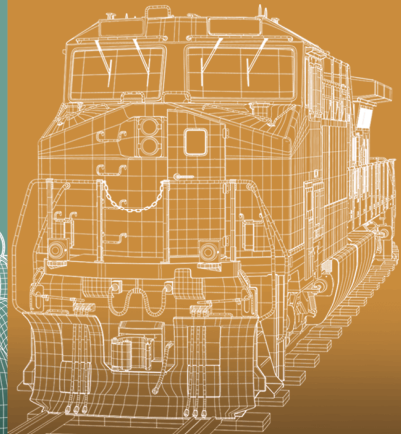
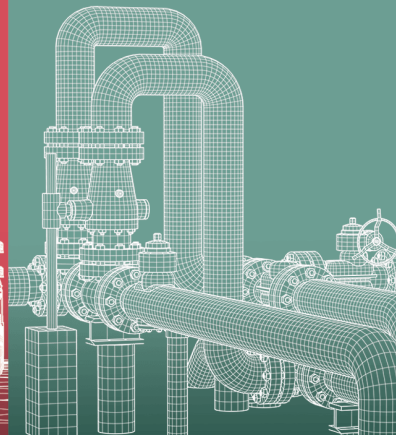
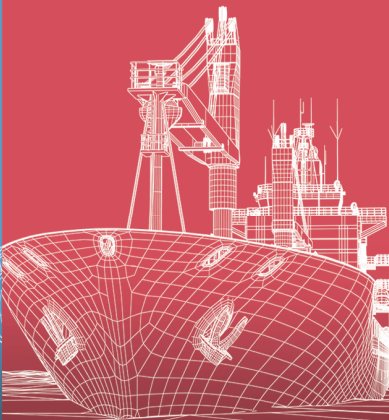




Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada



STATISTICAL SUMMARY

Marine Transportation Occurrences in 2020

Canada 

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Statistical summary: marine transportation occurrences in 2020

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Le présent rapport est également disponible en français.

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Statistical Summary

Marine Transportation Occurrences in 2020

The TSB gathers and uses transportation occurrence data during the course of its investigations to analyze safety deficiencies and identify risks in the Canadian marine transportation system.

It should be noted that certain characteristics of the data constrain statistical analysis and identification of emerging trends. These include the small totals of accidents and incidents, the large variability in the data from year to year, and changes to regulations and definitions. The reader is cautioned to keep these limitations in mind when viewing this summary to avoid drawing conclusions that cannot be supported by statistical analysis.

The 2020 data were collected according to the reporting requirements described in the *Transportation Safety Board Regulations* in force during that calendar year.

The statistics presented here reflect the TSB Marine Safety Information System (MARSIS) database at 25 February 2021. Since the occurrence data are constantly being updated in the live database, the statistics may change slightly over time.

Also, as many occurrences are not formally investigated, information recorded on some occurrences may not have been verified.

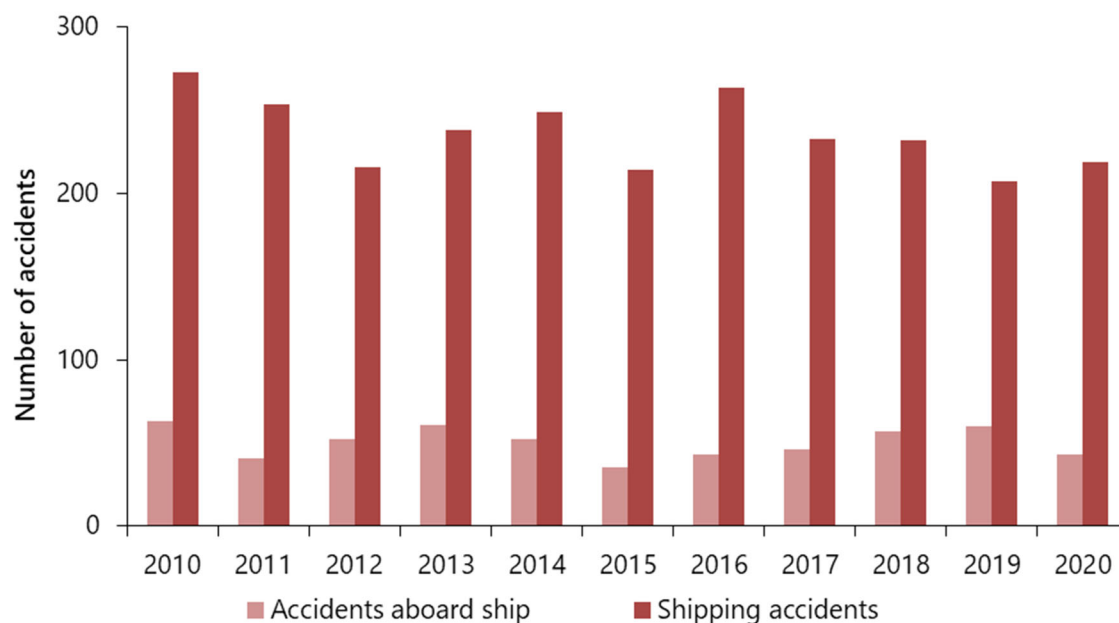
Accidents

Overview of accidents and casualties

In 2020, 262 marine accidents¹ were reported to the TSB, down from the 2019 total of 267 and below the 10-year (2010–2019) average of 289 (Figure 1). In 2020 the proportion of shipping accidents (as opposed to accidents aboard ship) was 84% of marine accidents, comparable to the previous 10-year average of 82%.

There were 219 shipping accidents in 2020, up from the 2019 total of 207 but down 8% from the 2010–2019 average of 238. The majority of shipping accidents involved fishing vessels (33%), followed by solid cargo vessels (26%).

Figure 1. Shipping accidents and accidents aboard ship, 2010–2020



In 2020, there were 43 accidents aboard ship, down from 60 in 2019 and down from the 2010–2019 average of 51. The majority of accidents aboard ship occurred on cargo vessels (35%) and fishing vessels (35%).

Casualties (tables 1, 6 and 7)

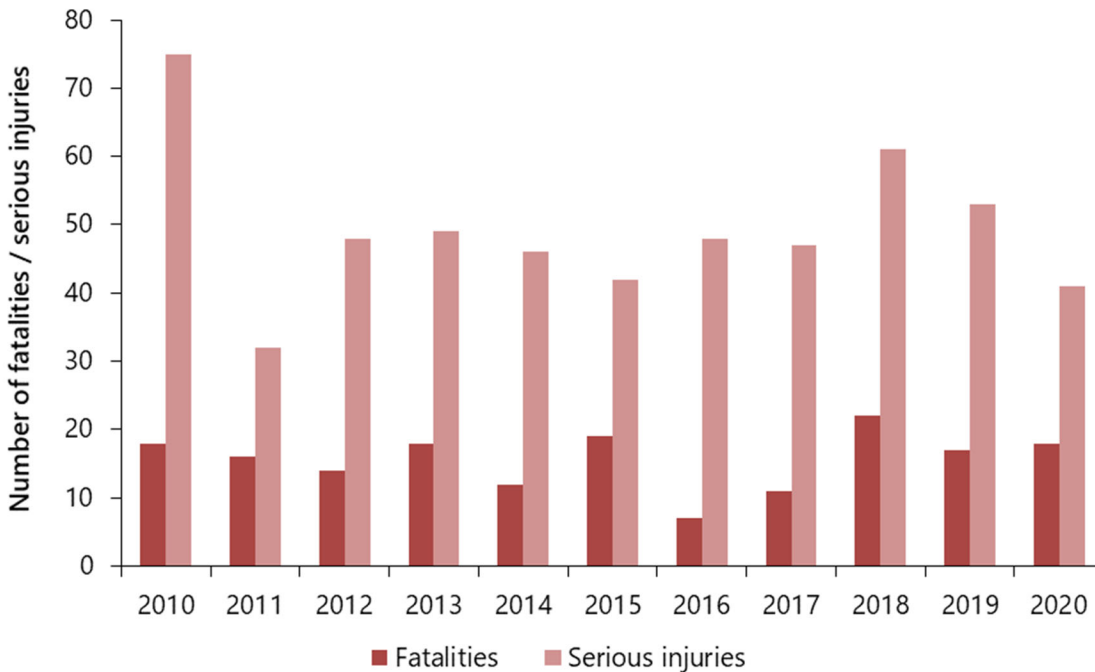
In 2020, 18 marine fatalities were reported, up from the 17 fatalities reported in 2019, and above the annual average of 15.4 in the 2010–2019 time period. Of the 18 fatalities in 2020, 12 were the result of 4 shipping accidents, while the remaining 6 fatalities resulted from 5 accidents aboard ship (Figure 2).

