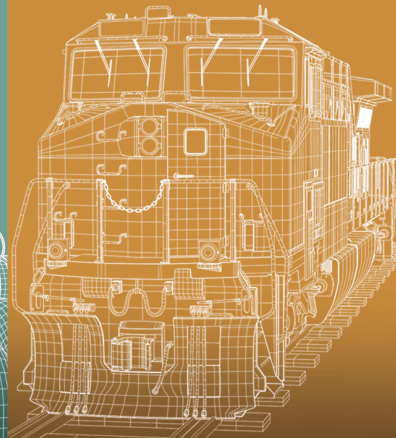
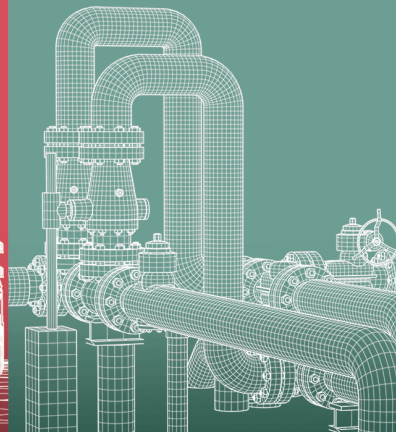




Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada



STATISTICAL SUMMARY

Marine transportation occurrences in 2023

Canada

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Statistical summary: marine transportation occurrences in 2023

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Le présent rapport est également disponible en français.

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Executive summary

The TSB received 1027 reports of marine transportation occurrences in 2023 (235 accidents and 792 incidents), including 18 fatalities.

The total of 235 marine transportation accidents represents a decrease from the 244 accidents in 2022 and is lower than the 10-year average of 274. In 2023, 84% of accidents were shipping accidents (when a ship, for example, sinks, founders, or capsizes). The remaining 16% of accidents in 2023 were accidents aboard ship (when a person is killed or seriously injured when, for example, boarding a ship or by falling overboard).

The 18 marine transportation fatalities are more than the 2022 total of 7 and the 10-year average of 14. Of the 18 fatalities, 10 involved shipping accidents. Over the previous 10 years, fatalities have been evenly divided between shipping accidents and accidents aboard ship.

As in previous years, a high proportion of the fatalities (11 of the 18) was related to commercial fishing (Canadian-flag vessels in Canadian waters). These fatalities underline why commercial fishing safety remains on the TSB's Watchlist.

The 2023 accident rate was 3.1 accidents per million commercial vessel-kilometres, lower than the 2013 to 2022 average of 4.0.

Statistical summary

Marine transportation occurrences in 2023

The Transportation Safety Board of Canada (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 2023 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 as of 15 February 2024. Since the occurrence data are constantly being updated in the live database, the statistics may change slightly over time.

Also, as many occurrences are limited to data gathering, information recorded on some occurrences may not have been verified.

The following discussion refers to data tables contained in this document.

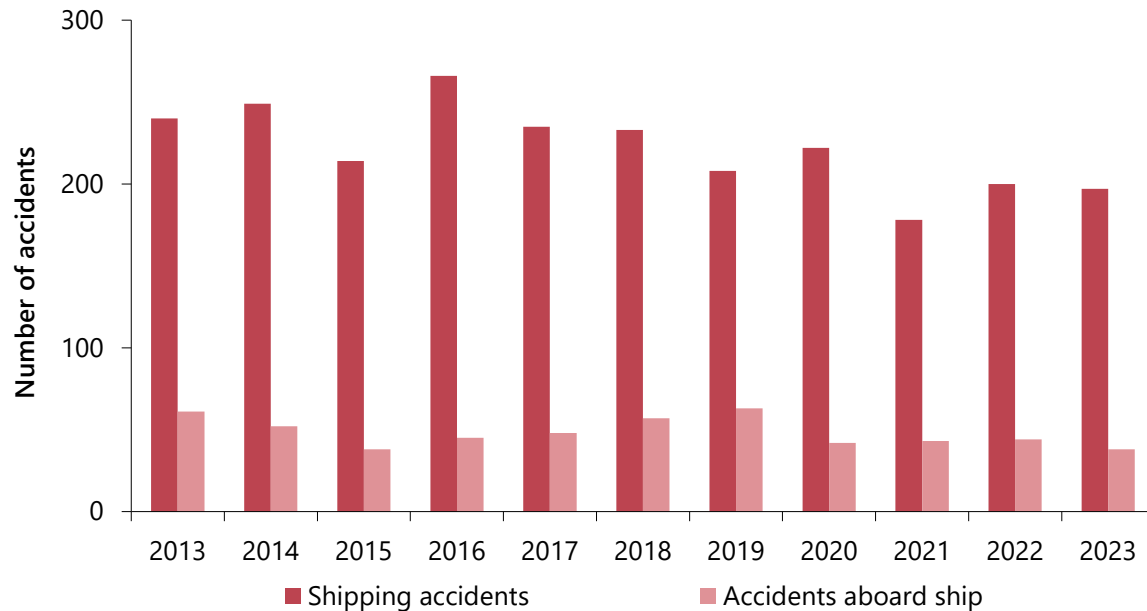
Accidents

Overview of accidents and casualties

In 2023, 235 marine accidents¹ were reported to the TSB, below the 2022 total of 244 and below the 10-year (2013 to 2022) average of 274 (Figure 1). In 2023 the proportion of shipping accidents (as opposed to accidents aboard ship) was 84% of all marine accidents, slightly higher than the previous 10-year average of 82%.

There were 197 shipping accidents in 2023, slightly below the 2022 total of 200 and 12% down from the 2013 to 2022 average of 225. Fishing vessels were involved in 28% of all shipping accidents, which is the highest proportion among vessel types, followed by solid cargo vessels, which were involved in 27% of shipping accidents (data not shown).

Figure 1. Shipping accidents and accidents aboard ship, 2013 to 2023



In 2023, there were 38 accidents aboard ship, compared to 44 in 2022 and also down from the 2013 to 2022 average of 49. Fishing vessels were involved in 29% of all accidents aboard ship, which is the highest proportion among vessel types, followed by vessels carrying solid cargo, which were involved in 24% of accidents aboard ship (data not shown).

