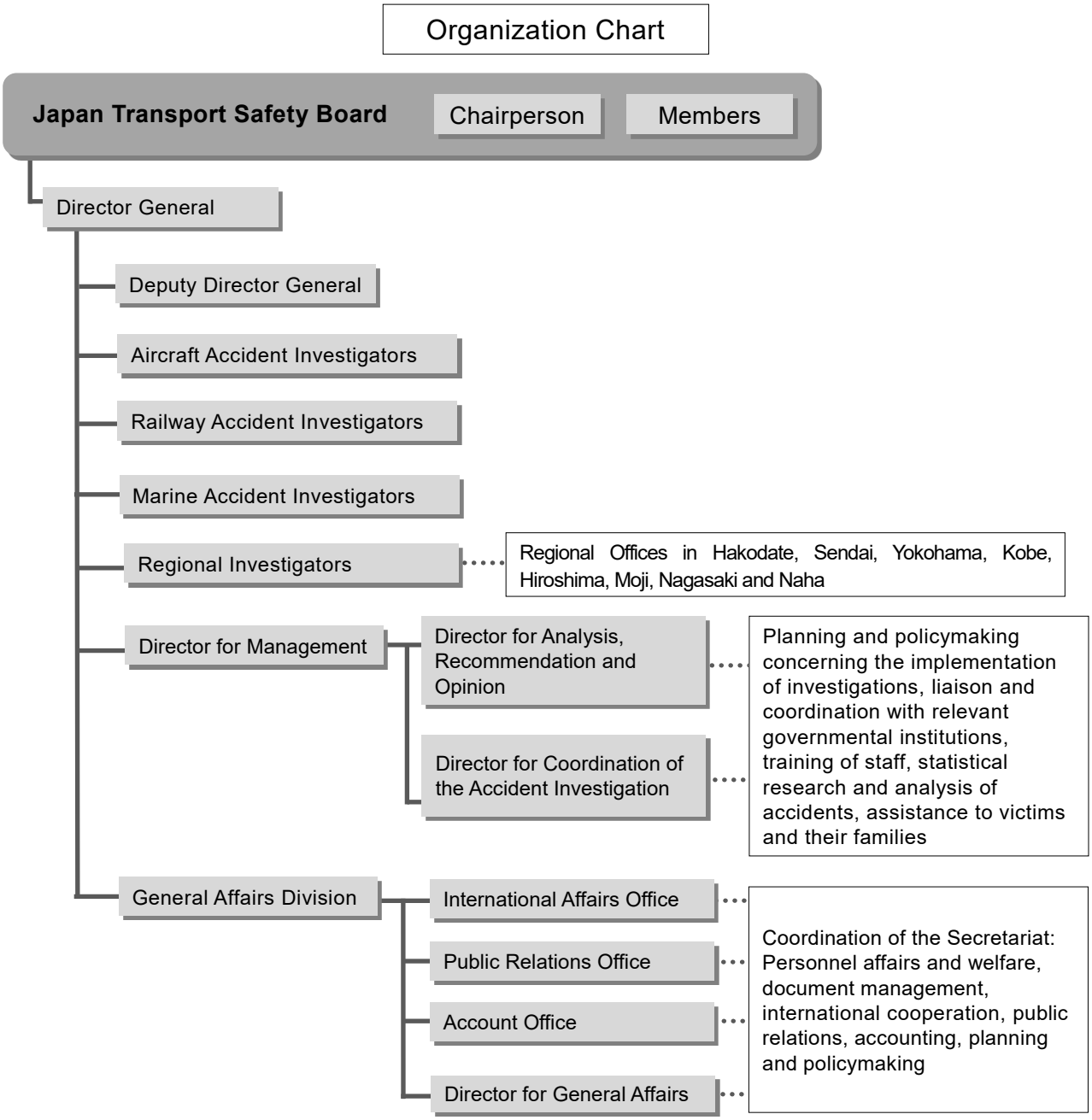
Appendices

Appendices

1 Outline of the organization

The Japan Transport Safety Board consists of the Chairperson, 12 members, and 179 secretariat staff (as of the end of March 2019). The staff in the secretariat consist of investigators who conduct investigations of aircraft, railway and marine accidents; the General Affairs Division that performs coordination-related jobs for the secretariat; and the Director for Management who is dedicated to the support and statistical analysis of accident investigations, and international cooperation. In addition, special support staff and local investigators are stationed at eight regional offices around the country (Hakodate, Sendai, Yokohama, Kobe, Hiroshima, Moji, Nagasaki and Naha). These local investigators investigate marine accidents (excluding serious ones) and support staff provide initial support for aircraft, railway and marine accidents.



2 Deliberation items of Board and each Committee

When investigations of accidents have progressed and the facts, as well as the causes and factors of accidents, have become clear to a certain extent, accident investigators put these results together and prepare a draft investigation report. This draft is then deliberated in the Board or Committees. As indicated in the table below, matters related to extremely serious accidents are deliberated in the Board, and matters related to particularly serious accidents are deliberated in the General Committee, and so nearly all draft investigation reports are deliberated in committees set up for each transport mode (Aircraft, Railway, Marine and Marine Special Committees).

The Board is composed of eight full-time members, including the Chairperson, and five part-time members, with its assemblies convened by the Chairperson. The Committees are composed of members with expertise related to each Committee, and their meetings are convened by their own Committee Directors. Any matters shall be decided by a majority of the members present for both the Board and Committees, and for both of these, a meeting cannot be convened and a decision cannot be made unless more than half of the members are present.

The Board (Committee) meeting is also attended by the Director General, Deputy Director General, Director for Management, Investigators concerned from the Secretariat.