¹ See the Definitions section.

Of note, all of the 12 shipping accident fatalities in 2020 involved commercial fishing vessels, and 4 of the 6 fatalities that ensued from accidents aboard ship occurred aboard commercial fishing vessels. These data indicate that more needs to be done to improve safety in the commercial fishing industry.

Serious injuries in 2020 totalled 41, down from 53 in 2019 and down from the annual average of 50 from 2010 to 2019. Thirty-nine of the 41 serious injuries (95%) resulted from accidents aboard ship, and the remaining 2 resulted from shipping accidents.

Figure 2. Marine fatalities and serious injuries, 2010–2020

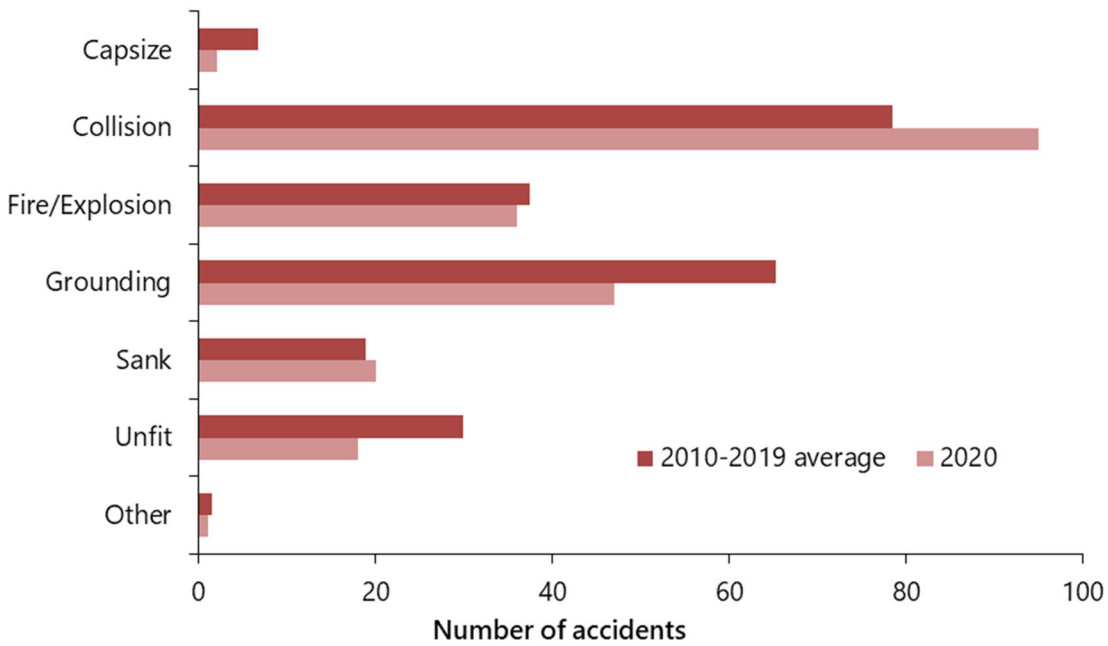


Shipping accidents

Type of accident (Table 1)

As illustrated in Figure 3, the most frequent types of shipping accidents in 2020 were collision (43%), grounding (21%), and fire/explosion (16%). The total number of collisions (95) was 21% more than the 10-year (2010–2019) average of 79, the number of groundings (47) was 28% below the 10-year average of 65, and the number of fire/explosion accidents (36) was 4% below the 10-year average of 37.

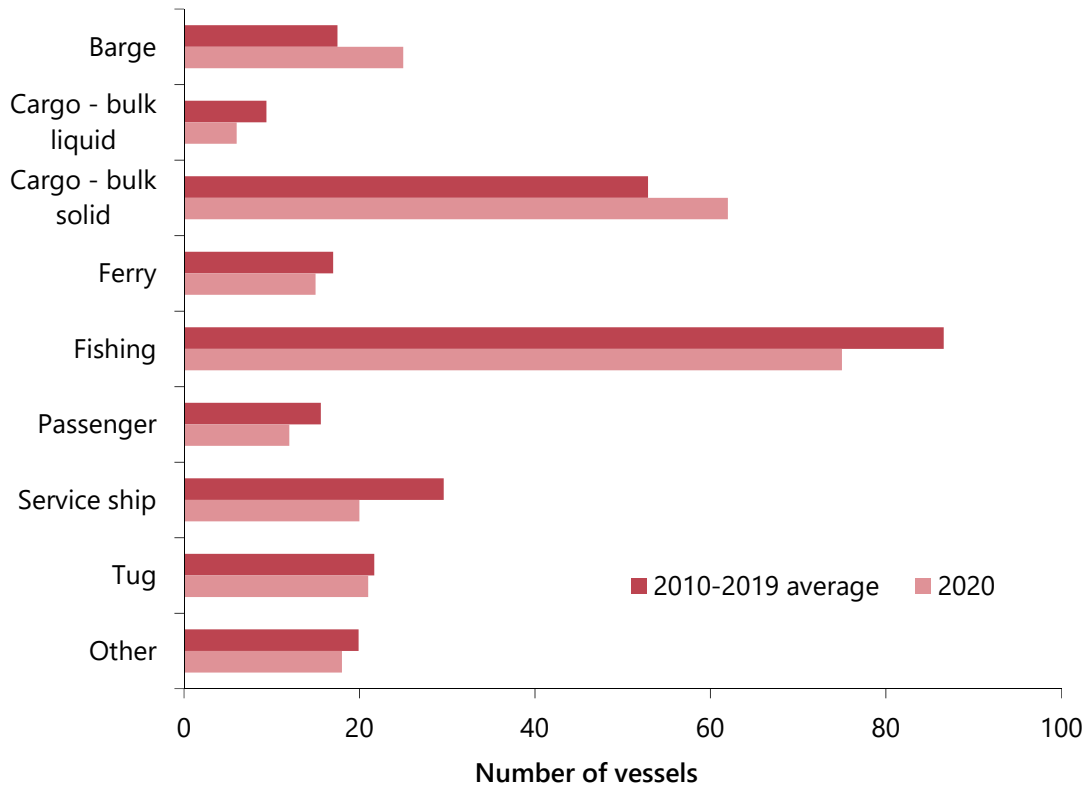
Figure 3. Shipping accidents, by accident type, in 2020 compared with the 2010–2019 average



Type of vessel (Table 1)

Seventy-five fishing vessels were involved in shipping accidents, up from 59 in 2019, but down from the 2010–2019 average of 87 (Figure 4). Fishing vessels represented almost one-third (30%) of all vessels involved in shipping accidents.