Casualties (tables 1, 6, and 7)

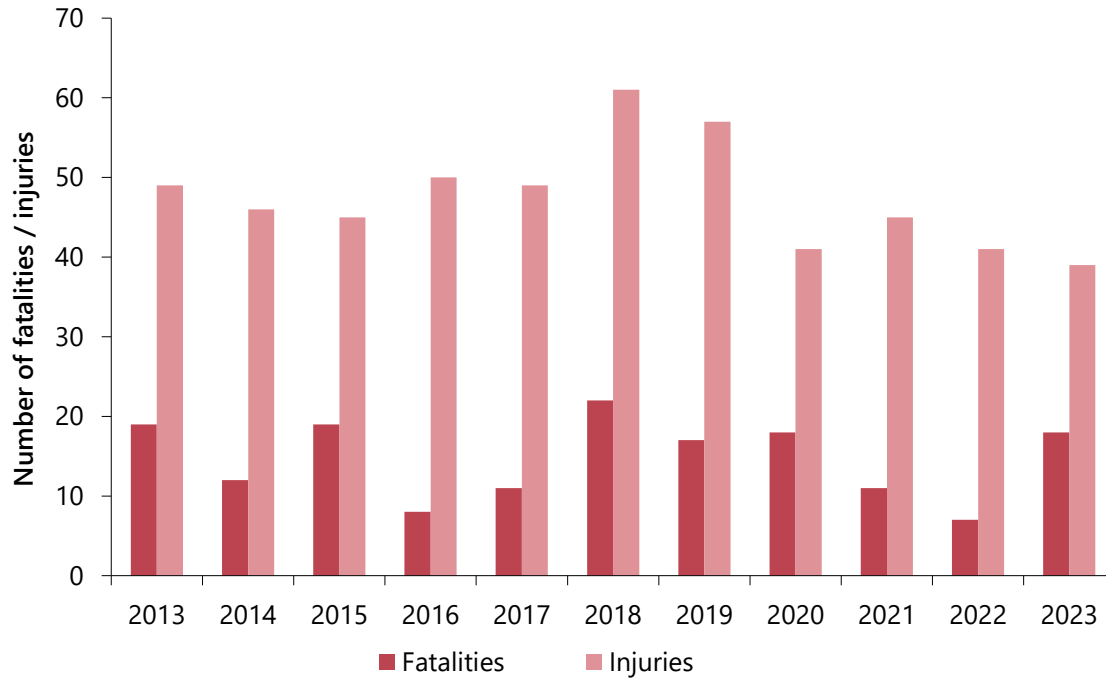
In 2023, 18 marine fatalities were reported, up from the 7 fatalities reported in 2022, and above the annual average of 14 in the 2013 to 2022 time period. Of the 18 fatalities in 2023, 10 were the result of 6 shipping accidents, while the remaining 8 fatalities resulted from 3 accidents aboard ship.

¹ See the Definitions section.

Of note, 8 shipping accident fatalities in 2023 involved commercial fishing vessels, and 3 of the fatalities that ensued from accidents aboard ship occurred aboard commercial fishing vessels. These data indicate that more still needs to be done to improve safety in the commercial fishing industry.

Thirty-nine people were seriously injured in 2023, slightly down from 41 in 2022 and below the annual average of 48 from 2013 to 2022. Thirty-three of the 39 serious injuries (85%) resulted from accidents aboard ship, and 6 resulted from shipping accidents (Figure 2).

Figure 2. Marine fatalities and serious injuries, 2013 to 2023

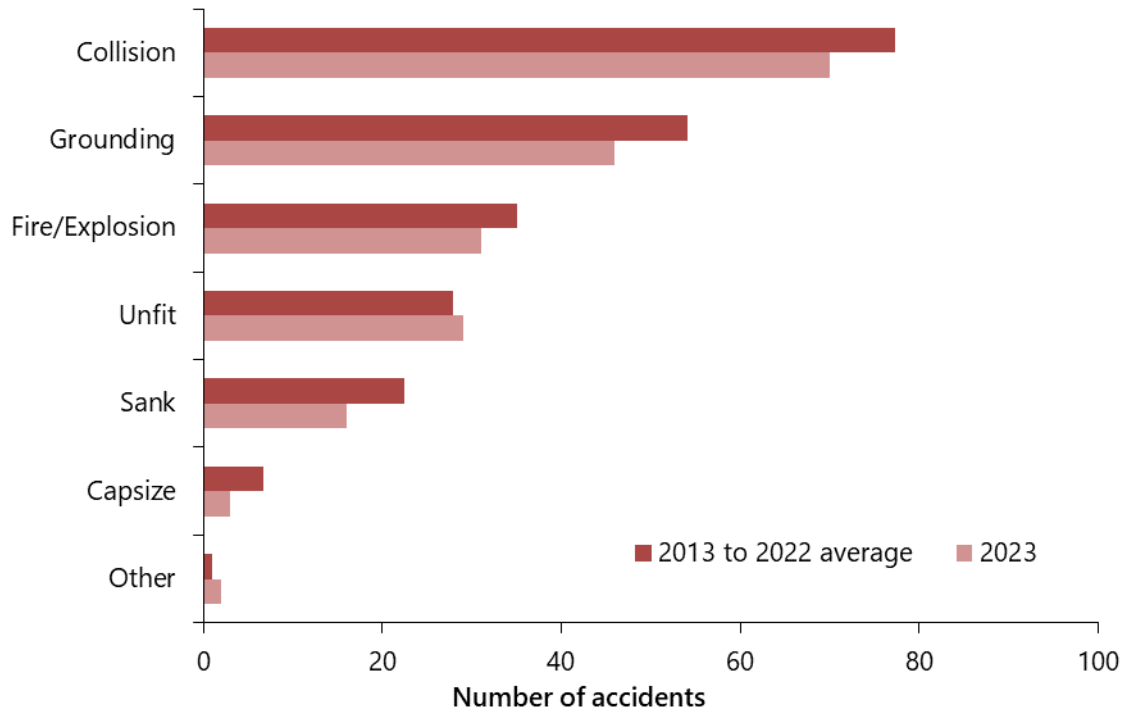


Shipping accidents

Type of accident (Table 1)

As illustrated in Figure 3, the most frequent types of shipping accidents in 2023 were collision (36% of all accident types reported), grounding (23%) and fire/explosion (16%). The total number of collisions (70) was 9% less than the 10-year (2013 to 2022) average of 77, the number of groundings (46) was 15% below the 10-year average of 54, and the number of fire/explosion accidents (31) was 12% below the 10-year average of 35.

