling of helplessness, create confusion, disorder and chaos, and could result in a substantial loss of life, extensive property damage and pollution of the marine environment. It must be dealt with by means of an effective emergency response plan. Not only must the plan exist, but it must be a living document that is exercised and modified with all key personnel being aware of their duties and actions under the plan. It is too late to take the plan off the shelf, dust it off and read it when a major emergency occurs.

A major emergency offshore, by its nature, is challenging and calls for a multi-organizational response effort, demanding cooperation among the response agencies and industry, and the coordination of their activities offshore and onshore. Only through planning, training and exercising can we hope to successfully deal with the effects of a marine disaster.

Regardless of the level of emergency preparedness, response agencies, in this time of fiscal restraint, are likely to be caught off guard by the occurrence of such a marine disaster. The response to these incidents is also abnormal and different from daily operations. It demands unique roles, rarely-applied and exercised procedures, specialized skills, and rare and unavailable resources. Disaster response always demands more resources and time than available.

It must be remembered that disaster chooses its own time and place, and most frequently strikes without warning. It is under these conditions that the treatment, safe removal and transportation of the persons at risk in the marine environment become the responsibility thrust upon all of us. In a disaster driven environment it is critical for emergency management systems to encourage and facilitate inter-agency cooperation and coordination. It must be a team effort in times of high stress and anxiety that

allows freedom and imitative to take necessary coordinated action to successfully save lives.

Standby vessels, helicopters, medical equipment, and a myriad of safety equipment and regulations all have contributed to a safer environment for the offshore oil worker, and have been effective in reducing the risk of working offshore. But when disaster strikes it is planning, training and cooperation that must pull together to save lives. Operators must provide a comprehensive and detailed safety plan to the petroleum board covering all aspects of operation. The offshore oil industry is legislated to have contingency plans formulated and equipment available to cope with any reasonably foreseeable emergency situation during a drilling program, including:

- a serious injury to or the death of any person;
- a major fire;
- the loss of or damage to support craft;
- the loss or disablement of a drilling unit, drilling rig, drilling base or any accommodation installation;
- the loss of well control;
- a situation requiring the drilling of a relief well;
- hazards unique to the drill site; and,
- spills of oil or other pollutants.

1.4.2 Notification and Coordinated Operations

With such factors as operation location being far from shore, sea ice and icebergs being a significant reality, and the extreme unforgiving weather and sea conditions of the North Atlantic, the requirement for early warning by the oil companies to search and rescue cannot be overemphasized. Whilst the companies must endeavour to be self-sufficient in facilities and resources during the first response to an emergency, it becomes essential to notify search and rescue to enable shore-based assets to respond to any situation that constitutes, or has the potential to lead to risk of loss of life.

Timeliness in notification is crucial to the eventual outcome of any incident. Any alerts therefore are made direct to search and rescue to obviate delays which occur through notification via the company's shore bases, particularly outside normal working hours. It is essential that search and rescue be informed immediately of any of the following:

- Whenever personnel on an installation go to muster stations;
- Fire or explosion;
- Man Overboard;
- Structure damage / collision;
- All aeronautical / maritime incidents on or near the installation, e.g.: aircraft ditching, drifting vessels, etc;
- Any other incident which may pose a threat to life or property.

