

Foreword

This document provides users of Canadian maritime safety data with an annual summary of selected statistics on marine occurrences. It covers commercial vessels, which include all vessels registered or licensed to operate commercially. Pleasure craft occurrences are not normally included unless they also involve a commercial vessel. Information in this summary is also posted on the Transportation Safety Board of Canada (TSB) web site at <http://www.tsb.gc.ca>.

Users of these statistics are advised that, in a live database, the occurrence data are constantly being updated. Consequently, the statistics can change slightly over time. Further, as many occurrences are not formally investigated, information recorded on some occurrences may not have been verified. Therefore, caution should be used when using these statistics. The 2004 statistics presented here reflect the TSB database updated as of 30 March 2005.

To enhance awareness and increase the safety value of the material presented in the *TSB Statistical Summary, Marine Occurrences 2004*, readers are encouraged to copy or reprint the data presented, in whole or in part, for further distribution (with acknowledgements of the source).

The TSB is an independent agency operating under its own Act of Parliament. Its sole aim is the advancement of transportation safety.

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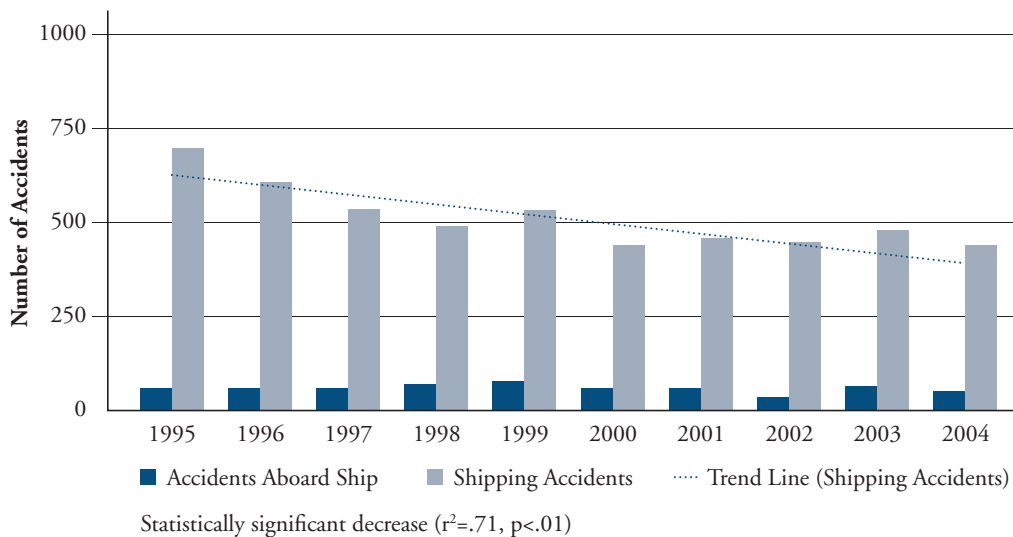
MARINE OCCURRENCES IN 2004

ACCIDENTS

Overview of Accidents and Casualties (Tables 1 and 8)

In 2004, 491 marine accidents were reported to the TSB, down from the 2003 total of 547 and the 1999–2003 average of 536. Over the past 10 years, 90% of marine accidents have been shipping accidents, while the remainder were accidents aboard ship (see Appendix B–Definitions).

Figure 1 – Accidents Aboard Ship and Shipping Accidents, 1995–2004



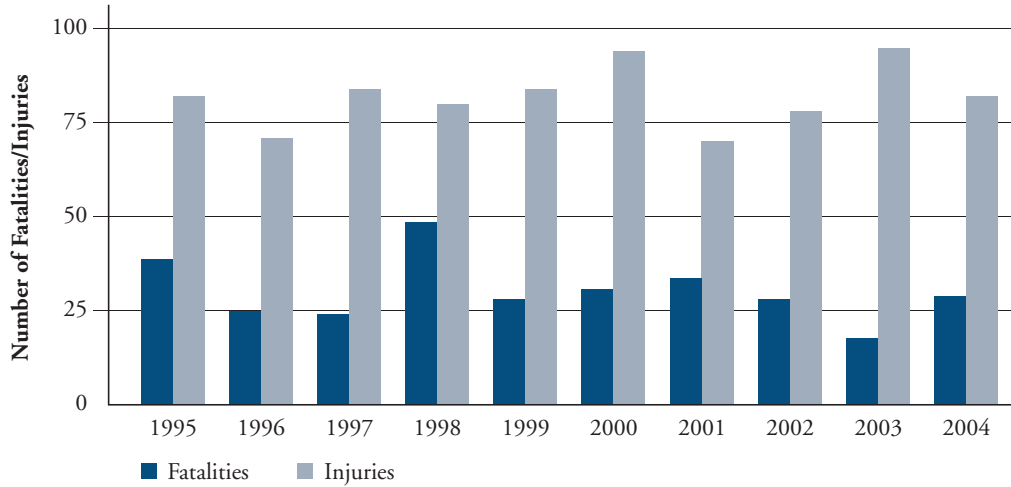
Shipping accidents reached a 29-year low of 441 in 2004, an 8% decrease from the 2003 total of 481 and a 7% decrease from the 1999–2003 average of 475. Statistical analysis using linear regression indicates that there has been a significant downward trend¹ in the number of shipping accidents since 1995 ($p<.01$) (Figure 1). In 2004, there were 50 accidents aboard ship, down from 66 in 2003 and the 1999–2003 average of 61. The majority of accidents aboard ship occurred on fishing (52%) and cargo/bulk carrier/OBO² (28%) vessels.

¹ It is agreed by convention that, for a result to be considered statistically significant, its probability must be lower than 1 in 20 (i.e. $p<.05$).

² Oil/bulk/ore carrier (OBO), see Appendix B

Marine-related fatalities totalled 28 in 2004 (Figure 2), up from 17 in 2003 but equal to the 1999–2003 average. This increase consisted mainly of a rise in shipping accident fatalities, which totalled 22 in 2004, up from a 29-year low of 9 in 2003 and the five-year average of 15. In all, 13 of these 22 fatalities resulted from fishing vessel accidents, 3 of which resulted in multiple fatalities. Injuries in 2004 numbered 81, down slightly from the 1999–2003 annual average of 84. Of these 81 injuries, 48 were serious and all but 4 were the result of accidents aboard ship.