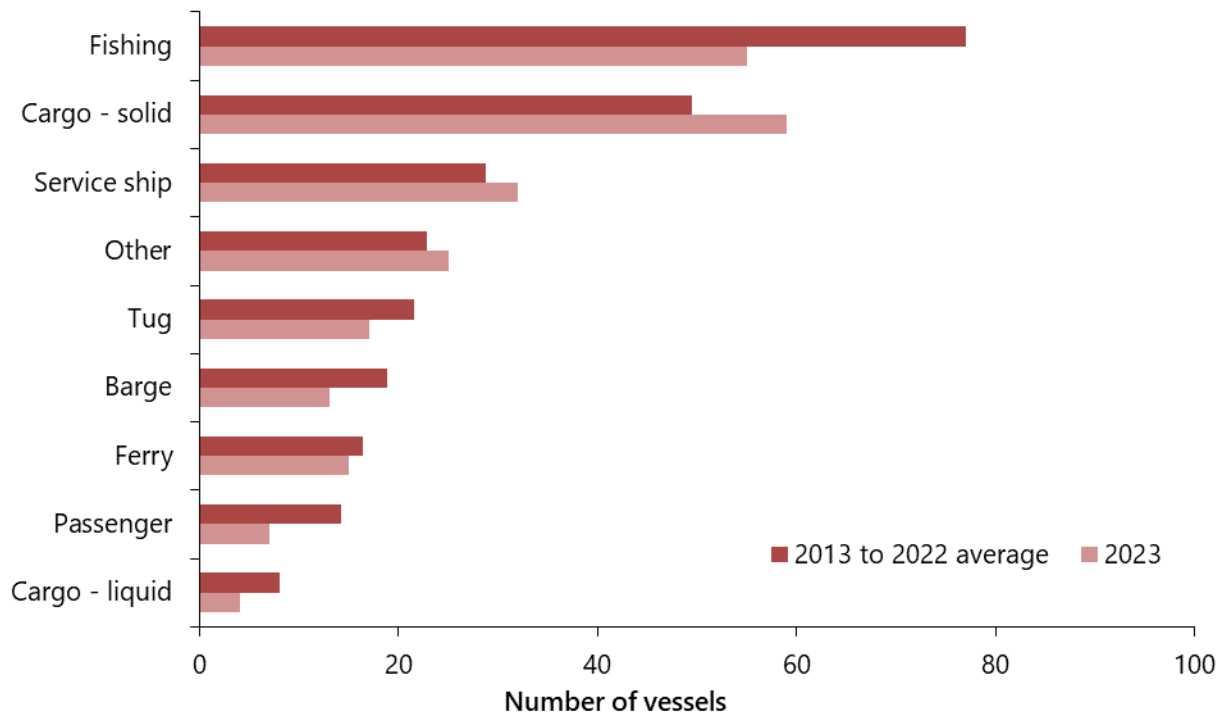
Figure 3. Shipping accidents, by accident type, in 2023 compared with the 2013 to 2022 average



Type of vessel (Table 1)

Fifty-five fishing vessels were involved in shipping accidents in 2023, down from 61 in 2022 and below the 2013 to 2022 average of 77 (Figure 4). Fishing vessels represented 24% of all vessels involved in shipping accidents.

Figure 4. Shipping accidents, by vessel type, in 2023 compared with the 2013 to 2022 average



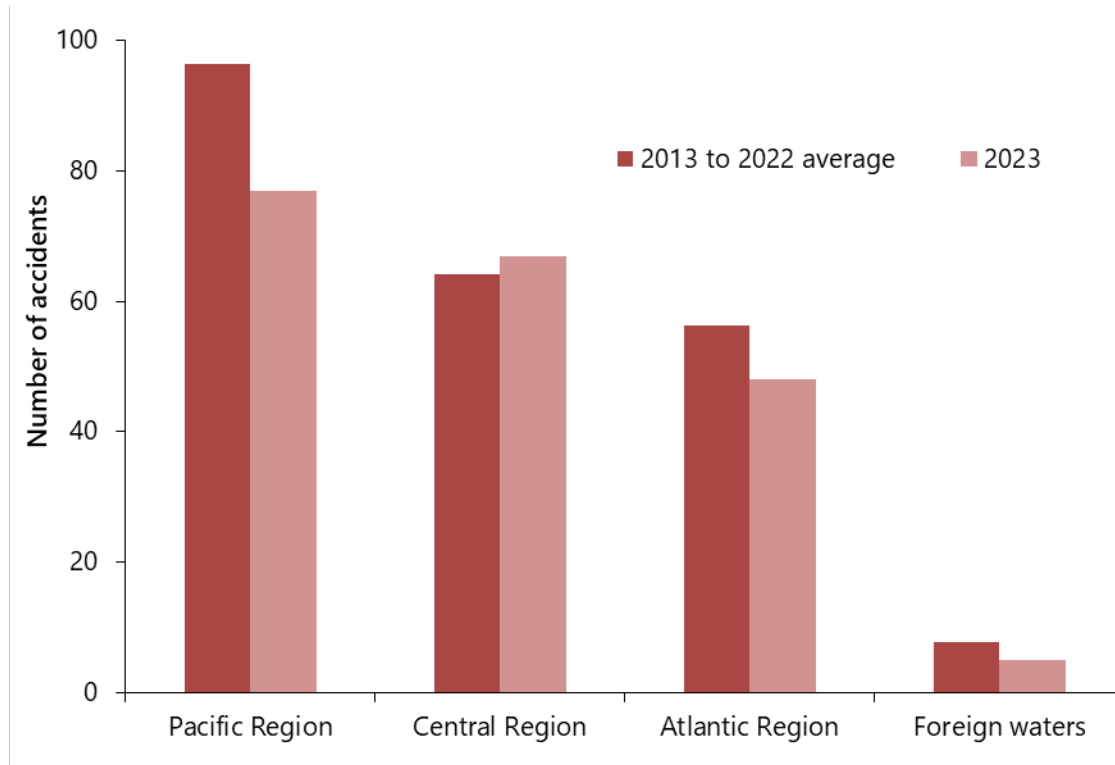
Geographical region (Table 2)

In 2023, 39% of shipping accidents occurred in the Pacific region, 34% in the Central region, and 24% in the Atlantic region. Less than 3% of shipping accidents were in foreign waters.² In the Pacific region in 2023, the number of shipping accidents dropped 20% below the 2013 to 2022 average of 97, and in the Atlantic region 15% below the 2013 to 2022 average of 56, while in the Central region shipping accidents were 5% above the 2013 to 2022 average of 64 (Figure 5).

In 2023, fishing vessels were more often involved in shipping accidents in the Atlantic region (25 fishing vessels, down from the 2013 to 2022 average of 40), and in the the Pacific region (22 fishing vessels, below the 2013 to 2022 average of 30). In the Central region, most of the vessels involved in shipping accidents were of cargo/tanker vessel type (41 cargo/tankers, above the 2013 to 2022 average of 35) (Table 2).

² See the Definitions section.

Figure 5. Shipping accidents, by geographical region, in 2023 compared with the 2013 to 2022 average



Vessel flag (tables 1, 3, and 4)

In 2023, 79% of the 227 vessels involved in shipping accidents reported to the TSB were Canadian-flag vessels. Of these Canadian-flag vessels, 44% were commercial non-fishing vessels and 34% were fishing vessels; the remaining 22% were non-commercial vessels, pleasure craft, or service vessels.

