THE CASUALTY

APPENDIX G

APPENDIX G

THE CASUALTY

NOTE: The call connection between the *Ocean Ranger* and the CG RCC New York was broken at 0500Z. Thirteen attempts were made to regain contact between 0500 – 0626Z, but were unsuccessful.

Item G-1
Distress Telex Transmitted from the *Ocean Ranger*
at 0439 Zulu (1:09 a.m. NST) February 15, 1982

(2/15/82)

HQT 0439Z

CENB 1330702

ARE EXPERIENCING A SEVERE LIST U NABLE TO CORRECT PROBLEM. NOTIFYING YOU PF PROBLEM QSL

(TELEX SWITCH OPTR-COMSAT) DO YOU WISH CONNECTION TO COAST GUARD AND WHAT SATELLITE ARE YOU ON GA

(O.C.) R R I WUD WISH CONN AM ON SATELLITE

(TELEX SWITCH) DO U WISH COAST GUARD NYK OR SAN FRANCISCO GA

(O.C.) NYK PLS

(TLEX SWITCH) MOM
230127775+ CONNECTION MADE WITH USCG RCC NYK 0442.6Z 15 FEBRUARY

USCG RCC NYK
USCG RCC NYK

CENB 1330702

(O.C.) WE ARE THE ODECO OCEAN RANGER KRTB LOC 46.43.33 N 48.50.13W AND ARE EXPERIENCING A SEVERE LIST OF ABOUT 10-15 DEGREES AND ARE IN THE MIDDLE OF A SEVERE STORM AT THE TIME 12 DEGREES AND PREGRESSING..REQUEST ASST ASAP..WE ARE AN OFFSHORE DRILLING PLATFORM..
GA

(C.G.) DE RCC NYK WILL PASS INFO
(O.C.) R R WE WILL STBY AS LONG AS POSS
CENB 1330702
(O.C.) WINDS AT THIS TIME ARE APPROX FROM THE WEST AT APPROX 75 KNOTS.
RIG IS OF SEMI-SU SUBMERSIBLE BUILD AND IS LISTING SEVERELY
12-15 DEGREES TO THE PORT SIDE.. GENL INFO
CENB 1330702

(C.G.) USCG RCC NYK
INFO HAEEE
INFO IS BEING FOREWARDED TO RCCHALEEE RCC HALIFAX
GA
(O.C.) R RGA
(O.C.) R R WE CHECK THAT ALL AVAILABLE WORKBOATS IN THE IMMEDIATE AREA ARE COMING TO OUR ASST THERE ARE TWO OTHER SEMI SUBMERSIBLES IN THE AREA AND WILL DO ALL POSSIBLE TO ASSIST

GA
(C.G.) R R WILL ALSO PASS THIS INFO

Item G-2
List of Crew Members Recovered by Date, Time and Location

NAME	RECOVERED BY	LOCATION	TIME (LOCAL)
Melvin Freid	*Nordertor*	46°35'N/48°31.5'W	1150, Feb. 15, 1982
Craig Tilley	*Schnoorturm*	46°30'N/48°37'W	1645, Feb. 16, 1982
Kenneth O'Brien	*Hudson*	These five (5) bodies were recovered at the following times and locations. The recovery time and locations sequence does not necessarily correspond.	
Kenneth Blackmore	*Hudson*		
Ronald Foley	*Hudson*	46°27.5'N/48°22.2'W,	0917, Feb. 17, 1982
Norman Dawe	*Hudson*	46°27.5'N/48°19.0'W,	1034, Feb. 17, 1982
		46°27.5'N/48°17.9'W,	1100, Feb. 17, 1982
		46°27.0'N/48°19.0'W,	1145, Feb. 17, 1982
Derek Escott	*Hudson*	46°27.6'N/48°18.9'W,	1145, Feb. 17, 1982
Thomas Blevins	*Java Seal*	Nine (9) of the bodies recovered by the *Java Seal* were recovered on Feb. 17, 1982 between 0855 and 1050 within a three mile radius of 46°27.8'N/48°21.4'W	
Wade Brinston	*Java Seal*		
Wayne Miller	*Java Seal*		
George F. Augot	*Java Seal*		
Ron E. Heffernan	*Java Seal*		
Robert Hicks	*Java Seal*		
Joseph C. Burry	*Java Seal*	Three (3) of the bodies recovered by the *Java Seal* were recovered on Feb. 17, 1982 at 1300 at 46°25'N/48°11'W	
Cliff Kuhl	*Java Seal*		
Douglas Putt	*Java Seal*		
Woodrow Warford	*Java Seal*	One (1) of the bodies recovered by the *Java Seal* was recovered at 0815 on Feb. 18, 1982 at 46°19.1'N/48°13'W	
Robert Wilson	*Java Seal*		
William David Smith	*Java Seal*		
David Leon Droddy	*Java Seal*		
Gerald Clarke	*Boltentor*	45°41.5N/48°28'W	1215, Feb. 20, 1982
Kenneth Chafe	*Bartlett*	45°43'N/48°23'W	0825, Feb. 20, 1982

Item G-3
List of Ocean Ranger Crew Members Recovered

COMPANY	NAME	ADDRESS
ANALYSTS OF CANADA LTD.	ESCOTT, Derek Logging Engineer	Mount Pearl, NF
ATLANTIC FORTIER	WARFORD, Woodrow Steward	Carbonear, NF
EASTEEL INDUSTRIES	CHAFE, Kenneth Fitter	Topsail, NF
	CLARKE, Gerald Welder	St. John's, NF
	PUTT, Douglas Welder	Goulds, NF
HYDROSPACE MARINE SERVICES	MILLER, Wayne Diver	St. John's, NF
NEYTFOR (TURBO-DRILL)	KUHL, Cliff	Brooks, AB
	WILSON, Robert	Calgary, AB
ODECO DRILLING	AUGOT, George F. Floorman	Torbay, NF
	BLACKMORE, Kenneth Medic	Norris Arm, NF
	BLEVINS, Thomas Derrickman	Plainfield, CT, USA
	BRINSTON, Wade Crane Operator	Arnold's Cove, NF
	BURRY, Joseph C. Welder	Norman's Cove, NF
	DAWE, Norman Motorman	Harbour Grace, NF
	DRODDY, David Leon Driller	Covington, LA, USA
	FOLEY, Ronald Roustabout	St. John's, NF
	FREID, Melvin Materials	St. John's, NF
	HEFFERNAN, Ron E. Roustabout	St. John's, NF
	HICKS, Robert L. Mech/Elect. Supervisor	Goose Creek, SC, USA
	O'BRIEN, Kenneth Floorman	St. John's, NF
	SMITH, William David Rig Mechanic	Valley Station, KY, USA
	TILLEY, Craig Roustabout	St. John's, NF

