Fatal and non-fatal accidents in harbor transportation service in Japan in 1999-2022

harbor transportation service industry Code No.0502

Type of accidents in harbor transportation service in 1999-2022

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
fall from height	123	131	141	124	122	110	137	112	118	111	87	82	82	88	67	85	85	66	86	83	97	96	84	70	2,387
falling to same level	61	51	54	54	45	46	54	50	47	30	33	39	47	45	40	47	25	35	43	43	45	35	54	59	1,082
crash	36	44	47	50	40	33	41	36	23	36	25	33	24	25	25	22	24	17	29	27	31	21	34	24	747
struck by flying or falling object	76	59	70	57	54	58	47	37	45	43	30	28	23	24	29	40	27	35	19	34	33	23	31	32	954
collapse	23	22	27	17	15	20	17	22	15	19	8	15	14	9	16	14	13	7	7	10	9	13	9	10	351
crashed by	61	62	47	59	56	49	39	51	42	39	28	33	32	34	32	24	22	27	22	31	16	29	29	27	891
caught in/between	115	125	124	115	130	125	94	77	88	79	52	73	87	65	56	67	50	53	68	59	63	56	56	46	1,923
cut	10	12	19	10	14	9	8	14	10	12	11	6	4	6	6	3	5	5	5	4	12	9	7	6	207
injury to the sole of the foot	1		2	1	2			2	1					2			3	2				2	3	2	23
drown	1	1		5	1	2	2			1	1		8				1	2	2				1		28
contact to high/low-	6	7	4	4	2	4	1	2	4	8		7	6	5	2	6	2	9	6	5	3	2	3	2	100

temperature																									
contact to harmful substance	3	2	2	3	1		3	1	4	3			1	2			2	1		1					29
electric shock							1					1						1	1						4
explosion												1											1		2
burst				1																					1
fire	1							1			1							1							4
traffic accident (public road)	11	9	7	7	7	6	10	5	15	3	4	8	5	4	1	7	4	6	14	8	23	9	8	3	184
traffic accident (others)		1	2			1	1		2		1		1	1	1		1				1		1	1	15
reaction to motion/improper motion	43	45	41	43	54	44	32	32	38	35	25	25	36	32	21	32	19	18	29	23	36	28	37	46	814
others	3	2	3	1	2	2	1	2		2		1	3	2		2	1	1		2	4	7	24	1	66
unclassifiable					1		1	1		1	1	1									3				9
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Causal agents (large) of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
machine	8	15	17	13	16	21	14	17	10	20	11	8	15	12	8	8	6	13	15	13	13	11	20	9	313

crane, conveying machine	191	225	186	189	184	183	155	154	167	157	104	108	116	117	103	105	103	81	121	109	118	101	132	96	3,305
other equipment	101	71	121	88	94	85	91	77	72	72	44	53	59	59	54	67	51	63	58	55	68	65	52	63	1,683
temporary buildings, establishments	46	73	71	74	74	62	69	62	66	59	50	74	66	53	43	58	42	42	52	55	58	58	68	65	1,440
substance, material	80	68	58	68	64	50	72	44	64	52	32	36	39	22	34	45	27	32	28	25	45	25	24	27	1,061
load	106	99	117	98	88	81	68	73	60	48	57	55	42	54	41	41	44	33	37	48	46	45	37	42	1,460
environment	8	5	5	8	6	8	9	3	5	6	3	7	16	9	3	6	5	14	9	8	6	5	11	6	171
others	34	17	15	13	20	19	11	15	8	8	6	12	20	18	10	19	6	8	11	17	22	20	38	21	388
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Causal agents (middle) of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine		1								2	1			1											5
power transmission mechanism		4			1	3	2						2	1					1	2	1			2	19
woodworking machine	3	6	8	5	4	6	5	6	2	9	4	1	6			2	2	1	2	2	5	1	2		82

