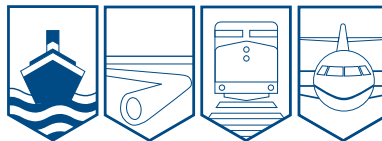
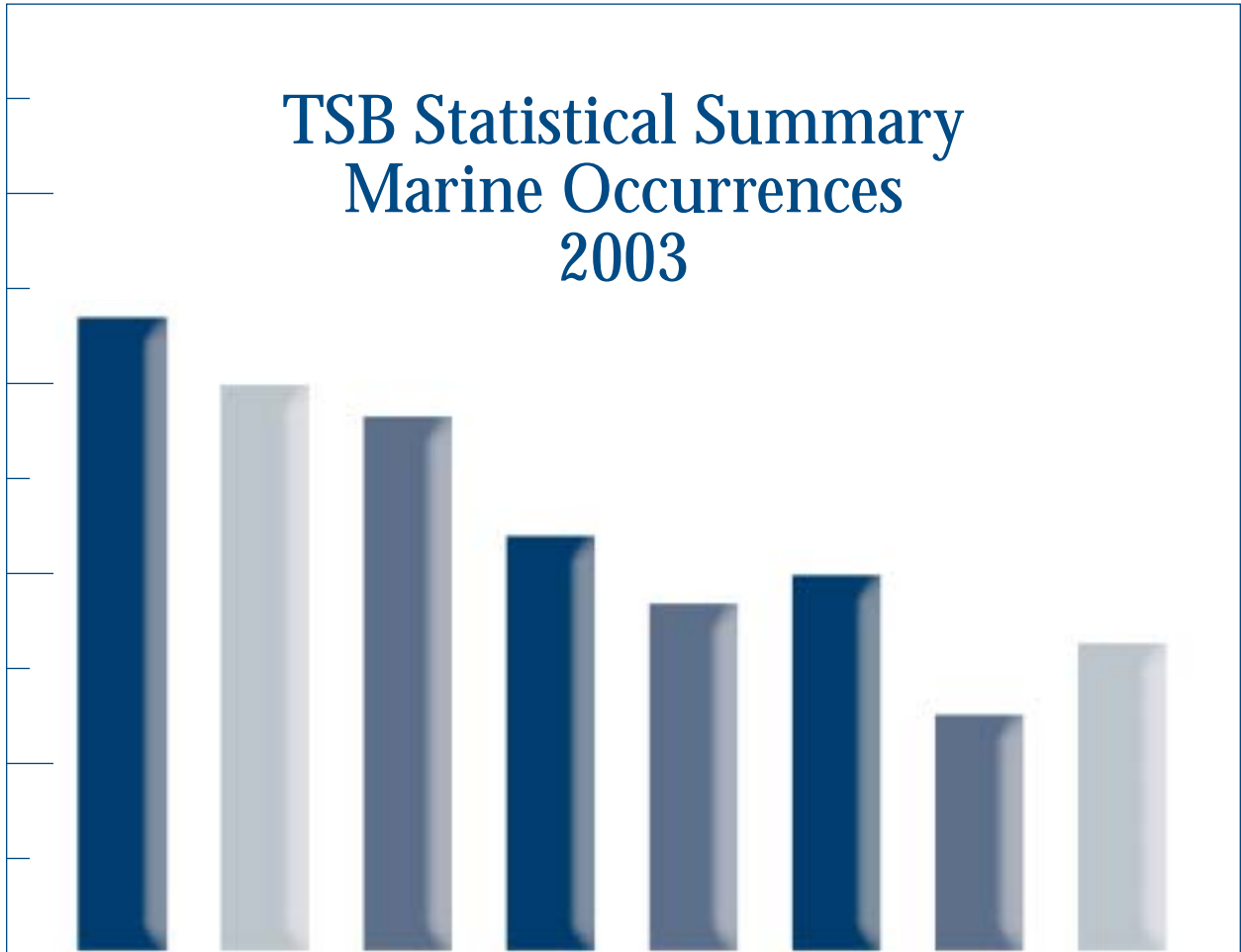




TSB Statistical Summary Marine Occurrences 2003



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) Internet site at 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 utilizing these statistics. The 2003 statistics presented here reflect the TSB database updated as of 15 March 2004.

To enhance awareness and increase the safety value of the material presented in the *TSB Statistical Summary, Marine Occurrences 2003*, 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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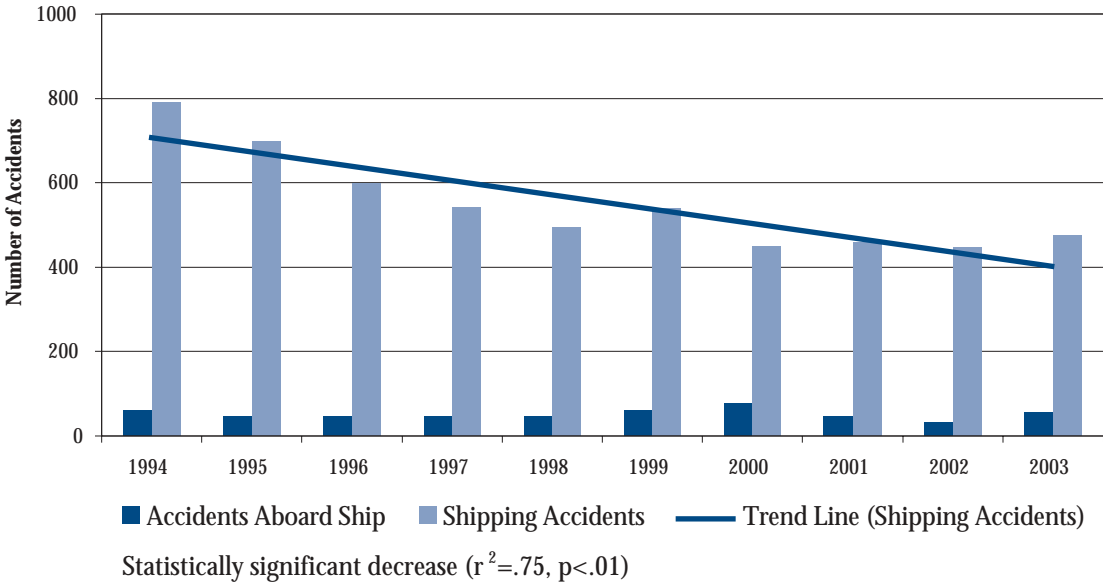
MARINE OCCURRENCES IN 2003

ACCIDENTS

Overview of Accidents and Casualties (Tables 1 and 8 - Appendix A)

In 2003, 546 marine accidents were reported to the TSB, up from the 2002 total of 485 and the 1998-2002 average of 537. 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, 1994-2003



Shipping accidents totalled 481 in 2003, a 7% increase from the 2002 total of 449 but comparable to the 1998-2002 average of 477. Notwithstanding this increase, statistical analysis using linear regression indicates there has been a significant downward trend¹ in the number of shipping accidents since 1994 ($p<.01$) (Figure 1). In 2003, there were 65 accidents aboard ship, compared to 36 in 2002 and the 1998-2002 average of 60. The majority of accidents aboard ship occurred on fishing (42%) and cargo/OBO² (25%) vessels.