Deliberation items of Board and each Committee

Board and Committees	Matters to be deliberated
Board	・Matters that the Board considers as extremely serious accidents based on the scale of damage and other matters including social impact
General Committee	・Matters related to particularly serious accidents (i) An accident involving ten or more persons killed or missing (ii) An accident involving twenty or more persons killed, missing or seriously injured (With regard to aircraft accidents and a marine accidents, (i) and (ii) are limited to passenger transport services.) ・Any other matters deemed to be necessary by the Board
Aircraft Committee	・Matters related to aircraft accidents and aircraft serious incidents (excluding the accidents to be handled by the General Committee)
Railway Committee	・Matters related to railway accidents and railway serious incidents (excluding the accidents to be handled by the General Committee)
Marine Committee	・Matters related to marine accidents and marine incidents as may be deemed serious by the Board (excluding the accidents to be handled by the General Committee and the Marine Special Committee)
Marine Special Committee	・Matters related to marine accidents and marine incidents (excluding the accidents to be handled by the General Committee and the Marine Committee)

3 Board Members

As of April 1, 2020

TAKEDA Nobuo, Chairperson (Full-time), Director of Aircraft Committee

TAKEDA Nobuo was appointed as Chairperson of the Japan Transport Safety Board on April 1, 2019; belongs to the Aircraft Committee, the Railway Committee and the Marine Committee with special expertise in aerospace engineering, strength of materials and composite materials engineering.

Career summary: PhD, University of Florida and D. Engr, the University of Tokyo
Emeritus Professor, Former Vice President, the University of Tokyo
Former Technical Advisor in Structures and Advanced Composite Research Unit, Aeronautical Technology Directorate of the Japan Aerospace Exploration Agency (JAXA)

KAKISHIMA Yoshiko, Member (Full-time)

KAKISHIMA Yoshiko was appointed as a member on April 1, 2019; belongs to the Aircraft Committee, the Railway Committee and the Marine Committee, with special expertise in Anglo-American law and others.

Career summary: Graduated from the Department of Law, the University of Tokyo
LL.M., Harvard Law School
Emeritus Professor, the University of Tokyo

MIYASHITA Toru, Member (Full-time), Vice-Chairperson, Deputy Director of Aircraft Committee

MIYASHITA Toru was appointed as a member on February 27, 2016; belongs to the Aircraft Committee, with special expertise in operation and maintenance of aircraft.

Career summary: Graduated from the Department of Aeronautics, Faculty of Engineering, the University of Tokyo
Former Executive Director of the Association of Air Transport Engineering & Research

MARUI Yuichi, Member (Full-time)

MARUI Yuichi was appointed as a member on December 6, 2016; belongs to the Aircraft Committee, with special expertise in maneuvering of aircraft.

Career summary: Graduated from Civil Aviation College
Former D.Senior Vice President, Corporate Safety and Security, All Nippon Airways Co., Ltd.

OKUMURA Fuminao, Member (Full-time), Director of Railway Committee

OKUMURA Fuminao was appointed as a member on December 6, 2016; belongs to the Railway Committee, with special expertise in railway engineering and geotechnical engineering.

Career summary: Doctor of Engineering, graduated from the Department of Civil Engineering, Faculty of Engineering, Tokyo Institute of Technology
Former Executive Director of the Railway Technical Research Institute

ISHIDA Hiroaki, Member (Full-time), Deputy Director of Railway Committee

ISHIDA Hiroaki was appointed as a member on December 26, 2016; belongs to the Railway Committee, with special expertise in dynamics of machinery, vehicle dynamics and railway vehicle engineering.

Career summary: Doctor of Engineering, graduated from the Department of Industrial Mechanical Engineering, Faculty of Engineering, the University of Tokyo
Former Professor in the Program in Mechanical Engineering, Department of Interdisciplinary Science and Engineering, School of Science and Engineering, Meisei University

SATO Yuji, Member (Full-time), Director of Marine Committee

SATO Yuji was appointed as a member on October 1, 2017; belongs to the Marine Committee and the Marine Special Committee, with special expertise in ship operation and maritime traffic safety.

Career summary: Graduated from Japan Coast Guard Academy
Former Commandant of Japan Coast Guard
Former President of Japan Coast Guard Foundation

TAMURA Kenkichi, Member (Full-time), Deputy Director of Marine Committee

TAMURA Kenkichi was appointed as a member on October 1, 2017; belongs to the Marine Committee and the Marine Special Committee, with special expertise in naval architect.

Career summary: Doctor of Engineering, Graduate School of Engineering, the University of Tokyo
Former Senior Director for Research of National Maritime Research Institute, National Institute of Maritime, Port and Aviation Technology

MIYAZAWA Yoshikazu, Member (Part-time)

MIYAZAWA Yoshikazu was appointed as a member on April 1, 2019; belongs to the Aircraft Committee, with special expertise in flight dynamics of aircraft, guidance and control.

Career summary: Doctor of Engineering, Graduate School of Engineering, the University of Tokyo
Emeritus Professor in Kyushu University
Contract Researcher in Electronic Navigation Research Institute

NAKANISHI Miwa, Member (Part-time)

NAKANISHI Miwa was appointed as a member on February 27, 2016; belongs to the Aircraft Committee, with special expertise in ergonomics (human factors).

Career summary: Doctor of Engineering, School of Science for Open and Environmental Systems, Graduate School of Science and Technology, Keio University
Associate Professor in the Department of Administration Engineering, Faculty of Science and Technology, Keio University (current post)

SUZUKI Mio, Member (Part-time)

SUZUKI Mio was appointed as a member on December 6, 2019; belongs to the Railway Committee, with special expertise in traffic engineering and human factors.

Career summary: Doctor of Engineering, Department of Built Environment, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology
Associate Professor in the Department of Civil Engineering, Tokai University (current post)

NIITSUMA Mihoko, Member (Part-time)

NIITSUMA Miho was appointed as a member on December 6, 2019; belongs to the Railway Committee, with special expertise in electrical engineering.