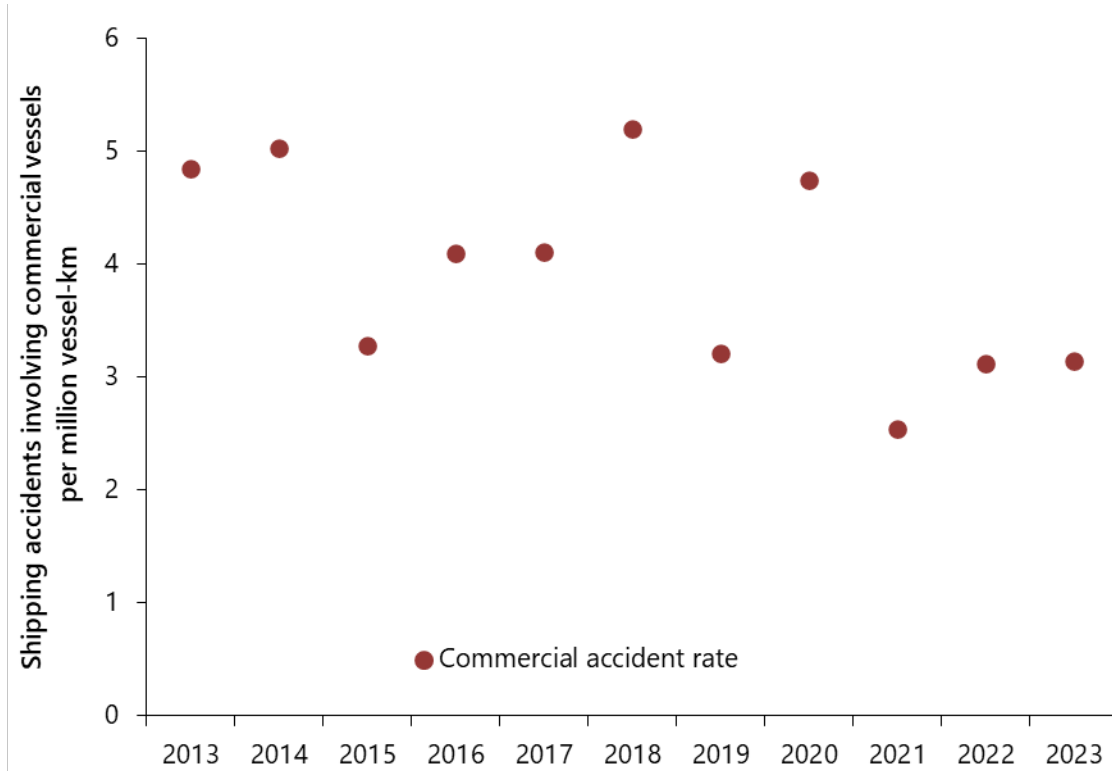
Accident rates

Canadian-flag commercial non-fishing vessels were most often involved in collisions (58%), groundings (13%), or fire/explosions (12%) (Table 3). According to information provided by Transport Canada,³ marine activity for Canadian commercial non-fishing vessels over 15 gross tons (GT) (excluding passenger vessels and cruise ships) was 14.301 million commercial vessel-km in 2023, which is 12% above the 2013 to 2022 average.⁴ This yields a rate of 3.1 shipping accidents per million commercial vessel-km in 2023, lower than the prior 10-year average of 4.0.

³ Commercial activity data. Source: Transport Canada, Transportation and Economic Analysis – Policy Group, email communication 03 April 2024.

⁴ Transport Canada (TC) has updated its methodology for measuring commercial activity. Beginning from 2013, 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, 2013 to 2023

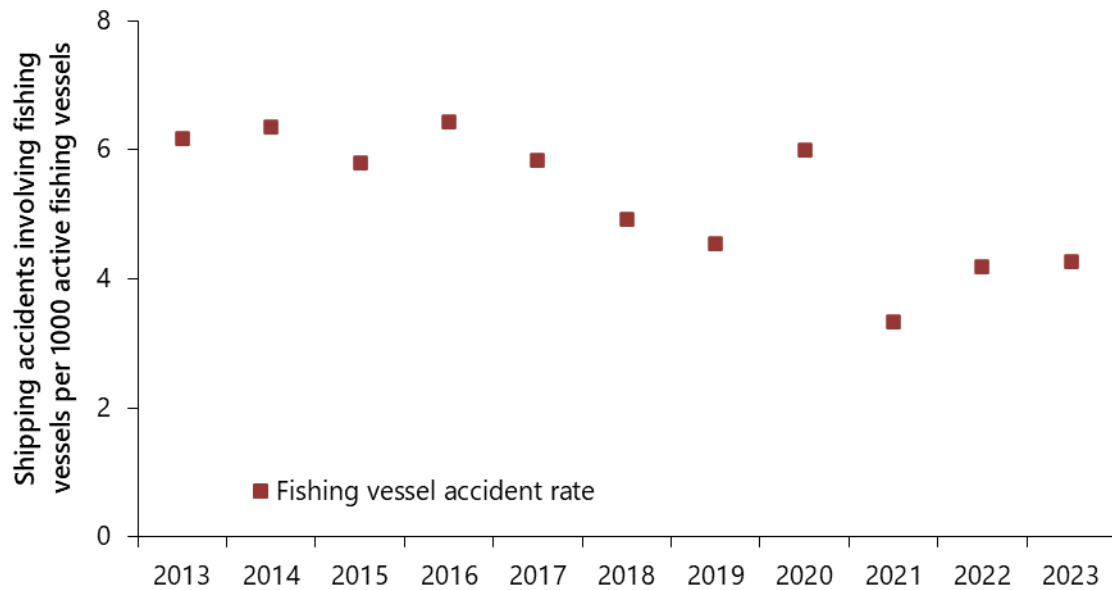


For Canadian-flag fishing vessels, the most frequently reported shipping accident types in 2023 were grounding (40%) and fire/explosion (25%) (Table 3). According to information provided by the Department of Fisheries and Oceans (DFO), there were 12 662 active fishing vessels in Canada in 2023.^{5,6} The shipping accident rate for Canadian-flag fishing vessels (Figure 7) was 4.3 shipping accidents per 1000 active fishing vessels in 2023, above the 2022 rate of 4.2, but below the 2013 to 2022 average of 5.4.

⁵ Source: Department of Fisheries and Oceans, email communications 06 May, 14 May 2024.

⁶ The TSB estimated some missing regional data by extrapolating from earlier years.