construction machine	2	2	6	7	6	10	4	6	3	9	3	6	5	5	5	5	3	6	9	5	4	6	13	4	134
metal manufacturing machine	1	2	2		1		1	2	3		2				1				2					2	19
general machine	2		1	1	4	2	2	3	2		1	1	2	5	2	1	1	5	1	3	3	4	5	1	52
mobile silviculture machine																		1		1					2
crane	48	65	50	43	43	52	32	32	37	34	18	25	30	22	21	28	21	23	26	10	20	19	19	21	739
conveying machine	110	131	105	115	114	98	98	92	88	94	67	58	65	74	63	58	63	47	69	74	56	58	86	57	1,940
vehicle	33	29	31	31	27	33	25	30	42	29	19	25	21	21	19	19	19	11	26	25	42	24	27	18	626
pressure vessel																					1				1
chemical facilities					1																				1
welding equipment				1			1			1				1							1				5
kiln, caldron																				1					1
electric equipment		1		1			1					1	1						1				1		7
human power machine, tools	15	14	14	7	13	13	9	10	11	10	10	11	8	9	3	6	2	5	4	7	14	13	15	12	235
tools	80	48	97	70	74	69	70	59	53	53	33	36	46	38	45	53	39	48	44	39	46	41	34	46	1,261
other equipments,																									

facilities	6	8	10	9	6	3	10	8	8	8	1	5	4	11	6	8	10	10	9	8	6	11	2	5	172
temporary buildings, establishments	46	73	71	74	74	62	69	62	66	59	50	74	66	53	43	58	42	42	52	55	58	58	68	65	1,440
hazards, harmful substances	4	2	3	3			2	2	5	4	1		2	1		3	1	1		1				1	36
materials	76	66	55	65	64	50	70	42	59	48	31	36	37	21	34	42	26	31	28	24	45	25	24	26	1,025
load	106	99	117	98	88	81	68	73	60	48	57	55	42	54	41	41	44	33	37	48	46	45	37	42	1,460
natural environment	8	5	5	8	6	8	9	3	5	6	3	7	16	9	3	6	5	14	9	8	6	5	11	6	171
other causal agent	24	11	4	4	5	5	2	7	1	4	2	1	2	3	2	4	2	1	2	6	4	4	23	1	124
no causal agent	9	6	11	9	13	14	8	7	5	4	4	10	18	14	8	14	4	7	9	11	15	16	15	20	251
unclassifiable	1				2		1	1	2			1		1		1					3				13
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Causal agents (small) of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine										2	1			1											4
power transmission mechanism					1		2						2	1					1	2	1			2	12

circular sawing machine			3		3		2	3		3	1		4			2		1	1		4		2		29
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer								1																	1
chamfering machine, router, woodworking milling machine																									
chain saw			3		1		3	2	1	4	2	1	1				2			2	1				23
other woodworking machines			2						1	2	1		1						1			1			9
leveling, transporting or loading machine			2		2		4	3	2	6	2	4	1	2	3	1	3	3	6	3	1	4	8	1	61
excavating machine			3		2			2	1	3	1	2	4	2	1	4		2	2	2	3	2	4	2	42
foundation work machine																									
hardening machine																									

demolition machine																			1					1	2
vehicle for high lift work			1		1																				2
other construction machines					1			1						1	1			1					1		6
lathe																									
drill press, milling machine																			1						1
grinding machine, buffing machine			2		1			1	2		1				1									2	10
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines							1	1	1		1								1						5
centrifugal machine																									
mixer, grinder									1											1					2
roll machine (except printingroll machine)																1									1

injection molding machine																									
food manufacturing machine								1																	1
printing machine																									
industrial robot																									
other general power machines			1		4		2	2	1		1	1	2	5	2		1	5	1	2	3	4	5	1	43
felling machine																									
mobile logging machine																									
skyline yarding machine																		1							1
other mobile silviculture machine																				1					1
crane			21		18		14	18	19	20	12	13	14	18	10	17	9	12	10	3	9	10	12	11	270
mobile crane			17		17		11	6	10	9	3	4	10	3	3	3	9	4	10	3	7	5	3	5	142
derrick crane			3					1	1			1	1												7
elevator, lift			1		1				1	1	1	1	1				1		1		1	1		1	12
cargo lifting appliance			6		6		5	6	6	3	1	5	3	1	6	5	1	6	4	3	2	3	2	4	78
gondola																	1								1

