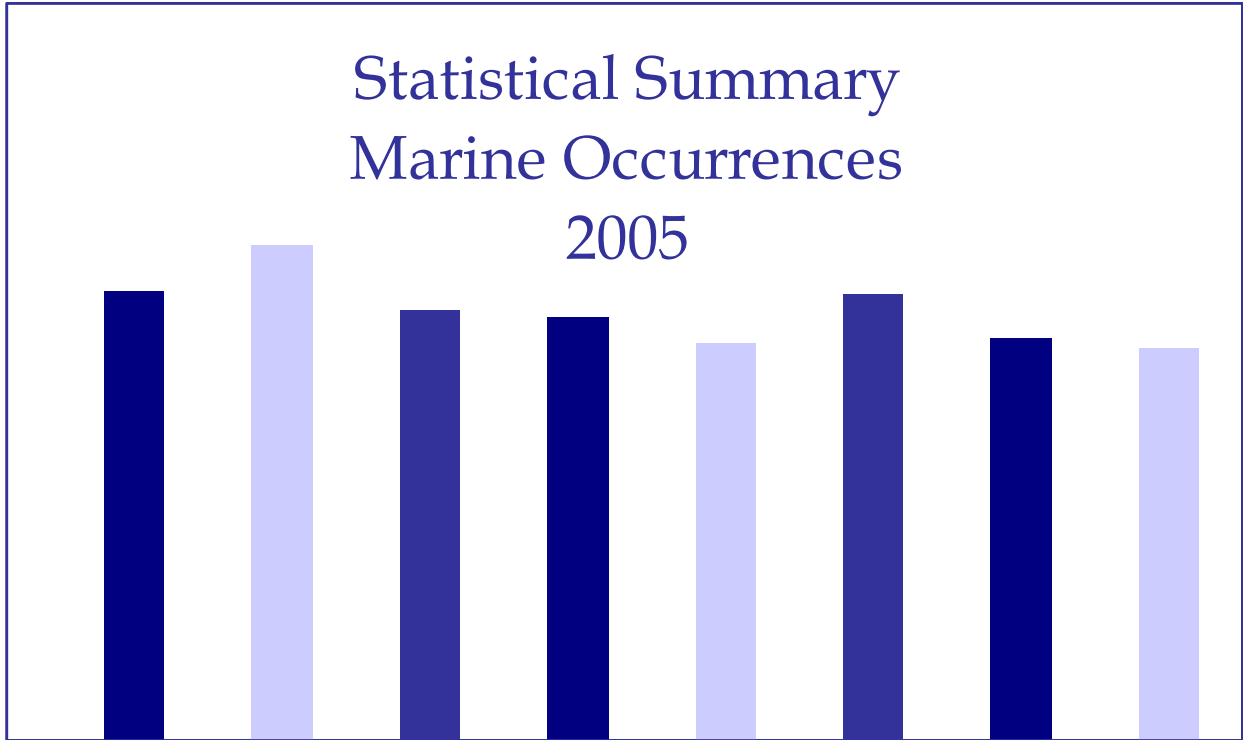




Statistical Summary Marine Occurrences 2005



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 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 2005 statistics presented here reflect the TSB database updated as of 09 February 2006.

To enhance awareness and increase the safety value of the material presented in the *Statistical Summary, Marine Occurrences 2005*, 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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Cat. No. TU1-1/2005
ISBN 0-662-49085-1

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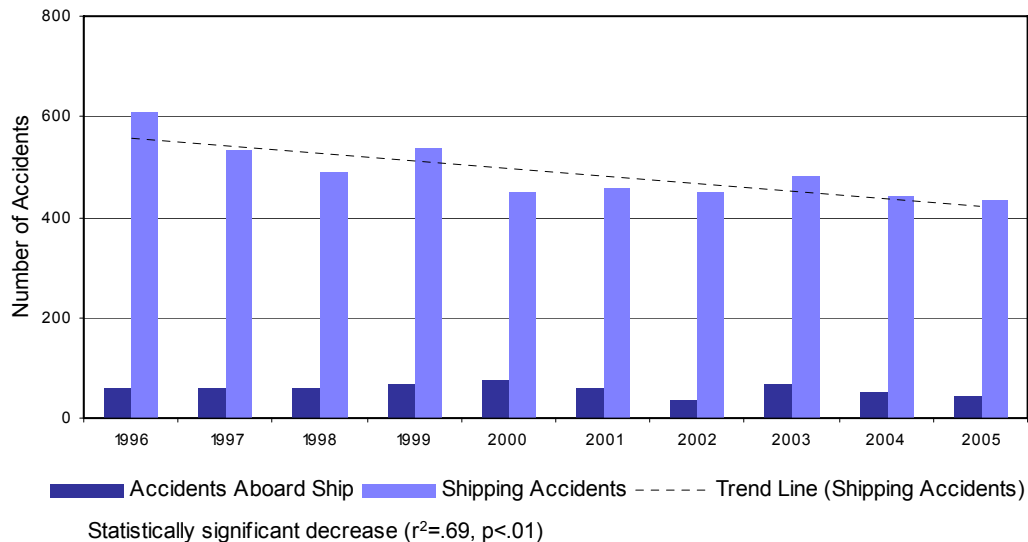
MARINE OCCURRENCES IN 2005

ACCIDENTS

Overview of Accidents and Casualties (Tables 1 and 8)

In 2005, 480 marine accidents were reported to the TSB, down from the 2004 total of 492 and the 2000–2004 average of 514. Over the past 10 years, nearly 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, 1996–2005