Item G-4
List of Crew Members Not Recovered and Presumed Dead

ANALYSTS OF CANADA LTD.	DODD, Jim Senior Logging Engineer	Berwick, NS
	FOGG, Peter Total Concept Unit Manager	Mount Pearl, NF
	GREENE, Cyril Sample Catcher	Piccadilly, NF
	HOLDEN, Derek Senior Logging Engineer	Mount Pearl, NF
	SHEPPARD, Rick Logging Technician	St. John's, NF
	SMIT, Frank Logging Technician	Kilbride, NF
ATLANTIC FORTIER	CONWAY, Daniel Steward	St. John's, NF
	DWYER, Terrance Chief Steward	Carbonear, NF
	HARNUM, Fred Steward	St. John's, NF
	NOSEWORTHY, Randy Night Cook	St. John's, NF
	PINHORN, John Steward	St. John's, NF
	RYANN, Dennis Steward	Medford, ON
	SMITH, William Steward	St. John's, NF
BAROID OF CANADA LTD.	HOWLAND, Robert C.	Calgary, AB
D'EON, MILLER & ASSOC.	HATFIELD, Tom Geologist	Wolfville, NS
DOWELL OF CANADA LTD.	DAGG, Arthur Cementer	St. John's, NF
HYDROSPACE MARINE SERVICES	CRAWFORD, Gary Diving Supervisor	St. John's, NF
	HALLIDAY, Norman Diver	Toronto, ON
	MITCHELL, Gord Diver	Lacombe, AB
	MORRISON, Perry Diver	Weston, ON
MacLAREN PLANSEARCH LTD.	CAINES, Greg Ice & Weather Observer	St. John's, NF
	DRAKE, Wayne Ice & Weather Observer	Kilbride, NF

PORTA TEST SYSTEMS LTD.	ARSENAULT, Robert Field Supervisor	St. John's, NF
	REID, Darryl Field Operator	Upper Gullies, NF
	TILLER, Greg Field Operator	Mount Pearl, NF
SCHLUMBERGER OF CANADA	CHALMERS, David Sr. Field Engineer	St. John's, NF
	HOWELL, Robert Sr. Wireline Operator	London, ON
MOBIL OIL CANADA LTD.	FENEZ, Robert Drilling Engineer	St. John's, NF
	JACOBSEN, Jack Drilling Foreman	Tusket, NS
	MADDEN, Robert Drilling Foreman	Calgary, AB
ODECO DRILLING	BALDWIN, Nicholas Floorman	Carbonear, NF
	BOUTCHER, David Floorman	Corner Brook, NF
	BURSEY, Paul Electrician	St. John's, NF
	DONLON, Thomas Electrician	Sumter, SC, USA
	DUGAS, William Crane Operator	Abbeville, LA, USA
	DYKE, Domenic Control Room Operator	Eastport, NF
	EVOY, Andrew Roustabout	Mount Carmel, NF
	FERGUSON, Randell Subsea Technician	Natchez, MS, USA
	FRY, Carl Mud Watcher	St. John's, NF
	GANDY, George Rig Mechanic	Logansport, LA, USA
	GERBEAU, Guy Derrickman	Montreal, PQ
	GORUM, Reginald Driller	El Paso, TX, USA
	HAUSS, Capt. Clarence Barge Master	Baltimore, MD, USA
	HICKEY, Gregory Radio Operator	Torbay, NF
	HOWELL, Albert Motorman	Mount Pearl, NF

ODECO DRILLING	LEDREW, Harold Roustabout	Botwood, NF
	LEDREW, Robert Floorman	Botwood, NF
	MAURICE, Michael Roustabout	St. John's, NF
	MELENDY, Ralph Floorman	St. John's, NF
	O'NEILL, Paschal Joseph Roustabout	Fermeuse, NF
	PALMER, George Roustabout	St. John's, NF
	PARSONS, Clyde Floorman	Foxtrap, NF
	PIEROWAY, Donald Roustabout	Barachois Brook, NF
	POWELL, Willie Assistant Toolpusher	Franklinton, LA, USA
	POWER, Gerald Mud Watcher	St. John's, NF
	RATHBUN, Donald Control Room Operator	Narragansett, RI, USA
	STAPLETON, Ted Electronic Technician	Mount Pearl, NF
	THOMPSON, B. Kent Toolpusher	Hattiesburg, MS, USA
	VAUGHN, Gerald Assistant Toolpusher	Collins, MS, USA
	WATKINS, Michael Industrial Relations Representative	New Orleans, LA, USA
	WINDSOR, Robert Floorman	Paradise, NF
	WINDSOR, Stephen Roustabout	Paradise, NF

Item G-5
Items Recovered During Search and Rescue Operations

This will cover receipt and identification of exhibits received at Pier 17, St. John's Harbour, by ship from the *Ocean Ranger* Marine Disaster. The larger exhibits are stored in Building 205, Pleasantville, St. John's, Newfoundland. The remainder of exhibits are stored at the R.C.M. Police Office, Donovans, Newfoundland.[1]

At 0720 hours, 82 FEB 17, the supply vessel *Nordertor*, under Captain Baxter ALLINGHAM, arrived at Pier 17. The following exhibits were received:

1. One bronze propellor attached to a four foot length of drive shaft. Propellor and shaft were torn from an *Ocean Ranger* lifeboat as the *Nordertor's* crew were trying to pull the lifeboat on its own deck. This occurred on 82 FEB 15 at 1150 hours (local time). Position was 46°35'N and 48°31'5"W. This information is from the ship's log.