Figure 4. Shipping accidents, by vessel type, in 2020 compared with the 2010–2019 average



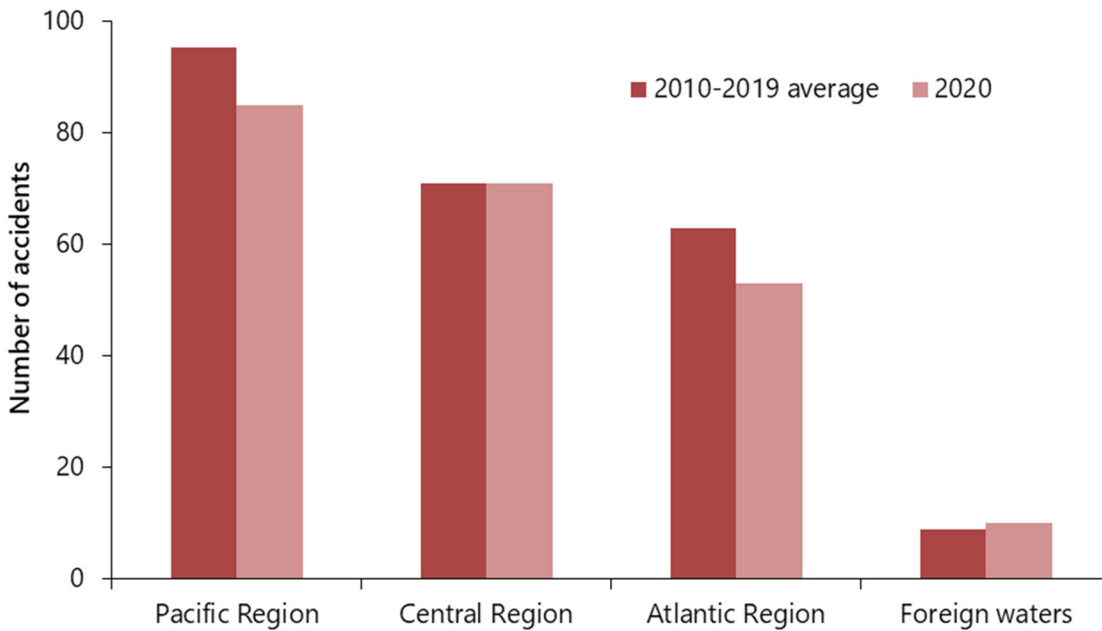
Geographical region (Table 2)

In 2020, 39% of shipping accidents occurred in the Pacific region, 32% in the Central region, and 24% in the Atlantic region. The remaining 5% of shipping accidents were in foreign waters.² In the Pacific region in 2020, shipping accidents were 11% below the 2010–2019 average, in the Central region shipping accidents were unchanged from the 2010–2019 average, and in the Atlantic region shipping accidents were 16% below the 2010–2019 average (Figure 5).

Thirty-eight fishing vessels were involved in shipping accidents in the Atlantic region, which is below the 2010–2019 average of 45 fishing vessels. Twenty-three fishing vessels were involved in shipping accidents in the Pacific region, below the 2010–2019 average of 34 (Table 2).

² See the Definitions section.

Figure 5. Shipping accidents, by geographical region, in 2020 compared with the 2010–2019 average



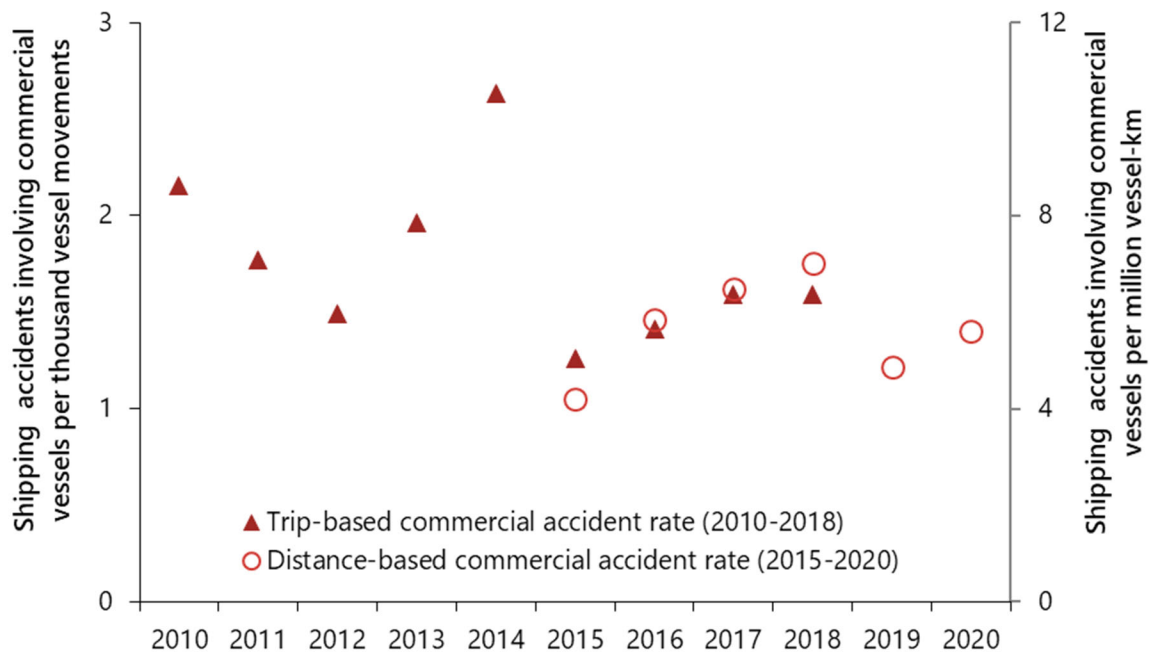
Vessel flag (tables 1, 3, and 4)

In 2020, 83% of the 254 vessels involved in shipping accidents reported to the TSB were Canadian-flag vessels. Of these Canadian-flag vessels, 51% were commercial non-fishing vessels and 37% were fishing vessels; the remaining 12% were non-commercial vessels, pleasure craft or service vessels.

According to information provided by Transport Canada, marine activity for Canadian commercial non-fishing vessels over 15 gross tons (GT) (excluding passenger vessels and cruise ships) was 11 071 thousand commercial vessel-km in 2020, which is 17% above the 2015–2019 average.³ This yields a rate of 5.6 shipping accidents per million commercial vessel-km in 2020, lower than the prior 5-year average of 5.7. (Note that a 6-year series is too short to test for trends.)