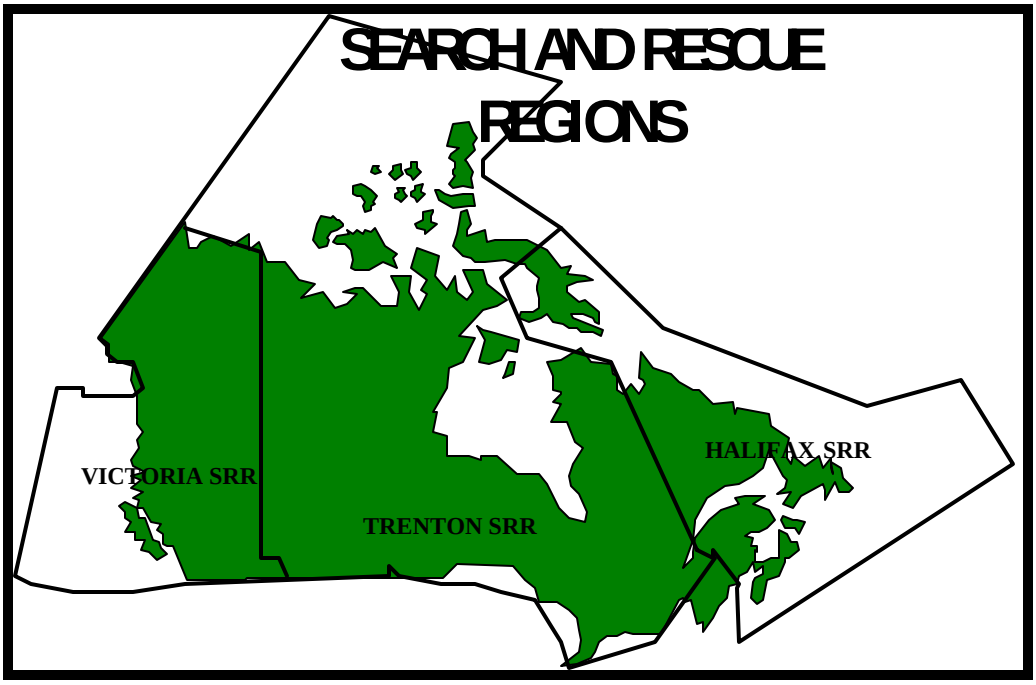
When the search and rescue system is notified of an occurrence, it is critical that the offshore installation provide all relevant and useful information to search and rescue

including the installation location, weather, number of persons at risk, on scene assets, etc.

1.4.3 Federal Aeronautical and Maritime Search and Rescue

Authority for the control of search and rescue in Canada is vested in the Lead Minister for search and rescue (SAR), the Minister of National Defence. Aeronautical and maritime search and rescue services are a joint Department of National Defence (DND) and Canadian Coast Guard (CCG) activity. DND has overall responsibility for the efficient operation of the coordinated SAR system while CCG has the statuary authority for the coordination of maritime SAR responses. Under these authorities, DND provides primary aeronautical SAR services and CCG provides primary maritime SAR services. While the current Canadian Federal primary SAR response may be sufficient for most emergencies, extraordinary arrangements involving federal, provincial and local authorities, non-government organizations and international assistance may be required to cope with the magnitude of a major incident involving an offshore oil and gas installation.

Canada has been divided into three Search and Rescue Regions (SRRs). Joint Rescue Coordination Centres (JRCCs) have been established at Halifax, Trenton, and Victoria, each one being responsible for aeronautical and maritime SAR coordination within their respective SRR. Maritime Rescue Sub-Centres (MRSC) have been established in St. John's and Quebec City to coordinate, conduct and control responses to maritime SAR incidents within the boundary of local Search and Rescue Sub-Regions (SRS), thus maximizing the use of local knowledge and resources in providing an effective response.



1.4.4 Command and Control

It is recognized that there can only be one person ultimately responsible for overall management of a marine disaster. In accordance with internationally accepted guidelines for search and rescue, each incident response is under the control of a nominated search and rescue mission coordinator (SMC). This will be the SAR Coordinator at either the JRCC or MRSC. In a distress or urgency situation, search and rescue will always nominate a SMC to coordinate all the on scene resources. The SMC has primary responsibility for planning all stages of the SAR mission, and all ships and aircraft are ultimately directed by the SMC. If a situation develops in the oil and gas industry that does not escalate to the urgency or distress phase, search and rescue will only assume the lead role as SMC and coordinate the assets upon the request of the company, or when it becomes necessary to deploy national assets.

Search Mission Coordinators, collect and distribute essential information concerning an emergency situation and arranges the dispatch of rescue assets (and personnel) to persons in distress. In addition, the SAR system works closely with the offshore oil and gas industry and provides SAR assistance when necessary. To achieve this, JRCC is manned on a 24 hour, seven day a week basis. Each shift is staffed by an Air Force Officer (SAR pilot or navigator), a Canadian Coast Guard Officer (deck officer), a CG Radio Operator and a Canadian Forces Assistant Air Controller. The MRSCs are staffed by Canadian Coast Guard Officers 24/7 basis. Extra personnel may be called upon to support operations during periods of heavy activity.