2. One 58-man orange lifeboat marked *Ocean Ranger* #3. Lifeboat was manufactured by Watercraft America Inc. and its serial number is ELZ8-034/11/79. The lifeboat was noted to be upside down on the deck of the *Nordertor* and secured with cables and chains. One cable had sliced through halfway of the hull of the lifeboat. The upper structure was completely destroyed and the boat was not provisioned but did carry two oars marked *Ocean Ranger*. Lifeboat was picked up on 82 FEB 16 at 1220 hours at position 46°24'N/48°15'W.

At 1540 hours, 82 FEB 19, the supply vessel *Ravensturm* arrived at Pier 17 and the following five exhibits were received from First Mate, John COONEY:

3. The bottom section of an Elliot 20-man rubber life raft in poor condition. Raft picked up on 82 FEB 17 at 1454 hours and the position was 46°14'N/47°24.2'W.

4. The top section of an Elliot 20-man rubber life raft. The canopy was noted to be badly torn and the rubber sections of the raft to be separating from one another. No air in any of the raft sections. Raft picked up on 82 FEB 17 at 1454 hours and the position was 46°14'N/47°24'W.

5. One grey ten gallon can with large dent in side and considerable amount of rust on same. Can picked up on 82 FEB 17 at 1500 hours, position was 46°14'N/47°24'W.

6. One large piece of yellow styrofoam, similar to the foam used in Lifeboat #3 off the *Ocean Ranger* but not from Lifeboat #3. This foam was picked up on 82 FEB 17 at 1500 hours at position 46°14'N/47°24'W.

7. Same as (6) above.

At 0613 hours, 82 FEB 20, the *MV Java Seal*, under Captain Robert FRONTIERRO, was boarded and the following items obtained:

8. Thirteen BILLY PUGH lifejackets.

9. One BILLY PUGH work vest and an assortment of other flotsam.

10. One garbage bag containing a coil of orange rope, one illumination marker, and nine cans of drinking water. These items are similar to the supplies found in an Elliot 20-man rubber life raft. These items were picked up on 82 FEB 18, at 1250 hours, at position 46°13'N/47°49'W.

11. One fluorescent orange supply bag from an Elliot 20-man life raft containing forty cans of drinking water. This bag was picked up on 82 FEB 18 at 1430 hours. Position was 46°07'N/47°41'W.

At 1010 hours, 82 FEB 22, the supply vessel *Boltentor*, under Captain J.C. DAVISON, arrived at Pier 22 and the following exhibits were obtained:

12. One *Ocean Ranger* 50-man HARDING lifeboat. Lifeboat was manufactured in 1974 at Bjorke Batbyggeri, Rosendal, Norway. Serial #2978. This lifeboat was fully provisioned but in poor condition. Two portable marine radios inside the lifeboat were marked *Ocean Ranger* No. 1. Noted lifeboat to have most of the upper structure attached but crushed down onto the boat. The bow section of the boat was split open and the front davit was missing. Boat picked up on 82 FEB 16 at 1310 hours (local time) at position 46°16'N/48°08'W.

13. One section of a BILLY PUGH work vest. No markings on vest. Vest picked up on 82 FEB 17 at 1320 hours and the position was 46°1'N/47°11'W.

[1]An extract from an internal RCMP Report on the items removed from the vessels involved in the Search and Rescue effort.

14. One fluorescent orange bag from an Elliot 20-man life raft containing 24 cans of drinking water. Bag was picked up on 82 FEB 17 at 1320 hours and the position was 46°1'N/47°12'W.

15. One Elliot 20-man rubber life raft. Raft was in fair condition with several sections of the bottom inflated but the top canopy was badly torn. Raft picked up on 82 FEB 17 at 1325 hours (local time) and the position was 46°01'N/47°11'W.

At 1055 hours, 82 FEB 23, the supply vessel *Seaforth Highlander*, under Captain Ronald Stewart DUNCAN, was boarded and the following exhibits obtained:

16. One Elliot 20-man rubber life raft in poor condition. Raft was torn apart and fully deflated. Canopy was mostly missing and what was left was in shreds. Raft picked up on 82 FEB 17 at 1255 hours. Position was 45°47'N/46°41'W.

17. One fluorescent orange bag containing sixteen cans of drinking water and two red hand flares. Flares were in plastic bag but waterlogged. Same was picked up on 82 FEB 17 at 1422 hours and the position was 45°49'N/46°39.5'W.

18. One ball of heavy yellow rope. Rope was picked up on 82 FEB 17 at 1652 hours. Position was 46°10'44"N and 48°11'31"W.

At 1100 hours, 82 FEB 25, the Canadian Coast Guard Ship *Bartlett*, under Captain Phillip GRANDY, was boarded and the following exhibits obtained:

19. One Elliott 20-man rubber life raft in two sections. Raft was deflated and torn up badly. Canopy was shredded and mostly missing. Raft was picked up on 82 FEB 20 at 0620 hours (local time) and the position was 45°47'N/48°22.6'W.

20. One BILLY PUGH lifejacket removed from the body of an *Ocean Ranger* victim. Lifejacket was marked *Ocean Ranger*. This lifejacket was recovered on 82 FEB 20 at 0825 hours (local time) and the position was 45°43'N/48°23'W.

21. One E.L.T. (Emergency Locator Transmitter) marked *Ocean Ranger*. This E.L.T. was still operating when picked up on 82 FEB 20 at 1407 hours at position 45°47'N/48°22.6'W.

22. One grey fibreglass centre section from a lifeboat. This section was full of provisions and had a checkoff sheet marked Lifeboat No. 2. It was picked up on 82 FEB 20 at 0620 hours (local time) at position 45°43'N/48°23'W.