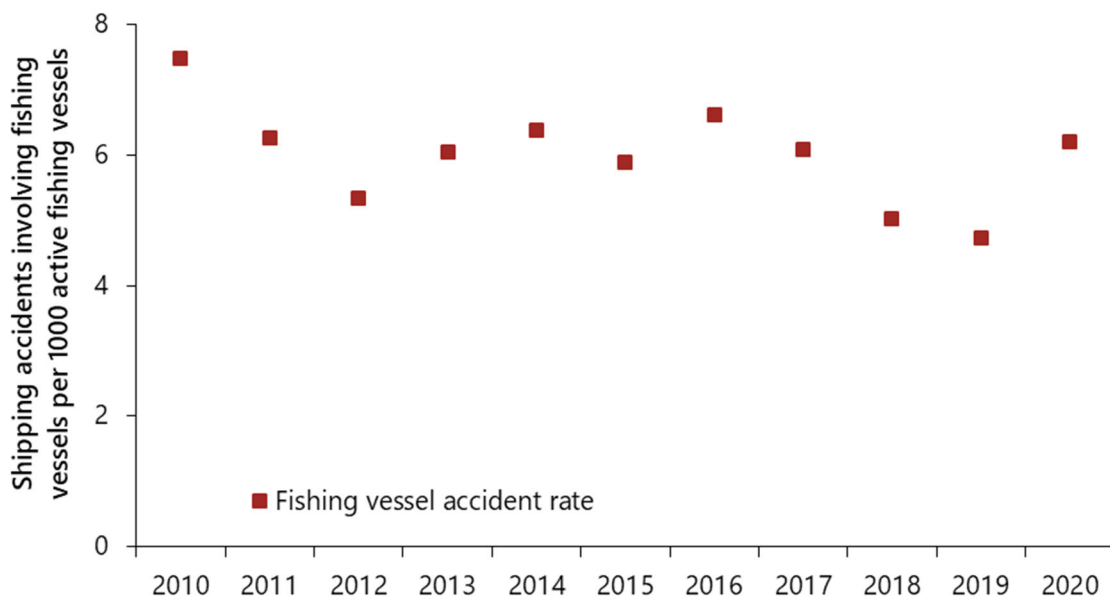
³ Transport Canada has updated its methodology for measuring commercial activity. Beginning from 2015, TC combines terrestrial automatic identification system (AIS) data from the Canadian Coast Guard and satellite AIS data from the Government of Canada Satellite AIS provider to calculate a distance-based metric of Canadian-flag commercial marine activity in Canadian waters. Vessel movements are no longer captured (Source: An introduction to automatic identification system (AIS) data & how it's used at TC (OPP). Transport Canada. December, 2019).

Figure 6. Shipping accident rate for Canadian-flag commercial non-fishing vessels, 2010–2020



According to the Department of Fisheries and Oceans (DFO), there were an estimated 11 908 active fishing vessels in Canada in 2020.⁴ The shipping accident rate for Canadian-flag fishing vessels (Figure 7) was 6.2 shipping accidents per 1000 active fishing vessels in 2020, above the rate of 4.7 in 2019, and above the 2010–2019 average of 6.0.

Figure 7. Shipping accident rate, for Canadian-flag fishing vessels, 2010–2020



⁴ Source: DFO email communication 6 April 2021.

For Canadian-flag fishing vessels, the most frequently reported shipping accident types in 2020 were groundings (36%), fire/explosions (26%), collisions (21%), and sinkings (13%). Canadian-flag commercial non-fishing vessels were most often involved in collisions (62%) or groundings (14%).

In 2020, 42 foreign-flag vessels were involved in shipping accidents in Canadian waters, 39 of which were commercial non-fishing vessels. According to information provided by Transport Canada,⁵ marine activity for foreign commercial non-fishing vessels over 15 GT was 19 570 thousand commercial vessel-km in 2020, above the 2015–2019 average of 18 781 thousand commercial vessel-km. This yields an accident rate of 2.0 shipping accidents involving commercial foreign-flag vessels over 15 GT per million commercial vessel-km, above the 2015–2019 average of 1.7.

Vessels lost (tables 1 and 5)

In 2020, 13 vessels were reported lost, up from 8 in 2019 but down from the 2010–2019 average of 19. Eleven of the 13 vessels lost in 2020 were fishing vessels. Eight of the 13 vessels lost were less than 15 GT (including 1 with unknown tonnage). In the past 10 years (2011 to 2020), fishing vessels under 60 GT have accounted for 62% of Canadian vessels lost (tables 1 and 5).

⁵ Source: Transport Canada, Transportation and Economic Analysis – Policy Group, email communication 9 April 2021.

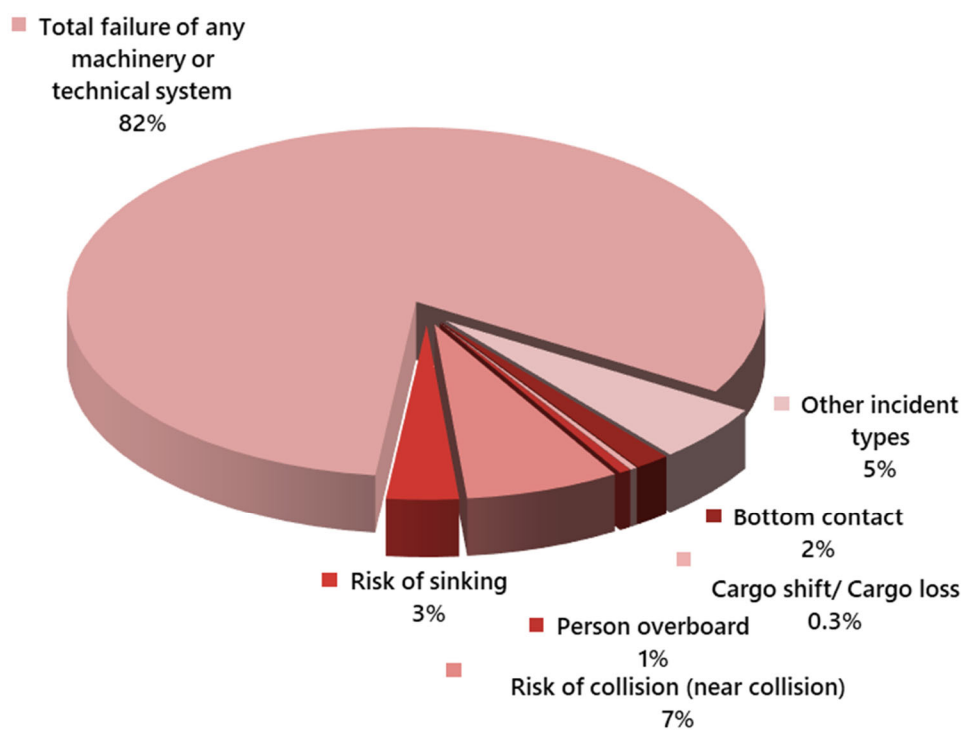
Incidents

Overview of incidents

In 2020, 925 marine incidents were reported to the TSB, down from the total of 948 in 2019, but above the annual 10-year (2010–2019) average of 643.⁶ Incidents in the Atlantic region (372) represented 40% of all marine incidents, followed by 31% (284) in the Central region, and 28% (257) in the Pacific region. The remaining 1% (12) of reported incidents occurred in foreign waters (Table 2).

The majority (82%) of reportable incidents involved the total failure of any machinery or technical system (Figure 8).⁷ The largest proportion of these incidents (44%) occurred in the Atlantic region, while the greatest proportion of incidents involving risk of collision (50%) occurred in the Central region (data not shown). The types of vessel most often involved in total failure of any machinery or technical systems incidents in 2020 were fishing vessels (52%) and solid cargo vessels (25%) (data not shown).