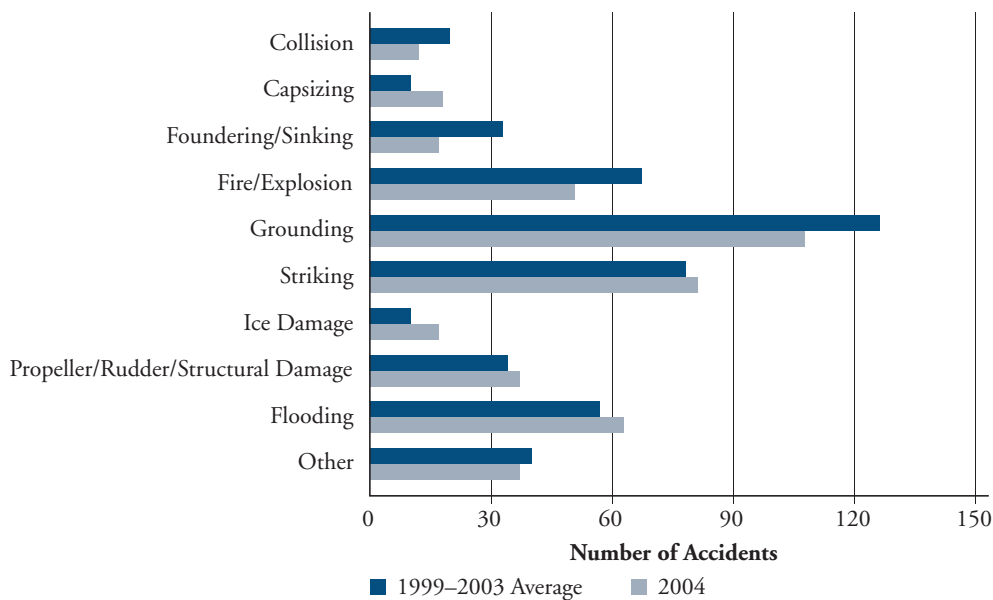
Figure 2–Marine Fatalities and Injuries, 1995–2004



Shipping Accidents

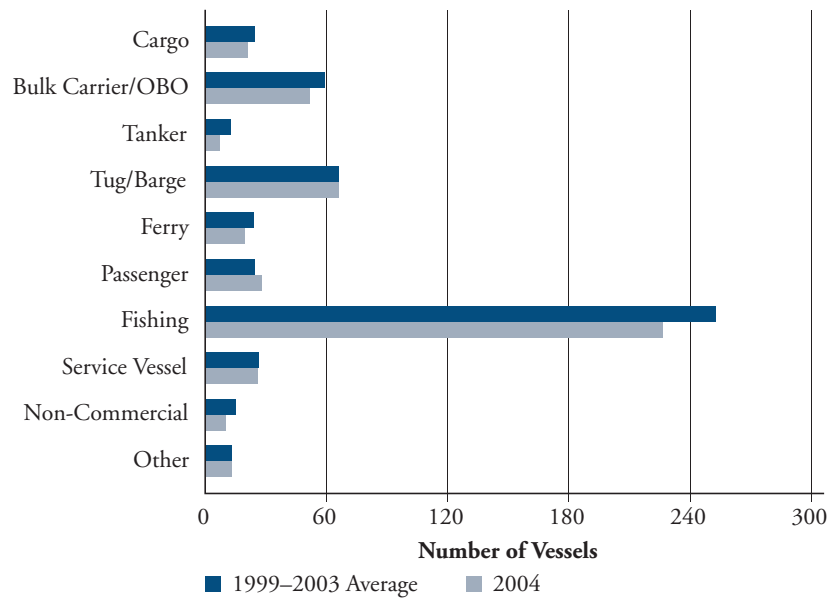
Type of Accidents (Table 1): As illustrated in Figure 3, the most frequent types of shipping accidents in 2004 were groundings (24%) and strikings (18%). Collisions, foundering/sinkings, fires/explosions and groundings showed a decrease from the five-year average, while capsizings and ice damage showed a considerable increase.

Figure 3–Shipping Accidents by Accident Type



Type of Vessels (Table 1): In 2004, there were 26 913 fishing vessels in Canada, representing 73% of all registered vessels excluding pleasure crafts (source: Transport Canada). Since 1995, approximately 50% of the vessels involved in shipping accidents have been fishing vessels. In 2004, there were 227 fishing vessels involved in shipping accidents (Figure 4), which represents a 13% decrease from the 2003 total of 260 and a 10% decrease from the 1999–2003 average of 252. After fishing vessels, tugs/barges (14%) and bulk carriers/OBO vessels (11%) were involved most often in shipping accidents. In 2004, there were 7 tankers involved in accidents, which represents a 53% decrease compared to 2003, and a 45% decrease from the five-year average of 13.

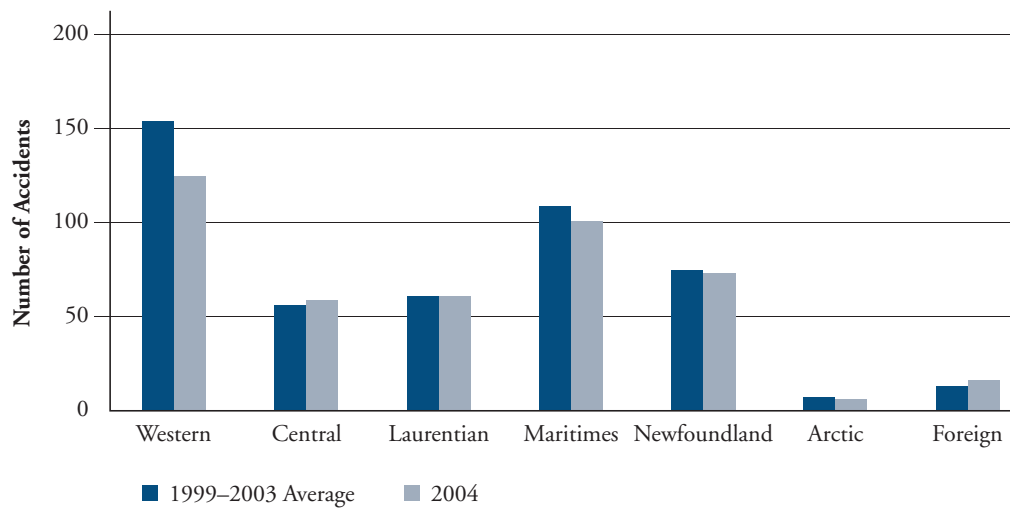
Figure 4—Shipping Accidents by Vessel Type



Geographical Region (Tables 2a and 2b): In 2004, over two-thirds of shipping accidents occurred in three of the seven geographical regions (Figure 5): the Western region (28%), the Maritimes region (23%) and the Newfoundland region (17%). Fishing vessel accidents dominated the accident record in these coastal waters. Compared to the 1999–2003 average, fishing vessels involved in shipping accidents showed a decrease in both the Western and Maritimes regions, reaching a 29-year low of 65 in the Western region. This decrease in the Western region may be due in part to a decline in the commercial fishing fleet in the Pacific region.³ The number of fishing vessels involved in shipping accidents in the Newfoundland region (64) is comparable to the 1999–2003 average (62).

The Laurentian and Central regions accounted for 14% and 13% of shipping accidents respectively; within narrower waterways, accidents most often involved larger commercial vessels such as cargo/bulk carrier/OBO vessels and tankers. The remaining 5% of shipping accidents took place in foreign waters or in the Arctic region.