lumberyard equipment, logging cableway																					1				1
simple skyline yarding equipment																									
other powered crane			2		1		2	1		1	1	1	1		2	3		1	1	1			2		20
truck			35		41		42	34	36	37	29	23	24	27	18	21	28	12	29	33	25	20	31	32	577
forklift			59		60		44	43	42	42	29	27	29	37	40	25	29	27	31	33	24	29	44	21	715
railway equipment							1							1											2
conveyor			2		6		5	6	4	4	5	4	3	4	3	4	5	3	5	4	5		5	1	78
loader			1		2		2	2	1	2	1		2	2		1	1	2	1			5	2		27
straddle carrier					3					5		1	2	1	1	3		2		2	1		1	2	24
rough terrain hauler																						1			1
other powered conveying machines			8		2		4	7	5	4	3	3	5	2	1	4		1	3	2	1	3	3	1	62
cars, bus, motorcycle			10		11		8	9	18	7		10	4	7	5	7	6	7	10	7	25	12	8	8	179
railway vehicle																									
other vehicles			21		16		17	21	24	22	19	15	17	14	14	12	13	4	16	18	17	12	19	10	321
boiler																									

pressure vessel																					1				1
other pressure vessels																									
chemical facilities					1																				1
gas welding equipment							1			1				1							1				4
arc welding equipment																									
other welding equipment																									
kiln, caldron																									
industrial dryer																				1					1
other kiln, caldron																									
transmission													1						1						2
electric power facilities							1					1											1		3
other electrical equipment																									
human power cranes			1							1		2	1	1	1								1	2	10
human power hauling equipment			1		5		2	3	2	4	5	3	1	2		2		1		2	3	3		4	43

human power machine					1		2	3													1		1		8
hand tool			12		7		5	4	9	5	5	6	6	6	2	4	2	4	4	5	10	10	13	6	125
ladder			30		22		23	12	12	12	9	13	12	13	12	16	10	12	13	16	13	12	14	17	293
slinging tool			19		18		11	15	14	12	13	8	9	5	10	8	9	9	9	7	7	7	8	7	205
other tools			48		34		36	32	27	29	11	15	25	20	23	29	20	27	22	16	26	22	12	22	496
other equipment, facilities			10		6		10	8	8	8	1	5	4	11	6	8	10	10	9	8	6	11	2	5	146
scaffolding			2		3		2		3	1		1				1				1	1	1	1	1	18
timbering										1															1
stairs, landing stage			12		11		14	12	11	6	5	15	14	7	10	10	6	8	10	8	9	16	7	9	200
opening			2		5		4		2	5	6	5	3	4	2	3	2	2	1	10	4	4	2	6	72
roof, beam, haze, crossbeam, principal rafter			1		1							2		1	1	1	1								8
working platform, boot board			21		11		7	14	9	14	12	13	17	12	8	8	8	8	10	8	12	5	10	11	218
passage			19		25		21	21	24	12	15	16	17	13	14	13	17	13	22	20	16	18	28	24	368
building, establishment			6		12		13	11	9	13	5	14	9	9	5	11	4	5	5	7	12	8	10	5	173
other temporary buildings,			8		6		8	4	8	7	7	8	6	7	3	11	4	6	4	1	4	6	10	9	127