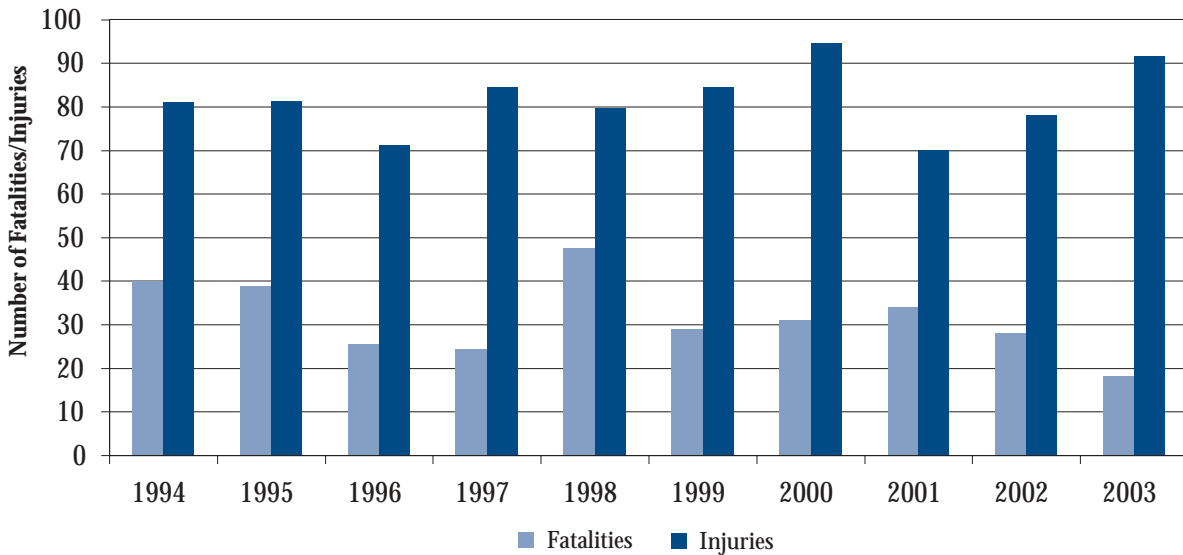
¹ It is agreed by convention that for a result to be considered statistically significant, its probability must be lower than 1 in 20 (i.e., $p<.05$).

² Oil/Bulk/Ore Carrier (OBO). See Appendix B.



Marine-related fatalities reached a 27-year low of 18 in 2003 (Figure 2), down from the 1998-2002 average of 34. Fatalities resulting from shipping accidents (nine) showed a 57% decrease from the 1998-2002 average of 21. Eight of these nine fatalities resulted from fishing vessel accidents, two of which resulted in multiple fatalities. Injuries in 2003 numbered 91, up from the 1998-2002 average of 81. Of these 91 injuries, 60 were serious and all but two were the result of accidents aboard ship.

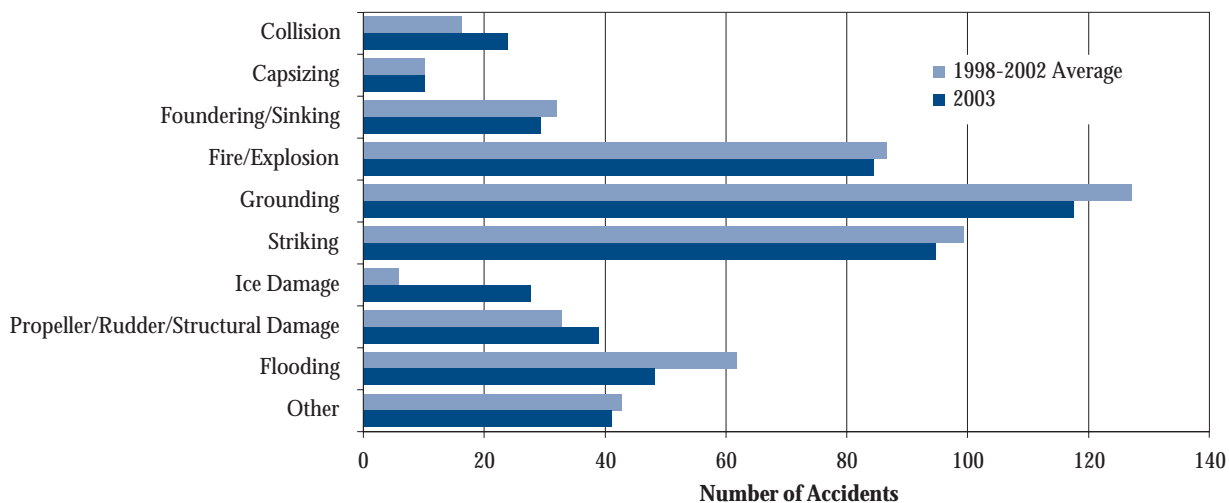
Figure 2 - Marine Fatalities and Injuries, 1994-2003