Figure 8. Marine incidents, by type, 2020



⁶ In 2014, the TSB issued new regulations that changed reporting requirements for some types of incidents, leading to an increase in incidents since that time.

⁷ The 2014 changes in reporting requirements applied to those involving a total failure of any machinery or technical system, leading to an increase in incidents of this category since then.

Data tables

Table 1. Marine transportation occurrences, vessels, losses, and casualties, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Accidents¹	336	295	268	299	301	249	307	279	289	267	262
Shipping accidents by type	273	254	216	238	249	214	264	233	232	207	219
Capsize	8	2	6	8	3	10	7	5	10	8	2
Collision	64	87	78	79	88	57	89	89	82	72	95
Fire/Explosion	53	50	34	31	29	33	44	33	35	32	36
Grounding	102	73	69	62	61	59	65	52	58	51	47
Sank	20	10	10	14	26	17	26	22	26	18	20
Sustains damage rendering vessel unseaworthy/ unfit for purpose	24	28	16	43	41	36	32	31	21	26	18
Other shipping accident types	2	4	3	1	1	2	1	1	0	0	1
Accidents aboard ship	63	41	52	61	52	35	43	46	57	60	43
Vessels involved in shipping accidents	295	294	241	275	281	241	310	268	267	230	254
Barge	17	20	6	19	12	10	24	20	29	18	25
Cargo – liquid	12	10	6	7	14	12	7	10	9	7	6
Cargo - solid	61	57	63	60	68	37	40	39	47	57	62
Ferry	19	23	18	13	20	18	20	12	10	17	15
Fishing	111	99	82	88	92	82	91	88	74	59	75
Passenger	14	16	15	15	13	17	15	15	15	21	12
Service ship	29	25	20	36	21	29	50	38	27	21	20
Tug	18	24	26	25	22	19	26	25	25	7	21
Other vessel types	14	20	5	12	19	17	37	21	31	23	18
Vessels involved in shipping accidents	295	294	241	275	281	241	310	268	267	230	254
Canadian non-fishing vessels	137	152	111	147	144	127	184	148	157	124	140
Canadian fishing vessels	109	95	78	86	92	81	90	84	69	57	72
Foreign vessels	49	47	52	42	45	33	36	36	41	49	42
Vessels lost	27	22	23	20	20	24	17	12	14	8	13
1600 GT and over	0	0	0	0	0	0	0	0	1	0	0
150 to 1599 GT	0	0	1	1	1	2	1	0	0	0	0
60 to 149 GT	4	2	3	4	4	6	4	2	4	1	2
15 to 59 GT	10	9	8	6	4	6	2	2	2	1	3
Less than 15 GT	8	10	9	6	8	9	6	5	6	6	7
Unknown tonnage	5	1	2	3	3	1	4	3	1	0	1
Persons fatally injured	18	16	14	18	12	19	7	11	22	17	18
Shipping accidents	11	3	5	10	4	13	6	4	14	4	12
Accidents aboard ship	7	13	9	8	8	6	1	7	8	13	6
Persons seriously injured	75	32	48	49	46	42	48	47	61	53	41
Shipping accidents	5	2	6	0	1	12	5	7	8	10	2
Accidents aboard ship	70	30	42	49	45	30	43	40	53	43	39
Occurrences with a dangerous good release¹	0	0	0	0	0	5	7	7	8	2	4
Reportable incidents	224	216	270	734	747	708	768	885	931	948	925
Bottom contact	13	14	21	19	24	36	24	42	35	33	15
Cargo shift/Cargo loss	3	2	5	2	1	4	4	6	7	3	3
Person overboard	9	4	5	10	7	13	10	10	11	14	5
Risk of collision (near collision)	33	38	37	63	35	31	45	52	67	54	66
Risk of sinking	24	24	25	26	0	10	20	15	34	13	31
Total failure of any machinery or technical system ²	135	120	156	603	676	590	637	719	732	799	756
Other incident types	7	14	21	11	4	24	28	41	45	32	49

Data extracted 25 February 2021

¹ The reporting requirement in the 2014 TSB Regulations concerning the release of dangerous goods has been harmonized with Part 8 of the *Transportation of Dangerous Goods Regulations*. The TSB did not collect detailed data on the release of dangerous goods prior to 1 July 2014.

² In 2013, the TSB clarified to industry the reporting requirements for a total failure of any machinery or technical system, which led to an increase in the number of reported incidents of this type. These requirements are documented in the 2014 TSB Regulations.

Table 2. Marine transportation occurrences, vessels, losses and casualties, by region,^{1,2} 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pacific region											
Shipping accidents	87	88	76	88	95	90	138	111	101	79	85
Accidents aboard ship	15	11	18	21	23	13	19	8	12	15	16
Vessels involved in shipping accidents	94	103	87	107	108	106	164	130	119	90	101
Barge/Tug	19	25	18	28	23	23	39	34	37	16	30
Cargo/Tanker	5	5	12	8	15	6	14	9	8	13	16
Ferry/Passenger	8	13	10	10	10	15	17	12	13	16	10
Fishing	43	38	29	30	36	33	43	35	30	23	23
Other vessel types	19	22	18	31	24	29	51	40	31	22	22
Vessels lost	6	3	6	3	9	12	9	9	3	2	4
Fatalities	6	6	4	2	5	12	0	6	7	8	4
Reportable incidents	113	102	118	150	149	260	290	283	253	234	257
Central region											
Shipping accidents	98	81	74	73	74	64	56	59	63	68	71
Accidents aboard ship	31	16	19	25	17	10	11	16	21	19	17
Vessels involved in shipping accidents	106	95	79	85	85	71	65	66	71	75	82
Barge/Tug	11	12	9	14	8	6	9	7	8	7	10
Cargo/Tanker	55	46	46	40	55	35	24	26	35	38	40
Ferry/Passenger	18	14	14	13	14	13	9	11	10	17	10
Fishing	10	11	6	7	3	6	5	14	8	1	14
Other vessel types	12	12	4	11	5	11	18	8	10	12	8
Vessels lost	2	2	1	4	2	2	1	0	2	0	1
Fatalities	3	1	3	5	2	2	0	3	1	3	1
Reportable incidents	67	74	107	149	137	116	126	203	274	284	284
Atlantic region											
Shipping accidents	79	78	56	62	72	55	63	57	53	53	53
Accidents aboard ship	13	14	14	12	12	12	13	18	22	22	9
Vessels involved in shipping accidents	85	88	64	67	80	58	72	64	61	58	59
Barge/Tug	4	6	5	2	3	0	1	1	5	2	3
Cargo/Tanker	5	11	3	6	6	2	3	11	4	6	4
Ferry/Passenger	7	12	9	4	9	7	9	4	2	5	7
Fishing	58	50	45	49	52	43	43	38	34	35	38
Other vessel types	11	9	2	6	10	6	16	10	16	10	7
Vessels lost	18	17	15	12	9	10	7	3	9	6	8
Fatalities	8	9	6	11	5	5	7	2	13	6	13
Reportable incidents	38	36	40	429	450	320	338	385	392	412	372
Foreign waters											
Shipping accidents	9	7	10	15	8	5	7	6	15	7	10
Accidents aboard ship	4	0	1	3	0	0	0	4	2	4	1
Vessels involved in shipping accidents	10	8	11	16	8	6	9	8	16	7	12
Barge/Tug	1	1	0	0	0	0	1	3	4	0	3
Cargo/Tanker	8	5	8	13	6	6	6	3	9	7	8
Ferry/Passenger	0	0	0	1	0	0	0	0	0	0	0
Fishing	0	0	2	2	1	0	0	1	2	0	0
Other vessel types	1	2	1	0	1	0	2	1	1	0	1
Vessels lost	1	0	1	1	0	0	0	0	0	0	0
Fatalities	1	0	1	0	0	0	0	0	1	0	0
Reportable incidents	6	4	5	6	11	12	14	14	12	18	12

Data extracted 25 February 2021

¹ See the map of the regions in the Definitions section of the statistical summary.