Figure 7. Shipping accident rate, for Canadian-flag fishing vessels, 2013 to 2023



In 2023, 47 foreign-flag vessels were involved in shipping accidents in Canadian waters, 44 of which were commercial non-fishing vessels (Table 4). According to information provided by Transport Canada,⁷ marine activity for foreign commercial non-fishing vessels over 15 GT was 21.604 million commercial vessel-km in 2023, above the 2013 to 2022 average of 18.846 million 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 2013 to 2022 average of 1.7.

Vessels lost (tables 1 and 5)

In 2023, 13 vessels were reported lost, unchanged from 2022 but below the 2013 to 2022 average of 16. Five of the 13 vessels lost in 2023 were fishing vessels. Three of the 13 vessels lost were less than 15 GT and for 6 vessels the tonnage was not known (but likely under 15 GT). In the past 11 years (2013 to 2023), fishing vessels under 60 GT have accounted for 58% of Canadian vessels lost (tables 1 and 5, some data not shown).

⁷ Source: Transport Canada, Transportation and Economic Analysis – Policy Group, email communication 03 April 2024.

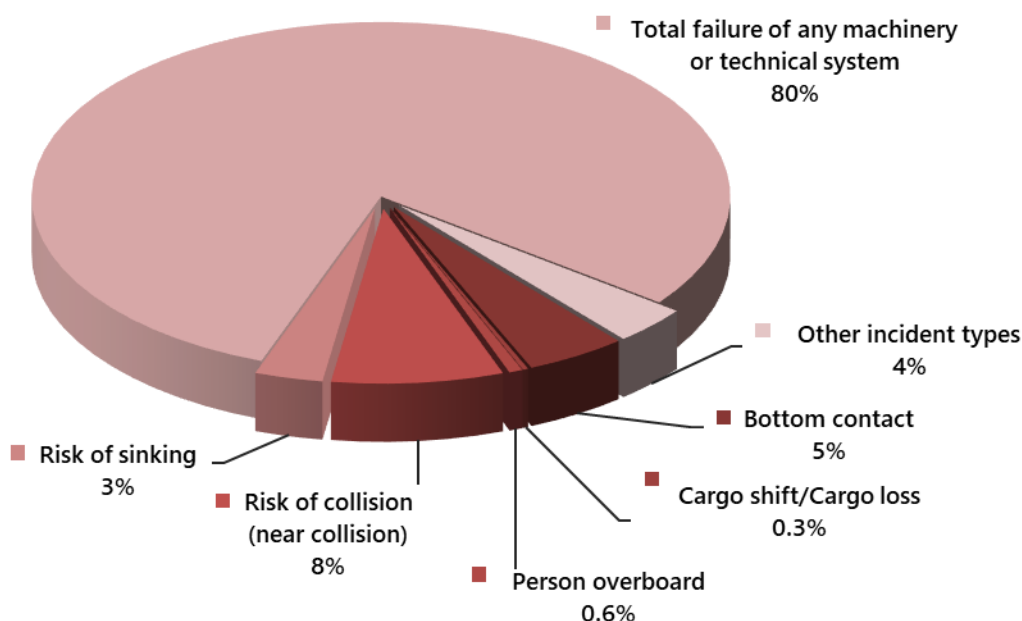
Incidents

Overview of incidents

In 2023, 792 marine incidents were reported to the TSB, down from the total of 968 in 2022 and below the annual 10-year (2013 to 2022) average of 845.⁸ Incidents in the Atlantic region (305) represented 39% of all marine incidents, followed by 31% (244) in the Central region, and 29% (227) in the Pacific region. The remaining 2% (16) of reported incidents occurred in foreign waters (Table 2).

The majority (80%) of reportable incidents involved the total failure of any machinery or technical system (Figure 8).⁹ The largest proportion of these incidents (43%) occurred in the Atlantic region, while the greatest proportion of incidents involving risk of collision (70%) 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 2023 were fishing vessels (55%) and solid cargo vessels (22%) (data not shown).

Figure 8. Marine incidents, by type, 2023*



* Due to rounding of percentages in category labels, additions across incident types should be calculated from Table 1 data rather than by adding percentages shown in Figure 8.

⁸ 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.

⁹ 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, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Accidents¹	301	301	252	311	283	290	271	264	221	244	235
Shipping accidents by type	240	249	214	266	235	233	208	222	178	200	197
Capsize	8	3	10	7	5	10	9	2	4	9	3
Collision	79	88	57	89	89	82	72	97	55	65	70
Fire/Explosion	32	29	33	44	33	35	32	36	44	33	31
Grounding	62	61	59	65	52	58	51	47	36	50	46
Sank	15	26	17	27	22	27	18	21	23	28	16
Sustains damage rendering vessel unseaworthy/ unfit for purpose	43	41	36	33	33	21	26	18	13	15	29
Other shipping accident types	1	1	2	1	1	0	0	1	3	0	2
Accidents aboard ship	61	52	38	45	48	57	63	42	43	44	38
Vessels involved in shipping accidents	277	281	241	312	270	268	232	258	201	232	227
Barge	19	12	10	24	20	29	18	25	14	18	13
Cargo - liquid	7	14	12	7	10	9	7	6	5	4	4
Cargo - solid	60	68	37	40	39	47	57	62	39	46	59
Ferry	13	20	18	20	12	10	17	15	18	21	15
Fishing	90	92	82	93	90	75	60	78	49	61	55
Passenger	15	13	17	15	15	15	21	12	7	12	7
Service ship	36	21	29	50	38	27	21	20	17	28	32
Tug	25	22	19	26	25	25	8	22	24	19	17
Other vessel types	12	19	17	37	21	31	23	18	28	23	25
Vessels involved in shipping accidents	277	281	241	312	270	268	232	258	201	232	227
Canadian non-fishing vessels	147	144	127	184	148	157	125	141	119	136	127
Canadian fishing vessels	88	92	81	92	86	70	58	75	46	60	53
Foreign vessels	42	45	33	36	36	41	49	42	36	36	47
Vessels lost	21	20	24	19	14	15	9	14	15	13	13
1600 GT and over	0	0	0	0	0	1	0	0	0	1	0
150 to 1599 GT	1	1	2	1	0	0	0	0	2	0	1
60 to 149 GT	4	4	6	5	2	4	1	3	0	1	2
15 to 59 GT	7	4	6	2	4	3	1	3	4	4	1
Less than 15 GT	6	8	9	7	5	6	7	7	5	5	3
Unknown tonnage	3	3	1	4	3	1	0	1	4	2	6
Persons fatally injured	19	12	19	8	11	22	17	18	11	7	18
Shipping accidents	11	4	13	6	4	14	8	14	9	2	10
Accidents aboard ship	8	8	6	2	7	8	9	4	2	5	8
Persons seriously injured	49	46	45	50	49	61	57	41	45	41	39
Shipping accidents	0	1	12	5	7	8	10	2	5	7	6
Accidents aboard ship	49	45	33	45	42	53	47	39	40	34	33
Occurrences with a dangerous good release¹	0	0	5	7	7	8	2	4	1	12	3
Reportable incidents	732	747	705	764	881	931	945	925	856	968	792
Bottom contact	19	24	36	23	42	35	33	15	22	33	37
Cargo shift/Cargo loss	2	1	5	4	6	7	3	3	4	2	2
Person overboard	10	7	10	8	9	11	14	5	5	13	5
Risk of collision (near collision)	63	35	31	45	52	67	54	66	35	63	63
Risk of sinking	24	0	10	20	14	34	14	31	30	27	25
Total failure of any machinery or technical system	603	676	590	636	718	732	797	756	730	792	632
Other incident types	11	4	23	28	40	45	30	49	30	38	28