Shipping Accidents

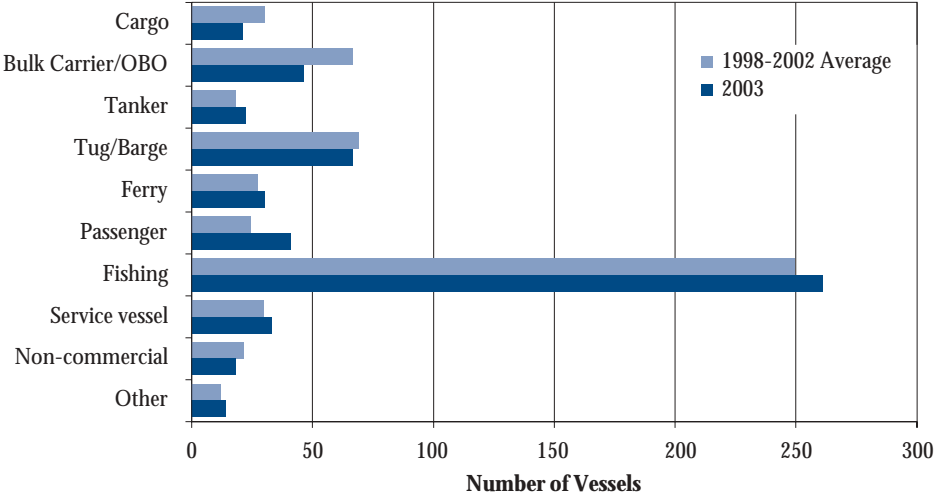
Type of Accidents (Table 1): As illustrated in Figure 3, the most frequent types of shipping accidents in 2003 were groundings (25%) and striking (16%). Compared to the five-year average, accidents due to ice damage increased from seven to 28 in 2003. Of these 28, 21 involved fishing vessels in the Newfoundland region, 18 of which were involved in sealing activities. As 2003 was an exceptionally heavy ice year, sealers made more requests for assistance due to ice damage to their vessels in 2003 than in the past. Collisions totalled 24 in 2003, up from the 1998-2002 average of 17. Forty-four percent of vessels involved in collisions over the past five years were fishing vessels, most of which collided with another fishing vessel.

Figure 3 - Shipping Accidents by Accident Type



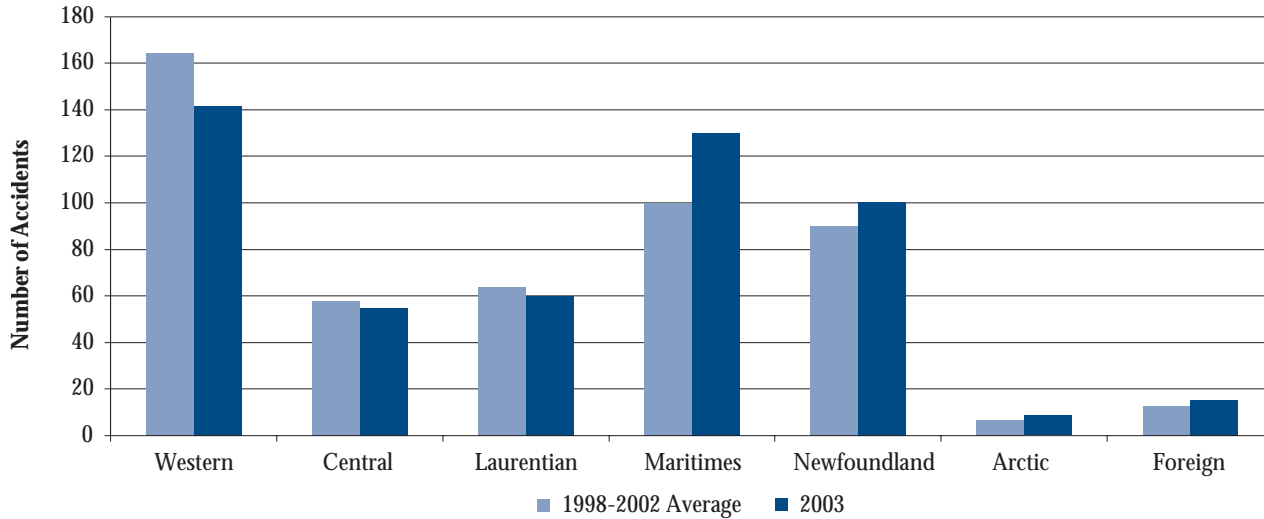
Type of Vessels (Table 1): In 2004, there were 20,221 fishing vessels in Canada, representing 74% of all registered vessels excluding pleasure crafts (source: Transport Canada). Since 1994, approximately 50% of the vessels involved in shipping accidents have been fishing vessels. In 2003, there were 260 fishing vessels involved in shipping accidents (Figure 4), which represents a 9% increase compared to 2002 and a 4% increase from the 1998-2002 average of 251. After fishing vessels, tugs/barges (12%) and bulk carriers/OBO vessels (9%) were involved most often in shipping accidents. The number of passenger vessels involved in shipping accidents is at a 29-year high of 41, up from 26 in 2002 and the 1998-2002 average of 22. However, none of these accidents were fatal. The majority of these passenger vessel accidents involved groundings (32%) and strikings (29%). In 2003, there were 18 cargo vessels involved in accidents, which represents a 22% decrease compared to 2002, and a 31% decrease from the five-year average of 26.

Figure 4 - Shipping Accidents by Vessel Type



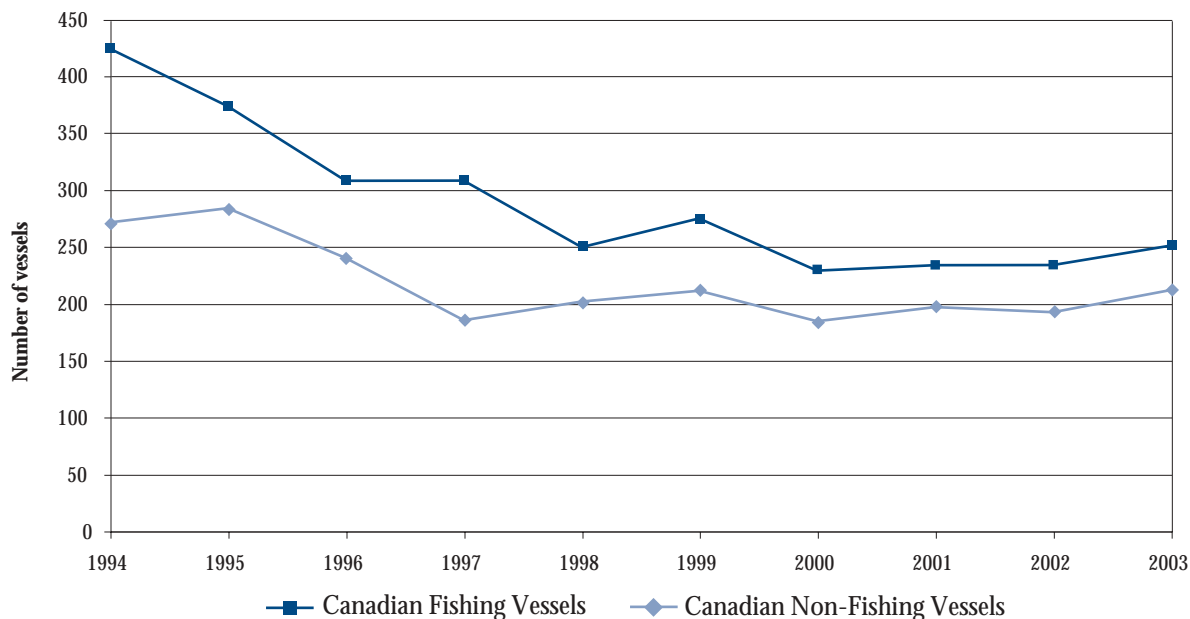
Geographical Region (Tables 2a and 2b): In 2003, almost three-quarters of shipping accidents occurred in three of the seven geographical regions (Figure 5): the Western region (29%), the Maritimes region (27%) and the Newfoundland region (17%). Fishing vessel accidents dominated the accident record in these coastal waters. Only the Maritimes and Newfoundland regions showed an increase in shipping accidents compared to the 1998-2002 average, from 100 to 129 and 71 to 80 respectively. This increase is mainly accounted for by a rise in the number of fishing vessels involved in shipping accidents in these two regions. The Laurentian and Central regions accounted for 12% and 11% of shipping accidents respectively; within narrower waterways, accidents most often involved larger commercial vessels such as cargo/OBO vessels and tankers. The remaining 4% of shipping accidents took place in foreign waters or in the Arctic region.