² In 2013, the TSB clarified to industry the reporting requirements for a total failure of any machinery or technical system, which led to an increase in the number of reported incidents of this type. These requirements are documented in the 2014 TSB Regulations.

Table 3. Canadian-flag vessels involved in shipping accidents, by category of vessel and type of accident, and commercial accident rates, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Canadian-flag vessels involved	246	246	189	230	225	193	242	210	194	163	197
Commercial vessels	98	109	88	101	107	83	100	90	100	80	101
Capsize	5	1	2	0	0	3	2	1	2	1	1
Collision	34	55	45	45	53	34	48	44	49	41	63
Fire/Explosion	13	18	9	12	12	11	14	7	14	13	7
Grounding	31	17	22	28	16	14	21	19	16	13	14
Sank	5	3	1	3	6	10	5	5	5	3	6
Sustains damage rendering vessel unseaworthy/unfit for purpose	10	15	9	13	20	11	10	14	14	9	10
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0
Commercial movements ¹	25 539	28 269	28 800	29 000	23 185	30 956	35 478	38 366	43 353	n/a	n/a
Commercial accident rate ²	2.2	1.8	1.5	2.0	2.6	1.3	1.4	1.6	1.6	n/a	n/a
Commercial vessel-km (thousands) ³	n/a	n/a	n/a	n/a	n/a	9 260	8 559	9 391	9 834	10 070	11 071
Commercial accidents per million vessel-km ⁴	n/a	n/a	n/a	n/a	n/a	4.2	5.8	6.5	7.0	4.9	5.6
Fishing vessels	109	95	78	86	91	79	88	80	67	57	72
Capsize	1	1	3	6	1	5	3	2	4	1	1
Collision	10	16	12	12	15	4	12	19	12	7	15
Fire/Explosion	28	24	19	12	9	14	16	15	6	10	19
Grounding	50	43	33	30	32	33	31	27	33	26	26
Sank	14	6	9	9	19	10	16	8	8	7	9
Sustains damage rendering vessel unseaworthy/unfit for purpose	4	1	0	16	14	11	9	8	4	6	1
Other shipping accident types	2	4	2	1	1	2	1	1	0	0	1
Active fishing vessels ⁵	14 167	14 217	13 871	13 719	13 623	13 242	13 311	13 138	13 124	12 682	11 908
Fishing vessel accident rate ⁶	7.5	6.3	5.3	6.1	6.4	5.9	6.6	6.1	5.0	4.7	6.2
Other vessels	39	42	23	43	27	31	54	40	27	26	24
Capsize	2	0	1	1	0	1	1	1	1	1	0
Collision	20	24	10	24	14	15	25	24	14	12	8
Fire/Explosion	6	6	4	3	7	3	14	4	10	2	9
Grounding	8	7	5	10	3	8	7	2	1	3	4
Sank	1	1	0	2	1	0	3	6	1	5	2
Sustains damage rendering vessel unseaworthy/unfit for purpose	2	4	3	3	2	4	4	3	0	3	1
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0

Data extracted 25 February 2021

¹ A movement is a vessel's travel segment between ports with at least one port being a domestic port. (Vessel movement data source: Transport Canada email communication 3 April 2019).

² This commercial accident rate is the number of shipping accidents involving Canadian-flag commercial vessels of 15 gross tons or more (excluding passenger vessels and fishing vessels) per 1 000 vessel movements (to 2019).

³ Based on data from Transport Canada, which has updated its methodology for measuring commercial activity. Beginning from 2015, TC combines terrestrial automatic identification system (AIS) data from the Canadian Coast Guard and satellite AIS data from the Government of Canada Satellite AIS provider to calculate a distance-based metric of Canadian-flag commercial marine activity in Canadian waters (Source: TC email communication 15 April 2021). Vessel movements are no longer captured.

⁴ This commercial accident rate is the number of shipping accidents involving Canadian-flag commercial vessels of 15 gross tonnage or more (excluding passenger vessels and fishing vessels) per million vessel-km.

⁵ Commercial fishing vessels landing at least one catch in that calendar year (Source: Department of Fisheries and Oceans email communication 6 April 2021).

⁶ The fishing vessel accident rate is the number of shipping accidents involving Canadian-flag commercial fishing vessels per 1 000 active fishing vessels.

Table 4. Foreign-flag vessels involved in shipping accidents, by category of vessel and type of accident, and commercial accident rates, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Foreign-flag vessels involved	49	47	52	42	45	33	36	36	41	49	42
Commercial vessels	43	40	46	38	41	30	32	31	31	45	39
Capsize	0	0	0	0	0	0	0	0	0	0	0
Collision	17	23	28	19	29	11	17	19	23	25	30
Fire/Explosion	5	3	3	5	0	5	0	3	3	6	0
Grounding	13	6	10	2	7	4	8	3	2	6	3
Sank	0	0	0	1	0	0	1	0	0	0	0
Sustains damage render unseaworthy/ unfit for purpose	8	8	5	11	5	10	6	6	3	8	6
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0
Commercial movements ¹	26 029	25 669	26 300	26 600	17 635	18 940	21 657	24 728	27 787	n/a	n/a
Commercial accident rate ²	1.4	1.3	1.5	1.3	2.4	1.4	1.3	1.4	1.1	n/a	n/a
Commercial vessel-km (thousands) ³	n/a	n/a	n/a	n/a	n/a	17 947	16 127	19 170	20 447	20 214	19 570
Commercial accidents per million vessel-kms ⁴	n/a	n/a	n/a	n/a	n/a	1.4	1.7	1.8	1.5	2.0	2.0
Fishing vessels	2	4	4	2	0	1	1	4	5	2	3
Capsize	0	0	0	0	0	0	0	0	0	0	0
Collision	0	1	2	2	0	0	0	2	1	0	2
Fire/Explosion	0	0	0	0	0	0	0	1	1	1	0
Grounding	2	3	1	0	0	1	1	1	2	1	1
Sank	0	0	0	0	0	0	0	0	1	0	0
Sustains damage render unseaworthy/ unfit for purpose	0	0	0	0	0	0	0	0	0	0	0
Other shipping accident types	0	0	1	0	0	0	0	0	0	0	0
Other vessels	4	3	2	2	4	2	3	1	5	2	0
Capsize	0	0	0	0	1	1	0	0	1	0	0
Collision	3	3	1	2	1	1	2	0	2	2	0
Fire/Explosion	1	0	0	0	0	0	0	1	1	0	0
Grounding	0	0	1	0	2	0	1	0	0	0	0
Sank	0	0	0	0	0	0	0	0	0	0	0
Sustains damage render unseaworthy/ unfit for purpose	0	0	0	0	0	0	0	0	1	0	0
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0

Data extracted 25 February 2021

¹ A movement is a vessel's travel segment between ports with at least one port being a domestic port. (Vessel movement data source: Transport Canada email communication 3 April 2019).