Career summary: Doctor of Engineering, Department of Electrical Engineering and Information Systems, Graduate School of Engineering, The University of Tokyo
Associate Professor in the Department of Precision Mechanics, Faculty of Science and Engineering, Chuo University (current post)

OKAMOTO Makiko, Member (Part-time)

OKAMOTO Makiko was appointed as a member on October 1, 2017; belongs to the Marine Committee and the Marine Special Committee, with special expertise in safety ergonomics.

Career Summary: Doctor of Human Sciences, Graduate School of Human Sciences, Waseda University
Lawyer
Associate Professor in the Faculty of Societal Safety Science, Kansai University (current post)

The chairperson and members of the Board shall be appointed by the Minister of Land, Infrastructure, Transport and Tourism with the consent of both houses of Representatives and Councilors.

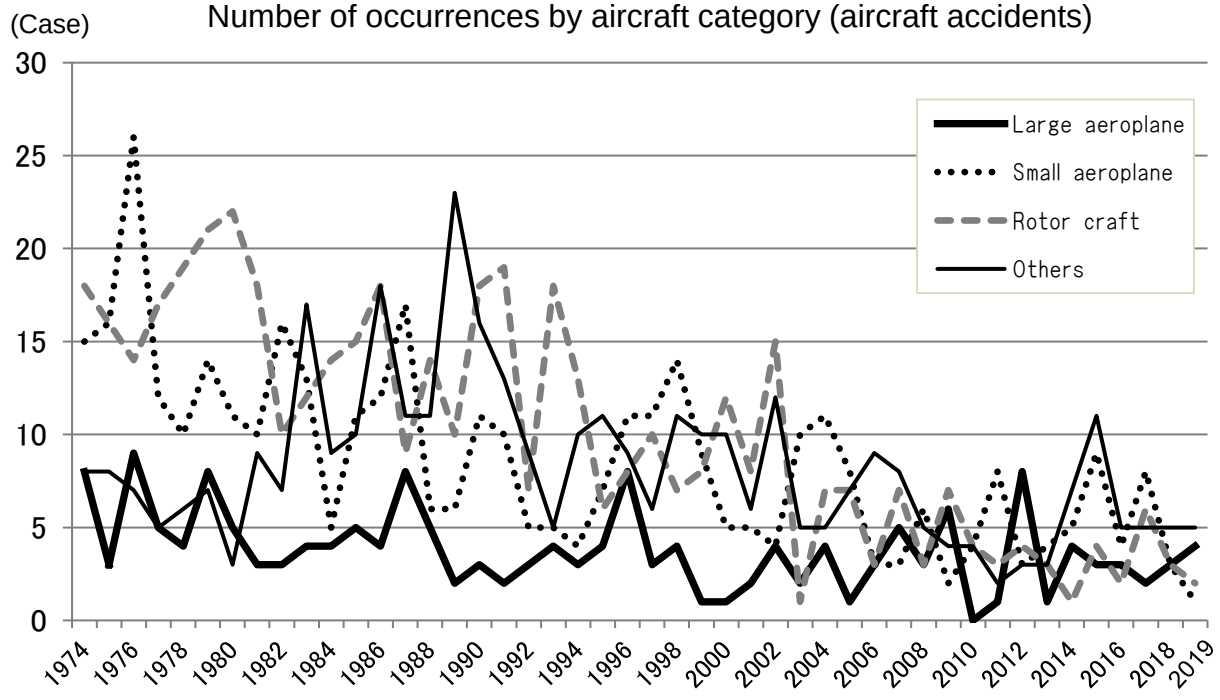
4 Number of occurrences by aircraft category (aircraft accidents)

(Cases)

Category / Year of occurrence	Aircraft			Rotor craft		Glider	Airship	Total
	Large aeroplane	Small aeroplane	Ultralight plane	Helicopter	Gyroplane			
1974	8	15	0	17	1	8	0	49
1975	3	16	0	16	0	8	0	43
1976	9	26	0	14	0	7	0	56
1977	5	12	0	16	1	5	0	39
1978	4	10	0	18	1	6	0	39
1979	8	14	0	20	1	6	1	50
1980	5	11	0	22	0	3	0	41
1981	3	10	1	18	0	8	0	40
1982	3	16	0	9	1	7	0	36
1983	4	13	10	12	0	7	0	46
1984	4	5	6	13	1	3	0	32
1985	5	11	6	15	0	4	0	41
1986	4	12	14	15	3	4	0	52
1987	8	17	8	8	1	3	0	45
1988	5	6	7	12	2	3	1	36
1989	2	6	11	9	1	12	0	41
1990	3	11	9	16	2	7	0	48
1991	2	10	6	19	0	7	0	44
1992	3	5	5	7	0	4	0	24
1993	4	5	3	17	1	2	0	32
1994	3	4	8	13	0	2	0	30
1995	4	7	10	6	0	1	0	28
1996	8	11	5	8	0	4	0	36
1997	3	11	3	8	2	3	0	30
1998	4	14	5	6	1	6	0	36
1999	1	9	5	7	1	5	0	28
2000	1	5	5	11	1	5	0	28
2001	2	5	2	8	0	4	0	21
2002	4	4	5	15	0	7	0	35
2003	2	10	3	1	0	2	0	18
2004	4	11	2	6	1	3	0	27
2005	1	8	0	7	0	7	0	23
2006	3	3	4	2	1	5	0	18

Category / Year of occurrence	Aircraft			Rotor craft		Glider	Airship	Total
	Large aeroplane	Small aeroplane	Ultralight plane	Helicopter	Gyroplane			
2007	5	3	4	7	0	4	0	23
2008	3	6	2	3	0	3	0	17
2009	6	2	1	7	0	3	0	19
2010	0	4	2	4	0	2	0	12
2011	1	8	1	3	0	1	0	14
2012	8	3	2	4	0	1	0	18
2013	1	4	1	3	0	2	0	11
2014	4	5	2	1	0	5	0	17
2015	3	9	3	3	1	8	0	27
2016	3	4	1	2	0	4	0	14
2017	2	8	3	5	1	2	0	21
2018	3	3	4	3	0	1	0	14
2019	4	1	2	2	0	3	0	12
Total	175	393	171	438	25	207	2	1,411

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accidents Investigation Commission.
2. Large aeroplanes are aircraft with a maximum take-off weight of more than 5,700kg.
3. Small aeroplanes are aircraft with a maximum take-off weight of 5,700kg or less, excluding Ultralight planes.
4. Ultralight planes include self-made, ultralight plane-shaped aircraft.
5. Gyroplanes include self-made, gyroplane-shaped aircraft.