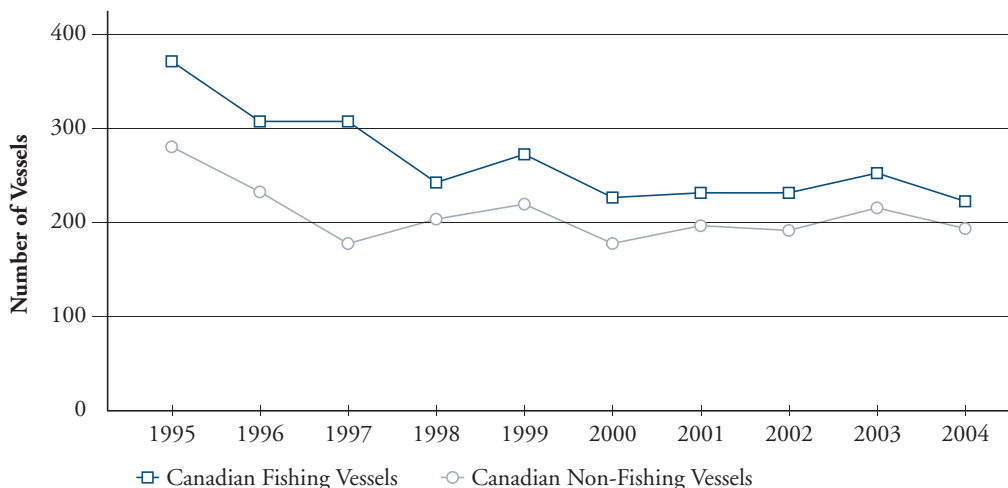
Figure 5–Shipping Accidents by Region



³ Fisheries and Oceans Canada, http://www.dfo-mpo.gc.ca/communic/statistics/commercial/licensing/pacific_info/pacfleet_e.htm

Vessel Flag (Tables 1, 3 and 4): In 2004, 89% of vessels involved in shipping accidents reported to the TSB were Canadian-flag vessels. In all, 53% of these were fishing vessels, 35% were commercial non-fishing vessels and the remaining 11% were non-commercial/pleasure craft or service vessels (Figure 6).

Figure 6—Canadian-Flag Vessels Involved in Shipping Accidents, 1995–2004



Over the past 10 years, Canadian-flag fishing vessels were involved mostly in groundings (30%), floodings (22%) or fires/explosions (13%). For the same period, Canadian-flag commercial non-fishing vessels were mostly involved in strikings (31%), groundings (22%) or fires/explosions (11%). Marine activity for Canadian commercial non-fishing vessels increased by 8% from the 1999–2003 average, resulting in a 3% decrease in the accident rate from 3.1 to 3.0 accidents per 1000 movements.

In 2004, 53 foreign-flag vessels were involved in shipping accidents in Canadian waters, 87% of which were commercial non-fishing vessels involved mainly in strikings (54%) or groundings (11%). Although marine activity for foreign commercial non-fishing vessels remained relatively unchanged compared to the 1999–2003 average, accidents decreased, yielding a 25% reduction in the accident rate from 1.9 to 1.4 accidents per 1000 movements.

Vessels Lost (Tables 1 and 6): In 2004, 21 vessels were reported lost, down from 38 in 2003 and the 1999–2003 average of 41. Of the vessels lost in 2004, 1 was a commercial non-fishing vessel and 18 were fishing vessels. Approximately half of vessels lost in 2004 were 15 tons or less in gross tonnage (grt),⁴ and 14% were 30 years old or more. During the past 10 years, small fishing vessels (less than 15 grt) have accounted for the largest proportion of vessels lost in Canada.

⁴ The majority of vessels classified under unknown tonnage were vessels of 15 tons or less in gross tonnage.

INCIDENTS

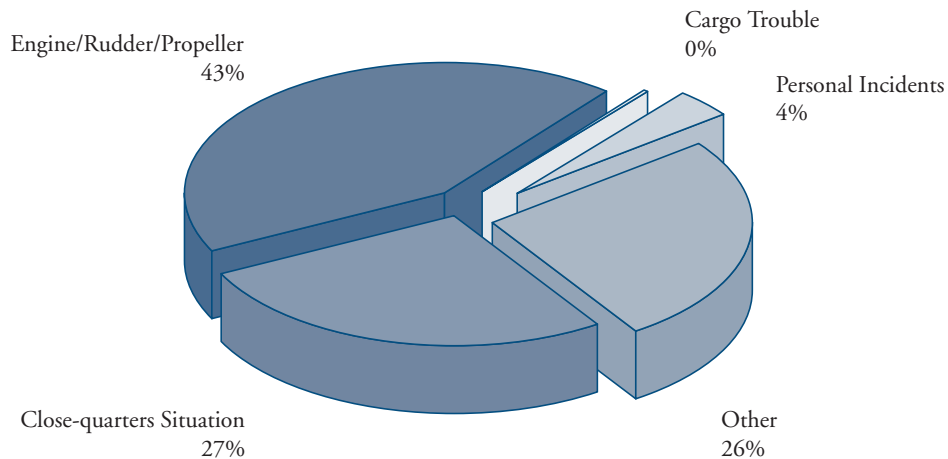
Overview of Incidents (Tables 1, 2a and 2b)

Pursuant to mandatory reporting requirements, 247 marine incidents were reported to the TSB in 2004, up from the 2003 total of 223 and the 1999–2003 average of 212. The majority of reportable incidents consisted of engine/rudder/propeller failures and close-quarters situations. The Western and Laurentian regions had the majority of close-quarters situations (49% and 33% respectively) and engine/rudder/propeller incidents (42% and 29% respectively).

Vessels most often involved in close-quarters situations over the past five years were non-commercial (26%) and fishing (19%) vessels. In the majority of these incidents, the other vessels involved were cargo/bulk carrier/OBO vessels, ferries, tugs and passenger vessels.

In 2004, West Coast incidents represented 40% of all marine incidents, slightly lower than the 1999–2003 proportion of 44%. The proportion of marine incidents that took place in other regions was as follows: Laurentian 27%, the Maritimes 11%, Central 10% and Newfoundland 8%. The remaining 4% of reported incidents took place in foreign waters or in the Arctic region.