Data extracted 15 February 2024

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 01 July 2014.

Table 2. Marine transportation occurrences, vessels, losses and casualties, by region¹, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Pacific region											
Shipping accidents	88	95	90	138	111	101	80	86	81	95	77
Accidents aboard ship	21	23	14	20	9	12	15	15	13	8	13
Vessels involved in shipping accidents	107	108	106	164	130	119	92	102	95	109	87
Barge/Tug	28	23	23	39	34	37	17	30	24	21	18
Cargo/Tanker	8	15	6	14	9	8	13	16	11	12	11
Ferry/Passenger	10	10	15	17	12	13	16	10	17	17	11
Fishing	30	36	33	43	35	30	24	24	18	30	22
Other vessel types	31	24	29	51	40	31	22	22	25	29	25
Vessels lost	3	9	12	9	9	3	3	5	6	5	3
Fatalities	2	5	12	0	6	7	8	4	2	1	5
Reportable incidents	150	149	259	289	282	254	233	257	251	272	227
Central region											
Shipping accidents	74	74	64	57	59	63	68	71	54	57	67
Accidents aboard ship	25	17	10	11	16	21	20	17	15	21	12
Vessels involved in shipping accidents	86	85	71	66	66	71	75	82	60	70	81
Barge/Tug	14	8	6	9	7	8	7	10	12	13	10
Cargo/Tanker	40	55	35	24	26	35	38	40	25	33	41
Ferry/Passenger	13	14	13	9	11	10	17	10	7	10	8
Fishing	8	3	6	6	14	8	1	14	3	3	7
Other vessel types	11	5	11	18	8	10	12	8	13	11	15
Vessels lost	4	2	2	2	0	2	0	1	2	1	4
Fatalities	6	2	2	0	3	1	3	1	2	2	3
Reportable incidents	148	137	116	125	203	274	284	284	244	339	244
Atlantic region											
Shipping accidents	63	72	55	64	59	54	53	55	42	45	48
Accidents aboard ship	12	12	14	14	19	22	24	9	13	14	11
Vessels involved in shipping accidents	68	80	58	73	66	62	58	62	45	50	53
Barge/Tug	2	3	0	1	1	5	2	4	2	3	2
Cargo/Tanker	6	6	2	3	11	4	6	4	7	3	7
Ferry/Passenger	4	9	7	9	4	2	5	7	1	6	2
Fishing	50	52	43	44	40	35	35	40	28	28	25
Other vessel types	6	10	6	16	10	16	10	7	7	10	17
Vessels lost	13	9	10	8	5	10	6	8	7	7	5
Fatalities	11	5	5	8	2	13	6	13	7	4	10
Reportable incidents	428	450	318	336	382	391	410	372	352	348	305
Foreign waters											
Shipping accidents	15	8	5	7	6	15	7	10	1	3	5
Accidents aboard ship	3	0	0	0	4	2	4	1	2	1	2
Vessels involved in shipping accidents	16	8	6	9	8	16	7	12	1	3	6
Barge/Tug	0	0	0	1	3	4	0	3	0	0	0
Cargo/Tanker	13	6	6	6	3	9	7	8	1	2	4
Ferry/Passenger	1	0	0	0	0	0	0	0	0	0	1
Fishing	2	1	0	0	1	2	0	0	0	0	1
Other vessel types	0	1	0	2	1	1	0	1	0	1	0
Vessels lost	1	0	0	0	0	0	0	0	0	0	1
Fatalities	0	0	0	0	0	1	0	0	0	0	0
Reportable incidents	6	11	12	14	14	12	18	12	9	9	16

Data extracted 15 February 2024

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

Table 3. Canadian-flag vessels involved in shipping accidents, by category of vessel and type of accident, and commercial accident rates, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Canadian-flag vessels involved	232	225	193	244	212	195	165	201	138	176	156
Commercial vessels	101	107	83	100	90	100	81	102	73	85	69
Capsize	0	0	3	2	1	2	1	1	1	2	0
Collision	45	53	34	48	44	49	42	64	34	45	40
Fire/Explosion	12	12	11	14	7	14	13	7	13	14	8
Grounding	28	16	14	21	19	16	13	14	14	14	9
Sank	3	6	10	5	5	5	3	6	7	4	2
Sustains damage rendering vessel unseaworthy/unfit for purpose	13	20	11	10	14	14	9	10	4	6	9
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	1
Commercial vessel-km (thousands) ¹	11 764	12 146	11 875	11 471	12 413	13 092	13 697	12 867	14 157	14 113	14 301
Commercial accidents per million vessel-km ²	4.8	5.0	3.3	4.1	4.1	5.2	3.2	4.7	2.5	3.1	3.1
Fishing vessels	88	91	79	90	82	68	58	75	43	59	54
Capsize	6	1	5	3	2	4	2	1	2	2	1
Collision	12	15	4	12	19	12	7	17	4	3	6
Fire/Explosion	13	9	14	16	15	6	10	19	15	10	13
Grounding	30	32	33	31	27	33	26	26	13	24	21
Sank	10	19	10	17	8	9	7	10	5	17	7
Sustains damage rendering vessel unseaworthy/unfit for purpose	16	14	11	10	10	4	6	1	2	3	6
Other shipping accident types	1	1	2	1	1	0	0	1	2	0	0
Active fishing vessels ³	13 778	13 697	13 265	13 363	13 172	13 180	12 743	12 007	12 586	13 629	12 662
Fishing vessel accident rate ⁴	6.2	6.4	5.8	6.4	5.8	4.9	4.6	6.0	3.3	4.2	4.3
Other vessels	43	27	31	54	40	27	26	24	22	32	33
Capsize	1	0	1	1	1	1	1	0	1	1	0
Collision	24	14	15	25	24	14	12	8	4	16	13
Fire/Explosion	3	7	3	14	4	10	2	9	9	6	8
Grounding	10	3	8	7	2	1	3	4	2	6	9
Sank	2	1	0	3	6	1	5	2	3	3	1
Sustains damage rendering vessel unseaworthy/unfit for purpose	3	2	4	4	3	0	3	1	3	0	2
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0

Data extracted 15 February 2024

¹ Based on data from Transport Canada, which has updated its methodology for measuring commercial activity. 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).