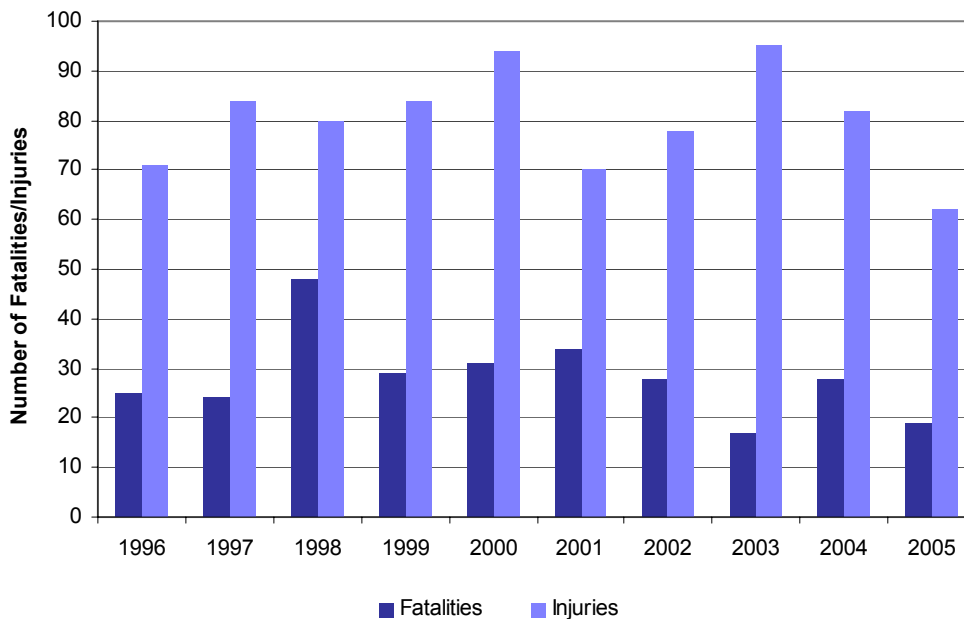
Shipping accidents reached a 30-year low of 435 in 2005, a 2% decrease from the 2004 total of 442 and a 5% decrease from the 2000–2004 average of 456. Statistical analysis using linear regression indicates that there has been a significant downward trend¹ in the number of shipping accidents since 1996 ($p<.01$) (Figure 1). In 2005, there were 45 accidents aboard ship, down from 50 in 2004 and the 2000–2004 average of 58. The majority of accidents aboard ship occurred on fishing (42%) and cargo/bulk carrier/OBO² (23%) 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 (that is, $p<.05$).

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

Marine-related fatalities totalled 19 in 2005 (Figure 2), down from the 2004 total and the 2000–2004 average of 28. This decrease consisted mainly of a decrease in shipping accident fatalities, which totalled 12 in 2005, down from 22 in 2004 and the five-year average of 17. In all, 10 of these 12 fatalities resulted from fishing vessel accidents, 3 of which resulted in multiple fatalities. Injuries in 2005 numbered 62, down from 82 in 2004 and the 2000–2004 average of 84. Of these 62 injuries, 43 were serious and all but 3 were the result of accidents aboard ship.

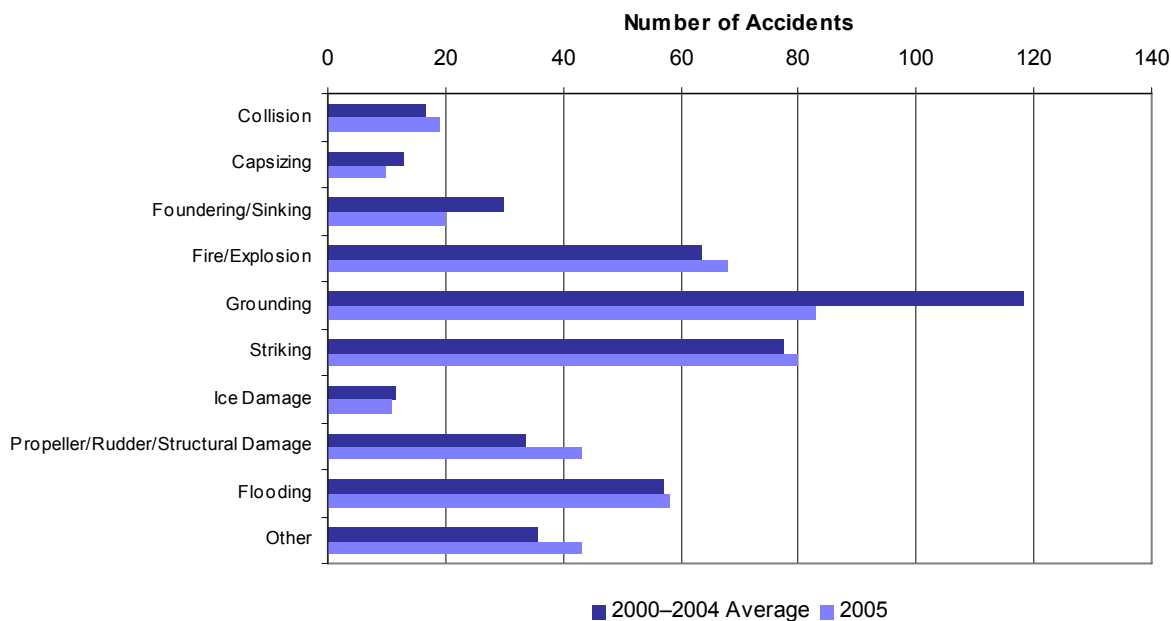
Figure 2 - Marine Fatalities and Injuries, 1996–2005



Shipping Accidents

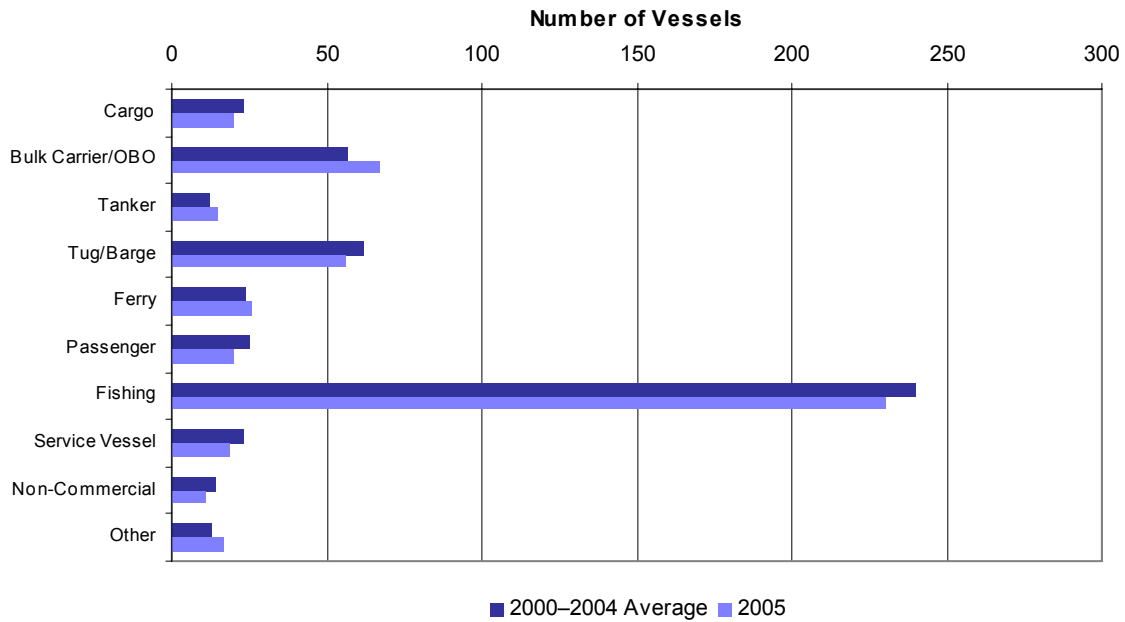
Type of Accidents (Table 1): As illustrated in Figure 3, the most frequent types of shipping accidents in 2005 were groundings (19%) and strikings (18%). Groundings and foundering/sinkings showed a 30% and 33% decrease respectively from the five-year average, while propeller/rudder/structural damage accidents showed a 26% increase.