In addition to the preceding items, the following have since been discovered:

a. On 83 JUL 12, a Fishery Products trawler, the *Zambezi* recovered one Elliott 20-man rubber life raft at position 45°30'N/48°50'W while fishing off the Grand Banks; the vessel docked in Catalina and the life raft was turned over to the RCMP.

b. Two life vests marked *Ocean Ranger* washed ashore at the Faroe Islands, just North of Scotland. They were recovered separately during the summer of 1982.

Item G-6
Aircraft Non-availability Through Maintenance Action

HELICOPTER 301	HELICOPTER 302	HELICOPTER 310
DATES/TIME LENGTH 1981	DATES/TIME LENGTH 1981	DATES/TIME LENGTH 1981
12 Mar – 14 Apr (34 days)	16 Mar – 16 Mar (7 hrs)	11 Mar – 17 Mar (6 days)
15 Apr – 16 Apr (1 day)	22 Mar – 26 Mar (14 hrs)	23 Mar – 01 Apr (8 days)
25 Apr – 25 Apr (8 hrs)	27 Mar – 27 Mar (16.5 hrs)	07 May – 08 May (24 hrs)
30 Apr – 06 May (6 days)	02 Apr – 02 Apr (10 hrs)	14 May – 14 May (7 hrs)
10 Jun – 12 Jun (2 days)	06 Apr – 06 Apr (9 hrs)	15 May – 17 May (2 days)
18 Jun – 19 Jun (19 hrs)	10 Apr – 10 Apr (4 hrs)	19 May – 02 Jun (13.5 days)
20 Jun – 21 Jun (33 hrs)	15 Apr – 15 Apr (13 hrs)	04 Jun – 04 Jun (5 hrs)
03 Jul – 03 Jul (3.5 hrs)	21 Apr – 23 Apr (58 hrs)	15 Jun – 15 Jun (6 hrs)
07 Jul – 09 Jul (46 hrs)	28 Apr – 01 May (2.5 days)	18 Jun – 19 Jun (16 hrs)
21 Jul – 09 Sep (51 days)	17 May – 19 May (2 days)	19 Jun – 19 Jun (6 hrs)
23 Sep – 23 Sep (7 hrs)	01 Jun – 26 Jun (26 days)	29 Jun – 06 Jul (7 days)
22 Oct – 22 Oct (3 hrs)	08 Jul – 20 Jul (13 days)	11 Jul – 20 Jul (9 days)
10 Nov – 10 Nov (4.5 hrs)	27 Jul – 27 Jul (15 hrs)	31 Aug – 06 Oct (36 days)
25 Nov – 30 Nov (5 days)	06 Aug – 06 Aug (6 hrs)	08 Oct – 13 Oct (5.5 days)
14 Dec – 15 Dec (29 hrs)	12 Aug – 13 Aug (12 hrs)	16 Oct – 18 Oct (2.5 days)
	14 Aug – 14 Aug (20 hrs)	20 Oct – 21 Oct (17 hrs)
	03 Sep – 03 Sep (3.5 hrs)	02 Nov – 05 Nov (3 days)
	08 Sep – 09 Sep (8.5 hrs)	07 Nov – 09 Nov (2.5 days)
	16 Sep – 18 Sep (2 days)	04 Dec – 06 Dec (2.5 days)
	22 Sep – 23 Sep (12 hrs)	
	23 Sep – 29 Sep (6 days)	
	03 Oct – 06 Oct (4 days)	
	08 Oct – 27 Nov (51 days)	
	06 Dec – 10 Dec (4.5 days)	
	11 Dec – 11 Dec (9 hrs)	
	15 Dec – 24 Dec (8.5 days)	
DATES/TIME LENGTH 1982	DATES/TIME LENGTH 1982	DATES/TIME LENGTH 1982
22 Dec – 14 Feb (53 days)	06 Jan – 06 Jan (8 hrs)	14 Jan – 21 Jan (7.5 days)
04 Mar – 05 Mar (28 hrs)	12 Jan – 12 Jan (7 hrs)	08 Feb – 10 Feb (2 days)
05 Mar – 06 Mar (35.5 hrs)	14 Jan – 14 Jan (3.5 hrs)	22 Feb – 25 Mar (32 days)
09 Mar – 09 Mar (3 hrs)	26 Jan – 26 Jan (7 hrs)	
17 Mar – 17 Mar (2.5 hrs)	27 Jan – 27 Jan (9.5 hrs)	
	28 Jan – 28 Jan (4 hrs)	
	04 Feb – 06 Feb (2.5 days)	
	11 Feb – 11 Feb (7 hrs)	
	12 Feb – 13 Feb (1.5 days)	
	02 Mar – 31 Mar (30 days)	

GLOSSARY

GLOSSARY

ABS American Bureau of Shipping

Actuator see valve actuator

AES Atmospheric Environment Service (Canada)

Air Gap The distance between mean sea level and the underside of the lower deck of a semisubmersible.

Alert The first stage of a search and rescue incident, when a Rescue Co-ordination Centre (RCC) calls Squadron Operations to advise of incident status. RCC gives instructions to either commence take-off procedure or await further information.

All Ships Broadcast A radio broadcast made by a station to all ships within its range. Depending on the urgency involved, the all ships broadcast is prefaced by an internationally accepted term, such as the repetition of "Mayday Relay" three times for a relayed distress call.

Ammeter An instrument for measuring electrical current.

Anchor Bolster A protective rail attached to the side of a vessel or offshore structure to safeguard the structure from damage when the anchors are raised or lowered. Anchor bolsters may be seen on the pontoons or stabilizing columns of semisubmersible drilling units.

Anchor Tension The force exerted on an anchor and its mooring line by rig movement. Anchor tensions are measured in KIPS, with 1 KIP equal to 1000 pounds.

Anchor Windlass A winch used for hauling in and deploying anchor cables or chains.

Anemometer An instrument for measuring wind speed.

ASE Aviation Safety Engineering Facility, Transport Canada

Attitude The inclination of a vessel relative to true vertical.