Figure 7 – Marine Incidents by Type, 2004



APPENDIX A – MARINE OCCURRENCE TABLES

Table 1

**Total Marine Occurrences
Types, Vessels and Losses Involved
1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Shipping Accidents by Type	698	607	534	491	536	450	459	449	481	441
Collision	20	20	15	15	22	16	16	15	24	12
Capsizing	27	19	21	13	6	15	6	14	11	18
Foundering/Sinking	55	42	36	28	32	38	37	26	30	17
Fire/Explosion	85	98	73	65	70	64	84	53	65	51
Grounding	159	143	126	128	146	123	114	129	118	108
Striking	138	90	88	85	85	68	89	72	76	81
Ice Damage	15	22	23	11	10	6	4	2	28	17
Propeller/Rudder/Structural Damage	57	50	30	25	40	31	19	43	39	37
Flooding	79	61	69	69	65	51	70	52	49	63
Other	63	62	53	52	60	38	20	43	41	37
Accidents Aboard Ship	56	58	60	59	69	77	59	36	66	50
Vessels Involved in Shipping Accidents										
By Type of Vessel	779	657	576	534	581	492	507	483	526	470
Cargo	34	29	21	26	26	25	31	23	18	21
Bulk Carrier/OBO	123	98	61	68	73	59	58	57	48	52
Tanker	15	24	13	18	14	14	12	9	15	7
Tug	51	45	38	42	42	33	39	24	34	32
Barge	51	43	31	25	35	30	28	32	31	34
Ferry	27	22	17	23	22	26	24	21	25	20
Passenger	21	21	16	27	20	19	16	27	41	28
Fishing	389	322	319	251	280	238	246	238	260	227
Service Vessel	36	24	30	27	35	23	27	19	27	26
Non-Commercial	28	15	13	19	14	13	18	19	14	10
Other	4	14	17	8	20	12	8	14	13	13
By Vessel Flag	779	657	576	534	581	492	507	483	526	470
Canadian (Non-Fishing)	281	233	178	204	220	179	197	192	216	194
Canadian (Fishing)	372	308	308	243	273	227	232	232	253	223
Foreign	126	116	90	87	88	86	78	59	57	53
Vessels Lost by Gross Tonnage	82	60	60	49	45	37	51	32	38	21
1600 grt and over	2	0	0	1	1	0	1	2	2	0
150 to 1599 grt	3	1	5	2	3	2	3	1	2	0
60 to 149 grt	7	7	6	6	5	3	8	4	8	4
15 to 59 grt	25	22	16	14	7	13	15	7	12	7
Less than 15 grt	32	20	21	16	21	16	18	12	12	3
Unknown Tonnage	13	10	12	10	8	3	6	6	2	7
Fatalities	39	25	24	48	29	31	34	28	17	28
Shipping Accidents	28	12	12	38	14	16	17	19	9	22
Accidents Aboard Ship	11	13	12	10	15	15	17	9	8	6
Injuries	82	71	84	80	84	94	70	78	95	81
Shipping Accidents	35	22	25	22	23	23	18	42	35	37
Accidents Aboard Ship	47	49	59	58	61	71	52	36	60	44
Reportable Incidents by Type	199	132	155	165	178	248	239	174	223	247
Close-quarters Situation	67	36	36	38	34	57	60	29	60	67
Engine/Rudder/Propeller	73	39	64	66	74	105	99	57	83	106
Cargo Trouble	9	8	6	9	1	5	4	5	3	1
Personal Incidents	7	8	4	3	5	6	8	8	14	9
Other	43	41	45	49	64	75	68	75	63	64

Table 2a**Marine Occurrences by Region
Occurrences, Vessels and Losses Involved
1995–2004**Western Region
Central Region
Laurentian Region
Maritimes Region

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Western Region										
Shipping Accidents	247	208	183	196	168	166	158	139	141	125
Accidents Aboard Ship	11	15	18	14	18	32	29	15	19	15
Vessels Involved in Shipping Accidents										
By Type of Vessel	278	218	202	213	181	177	179	155	159	135
Cargo	4	3	6	5	4	3	8	2	5	3
Bulk Carrier/OBO	5	6	5	3	6	6	2	1	4	7
Tanker	0	0	2	2	1	0	0	0	0	0
Ferry/Passenger	13	14	12	14	10	18	15	19	26	19
Tug/Barge	44	43	29	44	40	44	39	32	31	31
Fishing	194	142	133	128	102	93	98	78	76	65
Other	18	10	15	17	18	13	17	23	17	10
Vessels Lost	37	30	20	25	19	14	22	13	11	5
Fatalities	14	8	7	6	10	10	12	10	4	8
Incidents	51	43	41	54	57	110	122	86	95	98
Central Region										
Shipping Accidents	105	79	59	64	54	46	68	57	53	59
Accidents Aboard Ship	3	5	5	8	5	7	3	3	2	7
Vessels Involved in Shipping Accidents										
By Type of Vessel	122	89	65	67	59	54	79	63	59	62
Cargo	7	5	3	2	1	5	5	6	2	11
Bulk Carrier/OBO	61	51	28	30	33	22	32	25	15	22
Tanker	2	6	3	3	4	6	6	2	4	1
Ferry/Passenger	11	4	5	13	7	7	13	13	14	7
Tug/Barge	18	12	14	10	8	3	11	12	15	10
Fishing	6	3	7	1	1	1	2	2	1	2
Other	17	8	5	8	5	10	10	3	8	9
Vessels Lost	1	0	3	0	1	0	0	2	0	0
Fatalities	8	1	0	1	2	2	9	10	2	4
Incidents	29	16	21	24	16	32	26	28	22	25
Laurentian Region										
Shipping Accidents	103	78	63	64	72	60	59	60	56	61
Accidents Aboard Ship	15	7	9	8	12	7	9	6	17	8
Vessels Involved in Shipping Accidents										
By Type of Vessel	117	91	66	73	78	66	63	62	60	65
Cargo	11	7	5	9	12	8	12	7	3	5
Bulk Carrier/OBO	42	26	19	23	20	21	12	21	19	17
Tanker	9	13	5	5	6	4	4	4	5	4
Ferry/Passenger	6	9	5	10	11	8	5	7	10	10
Tug/Barge	17	7	11	6	14	4	9	5	5	7
Fishing	19	17	15	12	9	14	13	13	13	15
Other	13	12	6	8	6	7	8	5	5	7
Vessels Lost	7	2	5	2	4	2	2	3	6	1
Fatalities	4	4	3	9	5	1	2	2	2	4
Incidents	70	39	48	53	29	51	39	23	50	67
Maritimes Region										
Shipping Accidents	151	143	107	87	118	85	90	121	129	101
Accidents Aboard Ship	14	11	9	12	17	10	10	5	13	8
Vessels Involved in Shipping Accidents										
By Type of Vessel	163	155	114	95	128	95	97	128	138	108
Cargo	7	10	6	5	5	3	4	3	3	0
Bulk Carrier/OBO	2	4	1	3	0	0	0	2	1	0
Tanker	2	4	2	3	0	2	0	2	3	0
Ferry/Passenger	9	10	9	7	6	5	3	5	11	7
Tug/Barge	16	14	7	5	8	3	4	3	6	4
Fishing	121	100	77	59	92	73	75	96	99	80
Other	6	13	12	13	17	9	11	17	15	17
Vessels Lost	31	17	16	8	11	10	12	12	14	9
Fatalities	4	8	7	8	9	4	6	1	7	8
Incidents	36	15	19	17	35	35	33	26	35	28