5 Number of fatalities in accidents (aircraft accidents)

(Persons)

Year of occurrence \ Category		Large aeroplane	Small aeroplane	Ultralight plane	Helicopter	Gyroplane	Glider	Total	
2008	Crew	0	1	1	2	0	1	5	5
	Passengers and others	0	0	0	0	0	0	0	
2009	Crew	2	0	2	5	0	0	9	9
	Passengers and others	0	0	0	0	0	0	0	
2010	Crew	0	2	1	14	0	0	17	17
	Passengers and others	0	0	0	0	0	0	0	
2011	Crew	0	5	0	1	0	0	6	6
	Passengers and others	0	0	0	0	0	0	0	
2012	Crew	0	0	0	0	0	0	0	1
	Passengers and others	0	1	0	0	0	0	1	
2013	Crew	0	0	0	0	0	1	1	2
	Passengers and others	0	0	0	0	0	1	1	
2014	Crew	0	1	0	0	0	0	1	2
	Passengers and others	0	1	0	0	0	0	1	
2015	Crew	0	1	1	2	0	1	5	10
	Passengers and others	0	2	1	2	0	0	5	
2016	Crew	0	1	0	0	0	3	4	8
	Passengers and others	0	3	0	0	0	1	4	
2017	Crew	0	2	0	2	1	1	6	22
	Passengers and others	0	4	0	12	0	0	16	
2018	Crew	0	0	2	1	0	0	3	11
	Passengers and others	0	0	0	8	0	0	8	
2019	Crew	0	0	1	0	0	0	1	1
	Passengers and others	0	0	0	0	0	0	0	
	Crew	2	13	8	27	1	7	58	94
	Passengers and others	0	11	1	22	0	2	36	
	Total	2	24	9	49	1	9		

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accidents Investigation Commission in 2008
2. Death tolls represent data for the respective years of occurrence relisted from the annual reports published for those years.
3. Large aeroplanes are aircraft with a maximum take-off weight of more than 5,700kg.
4. Small aeroplanes are aircraft with a maximum take-off weight of 5,700kg or less, excluding Ultralight

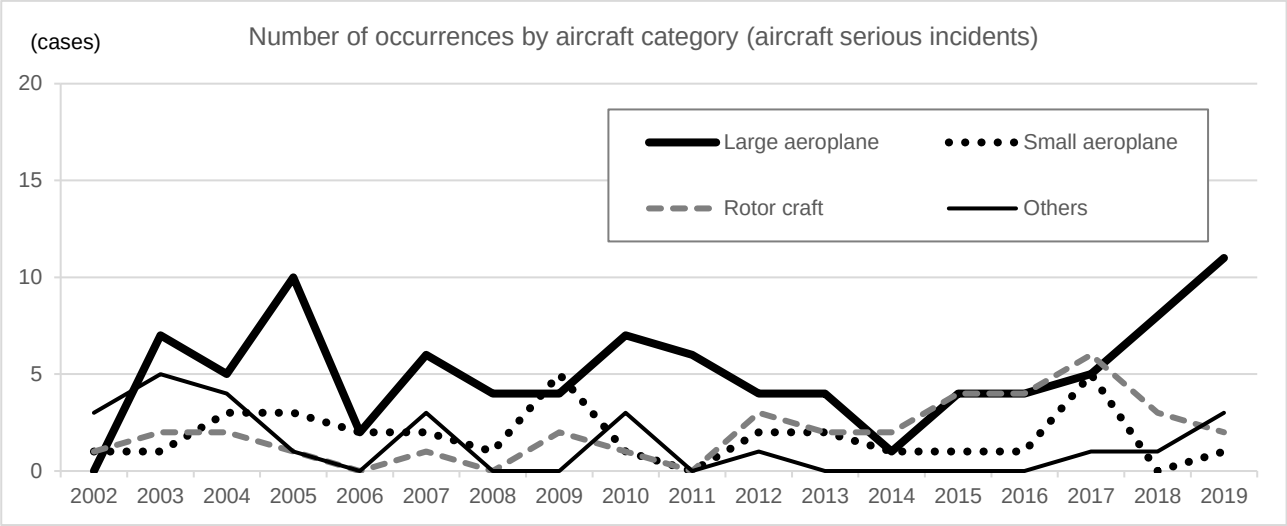
planes.
5. Ultralight planes include self-made, ultralight plane-shaped aircraft.
6. Gyroplanes include self-made, gyroplane-shaped aircraft.