establishments																									
explosive substance			1					1																	2
inflammable substance								1			1					1									3
inflammable gas													1												1
harmful substance			2						4	3			1	1		1				1					13
radiation																									
other hazards, harmful substances							2		1	1						1	1	1						1	8
metal material			28		39		42	26	37	28	19	22	26	15	21	26	18	20	19	16	31	14	15	17	479
lumber, bamboo			20		21		23	10	15	12	9	11	7	5	11	8	6	10	7	7	8	7	6	8	211
stone, sand, substance			2					3		1	2					2			1	1	2		1		15
other materials			5		4		5	3	7	7	1	3	4	1	2	6	2	1	1		4	4	2	1	63
load			111		87		68	72	59	47	51	53	41	52	39	40	43	31	37	47	45	44	37	40	1,044
machine/equipment as load			6		1			1	1	1	6	2	1	2	2	1	1	2		1	1	1		2	32
natural ground, rock							1	1			1			1									1		5
standing tree			1						1																2
water							1						8					2	1		1		1	1	15
abnormal																									

environment							1	1			1						1	1							5
high/cold temperature environment			1		2		1		1	2		6	3	3		3	2	8	4	5	2	2	3	1	49
other environments			3		4		5	1	3	4	1	1	5	5	3	3	2	3	4	3	3	3	6	4	66
other causal agent			4		5		2	7	1	4	2	1	2	3	2	4	2	1	2	6	4	4	23	1	80
no causal agent			11		13		8	7	5	4	4	10	18	14	8	14	4	7	9	11	15	16	15	20	213
unclassifiable					2		1	1	2			1		1		1					3				12
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Workers age of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less	4	6	9	3	10	7	5	10	11	8	8	6		6	3	7	5	15	9	9	9	6	6	12	174
20-29	103	98	92	91	94	85	59	90	64	64	38	46	54	69	47	49	53	40	39	57	54	38	62	52	1,538
30-39	109	110	111	122	135	113	110	81	122	115	66	79	95	65	72	73	59	59	55	63	82	81	81	59	2,117
40-49	102	104	110	104	91	91	110	75	88	74	79	92	97	83	74	96	81	75	94	85	96	72	99	74	2,146
50-59	211	207	217	177	165	149	140	128	108	98	65	81	73	70	65	76	50	58	83	75	81	76	92	91	2,636
60 years old or more	45	48	51	54	51	64	65	61	59	63	51	49	54	51	35	48	36	39	51	41	54	57	42	41	1,210
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Workers' number of workplace of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
9 workers or less	56	77	62	68	60	65	53	60	48	49	34	30	37	32	28	39	30	30	34	33	32	28	33	31	1,049
10-29	135	137	147	156	155	113	116	135	134	110	82	97	82	98	83	91	70	89	79	79	100	84	72	86	2,530
30-49	69	71	105	83	98	91	78	66	68	81	60	86	66	67	52	57	54	53	71	76	86	77	81	62	1,758
50-99	147	139	142	125	136	118	121	90	92	73	75	68	82	63	58	69	57	55	66	57	78	73	97	68	2,149
100-299	137	119	118	96	81	104	110	86	96	97	49	61	93	75	67	86	62	54	72	79	74	63	94	76	2,049
300 workers or more	30	30	16	23	16	18	11	8	14	12	7	11	13	9	8	7	11	5	9	6	6	5	5	6	286
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Month of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	44	50	53	45	35	40	35	33	32	36	33	27	29	26	15	33	28	23	24	27	38	33	28	34	801
February	57	55	44	45	31	51	38	36	29	43	20	28	30	25	28	26	20	25	33	26	37	33	28	21	809
March	57	58	51	40	53	46	46	34	47	31	27	28	43	35	33	32	34	24	26	25	30	24	26	35	885
April	40	60	54	51	47	51	34	40	31	37	29	30	27	25	27	32	27	16	21	21	33	28	31	19	811
May	41	53	41	51	57	36	49	38	43	40	21	36	34	36	28	23	33	20	33	28	34	25	32	21	853
June	40	42	58	38	43	47	57	44	38	34	13	32	31	32	17	31	19	23	21	26	33	31	25	30	805