Aurora A military fixed-wing aircraft equipped with sophisticated tracking and detection systems; military aircraft may be tasked by Search and Rescue to co-ordinate aircraft and vessel movement at the site of a marine emergency.

Authority to Drill a Well A permit issued by COGLA to an operator after a review of the detailed engineering program for a proposed well. An operator is required to obtain separate approval for each well to be drilled.

Automatic Flight Control System An aircraft navigation system which automatically maintains direction, speed, and altitude.

Ballast Control Console Located in the ballast control room of a semisubmersible, this console is equipped with controls for pumps and valves used to transfer ballast and liquid cargo to and from the tanks in the pontoons. It includes gauges and indicators used to monitor these operations.

Ballast Control Operator The person designated to operate the ballast system of a semisubmersible. Sometimes referred to as the watchstander.

Ballast Control Room The area of a semisubmersible which houses the equipment used to monitor and control the distribution of ballast. Also referred to as the barge control room.

Ballast System A system of tanks and pumps, interconnected by a network of pipes and valves; on a semisubmersible, the system is used to control draft, attitude and stability. During drilling operations, the system is routinely used to compensate for the movement and loading of equipment and supplies.

Bilge Any space in the lower part of a hull or pontoon where water collects.

Blowout A sudden, violent, uncontrolled escape of gas/water/oil, with mud, at high pressure from a well. A blowout occurs when the formation pressure exceeds the hydrostatic head of the drilling mud.

Blowout Preventer (BOP) Equipment installed on a wellhead enabling any flow from the well to be controlled by the driller, preventing excessive downhole pressure from reaching the top of the hole where it may endanger personnel and equipment.

Boat Hook An iron hook with a straight prong at its hind part, fixed to a long pole.

Booklet of Operating Conditions A book of instructions designed to assist the crew in operating the rig under normal and emergency conditions. Also referred to as the operating manual.

BOP blowout preventer.

Bow Thruster A fixed propeller mounted in a recess or tunnel in the bow of a vessel, which greatly improves manoeuvrability.

Brass Rod See Manual Control Rod.

Buffalo A fixed-wing Search and Rescue aircraft, used primarily for search, tracking and communications support.

Bulkhead Any vertical partition which subdivides the interior of a vessel into compartments or rooms.

Bulwark The raised side of a vessel above the weather deck.

Casing Very tough, thick-walled steel pipe of varying diameters which is placed inside the well as a lining to secure the hole and prevent the walls from collapsing.

CCG Canadian Coast Guard

CCGS Canadian Coast Guard Ship

CFB Canadian Forces Base

CFR Code of Federal Regulations (U.S.)

Chain Locker A compartment located under an anchor windlass in which the anchor chains are stowed.

Chain Pipe A longitudinal bulkhead pipe fitted directly under the anchor windlass to lead the anchor chains to the chain locker.

Charter Party A contractual agreement between a vessel owner and an operator.

Chinook A twin-rotor helicopter, similar in design to the Labrador/Voyageur helicopter used by Search and Rescue.

Classification Society An independent organization whose purpose is to supervise the construction, upkeep and alteration of vessels according to the society's rules for classing each particular type of vessel. Although not compulsory by law, construction of a vessel according to the rules of a society makes it much easier for the owner or charterer to secure satisfactory insurance rates.

Close Standby The condition of a standby vessel when in close proximity to a drilling unit, such as during helicopter operations and emergencies.

Coastal State A state exerting regulatory control over vessels operating within its jurisdictional limits.

COGLA Canada Oil and Gas Lands Administration

Compensator Hoses A bundle of flexible hydraulic and/or pneumatic hoses connected between the derrick and the drill string motion compensator, so as to allow the free movement of the compensator and the travelling block.

Contingency Plan A detailed plan submitted to a regulatory authority, outlining a drilling company's procedures for dealing with emergencies. The plan sets down procedures for events ranging from personal injuries to blowouts.

Damage Stability The reserve stability of a vessel in a prescribed damage condition; one of the criteria used in the classification process.

Davit A small crane located at the edge of a deck, used for lowering lifeboats and davit-launched life rafts.

Deadlight An interior metal cover affixed to a porthole which, when closed, prevents sea water ingress in the event of portlight breakage.

Deadweight Check See Reinclining Test.

Deballast To remove ballast from tanks by pumping, in order to alter the draft of a vessel.

Deckload The equipment and supplies stored temporarily on a semisubmersible.

Derrick A steel tower rising several hundred feet above the drill floor and supporting the hoisting equipment used to lower and raise the drill string.

Disconnect The process of unlatching the marine riser from the blowout preventer so that the rig is no longer physically connected to the seabed.

DND Department of National Defence (Canada)

DnV Det norske Veritas (Norway)

Dodging Pattern A term used to describe the course often followed by standby vessels during heavy weather. The vessel proceeds into the wind, at the lowest possible speed to maintain steerage. At the extreme range, the vessel executes a 180 degree turn and then proceeds downwind to turn again.

Downflooding The unintentional entry of water into a compartment. The "first point of downflooding" is the lowest opening through which water can enter the internal structure of a vessel, while the "angle of downflooding" specifies the inclination at which downflooding first occurs.

Downwind In the direction in which the wind is blowing.

Draft The depth of the keel from the surface of the water. The draft of a semisubmersible drilling unit is controlled by taking on or discharging ballast water.

Draft Marks The external marks on the hull of a vessel or the columns of a semisubmersible used to measure the draft.

Drift Plot A graphic representation of the direction and speed of an object drifting on the ocean surface, based upon a mathematical calculation involving surface current, wind and the physical configuration of the object.

Drill Bit The cutting tool attached to the lower end of the drill string. A hole in the centre of the drill bit permits drilling fluid to be pumped down through the drill pipe to circulate cuttings to the surface and to cool and lubricate the bit.

Drill Floor The working area on a drilling unit located directly above the moonpool, from which the drilling operation is carried out.