Search Mission Coordinators utilize a variety of assets to respond to emergency situations, however, primary air resources from the Canadian Forces 413 Transport and Rescue Squadron and 103 Rescue Squadron are considered as first response due to the rescue and medical capabilities of the aircraft and personnel. Similarly, the Canadian Coast Guard cutters and ships stationed throughout the area will be tasked as a primary responder for marine and, if warranted, air incidents. Additional assets such as commercial vessels, privately owned craft, volunteer organizations, and other Government organizations will be tasked if they are available and appropriate for the mission.

The SMC may designate an On Scene Coordinator (OSC) whose roles and tasks are outlined in the IAMSAR Volume III. The role of OSC is normally assumed by the Offshore Installation Manager (OIM). Where this is not possible or practical, the SMC will designate another vessel or aircraft. The role of OSC may be initially assumed by the units on scene, but must be subsequently verified by the SMC, who may transfer the function to a more suitable unit. The OSC is tasked to carry out the SMC's action plan in respect of control of on-scene assets and communications between all participants.

2. RESPONSIBILITY:

The workplace on board drilling rigs and platforms located off the shores of Nova Scotia and Newfoundland and Labrador is governed by the laws of Canada and two provinces. The offshore Accord Acts put in place by all three governments were intended to consolidate regulator authority into two offshore petroleum boards.

The boards have the direct responsibility for government response in all petroleum related emergency situations **except**:

- Search and Rescue related incidents which are controlled by the Joint Rescue Coordination Centre Halifax or by the Maritime Rescue Sub-Centre St. John's;
- Incidents involving criminal activity or accidental death where an investigation may be initiated by the RCMP; and,
- Oil spills or other pollution from ships, which are the responsibility of the Canadian Coast Guard.

2.1 CANADA – NOVA SCOTIA OFFSHORE PETROLEUM BOARD[5]

The Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) is the independent joint agency of the Governments of Canada and Nova Scotia established pursuant to the federal Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act and the provincial Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act. It is responsible for regulation of petroleum affairs and safe practices offshore Nova Scotia.

The Board's principal responsibilities include:

- ensuring the safe conduct of offshore operations;
- protection of the environment during offshore petroleum activities;
- management of offshore oil and gas resources;
- review of industrial benefits and employment opportunities;
- issuance of licences for offshore exploration and development; and,
- resource evaluation, data collection and distribution.

The Board consists of five members who are appointed for fixed terms of office. The Government of Canada and the Government of Nova Scotia each appoint two members. The Chairman is jointly appointed by both governments. The Chief Executive Officer reports to the Board and is responsible for the day to day operations of the Board and a staff of nineteen professional and support personnel.

[5] Canada – Nova Scotia Offshore Petroleum Board - 2003

2.2 CANADA – NEWFOUNDLAND OFFSHORE PETROLEUM BOARD[6]

The Canada-Newfoundland Offshore Petroleum Board (CNOSPB) is a federal-provincial authority established in 1985 to administer the relevant provisions of the Canada-Newfoundland Atlantic Accord Implementation Acts as legislated in the Parliament of Canada and the Legislature of Newfoundland and Labrador.

In carrying out this mandate, the Board operates autonomously in making its decisions, other than those described in the Accord as "fundamental decisions" which are subject to the approval of the federal and provincial energy ministers.

Board responsibilities include the sale of interest in lands, the issuing of exploration licences, approvals and authorizations pertaining to exploration activities, the declaration of Significant and Commercial discoveries, the issuing of production licences, decisions relating to the commencement, continuation, and suspension of drilling and production, the administration of regulations and the exercise of emergency powers pertaining to safety, environmental protection, and resource conservation.

In addition to its regulatory role, the Board has the responsibility and authority to evaluate and approve a proponent's industrial benefits plan. Every proponent must satisfy the Board that the provisions of the Atlantic Accord Acts are respected as they relate to providing full and fair opportunity to workers and companies in Canada, and particularly in Newfoundland and Labrador, to participate in the supply of goods and services used in the offshore activity.

In short, every aspect of operations in the offshore oil industry is done with the authorization and oversight of the C-NOPB. The Board continuously monitors the activities of offshore operators in the areas of safety, environmental protection, resource management, and industrial benefits. This regulatory role is recognized by industry, and companies make every effort to maintain full compliance at all times. The C-NOPB maintains a team of experienced professionals to carry out its regulatory duties and its supervisory mandate.