Figure 3 - Shipping Accidents by Accident Type



Type of Vessels (Table 1): In 2005, there were 20 211 fishing vessels in Canada, representing 74% of all registered vessels excluding pleasure craft (source: Transport Canada). Since 1996, approximately 50% of the vessels involved in shipping accidents have been fishing vessels. In 2005, there were 230 fishing vessels involved in shipping accidents (Figure 4), compared to 227 in 2004 and the 2000–2004 average of 240. After fishing vessels, bulk carriers/OBO vessels (14%) and tugs/barges (12%) were involved most often in shipping accidents.

Figure 4 - Shipping Accidents by Vessel Type

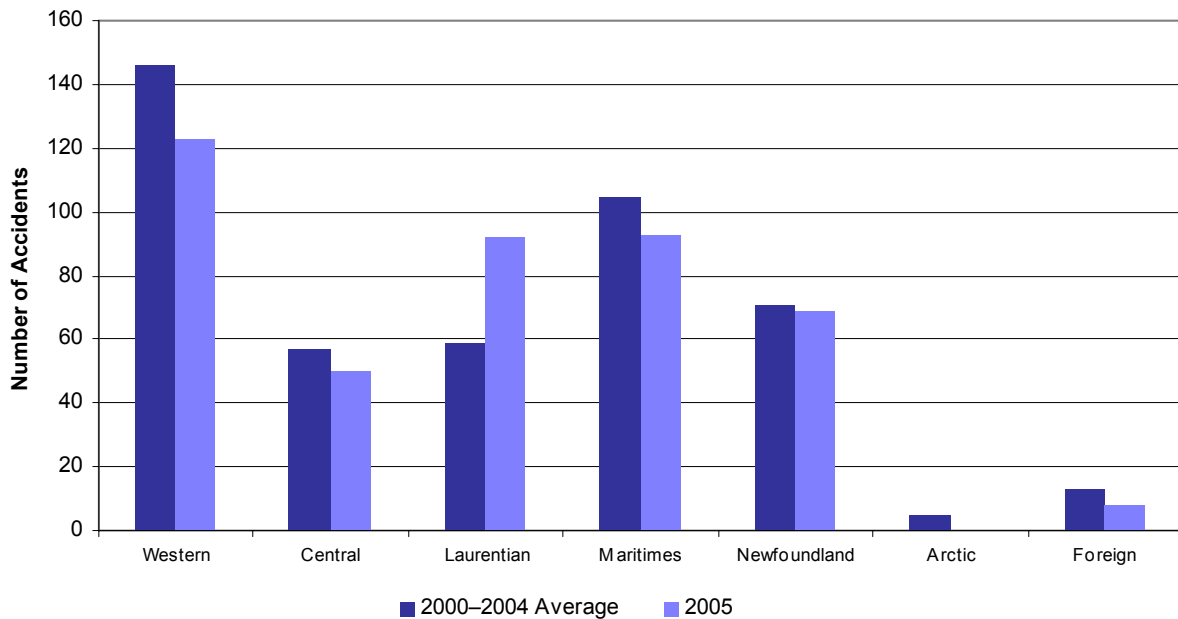


Geographical Region (Tables 2a and 2b): In 2005, 70% of shipping accidents occurred in three of the seven geographical regions (Figure 5): the Western region (28%), the Maritimes region (21%) and the Laurentian region (21%). Shipping accidents in the Laurentian region showed a 56% increase over the 2000–2004 average. This increase is mainly accounted for by an increase in foreign-flag vessels involved in shipping accidents.

Fishing vessel accidents dominated the accident record in coastal waters. Compared to the 2000–2004 average, fishing vessels involved in shipping accidents showed a decrease in both the Western and Maritimes regions. The number of fishing vessels involved in shipping accidents in the Newfoundland region (61) is comparable to the 2000–2004 average (59).

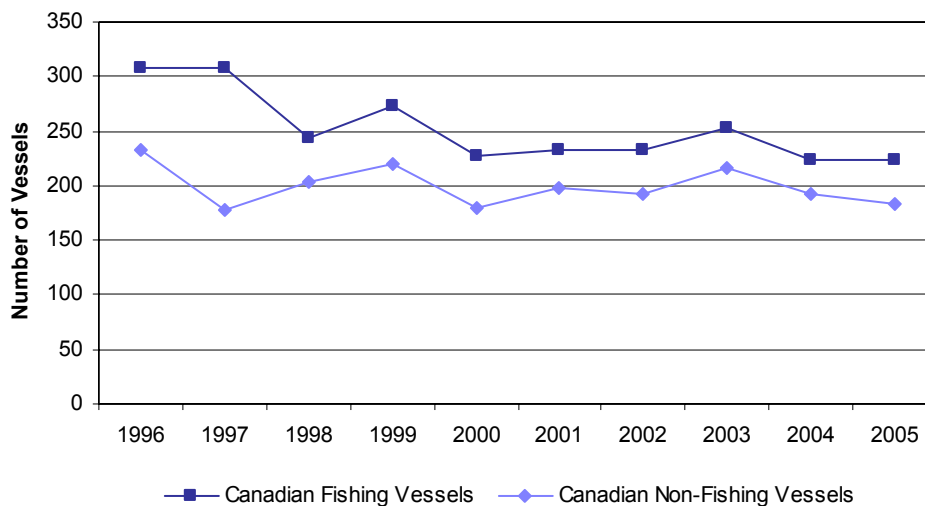
The Central region accounted for 11% of shipping accidents. Within narrower waterways, accidents in this region most often involved larger commercial vessels such as cargo/bulk carrier/OBO vessels and tankers. The remaining 2% of shipping accidents took place in foreign waters. In 2005, no shipping accident was reported in the Arctic region.