Drill Pipe Sections of hollow steel pipe 30 feet long which, when connected by threaded joints, make up the drill string.

Drill Rig In offshore exploration terminology, a fixed or mobile platform equipped to carry out a drilling operation.

Drill String An assembly of drill pipe lowered into the well. The drill bit is attached to the lower end of the string; the upper end of the string passes through the rotary table and is supported by the travelling block.

Drill Water Fresh water used in the preparation of drilling mud.

Drilling Contractor A company which is hired to drill a well on behalf of an operator.

Drilling Mode see Industrial Mode

Drilling Mud A water or oil-based fluid pumped down the drill string in order to lubricate and cool the drill bit, and to circulate cuttings back to the surface through the marine riser. The weight of the mud prevents the uncontrolled entry of formation fluids into the well and helps to prevent the sides of the open hole from collapsing. The weight and chemical properties of the mud are varied regularly in response to downhole conditions.

Drilling Program A program for the drilling of one or more wells within a specified area and time using one or more drilling units and including all ancillary operations and activities. Approval for a drilling program is granted to an operator upon provision of detailed information on the exploration program including extensive documentation on the purpose, location, timing, nature and logistics of the program. Geological and environmental data, information on rigs to be used, and a detailed contingency plan for emergencies must also be provided to the regulatory authority issuing approval.

Emergency Communications Officer Identified in Mobil's Contingency Plan as the Mobil representative who, during an emergency or disaster, has control over emergency procedures and the transmission of information. This position is normally filled by one of the following: Drilling Superintendent, Drilling Supervisor, Engineering Supervisor, Logistics Supervisor or Accounting Supervisor.

EMR Energy, Mines and Resources (Canada)

Fail-safe Describes a mechanism or system which incorporates an element that enables it to return automatically to a safe condition in the event of a breakdown or malfunction.

Fairlead A ring bolt, eye or pulley which guides a rope or chain in a required direction; often one element of a mooring system.

Flag State The country in which a vessel is registered.

Freeboard The distance measured on a vessel's side from the water-line to the upper surface of the uppermost continuous deck having permanent means of closing all weather openings.

Gas Detection System Detects the presence of combustible or noxious gas. Gas detectors are installed around the drill floor, in mud rooms, shaleshaker rooms, and in intake and exhaust ports to all pressurized areas of an offshore installation.

GM See Metacentric Height.

GMT Greenwich Mean Time. See (Z) (Zulu time).

Grappling Hook An implement with two or more hooks radiating from a common shank attached to a rope, used for anchoring small boats and recovering objects. Also called a Grapnel.

Gunwale The side of a vessel above the waterline up to the weather deck.

Gust Spread Refering to wind velocity, gust spread is the difference between the measured sustained wind and gusting wind velocity.

Hang-off The process of suspending the drill string from the pipe rams in the blowout preventer. Hanging-off allows the rig to disconnect from the BOP without having to remove the entire drill string from the well.

Heave The total vertical movement of a vessel relative to the seabed. Heave is of great significance in the operation of floating drilling platforms, since the rig is connected to the seabed. Heave or motion compensators will protect the drilling equipment within certain specified limits.

Heel The inclination of a vessel to port or starboard.

Heeling Moment An environmental or other force which acts to move a vessel away from the upright position.

Helideck A small landing area for helicopters. Most offshore rigs and platforms are fitted with helidecks.

HF high frequency

HF Radio A radio system using the high frequency band between 3 and 30 megahertz.

Hibernia Field An area of the Grand Banks off Southeastern Newfoundland with known petroleum reserves which have been explored since 1966.

Hot Refuel The refuelling of a helicopter during severe environmental or emergency conditions which preclude the helicopter's engines from being shut down during the refuelling process.

Hover Coupler System In conjunction with an automatic flight control system, this system uses a doppler radar and allows a helicopter to maintain a hover position without assistance from the pilot.

Hydrostatic Release Mechanism An automatic device designed to release an inflatable life raft from its container should the container become submerged.

Hypothermia The condition of abnormally low body core temperature produced by exposure to cold air or water.

Immersion Suit A generic term used to describe protective clothing which offers varying degrees of insulation from cold air and water. Three types of suits are currently being used offshore: (1) helicopter suits which are used by personnel while being transferred by helicopter; (2) insulated coveralls which are used by personnel working in a cold environment; (3) survival suits which are water and windproof one-piece garments designed to give wearers maximum protection from hypothermia.

IMO International Maritime Organization

IMP Industrial Marine Products Limited

In Trim A vessel is "in trim" when the deckload and ballast are such that the vessel has zero degrees of inclination.

Inclinometer An instrument for measuring the inclination of a vessel with respect to the vertical.

Industrial Mode (Drilling Mode) The condition of a semisubmersible while drilling. The draft is adjusted to attain minimum vessel motions.

International Distress Frequency 2182 kHz The radio frequency allocated by international agreement to distress calls.

Jackscrew A threaded bolt attached to the actuator of a remotely operated valve, allowing the valve to be opened or closed manually using a wrench.

KG The distance between the heel (K) and the centre of gravity (G). KG is one of the significant variables involved in calculating the stability of a vessel.

kHz kiloHertz (frequency)

King Gauge Manufacturer's name for a vertical, mercury pressure gauge system used to determine the level of the liquids in tanks.

KIPS An abbreviation for "kilopounds", usually used in reference to anchor tensions. One KIP is equal to 1000 pounds.

Lifeboat Stations The allotted place on board a vessel for gathering the crew in preparation for evacuation by lifeboat. The duties of each person on board during an emergency are listed here also.

Lifeline A rope stretched fore and aft along a deck to give the crew safety against being washed overboard in heavy weather. Also, a rope thrown to any person who has fallen overboard.

List The inclination of a vessel in any position other than upright, i.e. a combination of heel and trim.

Load Line The waterline corresponding to the maximum draft to which a vessel is permitted to load either by regulations, conditions of classification or conditions of service.

Load Line Certificate A certificate issued by the Flag State verifying the acceptable load line of a vessel in accordance with internationally adopted criteria.