The Board operates strictly within the authority given to it by the Atlantic Accord legislation, including a responsibility to provide advice and recommendations to both the federal and provincial governments as required. However, it cannot exceed its authority nor alter its mandate. The making or changing of relevant legislation is the sole prerogative of governments.

The C-NOPB reports to the Government of Canada and the Government of Newfoundland and Labrador through the respective Ministers responsible for Energy.

[6] Canada – Newfoundland Offshore Petroleum Board - 2003

3. ACTIONS TAKEN AND ONGOING:

3.1 EDUCATION AND AWARENESS:

The key to effective response in an emergency is training and exercising. SAR briefings and one-day seminars are given on an "*as needed*" basis, by SAR personnel, to industry.

Canadian Search And Rescue Seminar for the Oil and Gas Industry. The aim of this seminar is to provide an introduction to the organization and operation of Canada's maritime and aeronautical search and rescue service and foster better understanding between search and rescue officials and offshore oil and gas industry personnel.

This search and rescue seminar was specifically designed for senior offshore and selected key onshore oil industry officials involved in the decision-making process during an emergency in the offshore oil and gas industries operating within the Canadian East Coast search and rescue region. Through lectures, discussions, tabletop exercises and scenarios, this seminar reviewed the responsibilities, capabilities, procedures, and interaction between the SAR system and the oil and gas industry during an emergency, which enable them to operate effectively during an actual crisis offshore. The emphasis is to improve communications and promote closer liaison between SAR authorities and the Canadian offshore industry.

This forum provides an excellent opportunity to exchange information and ideas between industry and search and rescue. The seminar is currently being delivered in Halifax, N.S., and in St. John's, NL.

3.2 EXERCISES MAJOR AND MINOR:

Testing and exercising of industries emergency response plans are conducted:

- Weekly drills and exercises to test offshore elements of the plan, including equipment, procedures, and personnel;
- A major exercise every six months involving both offshore and onshore industry personnel to test their equipment, procedures and personnel;
- A major exercise once a year involving industry onshore and offshore personnel, support organizations and external support groups such as the RCMP, CNOPB; and,
- Communication procedures are tested on a regular basis with search and rescue during routine drills and exercises.

Personnel, both industry and government, involved in exercises all contribute to the development and improvement of the emergency response plans of both the oils industry and federal SAR.

3.3 COOPERATION AND ONGOING DIALOGUE:

The following types of cooperation also contribute to readiness:

- training and exercises;
- joint operational and long range planning;
- liaison visits between response personnel;
- sharing lessons learned from actual incidents and exercises;
- common response and communication procedures;
- combined education efforts;
- collection, integration, analysis and use of response statistics; and,
- cooperation in research and development.

4. WORK STILL TO BE DONE:

In many industries safety has become a game of money, numbers, and statistics. A company can now decide an appropriate expenditure per life saved, calculating safety decisions mathematically. While it is vital that a corporation consider the statistics of risks to workers along with the costs to protect them, the goal is to protect the lives each individual worker. Just because a company can financially handle the loss of a worker does not mean that it should not do everything possible to protect workers from injuries. **Safety is not simply about numbers; it is about lives**.

Over the past two decades, government and industry players have worked together to ensure that the necessary funding is available to facilitate the important research needed to improve escape, evacuation and rescue systems. New technologies have been introduced including cold water survival suits, man overboard detection systems and improved methods of rig abandonment and lifeboat deployment. Training requirements for offshore workers have increased significantly and new facilities have been established to ensure that these workers have the necessary safety skills to avoid tragedy. Industry players have worked with government to improve offshore health and safety. Their initiative and success in preventing major incidents is encouraging. New technologies continue to evolve and are regularly implemented. There is no question that industry has made tremendous progress in safety. There is also no question that failures in the safety systems could expose industry to incidents which could have huge impacts even beyond loss of life.

The North Atlantic Ocean is a very unpredictable and unforgiving environment. In this harsh setting the safe operation of any offshore installation requires the active participation from all levels of industry and government. We must continue to work together to ensure that offshore safety remains the highest priority. Effective safety procedures and regulations, a high quality of safety auditing, and should the unthinkable occur – cooperation between all groups involved contributes to a comprehensive offshore safety system.