Figure 5 - Shipping Accidents by Region



Vessel Flag (Tables 1, 3 and 4): In 2005, 84% of vessels involved in shipping accidents reported to the TSB were Canadian-flag vessels. In all, 55% of these were fishing vessels, 34% 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, 1996–2005



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 (27%), groundings (22%) or fires/explosions (12%). Marine activity for Canadian commercial non-fishing vessels increased by 5% from the 2000–2004 average, resulting in a 7% decrease in the accident rate from 3.0 to 2.8 accidents per 1000 movements.

In 2005, 75 foreign-flag vessels were involved in shipping accidents in Canadian waters, 88% of which were commercial non-fishing vessels involved mainly in strikings (45%) or rudder/propeller/structural damage (11%). Although marine activity for foreign commercial non-fishing vessels remained relatively unchanged compared to the 2000–2004 average, accidents increased, yielding a 47% increase in the accident rate from 1.5 to 2.2 accidents per 1000 movements.

Vessels Lost (Tables 1 and 6): In 2005, 22 vessels were reported lost, equal to the number of vessels lost in 2004, but lower than the 2000–2004 average of 36. During the past 10 years, small fishing vessels (less than 15 tons in gross tonnage [grt])³ have accounted for the largest proportion of vessels lost in Canada. Of the vessels lost in 2005, 2 were commercial non-fishing vessels and 20 were fishing vessels. Nearly half of vessels lost in 2005 were less than 15 grt, and over one-third were 20 years old or more.

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

INCIDENTS

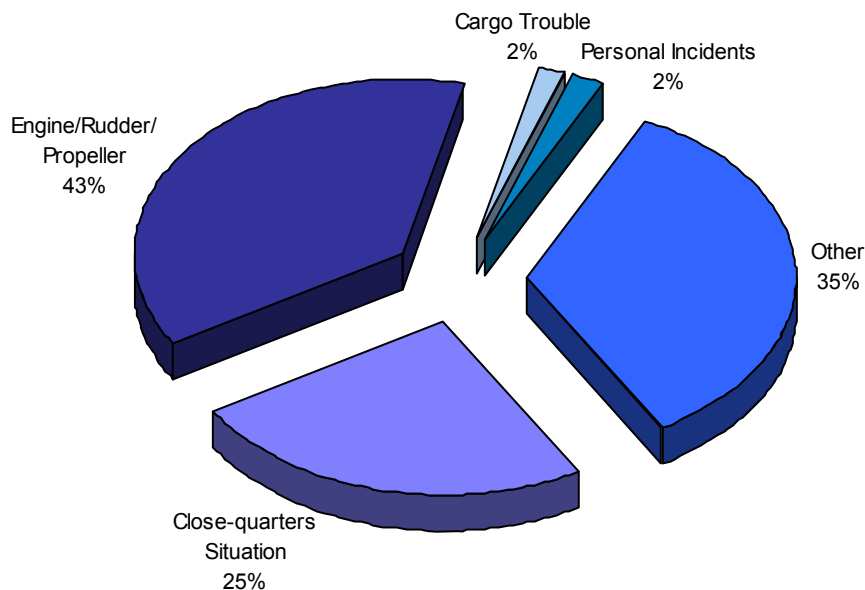
Overview of Incidents (Tables 1, 2a and 2b)

Pursuant to mandatory reporting requirements, 226 marine incidents were reported to the TSB in 2005, down from the 2004 total of 248 but equal to the 2000–2004 average. 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 (45% and 43% respectively) and engine/rudder/propeller incidents (46% and 32% respectively).

Vessels most often involved in close-quarters situations over the past five years were non-commercial (26%) and fishing (17%) vessels. In the majority of these incidents, the other vessels involved were cargo/bulk carrier/OBO vessels, ferries, tugs and passenger vessels.

In 2005, incidents in the Western region represented 38% of all marine incidents, lower than the 2000–2004 proportion of 45%. The proportion of marine incidents that took place in other regions was as follows: Laurentian 36%, Central 14%, the Maritimes 7% and Newfoundland 4%. One reported incident took place in foreign waters and none occurred in the Arctic region.

Figure 7 - Marine Incidents by Type, 2005



APPENDIX A – MARINE OCCURRENCE TABLES

Table 1
Total Marine Occurrences
Types, Vessels and Losses Involved
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Shipping Accidents by Type	607	534	491	536	450	459	449	481	442	435
Collision	20	15	15	22	16	16	15	24	12	19
Capsizing	19	21	13	6	15	6	14	11	18	10
Foundering/Sinking	42	36	28	32	38	37	26	30	18	20
Fire/Explosion	98	73	65	70	64	84	53	65	51	68
Grounding	143	126	128	146	123	114	129	118	108	83
Striking	90	88	85	85	68	89	72	76	82	80
Ice Damage	22	23	11	10	6	4	2	28	17	11
Propeller/Rudder/Structural Damage	50	30	25	40	31	19	43	39	36	43
Flooding	61	69	69	65	51	70	52	49	63	58
Other	62	53	52	60	38	20	43	41	37	43
Accidents Aboard Ship	58	60	59	69	77	59	36	66	50	45
Vessels Involved in Shipping Accidents										
By Type of Vessel	657	576	534	581	492	507	483	526	471	481
Cargo	29	21	26	26	25	31	23	18	21	20
Bulk Carrier/OBO	98	61	68	73	59	58	57	48	52	67
Tanker	24	13	18	14	14	12	9	15	7	15
Tug	45	38	42	42	33	39	24	34	32	29
Barge	43	31	25	35	30	28	32	31	34	27
Ferry	22	17	23	22	26	24	21	25	20	26
Passenger	21	16	27	20	19	16	27	41	29	20
Fishing	322	319	251	280	238	246	238	260	227	230
Service Vessel	24	30	27	35	23	27	19	27	25	19
Non-Commercial	15	13	19	14	13	18	19	14	11	11
Other	14	17	8	20	12	8	14	13	13	17
By Vessel Flag	657	576	534	581	492	507	483	526	471	481
Canadian (Non-Fishing)	233	178	204	220	179	197	192	216	193	183
Canadian (Fishing)	308	308	243	273	227	232	232	253	223	223
Foreign	116	90	87	88	86	78	59	57	55	75
Vessels Lost by Gross Tonnage	60	60	49	45	37	51	32	38	22	22
1600 grt and over	0	0	1	1	0	1	2	2	0	0
150 to 1599 grt	1	5	2	3	2	3	1	2	0	0
60 to 149 grt	7	6	6	5	3	8	4	8	5	6
15 to 59 grt	22	16	14	7	13	15	7	12	8	6
Less than 15 grt	20	21	16	21	16	18	12	12	3	8
Unknown Tonnage	10	12	10	8	3	6	6	2	6	2
Fatalities	25	24	48	29	31	34	28	17	28	19
Shipping Accidents	12	12	38	14	16	17	19	9	22	12
Accidents Aboard Ship	13	12	10	15	15	17	9	8	6	7
Injuries	71	84	80	84	94	70	78	95	82	62
Shipping Accidents	22	25	22	23	23	18	42	35	37	21
Accidents Aboard Ship	49	59	58	61	71	52	36	60	45	41
Reportable Incidents by Type	132	155	165	178	248	239	174	223	248	226
Close-quarters Situation	36	36	38	34	57	60	29	60	67	56
Engine/Rudder/Propeller	39	64	66	74	105	99	57	83	106	84
Cargo Trouble	8	6	9	1	5	4	5	3	1	4
Personal Incidents	8	4	3	5	6	8	8	14	9	4
Other	41	45	49	64	75	68	75	63	65	78