6 Number of occurrences by aircraft category (aircraft serious incidents)

(Cases)

Category / Year of occurrence	Aircraft			Rotor craft		Glider	Airship	Total
	Large aeroplane	Small aeroplane	Ultralight plane	Helicopter	Gyroplane			
2001	3	0	0	0	0	0	0	3
2002	0	1	2	1	0	1	0	5
2003	7	1	4	2	0	1	0	15
2004	5	3	4	2	0	0	0	14
2005	10	3	1	1	0	0	0	15
2006	2	2	0	0	0	0	0	4
2007	6	2	2	1	0	1	0	12
2008	4	1	0	0	0	0	0	5
2009	4	5	0	2	0	0	0	11
2010	7	1	3	1	0	0	0	12
2011	6	0	0	0	0	0	0	6
2012	4	2	0	3	0	1	0	10
2013	4	2	0	2	0	0	0	8
2014	1	1	0	2	0	0	0	4
2015	4	1	0	4	0	0	0	9
2016	4	1	0	4	0	0	0	9
2017	5	5	0	6	0	1	0	17
2018	8	0	0	3	0	1	0	12
2019	11	1	0	2	0	3	0	17
Total	95	32	16	36	0	9	0	188

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accidents Investigation Commission. The number of cases for 2001 represents those that occurred from October onward.
2. Large aeroplanes are aircraft with a maximum take-off weight of more than 5,700kg.
3. Small aeroplanes are aircraft with a maximum take-off weight of 5,700kg or less, excluding Ultralight planes.
4. Ultralight planes include self-made, ultralight plane-shaped aircraft.



7 Number of occurrences by type (railway accidents)

(Cases)

Year of occurrence \ Type	Railway							Tramway							Total
	Train collision	Train derailment	Train fire	Level crossing accident	Accident against road traffic	Other accidents with casualties	Heavy property loss without casualties	Vehicle collision	Vehicle derailment	Vehicle fire	Level crossing accident	Accident against road traffic	Other accidents with casualties	Heavy property loss without casualties	
2001	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
2002	1	14	1	2	0	1	1	0	0	0	0	0	0	0	20
2003	1	20	2	0	0	0	0	0	0	0	0	0	0	0	23
2004	0	18	0	1	0	0	0	0	1	0	0	0	0	0	20
2005	2	20	0	0	0	1	0	0	1	0	0	0	0	0	24
2006	1	13	0	1	0	0	0	1	0	0	0	0	0	0	16
2007	0	12	2	3	0	0	0	0	2	0	0	0	0	0	19
2008	0	7	2	2	0	1	1	0	0	0	0	0	0	0	13
2009	0	5	1	2	0	3	0	0	0	0	0	0	0	0	11
2010	0	6	0	0	0	1	0	0	0	0	0	2	0	0	9
2011	0	12	0	1	0	1	0	0	0	0	0	0	0	0	14
2012	0	13	2	0	0	2	0	0	2	0	0	1	0	0	20
2013	0	11	1	1	0	1	0	0	1	0	0	0	0	0	15
2014	1	9	0	4	0	0	0	0	0	0	0	0	0	0	14
2015	1	5	1	4	0	1	0	0	1	0	0	0	0	0	13
2016	0	7	0	15	0	0	0	0	1	0	0	0	0	0	23
2017	0	9	0	7	0	2	1	0	0	0	0	0	0	0	19
2018	0	2	0	9	0	0	0	0	0	0	0	0	0	0	11
2019	0	9	0	7	0	1	0	0	0	0	0	0	0	0	17

Total	7	196	13	59	0	15	3	1	9	0	0	3	0	0	306

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accidents Investigation Commission.
2. The number of cases for 2001 represents those that occurred from October onward.

8 Number of fatalities in accidents (railway accidents)

(Persons)

Death Classification / Year of occurrence	crew members	Passengers	Others	Total
2008	0	0	2	2
2009	0	0	3	3
2010	0	0	2	2
2011	0	0	1	1
2012	0	0	1	1
2013	0	0	1	1
2014	0	0	6	6
2015	0	2	4	6
2016	0	0	15	15
2017	0	0	10	10
2018	0	0	9	9
2019	0	0	8	8
Total	0	2	62	64

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accident Investigation Commission in 2008
2. Dealt tolls represent data for the respective years of occurrence relisted from the annual reports published for those years.
3. As investigations began to cover fatal accidents at third- and fourth-class crossings without crossing gates in April 2014, the number of deaths occurring in those locations were added.

9 Number of occurrences by type (railway serious incidents)

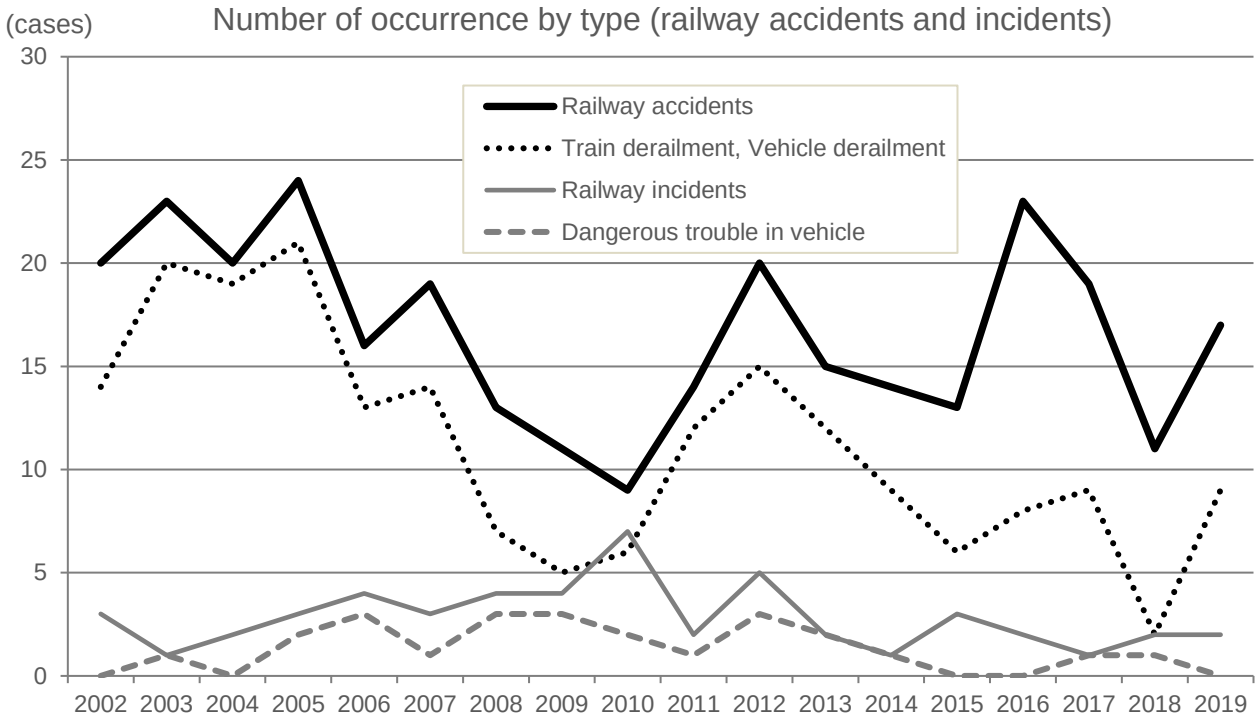
(Cases)