Table 2b**Marine Occurrences by Region
Occurrences, Vessels and Losses Involved
1995–2004**Newfoundland Region
Arctic Region
Foreign Waters

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Newfoundland Region										
Shipping Accidents	67	70	105	59	94	73	69	58	80	73
Accidents Aboard Ship	6	14	15	11	11	20	5	5	9	10
Vessels Involved in Shipping Accidents										
By Type of Vessel	72	72	110	59	101	76	72	60	86	73
Cargo	3	2	1	2	3	2	1	3	0	1
Bulk Carrier/OBO	0	0	1	1	2	1	2	2	3	1
Tanker	1	0	1	3	2	2	1	1	0	0
Ferry/Passenger	7	2	1	3	5	5	4	4	5	5
Tug/Barge	3	2	3	0	3	3	0	0	2	2
Fishing	48	58	84	48	76	56	58	48	71	64
Other	10	8	19	2	10	7	6	2	5	0
Vessels Lost	6	10	15	13	10	9	15	1	7	6
Fatalities	6	3	7	24	1	9	4	5	0	3
Incidents	11	12	24	12	33	15	12	5	17	19
Arctic Region										
Shipping Accidents	10	14	2	5	15	8	4	2	7	6
Accidents Aboard Ship	2	3	0	2	3	0	0	0	5	1
Vessels Involved in Shipping Accidents										
By Type of Vessel	10	14	2	5	17	8	4	2	7	8
Cargo	0	1	0	2	1	3	1	0	3	0
Bulk Carrier/OBO	2	4	0	0	2	2	2	0	0	0
Tanker	1	1	0	0	0	0	0	0	1	1
Ferry/Passenger	2	3	1	1	3	1	0	0	0	0
Tug/Barge	0	2	0	0	2	0	1	2	0	2
Fishing	1	1	1	0	0	1	0	0	0	0
Other	4	2	0	2	9	1	0	0	3	5
Vessels Lost	0	0	0	0	0	2	0	1	0	0
Fatalities	0	0	0	0	0	4	0	0	2	1
Incidents	1	2	0	1	1	2	1	1	1	5
Foreign Waters										
Shipping Accidents	15	15	15	16	15	12	11	12	15	16
Accidents Aboard Ship	5	3	4	4	3	1	3	2	1	1
Vessels Involved in Shipping Accidents										
By Type of Vessel	17	18	17	22	17	16	13	13	17	19
Cargo	2	1	0	1	0	1	0	2	2	1
Bulk Carrier/OBO	11	7	7	8	10	7	8	6	6	5
Tanker	0	0	0	2	1	0	1	0	2	1
Ferry/Passenger	0	1	0	2	0	1	0	0	0	0
Tug/Barge	4	8	5	2	2	6	3	2	6	10
Fishing	0	1	2	3	0	0	0	1	0	1
Other	0	0	3	4	4	1	1	2	1	1
Vessels Lost	0	1	1	1	0	0	0	0	0	0
Fatalities	3	1	0	0	2	1	1	0	0	0
Incidents	1	5	2	4	7	3	6	5	3	5

Table 3**Canadian-Flag Vessels Involved in Shipping Accidents by Vessel Category and Type of Accident (Including Commercial Accident Rate) 1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Commercial Vessels	214	184	127	156	157	135	146	142	165	148
Collision	12	20	9	13	11	7	8	8	20	8
Capsizing	8	8	8	2	2	6	1	3	7	4
Foundering/Sinking	13	15	5	13	8	9	14	11	6	3
Fire/Explosion	14	28	19	17	16	17	15	14	20	17
Grounding	32	28	26	43	40	32	31	41	35	32
Striking	94	41	33	32	40	36	43	37	44	46
Ice Damage	3	5	4	2	3	1	2	0	4	2
Propeller/Rudder/Structural Damage	9	7	4	1	4	2	7	9	8	11
Flooding	4	9	4	12	4	9	7	5	4	9
Other	25	23	15	21	29	16	18	14	17	16
Movements*	40 959	32 510	35 193	35 596	31 215	37 881	34 611	37 358	38 144	38 728
Accident Rate**	4.0	4.6	3.1	2.9	4.3	2.7	3.3	2.8	2.8	3.0
Fishing Vessels	372	308	308	243	273	227	232	232	253	223
Collision	17	8	12	8	21	15	11	19	15	7
Capsizing	14	9	10	8	3	5	3	5	5	8
Foundering/Sinking	40	27	27	12	22	23	21	11	19	11
Fire/Explosion	54	52	48	33	37	32	57	28	38	28
Grounding	99	88	73	63	74	71	60	70	67	67
Striking	24	12	23	30	15	8	12	12	15	8
Ice Damage	8	14	17	9	6	3	2	1	21	14
Propeller/Rudder/Structural Damage	28	36	25	13	30	20	7	29	24	20
Flooding	69	51	58	52	55	42	56	41	39	50
Other	19	11	15	15	10	8	3	16	10	10
Other Vessels	67	49	51	48	63	44	51	50	51	46
Collision	3	7	6	3	9	3	7	3	7	6
Capsizing	4	6	1	3	1	4	0	6	0	4
Foundering/Sinking	4	2	2	2	1	6	3	3	5	2
Fire/Explosion	9	11	4	6	10	8	8	7	7	4
Grounding	5	4	9	8	13	5	9	5	8	3
Striking	26	11	10	11	12	12	18	14	13	7
Ice Damage	0	0	2	0	0	0	0	0	2	0
Propeller/Rudder/Structural Damage	3	1	1	3	2	1	1	1	1	2
Flooding	4	1	4	2	3	0	4	3	2	3
Other	9	6	12	10	12	5	1	8	6	15
Total	653	541	486	447	493	406	429	424	469	417

* Based on data from Transport Canada. Note that 2004 data are estimates.

** The accident rate is the number of Canadian-flag commercial vessels of 15 grt or more (excluding passenger vessels, passenger ferries and fishing vessels) involved in shipping accidents per 1000 vessel movements.