Figure 5 - Shipping Accidents by Region



Vessel Flag (Tables 1, 3 and 4): In 2003, 89% of vessels involved in shipping accidents reported to the TSB were Canadian-flag vessels. Fifty-four percent 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, 1994-2003



Over the past 10 years, Canadian-flag fishing vessels were involved mostly in groundings (27%), floodings (19%) or fires/explosions (15%). For the same period, Canadian-flag commercial non-fishing vessels were mostly involved in strikings (28%), groundings (21%) or fires/explosions (11%). Marine activity for Canadian commercial non-fishing vessels increased by 10% from the 1998-2002 average, resulting in a 16% decrease in the accident rate from 3.2 to 2.7 accidents per 1000 movements.

In 2003, 57 foreign-flag vessels were involved in shipping accidents in Canadian waters, 82% of which were commercial non-fishing vessels involved mainly in strikings (38%) or groundings (17%). Although marine activity for foreign commercial non-fishing vessels remained relatively unchanged compared to the 1998-2002 average, accidents decreased yielding a 33% reduction in the accident rate from 2.1 to 1.4 accidents per 1000 movements.

Vessels Lost (Tables 1 and 6): In 2003, 34 vessels were reported lost, up from 32 in 2002, but lower than the 1998-2002 average of 43. Of the vessels lost in 2003, three were commercial vessels, 28 were fishing vessels, and three were pleasure crafts. Approximately one-third of vessels lost in 2003 were 15 tons or less in gross tonnage (grt)³, and one-quarter 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.

³ The majority of vessels classified under unknown tonnage were vessels of 15 tons or less in gross tonnage.

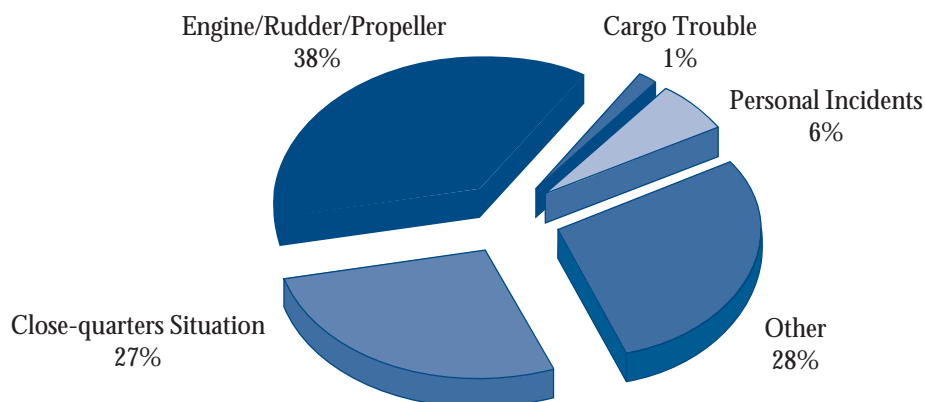
INCIDENTS

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

Pursuant to mandatory reporting requirements, 221 marine incidents were reported to the TSB in 2003, up from the 2002 total of 174 and the 1998-2002 average of 201. This increase is due in part to the higher number of close-quarters situations which totalled 60 in 2003, up from 29 in 2002 and the 1998-2002 average of 44. Two-thirds of close-quarters situations in 2003 took place in the Western region, up slightly from the 1998-2002 average proportion of 58%. Vessels most often involved in close-quarters situations over the past five years were non-commercial (23%) and fishing (19%) vessels. In the majority of these incidents, the other vessels involved were cargo/OBOs, ferries, tugs and passenger vessels.

In 2003, West Coast incidents represented 43% of all marine incidents, equal to the 1998-2002 average. The proportion of marine incidents which took place in other regions was as follows: Central 10%, the Maritimes 15%, Laurentian 22% and Newfoundland 8%. The remaining 2% of reported incidents took place in foreign waters or in the Arctic region.