Longitudinal Running from bow to stern e.g. longitudinal girder.

Manifold The junction of several incoming lines with one or more outlets, and incorporating valves and instruments where necessary to monitor fluids flowing in individual lines.

Manual Control Rod (Brass Rod) On the *Ocean Ranger*, a small tool consisting of a threaded brass rod and threaded brass bushing, which could be used to open the solenoid valves in the ballast control console. The manual control rods enabled the manual operation of the rig's ballast valves, bypassing the electrical mimic panel.

Manual Sea Chest Valve A manually operated valve located adjacent to the sea chest in the ballast piping system. Closing the manually operated sea chest valve will prevent any ingress of sea water into the ballast system.

MARCOM Maritime Command Operations (Canada)

Marine Emergency Duties (MED) A certificate required by the Canadian Ministry of Transport for most grades of seamen and officers to ensure a minimum level of marine survival skills. Course content includes training in lifesaving appliances, fire fighting, rescue and survival.

Marine Riser A large diameter pipe connected from the slip joint to the blowout preventer. The riser provides access to the well and a conduit for the circulation of drilling mud.

MARISAT System A satellite communication system providing voice, telex, facsimile and data transmission with global coverage for vessels and offshore installations. MARISAT uses the super high frequency band and its services can be linked into commercial telephone and data networks. A machine-logged, time record is kept of calls made on the MARISAT system.

Mayday The internationally accepted radio message transmitted by stations in distress. Derived from the French "m'aider", or "help me."

Mayday Relay A Mayday message forwarded to appropriate authorities on behalf of and at the request of the vessel in distress.

MED Marine Emergency Duties

Metacentric Height The vertical distance between the centre of gravity (G) and the transverse or longitudinal metacentre (M_T or M_L), abbreviated GM_T or GM_L. A measure of stability: a vessel is stable when its centre of gravity is below its metacentre.

Microswitch A small enclosed switch; microswitches are widely used in industrial applications involving repeated cycling, such as limit switches on motorized equipment.

Mimic Panel The portion of the ballast control console on which the layout of the pontoon tanks and piping system is represented.

Mobile Offshore Drilling Unit (MODU) A self-contained and movable platform or ship supporting a drilling system. This designation includes jack-ups, drillships, barges and semisubmersibles.

MODU Mobile Offshore Drilling Unit

Monkey Fist A heavy knot worked in at the end of a heaving line to weight it. A lead or iron weight is sometimes placed inside the knot before it is tightened.

Moonpool An opening through the hull of a semisubmersible, drillship or diving support vessel which allows equipment to be lowered to the seabed. The moonpool is normally located at the geometric centre to minimize the effects of vessel motion.

Mooring Lines A chain, cable or rope by which a vessel is secured to a dock or anchor.

Mooring Pattern An established system of setting anchors as determined by environmental factors and the requirements of a drilling program. Also, the physical position of the anchors of a vessel, as deployed at a drill site, is referred to as its mooring pattern.

Mooring System A system of ropes, wireropes or chains which are paid out from winches on board a vessel and attached to anchors used to secure the vessel in place.

Motion Compensator A pneumatic or hydraulic device on a floating drilling unit, which counteracts the effects of the vessel's motions on the drilling operation.

Muster List A list which identifies all crew members by job description, and details their emergency duties and the lifeboats to which they are assigned.

Nautical Mile (NM) The standard unit of measure for marine navigation; one nautical mile equals 6000 feet.

NHL Norwegian Hydrodynamic Laboratories

NORDCO Newfoundland Oceans Research and Development Corp.

NRC National Research Council of Canada

NST (Newfoundland Standard Time) A time zone which is 3½ hours earlier than Greenwich Mean Time (Zulu).

NTSB National Transportation Safety Board (U.S.)

ODECO Ocean Drilling & Exploration Company and its subsidiaries.

Offshore Employment Register A register, maintained by the Government of Newfoundland, of persons seeking employment in the offshore exploration industry.

On-Scene Commander A position assigned to an individual when a search and rescue mission will take place where communications may be a problem and on-site co-ordination is essential.

Operating Manual See Booklet of Operating Conditions.

Operator An oil company, often acting on behalf of a consortium of oil companies, that manages an offshore exploration or production program.

OSC on-scene commander

P.A. System Public address system; a means for making general announcements over a rig-wide system of loudspeakers, which may also provide a party-to-party telephone system and incorporate the general, fire and abandon ship alarms.

PEI Prince Edward Island

Phone Patch The process of electronically connecting a radio system to the public telephone system in order to allow two-way communication between a remote radio station and a telephone subscriber.

Photomicrograph A photograph taken at extremely high magnification through an optical or scanning electron microscope.

Pitch The bow/stern oscillation of a vessel.

Porthole A metal frame that contains a glass window, or portlight; portholes are fitted in the sides and superstructure of a vessel and may or may not be capable of opening.

PSI pounds per square inch

RCC Rescue Co-ordination Centre

RCMP Royal Canadian Mounted Police

RCV remotely controlled vehicle

Reinclining Test A test performed on a vessel, subsequent to the inclining test at the time of construction, if an unrecorded increase in weight is suspected. Inclining tests are administered by classification societies, and allow an accurate determination of a vessel's displacement and stability characteristics.

Remotely Controlled Vehicle (RCV) An unmanned submersible used to perform underwater tasks, such as photography, welding and the retrieval of objects, where the use of divers is impractical.

Rescue Co-ordination Centre (RCC) The place from which search and rescue efforts for a geographically defined Search and Rescue Region are co-ordinated and controlled. The Hibernia area is in the Halifax Search and Rescue Region.

Response Time The time elapsed before search and rescue resources are mobilized after an incident has been reported to a Rescue Co-ordination Centre or one of the sub-centres in its Search and Rescue Region.

Righting/Heeling Energy Ratios The relationship between those forces of weight and buoyancy which act to move a vessel towards the upright position and those which act to move the vessel away from the upright position.