² 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.

³ Commercial fishing vessels landing at least one catch in that calendar year (Source: Department of Fisheries and Oceans, email communications 06 May, 14 May 2024). The TSB estimated some missing regional data by extrapolating from earlier years.

⁴ The fishing vessel accident rate is the number of shipping accidents involving Canadian-flag commercial fishing vessels per 1000 active fishing vessels.

Table 4. Foreign-flag vessels involved in shipping accidents, by category of vessel and type of accident, and commercial accident rates, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Foreign-flag vessels involved	42	45	33	36	36	41	49	42	36	36	47
Commercial vessels	38	41	30	32	31	31	45	39	33	35	44
Capsize	0	0	0	0	0	0	0	0	0	0	0
Collision	19	29	11	17	19	23	25	30	20	21	26
Fire/Explosion	5	0	5	0	3	3	6	0	5	2	2
Grounding	2	7	4	8	3	2	6	3	5	5	4
Sank	1	0	0	1	0	0	0	0	0	1	0
Sustains damage render unseaworthy/unfit for purpose	11	5	10	6	6	3	8	6	3	6	12
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0
Commercial vessel-km (thousands) ¹	18 574	19 541	17 838	15 762	18 261	19 375	19 050	19 376	20 314	20 369	21 604
Commercial accidents per million vessel-kms ²	1.8	2.1	1.5	1.8	1.6	1.4	1.9	1.8	1.6	1.6	2.0
Fishing vessels	2	0	1	1	4	5	2	3	3	1	2
Capsize	0	0	0	0	0	0	0	0	0	0	0
Collision	2	0	0	0	2	1	0	2	0	1	1
Fire/Explosion	0	0	0	0	1	1	1	0	1	0	0
Grounding	0	0	1	1	1	2	1	1	0	0	0
Sank	0	0	0	0	0	1	0	0	2	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	0	0	0	0	0	0	0	0	1
Other vessels	2	4	2	3	1	5	2	0	0	0	1
Capsize	0	1	1	0	0	1	0	0	0	0	0
Collision	2	1	1	2	0	2	2	0	0	0	1
Fire/Explosion	0	0	0	0	1	1	0	0	0	0	0
Grounding	0	2	0	1	0	0	0	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	1	0	0	0	0	0
Other shipping accident types	0	0	0	0	0	0	0	0	0	0	0

Data extracted 15 February 2024

¹ Based on data from Transport Canada, which has updated its methodology for measuring commercial activity. 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).

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 million vessel-km.

Table 5. Vessels lost by category and age of vessel, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Vessels lost	21	20	24	19	14	15	9	14	15	13	13
0-4 years	0	0	1	0	0	0	1	0	1	0	0
5-9 years	1	0	0	0	0	1	0	0	0	0	0
10-14 years	3	0	3	0	0	2	0	0	1	0	1
15-19 years	2	2	1	3	2	2	1	2	1	2	0
20-24 years	3	1	1	0	0	1	1	0	2	0	1
25-29 years	2	5	5	1	0	3	0	0	1	1	0
30+ years	5	4	10	7	7	3	1	6	5	5	3
Unknown	5	8	3	8	5	3	5	6	4	5	8
Commercial vessels	1	2	8	4	2	3	0	1	3	3	2
0-4 years	0	0	0	0	0	0	0	0	1	0	0
5-9 years	0	0	0	0	0	1	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	1	0	0	0	0	0	1	0
20-24 years	0	0	1	0	0	0	0	0	0	0	0
25-29 years	0	1	2	0	0	0	0	0	0	0	0
30+ years	1	1	4	2	1	1	0	0	2	1	1
Unknown	0	0	1	1	1	1	0	1	0	1	1
Fishing vessels	18	17	16	14	9	12	6	12	10	8	5
0-4 years	0	0	1	0	0	0	0	0	0	0	0
5-9 years	1	0	0	0	0	0	0	0	0	0	0
10-14 years	3	0	3	0	0	2	0	0	0	0	1
15-19 years	2	2	1	2	2	2	1	2	1	1	0
20-24 years	3	1	0	0	0	1	1	0	2	0	1
25-29 years	2	4	3	1	0	3	0	0	1	1	0
30+ years	2	3	6	5	6	2	0	6	3	4	2
Unknown	5	7	2	6	1	2	4	4	3	2	1
Other vessels	2	1	0	1	3	0	3	1	2	2	6
0-4 years	0	0	0	0	0	0	1	0	0	0	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	1	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	0	0	0	0	0	0	0	0	0	0	0
30+ years	2	0	0	0	0	0	1	0	0	0	0
Unknown	0	1	0	1	3	0	1	1	1	2	6

Data extracted 15 February 2024

Table 6. Accidents and persons fatally¹ or seriously injured, by type of accident, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Shipping accidents with fatalities¹ or serious injuries	5	4	7	5	8	12	8	7	8	6	8
Capsize	2	0	2	1	1	5	3	0	3	0	2
Collision	0	1	2	2	4	1	1	2	1	2	3
Fire/Explosion	2	0	1	1	1	1	1	0	1	0	0
Grounding	1	0	1	0	0	3	1	1	0	2	0
Sank	0	3	1	1	2	2	2	3	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	0	0	0	0	0	0	0	1	1	0	1
Persons fatally injured in shipping accidents	11	4	13	6	4	14	8	14	9	2	10
Capsize	6	0	9	2	1	7	7	0	4	0	2
Collision	0	0	1	0	0	2	0	0	0	0	1
Fire/Explosion	2	0	0	0	0	0	0	0	0	0	0
Grounding	3	0	0	0	0	1	0	1	0	0	0
Sank	0	4	3	4	3	4	1	9	3	2	6
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	4	2	0	1
Persons seriously injured in shipping accidents	0	1	12	5	7	8	10	2	5	7	6
Capsize	0	0	0	0	0	1	0	0	2	0	0
Collision	0	1	9	4	6	0	4	2	1	2	3
Fire/Explosion	0	0	1	1	1	5	1	0	1	0	0
Grounding	0	0	2	0	0	2	4	0	0	5	0
Sank	0	0	0	0	0	0	1	0	1	0	3
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	61	52	38	45	48	57	63	42	43	44	38
Persons fatally injured in accidents aboard ship	8	8	6	2	7	8	9	4	2	5	8
Boarding, being on board, falling overboard from the ship	3	5	6	1	5	7	8	4	2	4	7
In contact with any part of the ship or its contents	5	3	0	1	2	1	1	0	0	1	1
Persons seriously injured in accidents aboard ship	49	45	33	45	42	53	47	39	40	34	33
Boarding, being on board, falling overboard from the ship	6	10	7	6	7	7	2	7	4	5	6
In contact with any part of the ship or its contents	43	35	26	39	35	46	45	32	36	29	27