Figure 7 - Marine Incidents by Type, 2003



APPENDIX A - MARINE OCCURRENCE TABLES

Table 1

Total Marine Occurrences
Types, Vessels and Losses Involved
1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Shipping Accidents by Type	796	698	607	534	491	536	450	459	449	481
Collision	40	20	20	15	15	22	16	16	15	24
Capsizing	18	27	19	21	13	6	15	6	14	11
Foundering/Sinking	56	55	42	36	28	32	38	37	26	30
Fire/Explosion	91	85	98	73	65	70	64	84	53	65
Grounding	176	159	143	126	128	146	123	114	129	118
Striking	112	138	90	88	85	85	68	89	72	76
Ice damage	30	15	22	23	11	10	6	4	2	28
Propeller/Rudder/Structural damage	89	57	50	30	25	40	31	19	43	39
Flooding	94	79	61	69	69	65	51	70	52	49
Other	90	63	62	53	52	60	38	20	43	41
Accidents Aboard Ship	67	56	58	60	59	69	77	59	36	65
Vessels Involved in Shipping Accidents										
By Type of Vessel	881	779	657	576	534	581	492	507	483	526
Cargo	48	34	29	21	26	26	25	31	23	18
Bulk carrier/OBO	141	123	98	61	68	73	59	58	57	48
Tanker	26	15	24	13	18	14	14	12	9	15
Tug	57	51	45	38	42	42	33	39	24	34
Barge	42	51	43	31	25	35	30	28	32	30
Ferry	28	27	22	17	23	22	26	24	21	25
Passenger	17	21	21	16	27	20	19	16	26	41
Fishing	444	389	322	319	251	280	238	246	238	260
Service vessel	44	36	24	30	27	35	23	27	19	27
Non-commercial	23	28	15	13	19	14	13	18	20	15
Other	11	4	14	17	8	20	12	8	14	13
By Vessel Flag	881	779	657	576	534	581	492	507	483	526
Canadian (Non-fishing)	272	281	233	178	204	220	179	197	192	216
Canadian (Fishing)	423	372	308	308	243	273	227	232	232	253
Foreign	186	126	116	90	87	88	86	78	59	57
Vessels Lost by Gross Tonnage	88	82	60	60	49	45	37	51	32	34
1600 grt and over	0	2	0	0	1	1	0	1	2	2
150 to 1599 grt	2	3	1	5	2	3	2	3	1	2
60 to 149 grt	7	7	7	6	6	5	3	8	4	7
15 to 59 grt	20	25	22	16	14	7	13	15	7	11
Less than 15 grt	35	32	20	21	16	21	16	18	12	10
Unknown tonnage	24	13	10	12	10	8	3	6	6	2
Fatalities	40	39	25	24	48	29	31	34	28	18
Shipping Accidents	28	28	12	12	38	14	16	17	19	9
Accidents Aboard Ship	12	11	13	12	10	15	15	17	9	9
Injuries	81	82	71	84	80	84	94	70	78	91
Shipping Accidents	22	35	22	25	22	23	23	18	42	32
Accidents Aboard Ship	59	47	49	59	58	61	71	52	36	59
Reportable Incidents by Type	228	199	132	155	165	178	248	239	174	221
Close-quarters situation	79	67	36	36	38	34	57	60	29	60
Engine/Rudder/Propeller	82	73	39	64	66	74	105	99	57	82
Cargo trouble	7	9	8	6	9	1	5	4	5	3
Personal incidents	6	7	8	4	3	5	6	8	8	14
Other	54	43	41	45	49	64	75	68	75	62



Table 2a
Marine Occurrences by Region
Occurrences, Vessels and Losses Involved
1994-2003

Western Region
 Central Region
 Laurentian Region
 Maritimes Region

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Western Region										
Shipping Accidents	299	247	208	183	196	168	166	158	139	141
Accidents Aboard Ship	20	11	15	18	14	18	32	29	15	19
Vessels Involved in Shipping Accidents										
By Type of Vessel	346	278	218	202	213	181	177	179	155	159
Cargo/OBO/Tanker	18	9	9	13	10	11	9	10	3	9
Ferry/Passenger	15	13	14	12	14	10	18	15	18	26
Tug/Barge	58	44	43	29	44	40	44	39	32	30
Fishing	234	194	142	133	128	102	93	98	78	76
Other	21	18	10	15	17	18	13	17	24	18
Vessels Lost	41	37	30	20	25	19	14	22	13	9
Fatalities	19	14	8	7	6	10	10	12	10	4
Incidents	69	51	43	41	54	57	110	122	86	95
Central Region										
Shipping Accidents	85	105	79	59	64	54	46	68	57	53
Accidents Aboard Ship	4	3	5	5	8	5	7	3	3	2
Vessels Involved in Shipping Accidents										
By Type of Vessel	91	122	89	65	67	59	54	79	63	59
Cargo/OBO/Tanker	62	70	62	34	35	38	33	43	33	21
Ferry/Passenger	7	11	4	5	13	7	7	13	13	14
Tug/Barge	8	18	12	14	10	8	3	11	12	15
Fishing	6	6	3	7	1	1	1	2	2	1
Other	8	17	8	5	8	5	10	10	3	8
Vessels Lost	2	1	0	3	0	1	0	0	2	0
Fatalities	4	8	1	0	1	2	2	9	10	2
Incidents	26	29	16	21	24	16	32	26	28	22
Laurentian Region										
Shipping Accidents	155	103	78	63	64	72	60	59	60	56
Accidents Aboard Ship	20	15	7	9	8	12	7	9	6	17
Vessels Involved in Shipping Accidents										
By Type of Vessel	168	117	91	66	73	78	66	63	62	60
Cargo/OBO/Tanker	85	62	46	29	37	38	33	28	32	27
Ferry/Passenger	11	6	9	5	10	11	8	5	7	10
Tug/Barge	16	17	7	11	6	14	4	9	5	5
Fishing	34	19	17	15	12	9	14	13	13	13
Other	22	13	12	6	8	6	7	8	5	5
Vessels Lost	6	7	2	5	2	4	2	2	3	6
Fatalities	0	4	4	3	9	5	1	2	2	2
Incidents	79	70	39	48	53	29	51	39	23	49
Maritimes Region										
Shipping Accidents	175	151	143	107	87	118	85	90	121	129
Accidents Aboard Ship	12	14	11	9	12	17	10	10	5	13
Vessels Involved in Shipping Accidents										
By Type of Vessel	191	163	155	114	95	128	95	97	128	138
Cargo/OBO/Tanker	27	11	18	9	11	5	5	4	7	7
Ferry/Passenger	9	9	10	9	7	6	5	3	5	11
Tug/Barge	13	16	14	7	5	8	3	4	3	6
Fishing	124	121	100	77	59	92	73	75	96	99
Other	18	6	13	12	13	17	9	11	17	15
Vessels Lost	28	31	17	16	8	11	10	12	12	12
Fatalities	2	4	8	7	8	9	4	6	1	7
Incidents	31	36	15	19	17	35	35	33	26	34