Rime Icing Rime icing occurs when precipitation freezes on impact and builds up on a surface in a bumpy layer. It is opaque in color and different from freezing rain which results in a clear, smooth layer of ice.

Roll The port/starboard oscillation of a vessel.

Rotary Table The machinery fitted into the drill floor which rotates the drill string.

Rubbing Strake An external fender extending along the sides of a vessel a short distance above the waterline to protect against collision damage.

Samson Line A light, white line made out of two or three strands of hemp, usually manufactured in coils of 30 fathoms.

SAR Search and Rescue

SARCUP Search and Rescue Capability Update Program.

SAREC Search and Rescue Emergency Centre.

Scramble Net A net suspended from the side of a vessel to allow evacuation or boarding.

Sea Chest An intake in a vessel's side which permits taking on sea water for ballast or cooling.

Search and Rescue Capability Update Program (SARCUP) A Canadian Government plan undertaken to re-fit and upgrade SAR helicopters with equipment which increases their effectiveness.

Search and Rescue Emergency Centre (SAREC) A sub-centre within a Search and Rescue Region whose resources are co-ordinated by a Rescue Co-ordination Centre. Since 1983 these sub-centres have been called "Marine Rescue Sub Centres (MRSC)". St. John's SAREC is a sub-centre of RCC Halifax.

Seaworthiness The sufficiency of a vessel in materials, construction, equipment, crew and outfit for the trade or service in which it is employed. In U.S. law, a vessel is seaworthy if it is "reasonably adequate for the service in which it is engaged".

SEDCO Southeastern Drilling Company

Semisubmersible A column-stabilized, floating drilling platform with a buoyant substructure, part of which is beneath the surface of the water. Semisubmersibles are virtually self-contained, carrying supplies and personnel for drilling and completing wells in hundreds of feet of water.

Shear To cut the drill string with the shear rams in the blowout preventer in order to seal the bore completely and quickly against high well pressure, or to facilitate a rapid disconnect.

Single Side-band Radio (SSB) An internationally-adopted mode of radio communications. SSB refers to the suppression of one of the modulation side-bands or part of the carrier wave, resulting in a more efficient transmission while retaining quality.

Slip Joint The piston-like pipe joint at the top of a marine riser. The slip joint enables the rig to heave without damaging the riser.

SOLAS Safety of Life at Sea

Solenoid A solenoid is an electrical unit consisting of a coil of wire in the shape of a hollow cylinder and a moveable core. When energized by an electric current, the coil acts as a bar magnet, instantly drawing in the moveable core. Solenoids are used for electrically opening and closing quick-acting, plunger-type valves.

Solenoid Valve A valve operated electrically by use of an attached solenoid.

Sonar Survey An underwater survey using sound waves to identify the height and position of objects on the seabed.

SSB single side-band

Stability Report A daily report completed every morning by the ballast control operator listing fluid, ballast, anchor tensions, deckloads, weather conditions, and king gauge readings.

Steerage The minimum amount of forward movement that will enable a vessel to steer.

Stem The upright post or bar at the bow of a vessel.

SURPIC A graphic presentation of all ships known to be within a specified radius from a given point based on voluntary reporting by ships of their location to the U.S. Coast Guard at Governor's Island, New York.

Tank Level Gauge See King Gauge

Tasked A Search and Rescue resource is considered "tasked" when the appropriate Rescue Co-ordination Centre gives the order to participate in a search and rescue mission. Tasking can occur at the time of the alert or later, at the discretion of the RCC, depending on information available.

Tempered Glass Glass in which the breaking strength has been increased by a process of heating followed by rapid cooling in a liquid or air.

Thimble A round or heart shaped fitting around which an eye or loop may be spliced in hemp or wirerope. Its purpose is to protect the eye from the destructive effect of anything passing through it.

Time Line A graphic presentation of the unfolding of a search and rescue incident, depicting the first notice of the incident received by Search and Rescue through to the time when the operation ceases.

Transverse Running from port to starboard e.g., a transverse beam.

Travelling Block The moving portion of the hoisting equipment used to raise and lower the drill string.

Trim The inclination of a vessel to the bow or stern.

Tugger A small electrical, pneumatic or diesel powered winch used for routine hoisting operations. A number of these winches are located on a drilling unit's drill floor and in other areas to facilitate moving small loads. Also called a tugger winch.

Twenty-one Eighty-two See International Distress Frequency 2182 kHz.

Upwind The direction from which the wind is blowing.

USCG United States Coast Guard

Valve An automatic or manual device for controlling the passage of liquid or gas through pipe.

Valve Actuator A pneumatic or hydraulic piston which, when extended, opens an attached valve.

Vertical Centre of Gravity (VCG) If the total weight of a vessel and everything on board were concentrated in one single, imaginary point, this point would be termed the vessel's centre of gravity, and its location relative to the vessel's keel is identified as the vertical centre of gravity.

VFR visual flight rules

VHF very high frequency

VHF Radio A radio system using the very high frequency band between 30 and 300 megahertz.

Visual Flight Rules (VFR) The rules applying to aircraft operations during daylight hours under conditions of good visibility.

VON Call letters of the Canadian Coast Guard Radio Station, St. John's

Watertight Flat An internal, horizontal watertight divider or deck.

Weather Deck A vessel's exposed watertight main deck.

Well Control The practices and techniques used in balancing the pressures encountered in a well in order to prevent blowouts.

Wellhead The equipment installed on the seabed to maintain surface control of a well while giving access to the hole for the purpose of drilling and testing.

Wheelhouse A structure originally built on vessels over the steering wheel to protect the helmsman; now also used for navigational purposes, containing various control instruments.

Wirerope A rope made of metal wires twisted into strands and strands twisted into rope, often around a core of hemp or wire.

Work Vest A buoyant vest less cumbersome than a life preserver and worn by personnel working in an area of a vessel where there is a possibility of falling overboard.

Z Zulu or Greenwich Mean Time; international standard time based on the meridian of Greenwich, England. Reference to Zulu time in this report is expressed in terms of a 24-hour clock.

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