Table 4**Foreign-Flag Vessels Involved in Shipping Accidents by Vessel Category and Type of Accident (Including Commercial Accident Rate) 1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Commercial Vessels	108	98	70	73	75	71	62	51	47	46
Collision	6	5	3	3	2	5	5	1	5	3
Capsizing	1	0	3	0	0	0	0	0	0	2
Foundering/Sinking	0	0	1	1	0	0	0	0	0	0
Fire/Explosion	4	7	5	7	6	6	6	4	0	2
Grounding	19	15	14	16	16	12	14	12	8	5
Striking	36	38	27	27	31	27	29	19	18	25
Ice Damage	4	3	0	0	1	2	0	1	1	1
Propeller/Rudder/Structural Damage	18	6	0	8	4	7	4	4	5	4
Flooding	1	0	2	2	2	0	1	2	2	0
Other	19	24	15	9	13	12	3	8	8	4
Movements*	27 894	28 245	29 170	29 660	29 479	30 190	29 186	28 747	28 567	28 704
Accident Rate**	3.4	3.2	2.2	2.4	2.4	2.1	1.9	1.7	1.5	1.4
Fishing Vessels	17	14	11	8	7	11	14	6	7	4
Collision	1	0	0	1	0	1	1	0	1	0
Capsizing	1	0	0	0	0	0	1	0	0	0
Foundering/Sinking	0	0	1	0	1	0	1	0	0	1
Fire/Explosion	4	1	1	2	0	1	1	0	1	0
Grounding	7	12	6	2	3	5	3	4	1	1
Striking	2	0	1	2	2	1	4	1	0	1
Ice Damage	0	0	0	0	0	0	0	0	0	0
Propeller/Rudder/Structural Damage	0	0	0	0	0	1	0	0	1	0
Flooding	1	0	1	1	1	0	2	1	2	1
Other	1	1	1	0	0	2	1	0	1	0
Other Vessels	1	4	9	6	6	4	2	2	3	3
Collision	0	0	0	0	1	1	0	0	1	0
Capsizing	0	0	0	0	0	0	1	0	0	0
Foundering/Sinking	0	0	0	0	0	0	1	1	0	0
Fire/Explosion	0	0	1	0	1	0	0	0	0	0
Grounding	0	1	0	1	2	1	0	0	1	2
Striking	1	0	5	4	0	1	0	0	0	0
Ice Damage	0	0	0	0	0	0	0	0	0	0
Propeller/Rudder/Structural Damage	0	0	0	0	0	0	0	0	0	0
Flooding	0	0	0	0	0	0	0	0	0	0
Other	0	3	3	1	2	1	0	1	1	1
Total	126	116	90	87	88	86	78	59	57	53

* Based on data from Transport Canada. Note that 2004 data are estimates.

** The accident rate is the number of foreign-flag commercial vessels of 15 grt or more (excluding passenger vessels, passenger ferries and fishing vessels) involved in shipping accidents per 1000 vessel movements.

Table 5**Masters, Skippers and Operators Involved in Shipping Accidents
by Vessel Flag and Crew Qualification
1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Canadian-Flag Vessels										
Commercial Vessels	214	184	127	156	157	135	146	142	165	148
Master Foreign-Going	13	22	15	13	11	8	13	12	12	15
ON1	12	15	10	16	10	13	8	12	9	8
ON2	0	1	1	0	0	1	0	0	0	1
CN1	5	10	9	16	2	4	6	11	14	8
CN2	4	7	8	9	8	4	6	1	2	8
Master–Ferry	0	0	1	2	1	2	1	3	4	1
Watchkeeping Mate	5	13	7	10	12	7	6	8	11	9
Other	11	18	15	17	38	24	24	29	22	29
Unknown	159	98	60	71	74	72	80	66	89	66
No certificate	5	0	1	2	1	0	2	0	2	3
Fishing Vessels	372	308	308	243	273	227	232	232	253	223
Fishing Master–Class 1	1	0	1	3	2	3	4	2	3	1
Fishing Master–Class 2	1	6	10	1	3	3	3	8	3	4
Fishing Master–Class 3	5	17	15	8	10	11	9	17	16	8
Fishing Master–Class 4	12	20	18	9	13	12	22	19	19	19
Fishing–Other certificate	5	3	2	1	0	5	1	4	5	2
Watchkeeping Mate	2	3	1	1	0	1	4	3	1	2
Other	2	3	5	0	2	2	1	1	0	1
Unknown	300	223	240	198	238	182	160	126	154	148
No certificate	44	33	16	22	5	8	28	52	52	38
Other Vessels	67	49	51	48	63	44	51	50	51	46
Master Foreign-Going	1	3	5	3	13	4	10	9	7	6
ON1	6	9	7	4	3	5	1	2	4	4
ON2	0	0	1	1	1	0	1	0	1	1
CN1	0	0	1	1	1	1	2	0	0	0
CN2	2	1	1	0	0	0	1	0	0	3
Watchkeeping Mate	2	6	7	5	0	4	8	6	2	6
Other	8	7	11	12	14	7	4	5	10	10
Unknown	48	23	17	20	30	23	24	26	27	16
No certificate	0	0	1	2	1	0	0	2	0	0
Foreign-Flag Vessels										
Commercial Vessels	108	98	70	73	75	71	62	51	47	46
Master Foreign-Going	35	39	31	38	36	46	33	26	17	18
CN1	0	0	0	1	0	0	0	0	0	0
CN2	0	2	1	0	0	1	0	1	0	0
Other	5	15	17	9	6	3	2	0	0	0
Unknown	68	42	21	25	33	21	27	24	30	28
Fishing Vessels	17	14	11	8	7	11	14	6	7	4
Certificate	0	0	1	1	0	4	2	1	2	1
Unknown	13	12	10	7	7	7	12	5	5	3
No certificate	4	2	0	0	0	0	0	0	0	0
Other Vessels	1	4	9	6	6	4	2	2	3	3
Master Foreign-Going	0	0	0	0	1	0	0	0	0	0
Other	0	3	4	1	0	0	0	0	0	0
Unknown	1	1	4	5	4	4	2	2	3	3
No certificate	0	0	1	0	1	0	0	0	0	0

Table 6**Vessels Lost by Vessel Category and Age
1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Commercial Vessels	7	7	7	8	5	4	7	8	4	1
Unknown	1	0	0	0	1	0	0	4	2	0
0–4 years	0	0	0	0	1	0	1	1	0	0
5–9 years	0	0	0	1	0	0	1	0	0	0
10–14 years	0	0	0	0	0	0	0	0	0	0
15–19 years	0	0	1	0	0	0	0	0	0	0
20–24 years	0	0	0	0	1	1	1	0	0	0
25–29 years	1	1	0	2	0	0	0	0	0	0
30+ years	5	6	6	5	2	3	4	3	2	1
Fishing Vessels	72	52	51	41	39	30	44	20	32	18
Unknown	10	5	11	8	4	4	7	4	2	5
0–4 years	3	4	0	2	1	0	2	0	2	2
5–9 years	10	4	6	6	3	4	1	4	2	2
10–14 years	6	4	4	3	5	6	9	3	4	0
15–19 years	11	11	10	5	7	4	3	1	5	3
20–24 years	5	8	5	4	5	4	7	2	5	3
25–29 years	7	3	3	5	2	2	2	3	5	1
30+ years	20	13	12	8	12	6	13	3	7	2
Other Vessels	3	1	2	0	1	3	0	4	2	2
Unknown	1	0	1	0	0	2	0	1	1	2
0–4 years	0	1	0	0	0	0	0	0	0	0
5–9 years	0	0	0	0	0	0	0	0	0	0
10–14 years	0	0	0	0	1	0	0	0	0	0
15–19 years	0	0	1	0	0	0	0	0	0	0
20–24 years	0	0	0	0	0	0	0	0	0	0
25–29 years	0	0	0	0	0	1	0	0	0	0
30+ years	2	0	0	0	0	0	0	3	1	0
All Vessels	82	60	60	49	45	37	51	32	38	21
Unknown	12	5	12	8	5	6	7	9	5	7
0–4 years	3	5	0	2	2	0	3	1	2	2
5–9 years	10	4	6	7	3	4	2	4	2	2
10–14 years	6	4	4	3	6	6	9	3	4	0
15–19 years	11	11	12	5	7	4	3	1	5	3
20–24 years	5	8	5	4	6	5	8	2	5	3
25–29 years	8	4	3	7	2	3	2	3	5	1
30+ years	27	19	18	13	14	9	17	9	10	3