Table 2b

Marine Occurrences by Region Occurrences, Vessels and Losses Involved 1994-2003

Newfoundland Region
Arctic Region
Foreign Waters

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Newfoundland Region										
Shipping Accidents	61	67	70	105	59	94	73	69	58	80
Accidents Aboard Ship	10	6	14	15	11	11	20	5	5	9
Vessels Involved in Shipping Accidents										
By Type of Vessel	62	72	72	110	59	101	76	72	60	86
Cargo/OBO/Tanker	8	4	2	3	6	7	5	4	6	3
Ferry/Passenger	3	7	2	1	3	5	5	4	4	5
Tug/Barge	3	3	2	3	0	3	3	0	0	2
Fishing	42	48	58	84	48	76	56	58	48	71
Other	6	10	8	19	2	10	7	6	2	5
Vessels Lost	9	6	10	15	13	10	9	15	1	7
Fatalities	7	6	3	7	24	1	9	4	5	0
Incidents	16	11	12	24	12	33	15	12	5	17
Arctic Region										
Shipping Accidents	9	10	14	2	5	15	8	4	2	7
Accidents Aboard Ship	1	2	3	0	2	3	0	0	0	4
Vessels Involved in Shipping Accidents										
By Type of Vessel	9	10	14	2	5	17	8	4	2	7
Cargo/OBO/Tanker	5	3	6	0	2	3	5	3	0	4
Ferry/Passenger	0	2	3	1	1	3	1	0	0	0
Tug/Barge	0	0	2	0	0	2	0	1	2	0
Fishing	2	1	1	1	0	0	1	0	0	0
Other	2	4	2	0	2	9	1	0	0	3
Vessels Lost	1	0	0	0	0	0	2	0	1	0
Fatalities	8	0	0	0	0	0	4	0	0	3
Incidents	5	1	2	0	1	1	2	1	1	1
Foreign Waters										
Shipping Accidents	12	15	15	15	16	15	12	11	12	15
Accidents Aboard Ship	0	5	3	4	4	3	1	3	2	1
Vessels Involved in Shipping Accidents										
By Type of Vessel	14	17	18	17	22	17	16	13	13	17
Cargo/OBO/Tanker	10	13	8	7	11	11	8	9	8	10
Ferry/Passenger	0	0	1	0	2	0	1	0	0	0
Tug/Barge	1	4	8	5	2	2	6	3	2	6
Fishing	2	0	1	2	3	0	0	0	1	0
Other	1	0	0	3	4	4	1	1	2	1
Vessels Lost	1	0	1	1	1	0	0	0	0	0
Fatalities	0	3	1	0	0	2	1	1	0	0
Incidents	2	1	5	2	4	7	3	6	5	3



Table 3

Canadian-flag Vessels Involved in Shipping Accidents by Vessel Category and Type of Accident (including Commercial Accident Rate) 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Commercial Vessels	202	214	184	127	156	157	135	146	141	164
Collision	13	12	20	9	13	11	7	8	8	20
Capsizing	5	8	8	8	2	2	6	1	3	7
Foundering/Sinking	18	13	15	5	13	8	9	14	11	5
Fire/Explosion	16	14	28	19	17	16	17	15	14	20
Grounding	33	32	28	26	43	40	32	31	40	35
Striking	49	94	41	33	32	40	36	43	37	44
Ice damage	9	3	5	4	2	3	1	2	0	4
Propeller/Rudder/Structural damage	12	9	7	4	1	4	2	7	9	8
Flooding	10	4	9	4	12	4	9	7	5	4
Other	37	25	23	15	21	29	16	18	14	17
Movements *	32 728	40 959	32 510	35 193	35 596	31 215	37 881	34 611	37 280	38 726
Accident Rate **	5.2	4.0	4.6	3.1	2.9	4.3	2.7	3.3	2.8	2.7
Fishing Vessels	423	372	308	308	243	273	227	232	232	253
Collision	38	17	8	12	8	21	15	11	19	15
Capsizing	7	14	9	10	8	3	5	3	5	5
Foundering/Sinking	36	40	27	27	12	22	23	21	11	19
Fire/Explosion	62	54	52	48	33	37	32	57	28	38
Grounding	110	99	88	73	63	74	71	60	70	67
Striking	35	24	12	23	30	15	8	12	12	15
Ice damage	10	8	14	17	9	6	3	2	1	21
Propeller/Rudder/Structural damage	27	28	36	25	13	30	20	7	29	24
Flooding	77	69	51	58	52	55	42	56	41	39
Other	21	19	11	15	15	10	8	3	16	10
Other Vessels	70	67	49	51	48	63	44	51	51	52
Collision	10	3	7	6	3	9	3	7	3	7
Capsizing	5	4	6	1	3	1	4	0	6	0
Foundering/Sinking	4	4	2	2	2	1	6	3	3	6
Fire/Explosion	11	9	11	4	6	10	8	8	7	7
Grounding	14	5	4	9	8	13	5	9	6	8
Striking	8	26	11	10	11	12	12	18	14	13
Ice damage	1	0	0	2	0	0	0	0	0	2
Propeller/Rudder/Structural damage	5	3	1	1	3	2	1	1	1	1
Flooding	2	4	1	4	2	3	0	4	3	2
Other	10	9	6	12	10	12	5	1	8	6
Total	695	653	541	486	447	493	406	429	424	469

* Based on data from Transport Canada. Note that 2003 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) 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Commercial Vessels	157	108	98	70	73	75	71	62	51	47
Collision	11	6	5	3	3	2	5	5	1	5
Capsizing	0	1	0	3	0	0	0	0	0	0
Foundering/Sinking	1	0	0	1	1	0	0	0	0	0
Fire/Explosion	4	4	7	5	7	6	6	6	4	0
Grounding	18	19	15	14	16	16	12	14	12	8
Striking	37	36	38	27	27	31	27	29	19	18
Ice damage	10	4	3	0	0	1	2	0	1	1
Propeller/Rudder/Structural damage	44	18	6	0	8	4	7	4	4	5
Flooding	2	1	0	2	2	2	0	1	2	2
Other	30	19	24	15	9	13	12	3	8	8
Movements *	24 763	27 894	28 245	29 170	29 660	29 479	30 190	29 186	28 821	29 755
Accident Rate **	6.3	3.4	3.2	2.2	2.4	2.4	2.1	1.9	1.7	1.4
Fishing Vessels	21	17	14	11	8	7	11	14	6	7
Collision	4	1	0	0	1	0	1	1	0	1
Capsizing	2	1	0	0	0	0	0	1	0	0
Foundering/Sinking	0	0	0	1	0	1	0	1	0	0
Fire/Explosion	1	4	1	1	2	0	1	1	0	1
Grounding	6	7	12	6	2	3	5	3	4	1
Striking	1	2	0	1	2	2	1	4	1	0
Ice damage	0	0	0	0	0	0	0	0	0	0
Propeller/Rudder/Structural damage	1	0	0	0	0	0	1	0	0	1
Flooding	3	1	0	1	1	1	0	2	1	2
Other	3	1	1	1	0	0	2	1	0	1
Other Vessels	8	1	4	9	6	6	4	2	2	3
Collision	2	0	0	0	0	1	1	0	0	1
Capsizing	0	0	0	0	0	0	0	1	0	0
Foundering/Sinking	0	0	0	0	0	0	0	1	1	0
Fire/Explosion	0	0	0	1	0	1	0	0	0	0
Grounding	3	0	1	0	1	2	1	0	0	1
Striking	2	1	0	5	4	0	1	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	1	0	3	3	1	2	1	0	1	1
Total	186	126	116	90	87	88	86	78	59	57