Type / Year of occurrence	Railway										Tramway							Total
	Incorrect management of safety block	Incorrect indication of signal	Violating red signal	Main track overrun	Violating closure section for construction	Vehicle derailment	Dangerous damage in facilities	Dangerous trouble in vehicle	Heavy leakage of dangerous object	Others	Incorrect management of safety block	Violating red signal	Main track overrun	Dangerous damage in facilities	Dangerous trouble in vehicle	Heavy leakage of dangerous object	Others	
2001	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Type / Year of occurrence	Railway										Tramway							Total
	Incorrect management of safety block	Incorrect indication of signal	Violating red signal	Main track overrun	Violating closure section for construction	Vehicle derailment	Dangerous damage in facilities	Dangerous trouble in vehicle	Heavy leakage of dangerous object	Others	Incorrect management of safety block	Violating red signal	Main track overrun	Dangerous damage in facilities	Dangerous trouble in vehicle	Heavy leakage of dangerous object	Others	
2002	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2003	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2004	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
2005	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3
2006	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4
2007	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	3
2008	0	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	4
2009	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4
2010	1	0	0	0	1	1	0	2	0	0	1	1	0	0	0	0	0	7
2011	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
2012	0	0	0	0	1	1	0	3	0	0	0	0	0	0	0	0	0	5
2013	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
2014	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2015	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	3
2016	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
2017	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2018	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
2019	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Total	1	7	0	0	7	2	3	25	0	3	3	1	0	0	0	0	0	52

(Note) 1. The figures include the cases handled by the Aircraft and Railway Accidents Investigation Commission.

2. The number of cases for 2001 represents those that occurred from October onward.



10 Number of occurrences by area (marine accidents and incidents)

(Cases)

Area / Year	In Japanese waters			Outside Japanese waters	Total
	In ports specified by the Cabinet Order	Within 12 nautical miles	In lakes or rivers		
2007	0	3	0	0	3
2008	227	576	15	55	873
2009	341	1,065	34	82	1,522
2010	308	906	38	82	1,334
2011	239	780	28	79	1,126
2012	227	804	31	53	1,115
2013	215	763	35	69	1,082
2014	193	762	31	44	1,030
2015	154	673	44	39	910
2016	147	636	43	23	849
2017	155	671	35	47	907
2018	194	731	38	47	1,010
2019	210	707	54	32	1,003
Total	2,609	9,077	426	652	12,764

(Note) The above table shows the number of accidents and incidents into which the JTSB launched an investigation as of the end of February 2020 (including those carried over from the former Marine

Accident Inquiry Agency).

11 Number of occurrences by type (marine accidents and incidents)

(Cases)

Type / Year	Marine accident											Marine incident				Total
	Collision	Contact	Grounding	Sinking	Flooding	Capsizing	Fire	Explosion	Facility damage	Fatality/Injury	Others	Loss of control	Stranded	Safety obstruction	Navigation obstruction	
2007	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
2008	181	101	255	12	4	28	15	3	30	61	0	54	34	8	87	873
2009	325	174	431	16	19	58	42	3	38	217	2	105	33	0	59	1,522
2010	356	180	369	15	18	50	35	2	26	146	0	83	16	0	38	1,334
2011	282	145	265	12	18	56	32	1	23	142	1	103	10	1	35	1,126
2012	246	133	264	5	21	55	44	2	33	155	0	113	5	4	35	1,115
2013	264	145	210	10	25	49	33	2	38	163	2	106	7	3	25	1,082
2014	265	116	213	7	11	61	35	1	37	150	3	92	15	0	24	1,030
2015	244	102	202	5	12	56	38	3	20	122	1	85	4	4	12	910
2016	217	94	163	5	19	46	26	3	21	144	0	85	6	6	14	849
2017	200	96	181	14	22	55	27	3	23	144	0	115	4	3	20	907
2018	253	90	182	22	26	57	25	2	29	182	0	119	10	0	13	1,010
2019	215	89	197	12	25	61	31	1	24	142	0	172	15	0	19	1,003
Total	3,048	1,466	2,934	135	220	632	383	26	342	1,768	9	1,232	159	29	381	12,764

(Note) 1. The above table shows the number of accidents and incidents into which the JTSB launched an investigation as of the end of February 2020 (including those carried over from the former Marine Accident Inquiry Agency).
2. The figures in the column “Fatality/Injury” are the number of cases involving death, death and injury, missing persons, or injury which is not a result from other types of accident.