Table 2a
Marine Occurrences by Region
Occurrences, Vessels and Losses Involved
1996–2005

Western Region
 Central Region
 Laurentian Region
 Maritimes Region

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Western Region										
Shipping Accidents	208	183	196	168	166	158	139	141	125	123
Accidents Aboard Ship	15	18	14	18	32	29	15	19	15	13
Vessels Involved in Shipping Accidents										
By Type of Vessel	218	202	213	181	177	179	155	159	135	143
Cargo	3	6	5	4	3	8	2	5	3	2
Bulk Carrier/OBO	6	5	3	6	6	2	1	4	7	3
Tanker	0	2	2	1	0	0	0	0	0	0
Ferry/Passenger	14	12	14	10	18	15	19	26	19	26
Tug/Barge	43	29	44	40	44	39	32	31	31	34
Fishing	142	133	128	102	93	98	78	76	65	67
Other	10	15	17	18	13	17	23	17	10	11
Vessels Lost	30	20	25	19	14	22	13	11	6	5
Fatalities	8	7	6	10	10	12	10	4	8	6
Incidents	43	41	54	57	110	122	86	95	98	87
Central Region										
Shipping Accidents	79	59	64	54	46	68	57	53	59	50
Accidents Aboard Ship	5	5	8	5	7	3	3	2	7	3
Vessels Involved in Shipping Accidents										
By Type of Vessel	89	65	67	59	54	79	63	59	62	53
Cargo	5	3	2	1	5	5	6	2	11	4
Bulk Carrier/OBO	51	28	30	33	22	32	25	15	22	27
Tanker	6	3	3	4	6	6	2	4	1	4
Ferry/Passenger	4	5	13	7	7	13	13	14	7	3
Tug/Barge	12	14	10	8	3	11	12	15	10	8
Fishing	3	7	1	1	1	2	2	1	2	1
Other	8	5	8	5	10	10	3	8	9	6
Vessels Lost	0	3	0	1	0	0	2	0	0	0
Fatalities	1	0	1	2	2	9	10	2	4	0
Incidents	16	21	24	16	32	26	28	22	25	32
Laurentian Region										
Shipping Accidents	78	63	64	72	60	59	60	56	62	92
Accidents Aboard Ship	7	9	8	12	7	9	6	17	8	13
Vessels Involved in Shipping Accidents										
By Type of Vessel	91	66	73	78	66	63	62	60	66	104
Cargo	7	5	9	12	8	12	7	3	5	10
Bulk Carrier/OBO	26	19	23	20	21	12	21	19	17	32
Tanker	13	5	5	6	4	4	4	5	4	11
Ferry/Passenger	9	5	10	11	8	5	7	10	11	7
Tug/Barge	7	11	6	14	4	9	5	5	7	7
Fishing	17	15	12	9	14	13	13	13	15	23
Other	12	6	8	6	7	8	5	5	7	14
Vessels Lost	2	5	2	4	2	2	3	6	1	2
Fatalities	4	3	9	5	1	2	2	2	4	2
Incidents	39	48	53	29	51	39	23	50	67	82
Maritimes Region										
Shipping Accidents	143	107	87	118	85	90	121	129	101	93
Accidents Aboard Ship	11	9	12	17	10	10	5	13	8	7
Vessels Involved in Shipping Accidents										
By Type of Vessel	155	114	95	128	95	97	128	138	108	102
Cargo	10	6	5	5	3	4	3	3	0	3
Bulk Carrier/OBO	4	1	3	0	0	0	2	1	0	0
Tanker	4	2	3	0	2	0	2	3	0	0
Ferry/Passenger	10	9	7	6	5	3	5	11	7	7
Tug/Barge	14	7	5	8	3	4	3	6	4	4
Fishing	100	77	59	92	73	75	96	99	80	77
Other	13	12	13	17	9	11	17	15	17	11
Vessels Lost	17	16	8	11	10	12	12	14	9	9
Fatalities	8	7	8	9	4	6	1	7	8	2
Incidents	15	19	17	35	35	33	26	35	28	16

Table 2b
Marine Occurrences by Region
Occurrences, Vessels and Losses Involved
1996–2005