* Based on data from Transport Canada. Note that 2003 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 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Canadian-Flag Vessels										
Commercial Vessels	230	242	205	155	177	177	156	153	160	190
Master Foreign-Going	21	14	24	19	15	15	8	13	14	13
ON1	11	12	16	15	19	10	16	8	13	13
ON2	2	3	1	1	0	0	1	0	0	0
CN1	12	6	10	9	16	2	4	6	11	14
CN2	35	7	7	8	10	12	6	6	1	3
Master - Ferry	2	0	0	1	2	1	2	1	3	4
Watchkeeping mate	9	12	13	20	18	18	15	8	20	17
Other	34	16	25	22	17	44	25	28	33	33
Unknown	33	4	16	12	11	12	9	15	14	25
No certificate	2	7	2	1	2	1	0	2	0	1
No record on master	69	161	91	47	67	62	70	66	51	67
Fishing Vessels	423	362	308	308	244	275	227	228	230	252
Fishing Master - Class 1	3	1	0	1	3	2	3	4	2	3
Fishing Master - Class 2	3	1	6	10	1	3	3	3	8	3
Fishing Master - Class 3	20	5	17	16	8	10	12	9	17	16
Fishing Master - Class 4	8	12	20	18	9	13	12	22	19	19
Fishing - Other certificate	12	5	3	2	1	0	5	1	4	5
Watchkeeping mate	2	2	3	1	1	0	1	4	3	1
Other	2	2	3	5	0	2	3	1	1	0
Unknown	172	35	78	96	41	23	41	27	18	22
No certificate	49	44	33	16	22	5	8	28	52	51
No record on master	152	255	145	143	158	217	139	129	106	132
Other Vessels	72	70	51	55	51	64	46	51	51	53
Master Foreign-Going	5	2	3	5	4	13	5	10	9	7
ON1	3	6	9	7	4	3	5	1	2	4
ON2	0	0	0	1	1	1	0	1	0	1
CN1	0	0	0	1	1	1	1	2	0	0
CN2	7	2	1	1	0	0	0	1	0	1
Watchkeeping mate	3	2	6	8	5	0	4	8	5	2
Other	16	8	8	12	12	14	7	4	6	10
Unknown	15	3	5	4	2	8	0	4	2	5
No certificate	6	0	1	1	2	1	0	0	2	0
No record on master	17	47	18	15	20	23	24	20	25	23
Foreign-Flag Vessels										
Commercial Vessels	152	98	89	66	72	74	68	63	51	46
Master Foreign-Going	78	37	39	31	38	36	45	36	26	17
CN2	3	0	2	1	1	0	1	0	1	0
Other	6	7	15	19	10	7	3	5	2	0
Unknown	25	6	5	1	9	6	5	3	9	11
No certificate	0	0	0	0	0	0	0	0	0	0
No record on master	40	48	28	15	14	25	14	19	13	18
Fishing Vessels	21	17	14	11	9	7	11	14	6	7
Fishing Certificate	4	0	0	1	1	0	4	2	1	2
Unknown	9	4	7	2	5	2	1	0	1	0
No certificate	4	4	2	0	0	0	0	0	0	0
No record on master	4	9	5	8	3	5	6	12	4	5
Other Vessels	9	1	6	9	6	7	4	3	2	3
Master Foreign-Going	4	0	0	0	0	2	0	0	0	0
Other	2	0	3	4	1	0	0	0	0	0
Unknown	1	0	1	0	1	0	0	0	1	1
No certificate	0	0	0	1	0	1	0	0	0	0
No record on master	2	1	2	4	4	4	4	3	1	2



Table 6
Vessels Lost by Vessel Category and Age
1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Commercial Vessels	9	7	7	7	8	5	4	7	8	3
Unknown	2	1	0	0	0	1	0	0	4	2
0-4 years	0	0	0	0	0	1	0	1	1	0
5-9 years	0	0	0	0	1	0	0	1	0	0
10-14 years	1	0	0	0	0	0	0	0	0	0
15-19 years	1	0	0	1	0	0	0	0	0	0
20-24 years	0	0	0	0	0	1	1	1	0	0
25-29 years	2	1	1	0	2	0	0	0	0	0
30+ years	3	5	6	6	5	2	3	4	3	1
Fishing Vessels	75	72	52	51	41	39	30	44	20	28
Unknown	16	10	5	11	8	4	4	7	4	1
0-4 years	0	3	4	0	2	1	0	2	0	2
5-9 years	12	10	4	6	6	3	4	1	4	1
10-14 years	14	6	4	4	3	5	6	9	3	3
15-19 years	15	11	11	10	5	7	4	3	1	5
20-24 years	3	5	8	5	4	5	4	7	2	5
25-29 years	2	7	3	3	5	2	2	2	3	5
30+ years	13	20	13	12	8	12	6	13	3	6
Other Vessels	4	3	1	2	0	1	3	0	4	3
Unknown	3	1	0	1	0	0	2	0	1	1
0-4 years	0	0	1	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	0	1	0	0	0	0
15-19 years	0	0	0	1	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	0	1	0	0	0
30+ years	1	2	0	0	0	0	0	0	3	2
All Vessels	88	82	60	60	49	45	37	51	32	34
Unknown	21	12	5	12	8	5	6	7	9	4
0-4 years	0	3	5	0	2	2	0	3	1	2
5-9 years	12	10	4	6	7	3	4	2	4	1
10-14 years	15	6	4	4	3	6	6	9	3	3
15-19 years	16	11	11	12	5	7	4	3	1	5
20-24 years	3	5	8	5	4	6	5	8	2	5
25-29 years	4	8	4	3	7	2	3	2	3	5
30+ years	17	27	19	18	13	14	9	17	9	9