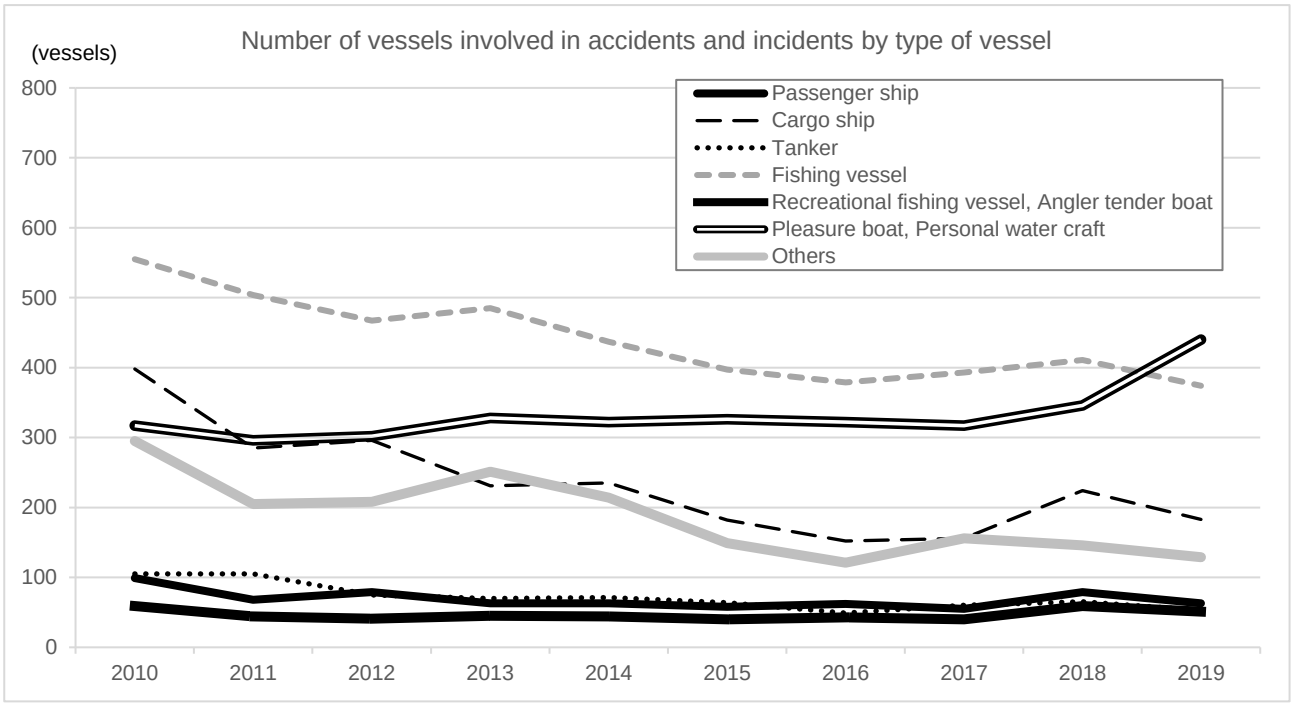
12 Number of vessels involved in accidents and incidents by type of vessel (marine accidents and incidents)

(Cases)

Type of Vessel / Year	Passenger ship	Cargo ship	Tanker	Fishing vessel	Tug boat, push boat	Recreational fishing vessel	Angler tender boat	Work vessel	Barge, Lighter	Public-service ship	Pleasure boat	Personal water craft	Others	Total
2007	2	1	0	0	0	0	0	0	0	0	0	0	0	3
2008	55	318	55	307	98	28	6	27	60	11	125	31	7	1,128
2009	103	480	83	605	163	39	5	35	104	40	249	65	23	1,994

Type of Vessel / Year	Passenger ship	Cargo ship	Tanker	Fishing vessel	Tug boat, push boat	Recreational fishing vessel	Angler tender boat	Work vessel	Barge, Lighter	Public-service ship	Pleasure boat	Personal water craft	Others	Total
2010	99	398	105	555	123	53	6	48	82	24	251	66	18	1,828
2011	68	285	105	504	89	38	6	29	50	16	250	46	21	1,507
2012	79	296	75	467	91	33	8	36	59	14	247	55	8	1,468
2013	63	231	70	485	100	41	4	37	72	24	264	64	18	1,473
2014	63	235	71	437	89	39	5	36	58	17	253	69	14	1,386
2015	58	182	64	397	53	33	7	27	45	14	278	48	10	1,216
2016	62	152	49	379	45	36	7	27	33	11	254	68	5	1,128
2017	55	156	60	393	62	37	3	29	45	12	275	42	8	1,177
2018	79	224	65	411	55	51	8	22	37	14	286	60	18	1,330
2019	63	183	53	374	48	45	6	24	33	11	395	45	13	1,293
Total	849	3,141	855	5,314	1,016	473	71	377	678	208	3,127	659	163	16,931

(Note) The above table shows the number of vessels involved in accidents and incidents into which the JTSB launched an investigation as of the end of February 2020 (including those carried over from the former Marine Accident Inquiry Agency).



13 Number of vessels involved in accidents and incidents by gross tonnage (marine accidents and incidents)

(Vessels)

Year \ Gross tonnage	less than 20 tons	20 to less than 100 tons	100 to less than 200 tons	200 to less than 500 tons	500 to less than 1,600 tons	1,600 to less than 3,000 tons	3,000 to less than 5,000 tons	5,000 to less than 10,000 tons	10,000 to less than 30,000 tons	More than 30,000 tons	Unknown	Total
2007	1	0	0	1	0	0	0	0	0	0	1	3
2008	485	52	138	216	77	24	16	17	10	15	78	1,128
2009	903	89	230	288	116	42	34	49	30	14	199	1,994
2010	900	86	175	260	128	36	37	39	25	24	118	1,828
2011	823	59	142	194	101	39	18	32	21	17	61	1,507
2012	790	53	133	199	78	33	25	38	25	20	74	1,468
2013	881	44	113	142	93	47	27	36	19	17	54	1,473
2014	839	46	86	145	87	38	26	29	17	17	56	1,386
2015	762	43	66	112	65	32	18	27	22	19	50	1,216
2016	745	31	64	104	61	23	17	21	18	10	34	1,128
2017	757	39	80	116	69	24	14	22	17	6	33	1,177
2018	840	35	83	127	83	48	31	18	17	12	36	1,330
2019	862	27	40	117	59	26	20	34	10	14	84	1,293
Total	9,588	604	1,350	2,021	1,017	412	283	362	231	185	878	16,931

(Note) The above table shows the number of vessels involved in accidents and incidents into which the JTSB launched an investigation as of the end of February 2020 (including those carried over from the former Marine Accident Inquiry Agency).