Newfoundland Region
Arctic Region
Foreign Waters

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Newfoundland Region										
Shipping Accidents	70	105	59	94	73	69	58	80	73	69
Accidents Aboard Ship	14	15	11	11	20	5	5	9	10	8
Vessels Involved in Shipping Accidents										
By Type of Vessel	72	110	59	101	76	72	60	86	73	70
Cargo	2	1	2	3	2	1	3	0	1	1
Bulk Carrier/OBO	0	1	1	2	1	2	2	3	1	1
Tanker	0	1	3	2	2	1	1	0	0	0
Ferry/Passenger	2	1	3	5	5	4	4	5	5	2
Tug/Barge	2	3	0	3	3	0	0	2	2	0
Fishing	58	84	48	76	56	58	48	71	64	61
Other	8	19	2	10	7	6	2	5	0	5
Vessels Lost	10	15	13	10	9	15	1	7	6	5
Fatalities	3	7	24	1	9	4	5	0	3	9
Incidents	12	24	12	33	15	12	5	17	20	8
Arctic Region										
Shipping Accidents	14	2	5	15	8	4	2	7	6	0
Accidents Aboard Ship	3	0	2	3	0	0	0	5	1	0
Vessels Involved in Shipping Accidents										
By Type of Vessel	14	2	5	17	8	4	2	7	8	0
Cargo	1	0	2	1	3	1	0	3	0	0
Bulk Carrier/OBO	4	0	0	2	2	2	0	0	0	0
Tanker	1	0	0	0	0	0	0	1	1	0
Ferry/Passenger	3	1	1	3	1	0	0	0	0	0
Tug/Barge	2	0	0	2	0	1	2	0	2	0
Fishing	1	1	0	0	1	0	0	0	0	0
Other	2	0	2	9	1	0	0	3	5	0
Vessels Lost	0	0	0	0	2	0	1	0	0	0
Fatalities	0	0	0	0	4	0	0	2	1	0
Incidents	2	0	1	1	2	1	1	1	5	0
Foreign Waters										
Shipping Accidents	15	15	16	15	12	11	12	15	16	8
Accidents Aboard Ship	3	4	4	3	1	3	2	1	1	1
Vessels Involved in Shipping Accidents										
By Type of Vessel	18	17	22	17	16	13	13	17	19	9
Cargo	1	0	1	0	1	0	2	2	1	0
Bulk Carrier/OBO	7	7	8	10	7	8	6	6	5	4
Tanker	0	0	2	1	0	1	0	2	1	0
Ferry/Passenger	1	0	2	0	1	0	0	0	0	1
Tug/Barge	8	5	2	2	6	3	2	6	10	3
Fishing	1	2	3	0	0	0	1	0	1	1
Other	0	3	4	4	1	1	2	1	1	0
Vessels Lost	1	1	1	0	0	0	0	0	0	1
Fatalities	1	0	0	2	1	1	0	0	0	0
Incidents	5	2	4	7	3	6	5	3	5	1

Table 3
Canadian-Flag Vessels Involved in Shipping Accidents by
Vessel Category and Type of Accident (Including Commercial Accident Rate)
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commercial Vessels	184	127	156	157	135	146	142	165	147	138
Collision	20	9	13	11	7	8	8	20	8	15
Capsizing	8	8	2	2	6	1	3	7	4	3
Foundering/Sinking	15	5	13	8	9	14	11	6	3	6
Fire/Explosion	28	19	17	16	17	15	14	20	17	23
Grounding	28	26	43	40	32	31	41	35	31	19
Striking	41	33	32	40	36	43	37	44	46	46
Ice Damage	5	4	2	3	1	2	0	4	2	4
Propeller/Rudder/Structural Damage	7	4	1	4	2	7	9	8	10	3
Flooding	9	4	12	4	9	7	5	4	9	7
Other	23	15	21	29	16	18	14	17	17	12
Movements *	32 510	35 193	35 596	31 215	37 881	34 617	37 357	38 107	38 564	39 027
Accident Rate **	4.6	3.1	2.9	4.3	2.7	3.3	2.8	2.8	3.0	2.8
Fishing Vessels	308	308	243	273	227	232	232	253	223	223
Collision	8	12	8	21	15	11	19	15	7	15
Capsizing	9	10	8	3	5	3	5	5	8	5
Foundering/Sinking	27	27	12	22	23	21	11	19	12	16
Fire/Explosion	52	48	33	37	32	57	28	38	28	31
Grounding	88	73	63	74	71	60	70	67	67	51
Striking	12	23	30	15	8	12	12	15	8	13
Ice Damage	14	17	9	6	3	2	1	21	14	5
Propeller/Rudder/Structural Damage	36	25	13	30	20	7	29	24	20	30
Flooding	51	58	52	55	42	56	41	39	50	45
Other	11	15	15	10	8	3	16	10	9	12
Other Vessels	49	51	48	63	44	51	50	51	46	45
Collision	7	6	3	9	3	7	3	7	6	4
Capsizing	6	1	3	1	4	0	6	0	4	2
Foundering/Sinking	2	2	2	1	6	3	3	5	2	0
Fire/Explosion	11	4	6	10	8	8	7	7	4	9
Grounding	4	9	8	13	5	9	5	8	3	7
Striking	11	10	11	12	12	18	14	13	7	10
Ice Damage	0	2	0	0	0	0	0	2	0	1
Propeller/Rudder/Structural Damage	1	1	3	2	1	1	1	1	2	2
Flooding	1	4	2	3	0	4	3	2	3	2
Other	6	12	10	12	5	1	8	6	15	8
Total	541	486	447	493	406	429	424	469	416	406

* Based on data from Transport Canada. Note that 2005 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)
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commercial Vessels	98	70	73	75	71	62	51	47	48	66
Collision	5	3	3	2	5	5	1	5	3	4
Capsizing	0	3	0	0	0	0	0	0	2	0
Foundering/Sinking	0	1	1	0	0	0	0	0	0	0
Fire/Explosion	7	5	7	6	6	6	4	0	2	5
Grounding	15	14	16	16	12	14	12	8	6	3
Striking	38	27	27	31	27	29	19	18	26	30
Ice Damage	3	0	0	1	2	0	1	1	1	1
Propeller/Rudder/Structural Damage	6	0	8	4	7	4	4	5	4	7
Flooding	0	2	2	2	0	1	2	2	0	2
Other	24	15	9	13	12	3	8	8	4	14
Movements *	28 245	29 170	29 660	29 479	30 190	29 182	28 752	28 575	28 918	29 265
Accident Rate **	3.2	2.2	2.4	2.4	2.1	1.9	1.7	1.5	1.5	2.2
Fishing Vessels	14	11	8	7	11	14	6	7	4	7
Collision	0	0	1	0	1	1	0	1	0	1
Capsizing	0	0	0	0	0	1	0	0	0	0
Foundering/Sinking	0	1	0	1	0	1	0	0	1	0
Fire/Explosion	1	1	2	0	1	1	0	1	0	0
Grounding	12	6	2	3	5	3	4	1	1	3
Striking	0	1	2	2	1	4	1	0	1	0
Ice Damage	0	0	0	0	0	0	0	0	0	0
Propeller/Rudder/Structural Damage	0	0	0	0	1	0	0	1	0	1
Flooding	0	1	1	1	0	2	1	2	1	2
Other	1	1	0	0	2	1	0	1	0	0
Other Vessels	4	9	6	6	4	2	2	3	3	2
Collision	0	0	0	1	1	0	0	1	0	0
Capsizing	0	0	0	0	0	1	0	0	0	0
Foundering/Sinking	0	0	0	0	0	1	1	0	0	0
Fire/Explosion	0	1	0	1	0	0	0	0	0	0
Grounding	1	0	1	2	1	0	0	1	2	2
Striking	0	5	4	0	1	0	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	3	3	1	2	1	0	1	1	1	0
Total	116	90	87	88	86	78	59	57	55	75