Data extracted 15 February 2024

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, 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Vessels in shipping accidents with fatalities¹ or serious injuries	5	4	7	5	8	12	8	7	8	6	8
Barge/Tug	0	0	0	0	0	1	0	0	1	0	0
Cargo/Tanker	0	1	0	0	1	1	0	0	0	0	0
Ferry/Passenger	0	0	2	2	2	1	0	2	0	2	1
Fishing	5	3	3	2	3	8	3	5	5	2	4
Other	0	0	2	1	2	1	5	0	2	2	3
Persons fatally injured in shipping accidents	11	4	13	6	4	14	8	14	9	2	10
Barge/Tug	0	0	0	0	0	0	0	0	2	0	0
Cargo/Tanker	0	2	0	0	0	0	0	0	0	0	0
Ferry/Passenger	0	0	6	0	2	1	0	0	0	0	0
Fishing	11	2	6	6	1	13	4	14	6	1	8
Other	0	0	1	0	1	0	4	0	1	1	2
Persons seriously injured in shipping accidents	0	1	12	5	7	8	10	2	5	7	6
Barge/Tug	0	0	0	0	0	1	0	0	1	0	0
Cargo/Tanker	0	0	0	0	1	5	0	0	0	0	0
Ferry/Passenger	0	0	2	4	2	0	0	2	0	5	1
Fishing	0	1	1	0	3	1	2	0	1	1	3
Other	0	0	9	1	1	1	8	0	3	1	2
Vessels in accidents aboard ship with fatalities¹ or serious injuries	61	52	38	45	48	58	63	42	43	44	39
Barge/Tug	3	4	0	4	2	3	5	3	2	2	4
Cargo/Tanker	17	21	5	12	19	22	24	15	13	14	10
Ferry/Passenger	7	5	9	6	5	8	8	3	4	8	8
Fishing	25	18	23	19	16	21	23	14	23	15	11
Other	9	4	1	4	6	4	3	7	1	5	6
Persons fatally injured in accidents aboard ship	8	8	6	2	7	8	8	4	2	5	8
Barge/Tug	1	0	0	0	0	0	0	0	0	0	0
Cargo/Tanker	2	1	0	0	2	2	2	0	0	0	0
Ferry/Passenger	0	0	1	0	2	0	1	2	0	2	0
Fishing	5	6	5	1	2	4	4	2	2	2	3
Other	0	1	0	1	1	2	1	0	0	1	5
Persons seriously injured in accidents aboard ship	49	42	33	44	42	53	47	39	40	34	32
Barge/Tug	2	4	0	4	3	2	4	2	2	2	3
Cargo/Tanker	12	18	5	12	16	21	16	16	15	12	9
Ferry/Passenger	7	5	8	6	4	10	7	1	4	4	7
Fishing	19	12	19	19	14	17	19	12	19	12	9
Other	9	3	1	3	5	3	1	8	0	4	4

Data extracted 15 February 2024

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

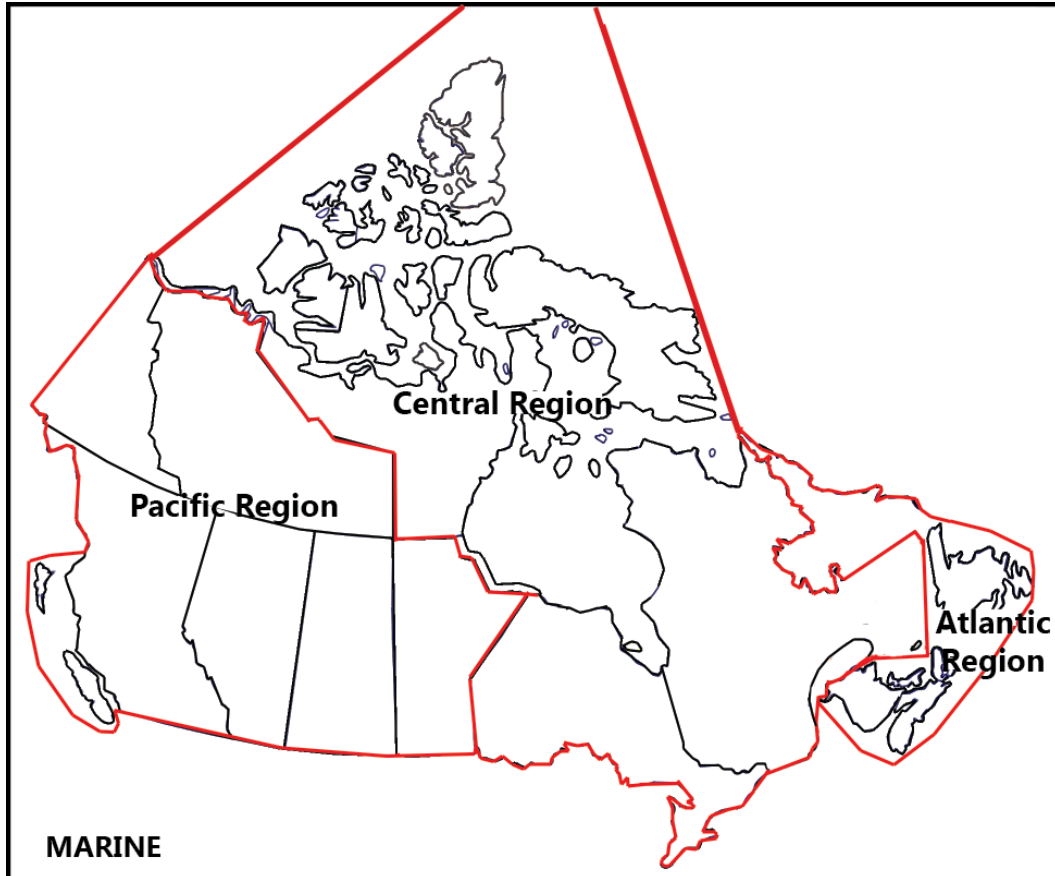
Gross tons (GT)

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.