14 Number of vessels involved in accidents and incidents in 2019 by type of accident/incident and type of vessel (marine accidents and incidents)

(Vessels)

Type of vessel \ Type of accident/ incident	Marine accident											Marine incident				Total
	Collision	Contact	Grounding	Sinking	Flooding	Capsizing	Fire	Explosion	Facility damage	Fatality/ Injury	Others	Loss of control	Stranded	Safety obstruction	Navigation obstruction	
Passenger ship	13	14	7	1	0	0	1	0	1	16	0	1	0	0	9	63
Cargo ship	85	22	36	1	0	0	3	0	3	11	0	11	8	0	3	183
Tanker	27	8	10	0	1	0	0	0	0	2	0	4	1	0	0	53
Fishing vessel	140	27	32	6	6	36	18	1	5	79	0	24	0	0	0	374
Tug boat, push boat	15	4	17	0	0	3	2	0	3	3	1	0	0	0	0	48
Recreational fishing vessel	20	5	7	0	2	1	0	0	0	1	0	9	0	0	0	45
Angler tender boat	0	1	2	0	0	0	1	0	0	1	0	1	0	0	0	6
Work vessel	6	2	10	0	0	3	0	0	1	1	0	1	0	0	0	24
Barge, Lighter	10	3	9	1	0	2	2	0	1	4	1	0	0	0	0	33

Type of accident/ incident / Type of vessel	Marine accident											Marine incident				Total
	Collision	Contact	Grounding	Sinking	Flooding	Capsizing	Fire	Explosion	Facility damage	Fatality/ Injury	Others	Loss of control	Stranded	Safety obstruction	Navigation obstruction	
Public-service ship	3	1	2	0	0	0	3	0	0	2	0	0	0	0	0	11
Pleasure boat	93	17	79	6	16	22	4	0	12	19	0	116	7	0	4	395
Personal water craft	21	0	0	0	0	0	0	0	0	20	0	4	0	0	0	45
Others	2	0	1	0	1	3	1	0	0	3	0	2	0	0	0	13
Total	435	104	212	15	26	70	35	1	26	162	2	173	16	0	16	1,293

(Note) 1. The above table shows the number of vessels involved in accidents and incidents into which the JTSB launched an investigation as of the end of February 2020.
2. The figures in the column “Fatality/Injury” are the number of cases involving death, death and injury, missing persons, or injury which is not a result from other types of accident.

15 Number of fatalities in accidents (marine accidents)

(Persons)

Year of occurrence / Type of Vessel		Passenger ship	Cargo ship	Tanker	Cargo ship	Recreational fishing vessel・Angler tender boat	Pleasure boat・Personal water craft	Others	Total	
2008	Crew	0	2	2	51	1	21	1	61	71
	Passengers	0	0	0	0	2	0	0	2	
	Others	0	0	0	0	1	6	1	8	
2009	Crew	3	1	2	109	0	26	4	145	191
	Passengers	0	0	0	0	3	0	0	3	
	Others	1	5	0	6	0	27	4	43	
2010	Crew	1	10	1	74	0	11	2	99	129
	Passengers	0	0	0	0	1	0	0	1	
	Others	0	3	0	1	1	22	2	29	
2011	Crew	3	4	8	83	3	18	7	126	146
	Passengers	4	0	0	0	2	0	0	6	
	Others	0	2	0	0	0	12	0	14	
2012	Crew	2	6	4	79	1	22	3	117	133
	Passengers	1	0	0	0	2	0	0	3	
	Others	1	1	0	1	0	8	2	13	
2013	Crew	0	17	2	69	0	19	7	114	134
	Passengers	0	0	0	0	1	0	0	1	
	Others	0	2	0	0	0	16	1	19	

Year of occurrence \ Type of Vessel		Passenger ship	Cargo ship	Tanker	Cargo ship	Recreational fishing vessel・Angler tender boat	Pleasure boat・Personal water craft	Others	Total	
2014	Crew	0	11	3	89	0	17	3	123	138
	Passengers	0	0	0	0	2	0	0	2	
	Others	0	1	1	1	0	10	0	13	
2015	Crew	3	5	0	44	0	12	5	69	87
	Passengers	2	0	0	0	2	0	0	4	
	Others	0	0	0	0	0	13	1	14	
2016	Crew	1	4	5	45	1	10	4	70	93
	Passengers	0	0	0	0	2	0	0	2	
	Others	0	2	0	2	0	15	2	21	
2017	Crew	2	4	0	46	0	7	20	79	93
	Passengers	0	0	0	0	0	0	0	0	
	Others	0	0	0	0	0	12	2	14	
2018	Crew	0	2	1	48	0	10	2	63	88
	Passengers	0	0	0	0	1	0	0	1	
	Others	1	0	0	1	0	18	4	23	
2019	Crew	0	15	0	55	1	11	1	83	98
	Passengers	0	0	0	0	1	0	0	1	
	Others	0	3	0	1	0	9	1	15	
Total	Crew	15	81	27	792	7	168	59	1,149	1,401
	Passengers	7	0	0	0	19	0	0	26	
	Others	3	19	1	13	2	168	20	226	
	Total	25	100	28	805	28	336	79		

(Note) The above table shows the number of vessels involved in accidents and incidents into which the JTSB launched an investigation as of the end of February 2020 (including those carried over from the former Marine Accident Inquiry Agency).