* Based on data from Transport Canada. Note that 2005 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
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Canadian-Flag Vessels										
Commercial Vessels	184	127	156	157	135	146	142	165	147	138
Master Foreign-Going	22	15	13	11	8	13	12	12	14	9
ON1	15	10	16	10	13	8	12	9	8	13
ON2	1	1	0	0	1	0	0	0	1	1
CN1	10	9	16	2	4	6	11	14	8	5
CN2	7	8	9	8	4	6	1	2	9	5
Master – Ferry	0	1	2	1	2	1	3	4	1	2
Watchkeeping Mate	13	7	10	12	7	6	8	11	10	7
Other	18	15	17	38	24	24	29	22	29	10
Unknown	98	60	71	74	72	80	66	89	64	84
No Certificate	0	1	2	1	0	2	0	2	3	2
Fishing Vessels	308	308	243	273	227	232	232	253	223	223
Fishing Master – Class 1	0	1	3	2	3	4	2	3	1	2
Fishing Master – Class 2	6	10	1	3	3	3	8	3	4	8
Fishing Master – Class 3	17	15	8	10	11	9	17	16	9	14
Fishing Master – Class 4	20	18	9	13	12	22	19	19	19	21
Fishing – Other Certificate	3	2	1	0	5	1	4	5	2	1
Watchkeeping Mate	3	1	1	0	1	4	3	1	2	0
Other	3	5	0	2	2	1	1	0	1	3
Unknown	223	240	198	238	182	160	126	154	147	131
No Certificate	33	16	22	5	8	28	52	52	38	43
Other Vessels	49	51	48	63	44	51	50	51	46	45
Master Foreign-Going	3	5	3	13	4	10	9	7	6	6
ON1	9	7	4	3	5	1	2	4	4	3
ON2	0	1	1	1	0	1	0	1	1	1
CN1	0	1	1	1	1	2	0	0	0	2
CN2	1	1	0	0	0	1	0	0	3	0
Watchkeeping Mate	6	7	5	0	4	8	6	2	6	2
Other	7	11	12	14	7	4	5	10	10	9
Unknown	23	17	20	30	23	24	26	27	16	21
No Certificate	0	1	2	1	0	0	2	0	0	1
Foreign-Flag Vessels										
Commercial Vessels	98	70	73	75	71	62	51	47	48	66
Master Foreign-Going	39	31	38	36	46	33	26	17	19	18
CN1	0	0	1	0	0	0	0	0	0	0
CN2	2	1	0	0	1	0	1	0	0	1
Other	15	17	9	6	3	2	0	0	0	0
Unknown	42	21	25	33	21	27	24	30	29	47
Fishing Vessels	14	11	8	7	11	14	6	7	4	7
Certificate	0	1	1	0	4	2	1	2	1	0
Unknown	12	10	7	7	7	12	5	5	3	7
No Certificate	2	0	0	0	0	0	0	0	0	0
Other Vessels	4	9	6	6	4	2	2	3	3	2
Master Foreign-Going	0	0	0	1	0	0	0	0	0	1
Other	3	4	1	0	0	0	0	0	0	0
Unknown	1	4	5	4	4	2	2	3	3	1
No Certificate	0	1	0	1	0	0	0	0	0	0

Table 6
Vessels Lost by Vessel Category and Age
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Commercial Vessels	7	7	8	5	4	7	8	4	1	2
Unknown	0	0	0	1	0	0	4	2	0	1
0–4 years	0	0	0	1	0	1	1	0	0	0
5–9 years	0	0	1	0	0	1	0	0	0	0
10–14 years	0	0	0	0	0	0	0	0	0	0
15–19 years	0	1	0	0	0	0	0	0	0	0
20–24 years	0	0	0	1	1	1	0	0	0	0
25–29 years	1	0	2	0	0	0	0	0	0	0
30+ years	6	6	5	2	3	4	3	2	1	1
Fishing Vessels	52	51	41	39	30	44	20	32	19	20
Unknown	5	11	8	4	4	7	4	2	5	1
0–4 years	4	0	2	1	0	2	0	2	2	2
5–9 years	4	6	6	3	4	1	4	2	2	1
10–14 years	4	4	3	5	6	9	3	4	0	2
15–19 years	11	10	5	7	4	3	1	5	3	7
20–24 years	8	5	4	5	4	7	2	5	3	3
25–29 years	3	3	5	2	2	2	3	5	1	3
30+ years	13	12	8	12	6	13	3	7	3	1
Other Vessels	1	2	0	1	3	0	4	2	2	0
Unknown	0	1	0	0	2	0	1	1	2	0
0–4 years	1	0	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	1	0	0	0	0	0	0
15–19 years	0	1	0	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	1	0	0	0	0	0
30+ years	0	0	0	0	0	0	3	1	0	0
All Vessels	60	60	49	45	37	51	32	38	22	22
Unknown	5	12	8	5	6	7	9	5	7	2
0–4 years	5	0	2	2	0	3	1	2	2	2
5–9 years	4	6	7	3	4	2	4	2	2	1
10–14 years	4	4	3	6	6	9	3	4	0	2
15–19 years	11	12	5	7	4	3	1	5	3	7
20–24 years	8	5	4	6	5	8	2	5	3	3
25–29 years	4	3	7	2	3	2	3	5	1	3
30+ years	19	18	13	14	9	17	9	10	4	2