Table 7**Accidents, Fatalities and Injuries by Type of Accident
1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Shipping Accidents with Fatalities or Injuries										
Collision	1	1	1	2	3	1	2	4	2	1
Capsizing	11	4	6	5	2	6	3	4	3	7
Sinking/Foundering	6	5	0	5	4	7	5	3	2	6
Fire/Explosion	6	2	4	1	2	1	2	5	4	2
Grounding	2	2	3	0	3	2	2	4	2	0
Striking	3	2	6	1	2	3	4	4	5	2
Other	1	1	1	2	4	2	1	1	1	3
Total	30	17	21	16	20	22	19	25	19	21
Fatalities*										
Collision	0	0	1	2	5	2	1	0	1	2
Capsizing	8	5	8	6	2	6	3	10	5	9
Sinking/Foundering	14	7	0	28	5	7	10	7	2	7
Fire/Explosion	0	0	3	0	1	0	0	1	1	0
Grounding	0	0	0	0	0	0	0	1	0	0
Striking	3	0	0	0	1	1	0	0	0	0
Other	3	0	0	2	0	0	3	0	0	4
Total	28	12	12	38	14	16	17	19	9	22
Injuries										
Collision	2	1	0	0	3	0	1	4	1	2
Capsizing	11	7	2	5	0	5	1	0	2	7
Sinking/Foundering	5	3	0	14	5	5	6	4	2	4
Fire/Explosion	9	4	4	1	1	3	2	7	4	6
Grounding	4	2	4	0	3	3	3	10	3	0
Striking	4	2	12	1	4	5	5	16	22	15
Other	0	3	3	1	7	2	0	1	1	3
Total	35	22	25	22	23	23	18	42	35	37
Accidents Aboard Ship										
Fatalities*	56	58	60	59	69	77	59	36	66	50
Carried Overboard	0	1	0	0	0	1	2	0	3	0
Caught by Cargo/Machinery	2	2	3	1	5	1	3	1	2	1
Fell Overboard	6	5	4	4	6	7	8	3	2	2
Fell into Tank/Hold	1	1	0	0	1	0	0	0	0	0
Fell on Deck or off Quay	1	0	0	2	0	0	2	0	0	0
Heavy Weather	0	0	0	0	0	0	0	0	0	0
Suicide (Suspected)	1	0	0	1	0	1	0	0	1	1
Other	0	4	5	2	3	5	2	5	0	2
Total	11	13	12	10	15	15	17	9	8	6
Injuries										
Carried Overboard	2	1	2	1	0	1	3	2	2	2
Caught by Cargo/Machinery	15	18	28	24	17	33	16	11	25	16
Fell Overboard	3	2	3	3	5	4	2	2	1	1
Fell into Tank/Hold	1	0	1	2	3	2	1	1	3	0
Fell on Deck or off Quay	9	8	10	4	9	12	8	7	9	4
Heavy Weather	1	3	1	2	0	0	2	0	2	1
Suicide (Suspected)	0	0	0	1	0	0	0	0	0	0
Other	16	17	14	21	27	19	20	13	18	20
Total	47	49	59	58	61	71	52	36	60	44

* The total number of fatalities includes missing persons.

Table 8**Accidents, Fatalities and Injuries by Type of Vessel
1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Shipping Accidents with Fatalities or Injuries										
Cargo/Bulk Carrier/OBO	1	0	0	1	1	1	1	0	0	0
Tanker	2	0	1	0	0	0	0	0	0	0
Tug/Barge	5	3	2	1	2	5	3	2	0	2
Fishing	16	10	10	10	10	9	10	13	11	10
Passenger	0	2	1	1	1	1	0	2	3	1
Ferry	0	0	3	0	0	1	0	2	4	2
Other	6	2	4	3	6	5	5	6	1	6
Total	30	17	21	16	20	22	19	25	19	21
Fatalities*										
Cargo/Bulk Carrier/OBO	0	0	0	21	1	4	0	0	0	0
Tanker	0	0	2	0	0	0	0	0	0	0
Tug/Barge	4	2	0	0	0	1	4	1	0	3
Fishing	15	10	9	14	7	5	10	9	8	13
Passenger	0	0	0	2	0	2	0	4	0	0
Ferry	0	0	0	0	0	0	0	0	0	0
Other	9	0	1	1	6	4	3	5	1	6
Total	28	12	12	38	14	16	17	19	9	22
Injuries										
Cargo/Bulk Carrier/OBO	3	0	0	4	0	0	2	0	0	0
Tanker	3	0	2	0	0	0	0	0	0	0
Tug/Barge	5	5	4	2	4	7	2	5	0	0
Fishing	13	11	4	11	10	7	10	18	10	8
Passenger	0	2	1	2	3	0	0	1	8	10
Ferry	0	0	8	0	0	1	0	14	17	7
Other	11	4	6	3	6	8	4	4	0	12
Total	35	22	25	22	23	23	18	42	35	37
Accidents Aboard Ship										
Cargo/Bulk Carrier/OBO	17	13	13	16	14	15	16	9	16	14
Tanker	2	2	1	1	2	2	3	0	3	1
Tug/Barge	3	2	3	7	3	3	7	4	4	3
Fishing	19	29	27	19	28	34	23	13	27	26
Passenger	2	1	5	6	6	5	2	2	0	0
Ferry	3	2	3	1	2	4	0	4	4	3
Other	10	9	8	9	14	14	8	4	12	3
Total	56	58	60	59	69	77	59	36	66	50
Fatalities*										
Cargo/Bulk Carrier/OBO	5	4	1	3	4	3	3	1	0	1
Tanker	1	1	0	0	0	0	1	0	0	0
Tug/Barge	1	0	0	1	1	2	4	0	2	0
Fishing	2	7	7	4	8	8	8	5	4	3
Passenger	0	0	2	1	0	1	0	0	0	0
Ferry	1	1	0	0	1	1	0	1	2	1
Other	1	0	2	1	1	0	1	2	0	1
Total	11	13	12	10	15	15	17	9	8	6
Injuries										
Cargo/Bulk Carrier/OBO	12	9	13	19	10	15	14	9	18	13
Tanker	1	4	1	1	2	2	2	0	3	1
Tug/Barge	2	2	12	6	2	3	8	5	2	3
Fishing	17	22	20	16	25	29	16	14	23	23
Passenger	3	2	3	7	8	4	3	2	0	0
Ferry	3	1	4	1	1	4	0	4	2	2
Other	9	9	6	8	13	14	9	2	12	2
Total	47	49	59	58	61	71	52	36	60	44

* The total number of fatalities includes missing persons.