Table 7

Accidents, Fatalities and Injuries by Type of Accident 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Shipping Accidents										
With Fatalities or Injuries										
Collision	6	1	1	1	2	3	1	2	4	2
Capsizing	3	11	4	6	5	2	6	3	4	3
Sinking/Foundering	3	6	5	0	5	4	7	5	3	2
Fire/Explosion	7	6	2	4	1	2	1	2	5	3
Grounding	5	2	2	3	0	3	2	2	4	2
Striking	0	3	2	6	1	2	3	4	4	5
Other	4	1	1	1	2	4	2	1	1	1
Total	28	30	17	21	16	20	22	19	25	18
Fatalities*										
Collision	1	0	0	1	2	5	2	1	0	1
Capsizing	2	8	5	8	6	2	6	3	10	5
Sinking/Foundering	4	14	7	0	28	5	7	10	7	2
Fire/Explosion	0	0	0	3	0	1	0	0	1	1
Grounding	4	0	0	0	0	0	0	0	1	0
Striking	0	3	0	0	0	1	1	0	0	0
Other	17	3	0	0	2	0	0	3	0	0
Total	28	28	12	12	38	14	16	17	19	9
Injuries										
Collision	8	2	1	0	0	3	0	1	4	1
Capsizing	2	11	7	2	5	0	5	1	0	2
Sinking/Foundering	0	5	3	0	14	5	5	6	4	2
Fire/Explosion	7	9	4	4	1	1	3	2	7	2
Grounding	3	4	2	4	0	3	3	3	10	3
Striking	0	4	2	12	1	4	5	5	16	21
Other	2	0	3	3	1	7	2	0	1	1
Total	22	35	22	25	22	23	23	18	42	32
Accidents Aboard Ship										
Fatalities*										
Carried overboard	2	0	1	0	0	0	1	2	0	3
Caught by cargo/machinery	2	2	2	3	1	5	1	3	1	2
Fell overboard	7	6	5	4	4	6	7	8	3	3
Fell into tank/hold	0	1	1	0	0	1	0	0	0	0
Fell on deck or off quay	0	1	0	0	2	0	0	2	0	0
Heavy weather	0	0	0	0	0	0	0	0	0	0
Suicide (suspected)	0	1	0	0	1	0	1	0	0	1
Other	1	0	4	5	2	3	5	2	5	0
Total	12	11	13	12	10	15	15	17	9	9
Injuries										
Carried overboard	1	2	1	2	1	0	1	3	2	2
Caught by cargo/machinery	15	15	18	28	24	17	33	16	11	25
Fell overboard	7	3	2	3	3	5	4	2	2	1
Fell into tank/hold	3	1	0	1	2	3	2	1	1	3
Fell on deck or off quay	12	9	8	10	4	9	12	8	7	9
Heavy weather	1	1	3	1	2	0	0	2	0	2
Suicide (suspected)	0	0	0	0	1	0	0	0	0	0
Other	20	16	17	14	21	27	19	20	13	17
Total	59	47	49	59	58	61	71	52	36	59

* The total number of fatalities includes missing persons.



Table 8

Accidents, Fatalities and Injuries by Type of Vessel 1994-2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Shipping Accidents										
With Fatalities or Injuries										
Cargo/OBO	0	1	0	0	1	1	1	1	0	0
Tanker	0	2	0	1	0	0	0	0	0	0
Tug/Barge	4	5	3	2	1	2	5	3	2	0
Fishing	20	16	10	10	10	10	9	10	13	10
Passenger	1	0	2	1	1	1	1	0	2	3
Ferry	0	0	0	3	0	0	1	0	2	4
Other	3	6	2	4	3	6	5	5	6	1
Total	28	30	17	21	16	20	22	19	25	18
Fatalities*										
Cargo/OBO	0	0	0	0	21	1	4	0	0	0
Tanker	0	0	0	2	0	0	0	0	0	0
Tug/Barge	2	4	2	0	0	0	1	4	1	0
Fishing	25	15	10	9	14	7	5	10	9	8
Passenger	1	0	0	0	2	0	2	0	4	0
Ferry	0	0	0	0	0	0	0	0	0	0
Other	0	9	0	1	1	6	4	3	5	1
Total	28	28	12	12	38	14	16	17	19	9
Injuries										
Cargo/OBO	0	3	0	0	4	0	0	2	0	0
Tanker	0	3	0	2	0	0	0	0	0	0
Tug/Barge	2	5	5	4	2	4	7	2	5	0
Fishing	13	13	11	4	11	10	7	10	18	8
Passenger	2	0	2	1	2	3	0	0	1	8
Ferry	0	0	0	8	0	0	1	0	14	16
Other	5	11	4	6	3	6	8	4	4	0
Total	22	35	22	25	22	23	23	18	42	32
Accidents Aboard Ship										
Cargo/OBO	24	17	13	13	16	14	15	16	9	16
Tanker	5	2	2	1	1	2	2	3	0	3
Tug/Barge	6	3	2	3	7	3	3	7	4	4
Fishing	27	19	29	27	19	28	34	23	13	27
Passenger	0	2	1	5	6	6	5	2	2	0
Ferry	3	3	2	3	1	2	4	0	4	4
Other	2	10	9	8	9	14	14	8	4	11
Total	67	56	58	60	59	69	77	59	36	65
Fatalities*										
Cargo/OBO	2	5	4	1	3	4	3	3	1	0
Tanker	0	1	1	0	0	0	0	1	0	0
Tug/Barge	1	1	0	0	1	1	2	4	0	3
Fishing	7	2	7	7	4	8	8	8	5	4
Passenger	0	0	0	2	1	0	1	0	0	0
Ferry	1	1	1	0	0	1	1	0	1	2
Other	1	1	0	2	1	1	0	1	2	0
Total	12	11	13	12	10	15	15	17	9	9
Injuries										
Cargo/OBO	23	12	9	13	19	10	15	14	9	18
Tanker	8	1	4	1	1	2	2	2	0	3
Tug/Barge	5	2	2	12	6	2	3	8	5	2
Fishing	20	17	22	20	16	25	29	16	14	23
Passenger	0	3	2	3	7	8	4	3	2	0
Ferry	2	3	1	4	1	1	4	0	4	2
Other	1	9	9	6	8	13	14	9	2	11
Total	59	47	49	59	58	61	71	52	36	59

* 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 ship⁴ 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 craft⁵, 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”.

⁴ 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.

⁵ Pleasure craft means a ship that is used for pleasure or recreation and does not carry goods or passengers for hire or reward.



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 one hundred 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.

Vessels Covered

This report covers commercial vessels which 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:** includes cargo vessels, ferries, tankers, passenger vessels, tugs and barges.
- **Fishing vessels:** includes vessels involved in commercial fishing.
- **Other:** includes 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 which 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, SAR 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 surveying.

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