² This commercial accident rate is the number of shipping accidents involving foreign-flag commercial vessels of 15 gross tons or more (excluding passenger vessels and fishing vessels) per 1 000 vessel movements (to 2019).

³ Based on data from Transport Canada, which has updated its methodology for measuring commercial activity. Beginning from 2015, TC combines terrestrial automatic identification system (AIS) data from the Canadian Coast Guard and satellite AIS data from the Government of Canada Satellite AIS provider to calculate a distance-based metric of foreign-flag commercial marine activity in Canadian waters (Source: TC email communication 15 April 2021). Vessel movements are no longer captured.

⁴ This commercial accident rate is the number of shipping accidents involving foreign-flag commercial vessels of 15 gross tons or more (excluding passenger vessels and fishing vessels) per million vessel-km.

Table 5. Vessels lost, by category and age of vessel, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Vessels lost	27	22	23	20	20	24	17	12	14	8	13
0-4 years	1	0	1	0	0	1	0	0	0	1	0
5-9 years	5	1	1	1	0	0	0	0	1	0	0
10-14 years	1	1	2	3	0	3	0	0	2	0	0
15-19 years	2	3	5	2	2	1	3	1	1	1	2
20-24 years	6	4	3	2	1	1	0	0	1	1	0
25-29 years	2	4	3	2	5	5	1	0	3	0	0
30+ years	4	7	5	5	4	10	5	6	3	1	5
Unknown	6	2	3	5	8	3	8	5	3	4	6
Commercial vessels	1	1	1	1	2	8	4	2	3	0	1
0-4 years	0	0	0	0	0	0	0	0	0	0	0
5-9 years	0	0	0	0	0	0	0	0	1	0	0
10-14 years	0	0	0	0	0	0	0	0	0	0	0
15-19 years	0	0	0	0	0	0	1	0	0	0	0
20-24 years	0	0	0	0	0	1	0	0	0	0	0
25-29 years	0	0	0	0	1	2	0	0	0	0	0
30+ years	0	1	1	1	1	4	2	1	1	0	0
Unknown	1	0	0	0	0	1	1	1	1	0	1
Fishing vessels	23	21	22	17	17	16	12	7	11	5	11
0-4 years	1	0	1	0	0	1	0	0	0	0	0
5-9 years	5	1	1	1	0	0	0	0	0	0	0
10-14 years	1	1	2	3	0	3	0	0	2	0	0
15-19 years	2	3	5	2	2	1	2	1	1	1	2
20-24 years	6	4	3	2	1	0	0	0	1	1	0
25-29 years	1	4	3	2	4	3	1	0	3	0	0
30+ years	4	6	4	2	3	6	3	5	2	0	5
Unknown	3	2	3	5	7	2	6	1	2	3	4
Other vessels	3	0	0	2	1	0	1	3	0	3	1
0-4 years	0	0	0	0	0	0	0	0	0	1	0
5-9 years	0	0	0	0	0	0	0	0	0	0	0
10-14 years	0	0	0	0	0	0	0	0	0	0	0
15-19 years	0	0	0	0	0	0	0	0	0	0	0
20-24 years	0	0	0	0	0	0	0	0	0	0	0
25-29 years	1	0	0	0	0	0	0	0	0	0	0
30+ years	0	0	0	2	0	0	0	0	0	1	0
Unknown	2	0	0	0	1	0	1	3	0	1	1

Data extracted 25 February 2021

Table 6. Accidents and persons fatally¹ or seriously injured, by type of accident, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Shipping accidents with fatalities¹ or serious injuries	7	4	7	4	4	7	5	8	12	7	6
Capsize	1	0	3	2	0	2	1	1	5	2	0
Collision	3	1	1	0	1	2	2	4	1	1	2
Fire/Explosion	0	2	3	1	0	1	1	1	1	1	0
Grounding	0	1	0	1	0	1	0	0	3	1	1
Sank	1	0	0	0	3	1	1	2	2	2	2
Sustains damage rendering unseaworthy/unfit for purpose	0	0	0	0	0	0	0	0	0	0	0
Other shipping accident types	2	0	0	0	0	0	0	0	0	0	1
Persons fatally injured in shipping accidents	11	3	5	10	4	13	6	4	14	4	12
Capsize	4	0	3	6	0	9	2	1	7	3	0
Collision	0	1	1	0	0	1	0	0	2	0	0
Fire/Explosion	0	1	1	1	0	0	0	0	0	0	0
Grounding	0	1	0	3	0	0	0	0	1	0	1
Sank	1	0	0	0	4	3	4	3	4	1	7
Sustains damage rendering unseaworthy/unfit for purpose	0	0	0	0	0	0	0	0	0	0	0
Other shipping accident types	6	0	0	0	0	0	0	0	0	0	4
Persons seriously injured in shipping accidents	5	2	6	0	1	12	5	7	8	10	2
Capsize	0	0	3	0	0	0	0	0	1	0	0
Collision	5	1	0	0	1	9	4	6	0	4	2
Fire/Explosion	0	1	3	0	0	1	1	1	5	1	0
Grounding	0	0	0	0	0	2	0	0	2	4	0
Sank	0	0	0	0	0	0	0	0	0	1	0
Sustains damage rendering unseaworthy/unfit for purpose	0	0	0	0	0	0	0	0	0	0	0
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0
Accidents aboard ship	63	41	52	61	52	35	43	46	57	60	43
Persons fatally injured in accidents aboard ship	7	13	9	8	8	6	1	7	8	13	6
Boarding, being on board, falling overboard from the ship	4	13	3	3	5	6	0	5	5	12	6
In contact with any part of the ship or its contents	3	0	6	5	3	0	1	2	3	1	0
Persons seriously injured in accidents aboard ship	70	30	42	49	45	30	43	40	53	43	39
Boarding, being on board, falling overboard from the ship	2	3	2	6	10	5	4	6	7	2	7
In contact with any part of the ship or its contents	68	27	40	43	35	25	39	34	46	41	32

Data extracted 25 February 2021

¹ Fatalities include missing persons.