APPENDIX B – DEFINITIONS

The following definitions apply to marine occurrences that are required to be reported pursuant to the *Canadian Transportation Accident Investigation and Safety Board Act* and the associated Regulations.

Marine Occurrence

- a) any accident or incident associated with the operation of a ship⁵ and
- b) any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described in paragraph (a).

The Act applies:

- a) in Canada; and
- b) in any other place, including waters described in (c), if
 - i) Canada is requested to investigate the marine occurrence by an appropriate authority,
 - ii) the marine occurrence involves a ship registered or licensed in Canada, or
 - iii) a competent witness to, or person having information concerning a matter that may have contributed to, the marine occurrence arrives or is found at any place in Canada.
- c) This Act also applies in respect of marine occurrences related to an activity concerning the exploration or exploitation of the continental shelf.

Reportable Marine Accident

An accident resulting directly from the operation of a ship other than a pleasure craft,⁶ where:

- a) a person sustains a serious injury or is killed as a result of:
 - i) being on board the ship or falling overboard from the ship, or
 - ii) coming into contact with any part of the ship or its contents, or
- b) the ship:
 - i) sinks, founders or capsizes,
 - ii) is involved in a collision (which includes collisions, strikings and contacts),
 - iii) sustains a fire or an explosion,
 - iv) goes aground,
 - v) sustains damage that affects its seaworthiness or renders it unfit for its purpose, or
 - vi) is missing or abandoned.

For statistical purposes, accidents defined in paragraph (a) are classified as “Accidents Aboard Ship” and accidents defined in paragraph (b) are classified as “Shipping Accidents.”

Reportable Marine Incident

An incident resulting directly from the operation of a ship, other than a pleasure craft, where:

- a) a person falls overboard from the ship;
- b) the ship, of 100 gross tons or more, unintentionally makes contact with the bottom without going aground;
- c) the ship fouls a utility cable or pipe, or underwater pipeline;
- d) the ship is involved in a risk of collision;
- e) the ship sustains a total failure of any machinery;
- f) the ship sustains a shifting of cargo or a loss of cargo overboard;
- g) the ship is intentionally grounded or beached to avoid an accident;
- h) any crew member whose duties are directly related to the safe operation of the ship is unable to perform the crew member’s duties as a result of a physical incapacitation that poses a threat to the safety of any person, property or the environment; or
- i) any dangerous goods are released on board or from the ship.

⁵ Ship includes:

- a) every description of vessel, boat or craft designed, used or capable of being used solely or partly for marine navigation without regard to method or lack of propulsion, and
- b) a dynamically supported craft.

⁶ Pleasure craft means a ship that is used for pleasure or recreation and does not carry goods or passengers for hire or reward.

Vessels Covered

This report covers commercial vessels that include all vessels either registered or licensed to operate commercially. Pleasure craft occurrences are not normally included unless they also involved a commercial vessel.

Vessel Categories

- **Commercial vessels:** include cargo vessels, ferries, tankers, passenger vessels, tugs and barges.
- **Fishing vessels:** include vessels involved in commercial fishing.
- **Other vessels:** include research vessels, oil exploration, exploitation and support vessels, government vessels and pleasure craft.

Type of Vessel

Cargo: Ship designed for the carriage of various types and forms of cargo and the combined carriage of general cargo and passengers with 12 or less fare-paying passengers.

Bulk carrier: Ships specifically designed for bulk carriage of ore or other dry cargo.

OBO (oil/bulk/ore carrier): Ships specifically designed for bulk carriage of ore with additional facilities for alternative, but not simultaneous, carriage of oil or loose dry cargo.

Tanker: Propelled ships designed and constructed for the bulk carriage of liquids.

Tug: Vessels designed for the towing and pushing of ships or other floating structures. Additional activity may include salvage, fire-fighting and work duties of a general nature.

Barge: Vessels designed as non-propelled units for the carriage of cargo in holds or in tanks or weather deck cargo space only for the carriage of non-perishable cargo, or specially outfitted for specific operations.

Ferry: Ships that follow a regular scheduled service of relatively short duration, designed for the carriage of passengers and vehicles. There is usually no cabin accommodation for passengers or not all passengers are accommodated in cabins where cabins are provided.

Passenger: Vessels designed for the carriage of passengers.

Fishing: Vessels designed for fishing operations and support.

Service: Vessels designed for supporting marine transportation such as icebreakers, buoy tenders, Search and Rescue vessels, pilot boats and fireboats.

Non-commercial: Vessels designed to conduct non-commercial activities such as pleasure craft, seaplanes and naval vessels.

Other: Vessels designed for other functions such as laying and repair of sea-bed cables, dredging, training, patrolling as well as ships and platforms designed for the extraction, processing, and storage of oil/gas from offshore wells; ships designed for the carriage of stores and cargo to offshore installations; ships outfitted for support activities related to offshore oil and gas exploration; and vessels designed for research work such as seismic research, oceanic and hydrographic survey.

Type of Accident

Collision: An impact between two or more vessels under way.

Capsizing: To turn over.

Foundering: To fill from above the waterline and sink.

Sinking: To become submerged from water intake below the waterline and settle to the bottom.

Fire: Where a fire is the first event reported.

Explosion: Where an explosion is the first event reported.

Grounding: To touch bottom and remain stranded.

Striking: A hard impact with a stationary object or a vessel not under way.

Ice damage: Damage sustained as a consequence of contact with ice.

Propeller damage: Damage to a vessel propeller, propeller portion or propeller adjoining parts affecting a vessel's seaworthiness or rendering the vessel unfit for its purpose.

Rudder damage: Damage to a vessel rudder or rudder adjoining parts affecting a vessel's seaworthiness or rendering the vessel unfit for its purpose.

Structural damage: Hull damage, such as cracks and fractures, sustained by a vessel affecting its seaworthiness or rendering the vessel unfit for its purpose.

Flooding: To fill a compartment below the waterline with water admitted from the sea.

Other: Vessels lost or damaged for other reasons, including contact defined as a lateral/light impact with another vessel or an object (i.e. bottom contact affecting a vessel's seaworthiness or rendering the vessel unfit for its purpose).

Miscellaneous

Gross tons (grt): A measure of vessel capacity in cubic feet of the spaces within the hull, and of enclosed spaces above deck available for cargo, stores, fuel, passengers and crew, with certain exclusions. One hundred cubic feet is equivalent to one gross ton.

Movement: A vessel's travel segment between ports with at least one port being a domestic port.

Under way: Vessel not at anchor or made fast to shore or aground.

APPENDIX C – REGIONAL LIMITS