Table 7
Accidents, Fatalities and Injuries by Type of Accident
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Shipping Accidents										
with Fatalities or Injuries										
Collision	1	1	2	3	1	2	4	2	1	4
Capsizing	4	6	5	2	6	3	4	3	7	5
Sinking/Foundering	5	0	5	4	7	5	3	2	7	1
Fire/Explosion	2	4	1	2	1	2	5	4	2	1
Grounding	2	3	0	3	2	2	4	2	0	0
Striking	2	6	1	2	3	4	4	5	2	5
Other	1	1	2	4	2	1	1	1	2	0
Total	17	21	16	20	22	19	25	19	21	16
Fatalities*										
Collision	0	1	2	5	2	1	0	1	2	0
Capsizing	5	8	6	2	6	3	10	5	9	9
Sinking/Foundering	7	0	28	5	7	10	7	2	11	3
Fire/Explosion	0	3	0	1	0	0	1	1	0	0
Grounding	0	0	0	0	0	0	1	0	0	0
Striking	0	0	0	1	1	0	0	0	0	0
Other	0	0	2	0	0	3	0	0	0	0
Total	12	12	38	14	16	17	19	9	22	12
Injuries										
Collision	1	0	0	3	0	1	4	1	2	7
Capsizing	7	2	5	0	5	1	0	2	7	0
Sinking/Foundering	3	0	14	5	5	6	4	2	4	0
Fire/Explosion	4	4	1	1	3	2	7	4	6	1
Grounding	2	4	0	3	3	3	10	3	0	0
Striking	2	12	1	4	5	5	16	22	15	13
Other	3	3	1	7	2	0	1	1	3	0
Total	22	25	22	23	23	18	42	35	37	21
Accidents Aboard Ship										
Fatalities*										
Carried Overboard	1	0	0	0	1	2	0	3	0	0
Caught by Cargo/Machinery	2	3	1	5	1	3	1	2	1	1
Fell Overboard	5	4	4	6	7	8	3	2	2	3
Fell into Tank/Hold	1	0	0	1	0	0	0	0	0	0
Fell on Deck or off Quay	0	0	2	0	0	2	0	0	0	2
Heavy Weather	0	0	0	0	0	0	0	0	0	0
Suicide (Suspected)	0	0	1	0	1	0	0	1	1	1
Other	4	5	2	3	5	2	5	0	2	0
Total	13	12	10	15	15	17	9	8	6	7
Injuries										
Carried Overboard	1	2	1	0	1	3	2	2	2	3
Caught by Cargo/Machinery	18	28	24	17	33	16	11	25	17	19
Fell Overboard	2	3	3	5	4	2	2	1	1	1
Fell into Tank/Hold	0	1	2	3	2	1	1	3	0	0
Fell on Deck or off Quay	8	10	4	9	12	8	7	9	4	7
Heavy Weather	3	1	2	0	0	2	0	2	1	0
Suicide (Suspected)	0	0	1	0	0	0	0	0	0	0
Other	17	14	21	27	19	20	13	18	20	11
Total	49	59	58	61	71	52	36	60	45	41

* The total number of fatalities includes missing persons.

Table 8
Accidents, Fatalities and Injuries by Type of Vessel
1996–2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Shipping Accidents with Fatalities or Injuries										
Cargo/Bulk Carrier/OBO	0	0	1	1	1	1	0	0	0	0
Tanker	0	1	0	0	0	0	0	0	0	0
Tug/Barge	3	2	1	2	5	3	2	0	2	1
Fishing	10	10	10	10	9	10	13	11	10	8
Passenger	2	1	1	1	1	0	2	3	1	1
Ferry	0	3	0	0	1	0	2	4	2	3
Other	2	4	3	6	5	5	6	1	6	3
Total	17	21	16	20	22	19	25	19	21	16
Fatalities*										
Cargo/Bulk Carrier/OBO	0	0	21	1	4	0	0	0	0	0
Tanker	0	2	0	0	0	0	0	0	0	0
Tug/Barge	2	0	0	0	1	4	1	0	3	0
Fishing	10	9	14	7	5	10	9	8	13	10
Passenger	0	0	2	0	2	0	4	0	0	0
Ferry	0	0	0	0	0	0	0	0	0	0
Other	0	1	1	6	4	3	5	1	6	2
Total	12	12	38	14	16	17	19	9	22	12
Injuries										
Cargo/Bulk Carrier/OBO	0	0	4	0	0	2	0	0	0	0
Tanker	0	2	0	0	0	0	0	0	0	0
Tug/Barge	5	4	2	4	7	2	5	0	0	3
Fishing	11	4	11	10	7	10	18	10	8	4
Passenger	2	1	2	3	0	0	1	8	10	4
Ferry	0	8	0	0	1	0	14	17	7	9
Other	4	6	3	6	8	4	4	0	12	1
Total	22	25	22	23	23	18	42	35	37	21
Accidents Aboard Ship										
Cargo/Bulk Carrier/OBO	13	13	16	14	15	16	9	16	14	6
Tanker	2	1	1	2	2	3	0	3	1	2
Tug/Barge	2	3	7	3	3	7	4	4	3	5
Fishing	29	27	19	28	34	23	13	27	26	15
Passenger	1	5	6	6	5	2	2	0	0	5
Ferry	2	3	1	2	4	0	4	4	3	3
Other	9	8	9	14	14	8	4	12	3	9
Total	58	60	59	69	77	59	36	66	50	45
Fatalities*										
Cargo/Bulk Carrier/OBO	4	1	3	4	3	3	1	0	1	1
Tanker	1	0	0	0	0	1	0	0	0	0
Tug/Barge	0	0	1	1	2	4	0	2	0	0
Fishing	7	7	4	8	8	8	5	4	3	3
Passenger	0	2	1	0	1	0	0	0	0	1
Ferry	1	0	0	1	1	0	1	2	1	1
Other	0	2	1	1	0	1	2	0	1	1
Total	13	12	10	15	15	17	9	8	6	7
Injuries										
Cargo/Bulk Carrier/OBO	9	13	19	10	15	14	9	18	14	5
Tanker	4	1	1	2	2	2	0	3	1	2
Tug/Barge	2	12	6	2	3	8	5	2	3	5
Fishing	22	20	16	25	29	16	14	23	23	13
Passenger	2	3	7	8	4	3	2	0	0	4
Ferry	1	4	1	1	4	0	4	2	2	3
Other	9	6	8	13	14	9	2	12	2	9
Total	49	59	58	61	71	52	36	60	45	41

* 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 craft,⁵ 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;

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.

- 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 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 (that is, 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