Table 7. Vessels involved in accidents with fatalities or serious injuries and persons fatally¹ or seriously injured, by type of vessel, 2010 to 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Vessels in shipping accidents with fatalities¹ or serious injuries	7	4	7	4	4	7	5	8	12	7	6
Barge/Tug	0	0	2	0	0	0	0	0	1	0	0
Cargo/Tanker	0	0	0	0	1	0	0	1	1	0	0
Ferry/Passenger	1	0	0	0	0	2	2	2	1	0	2
Fishing	4	3	4	4	3	3	2	3	8	2	4
Other	2	1	1	0	0	2	1	2	1	5	0
Persons fatally injured in shipping accidents	11	3	5	10	4	13	6	4	14	4	12
Barge/Tug	0	0	1	0	0	0	0	0	0	0	0
Cargo/Tanker	0	0	0	0	2	0	0	0	0	0	0
Ferry/Passenger	4	0	0	0	0	6	0	2	1	0	0
Fishing	7	2	2	10	2	6	6	1	13	0	12
Other	0	1	2	0	0	1	0	1	0	4	0
Persons seriously injured in shipping accidents	5	2	6	0	1	12	5	7	8	10	2
Barge/Tug	0	0	1	0	0	0	0	0	1	0	0
Cargo/Tanker	0	0	0	0	0	0	0	1	5	0	0
Ferry/Passenger	0	0	0	0	0	2	4	2	0	0	2
Fishing	1	1	3	0	1	1	0	3	1	2	0
Other	4	1	2	0	0	9	1	1	1	8	0
Vessels in accidents aboard ship with fatalities¹ or serious injuries	64	41	53	61	52	35	43	46	58	60	43
Barge/Tug	5	4	1	3	4	0	4	2	3	5	3
Cargo/Tanker	22	13	23	17	21	5	12	18	22	23	15
Ferry/Passenger	8	6	3	7	5	8	5	5	8	7	3
Fishing	17	17	21	25	18	21	18	15	21	22	15
Other	12	1	5	9	4	1	4	6	4	3	7
Persons fatally injured in accidents aboard ship	7	13	9	8	8	6	1	7	8	12	6
Barge/Tug	0	1	0	1	0	0	0	0	0	0	0
Cargo/Tanker	1	1	2	2	1	0	0	2	2	2	0
Ferry/Passenger	2	1	1	0	0	1	0	2	0	1	2
Fishing	4	10	6	5	6	5	0	2	4	8	4
Other	0	0	0	0	1	0	1	1	2	1	0
Persons seriously injured in accidents aboard ship	70	30	42	49	42	30	42	40	53	43	39
Barge/Tug	5	3	0	2	4	0	4	3	2	4	2
Cargo/Tanker	36	12	21	12	18	5	12	15	21	15	16
Ferry/Passenger	5	6	2	7	5	7	5	4	10	6	1
Fishing	13	8	15	19	12	17	18	13	17	17	12
Other	11	1	4	9	3	1	3	5	3	1	8

Data extracted 25 February 2021

¹ Fatalities include missing persons.

Definitions

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

Marine occurrence

- any accident or incident associated with the operation of a ship
- any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described above.

Marine accident

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

Accident aboard ship

- a person is killed or sustains a serious injury as a result of
 - boarding, being on board or falling overboard from the ship, or
 - coming into direct contact with any part of the ship or its contents;

Shipping accident

- the ship
 - sinks, founders or capsizes,
 - is involved in a collision (includes strikings and contacts),
 - sustains a fire or an explosion,
 - goes aground, or
 - sustains damage that affects its seaworthiness or renders it unfit for its purpose,
 - is missing or abandoned;

Marine incident

- a person falls overboard from the ship, or
- the ship
 - makes unforeseen contact with the bottom without going aground,
 - fouls a utility cable or pipe, or an underwater pipeline,
 - is involved in a risk of a collision,
 - sustains a total failure of
 - the navigation equipment if the failure poses a threat to the safety of any person, property or the environment,
 - the main or auxiliary machinery, or

- the propulsion, steering, or deck machinery if the failure poses a threat to the safety of any person, property or the environment;
- all or part of the ship's cargo shifts or falls overboard, or
- is anchored, grounded or beached to avoid an occurrence,
- a crew member whose duties are directly related to the safe operation of the ship is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment;
- there is an accidental release on board or from the ship consisting of a quantity of dangerous goods or an emission of radiation that is greater than the quantity or emission levels specified in Part 8 of the *Transportation of Dangerous Goods Regulations*.

Serious injury

- (a) a fracture of any bone, except simple fractures of fingers, toes or the nose;
- (b) lacerations that cause severe hemorrhage or nerve, muscle or tendon damage;
- (c) an injury to an internal organ;
- (d) second or third degree burns, or any burns affecting more than 5% of the body surface;
- (e) a verified exposure to infectious substances or injurious radiation; or
- (f) an injury that is likely to require hospitalization.

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, 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

Miscellaneous

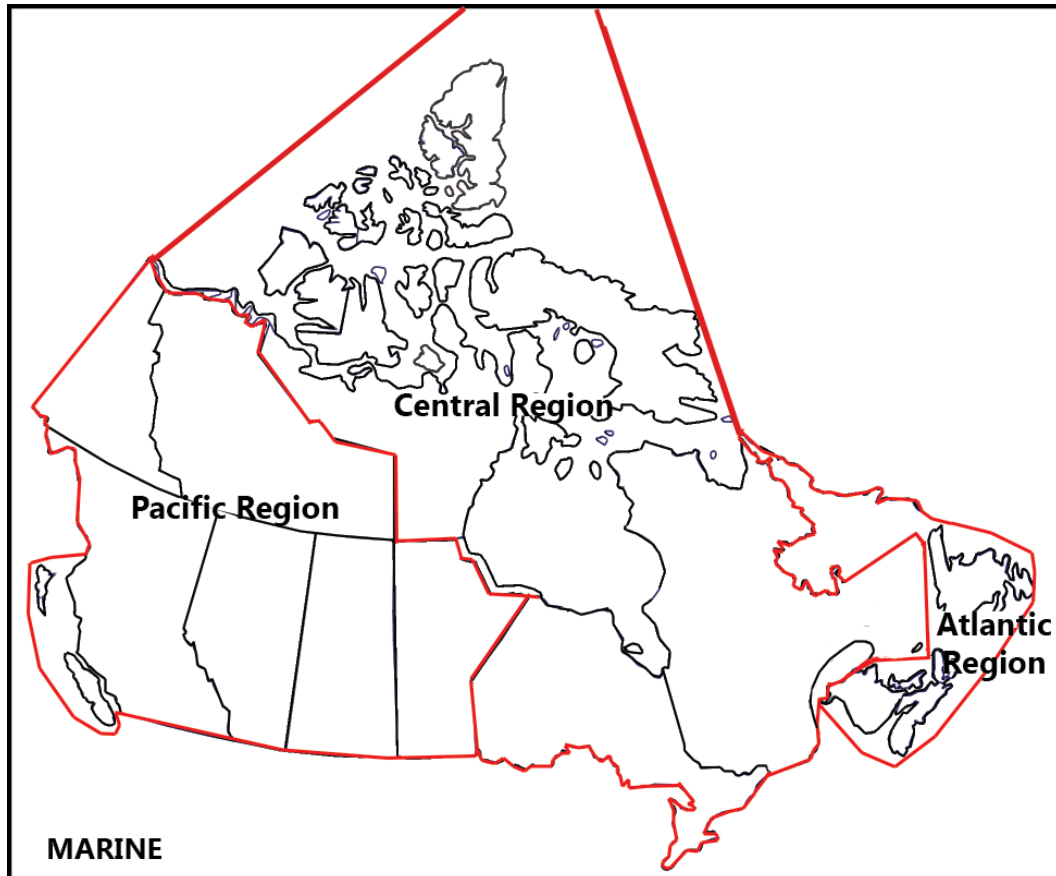
Gross tons (GT)

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 or a length of 1 km or more within a port harbor, with at least one port being a domestic port.

TSB regional offices' areas of responsibility



Pacific Region's area of responsibility consists of the provinces of British Columbia, Alberta, Saskatchewan, and Manitoba, the Yukon and the Northwest Territories south of the 70th parallel, as well as the waters adjacent to these provinces and territories.

Central Region's area of responsibility consists of the provinces of Ontario and Quebec (including the Magdalen Islands), the territory of Nunavut, and the Northwest Territories north of the 70th parallel, as well as James Bay, Hudson Bay, the St. Lawrence Seaway, and the Great Lakes waterways up to the Canada–U.S. border.

Atlantic Region's area of responsibility consists of the provinces of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador, as well as the waters adjacent to these provinces.