July	52	35	55	59	53	48	32	34	41	40	33	25	34	32	20	29	19	28	37	34	28	25	41	34	868
August	42	47	52	48	40	32	35	42	36	30	22	28	15	27	34	28	18	24	24	33	30	32	40	29	788
September	48	40	45	43	41	37	32	37	46	28	24	27	37	26	24	26	20	25	23	26	42	27	36	27	787
October	55	47	54	56	49	39	33	40	55	33	33	26	30	29	27	31	24	34	33	32	19	27	37	31	874
November	49	38	41	41	41	39	46	35	27	38	27	33	27	17	19	31	19	23	27	24	32	21	25	19	739
December	49	48	42	34	56	43	52	32	27	32	25	33	36	34	24	27	23	21	29	28	20	24	33	29	801
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Prefecture of fatal and non-fatal accidents in harbor transportation service in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido	23	23	24		31		18	21	24	23	23	15	23	25	16	21	12	9	8	13	17	18	21	15	423
Aomori	7	1	3		2		5	3	4	5	2	2		4	1	2	3	2	2	2	3	4	2	2	61
Iwate	3	2	3		2		2		1		1	1	1		1	1	1		1				1		21
Miyagi	6	5	11		12		9	8	4	9	4	12	16	11	1	6	1		7	11	10	4	8	7	162
Akita	3	2	2		1		2			3	1	2	1			1	3	1	1		1	1	1	1	27
Yamagata										1	1			1			1			1					5
Fukushima	2		1		1		4	2	2	2	1	6	2	5			2	2	3	3	3	2	6	7	56
Ibaraki	2	5	5		8		4	8	2	3	2	7	6	5	1	3	5	5	4	7	2	2	7	6	99
Tochigi																									
Gunma																									

Saitama													1	1											2
Chiba	15	18	25		12		16	19	19	16	9	11	12	9	6	15	4	9	14	9	9	10	15	16	288
Tokyo	39	29	36		23		22	18	11	31	19	24	22	17	22	23	20	18	21	20	30	20	32	31	528
Kanagawa	80	63	80		59		64	61	69	71	39	49	47	35	29	44	34	26	36	33	36	39	29	22	1,045
Niigata	3	9	2		4		3	5	5	2	2	3	2	2	6	12	5	2	4	7	7	4	5	4	98
Toyama		2	2		3		2		1	1		1	3	5	1	1	1	1	2	2			1	1	30
Ishikawa		3	5		4		1	2	1	2		2		2	3	4			2	1	2	2	1	2	39
Fukui	3	2	4		3		3	2	1		2		1	1	1	1		3	5	2	1	1	3	2	41
Yamanashi																									
Nagano																									
Gifu											1			1											2
Shizuoka	14	14	15		10		17	18	14	10	6	12	10	11	5	6	6	6	10	6	10	10	5	6	221
Aichi	57	77	52		57		37	40	47	31	17	35	32	31	34	44	28	24	25	33	45	40	39	34	859
Mie	3	7	5		6		9	2	9	2	7	2	4	5	2	3	4	2	8	5	3	5	4	2	99
Shiga	1																								1
Kyoto	1	4	3				2	2			1		1		2	1	1	1	1		2	1			23
Osaka	118	125	102		130		96	78	72	83	61	54	55	55	56	49	37	43	40	33	28	36	49	42	1,442
Hyogo	50	45	60		45		50	34	49	40	31	16	30	33	34	26	26	32	29	25	32	21	26	29	763
Nara																		1							1
Wakayama	5	4	9		3		3	1	5	1	4		4	1	2	1	2		1		2	3	2	2	55
Tottori	2				1			5	2		1	2	4	1		2			1	1	2	1	2		27

Shimane					1		1		1	1	1	1			1			1							8
Okayama	10	6	13		7		8	8	4	2	2	8	4	3	1	3	1	3	3	6	3	4	3	3	105
Hiroshima	26	20	24		12		18	17	26	12	15	13	12	9	12	13	13	18	7	21	16	20	8	8	340
Yamaguchi	11	7	9		5		8	9	4	6	1	2	4	2	1	5	2	4	5	2	4	5	5	1	102
Tokushima	2	3	1		4		5	5	3	1	4	2	2	1	1	2	1		2	1		2	5	3	50
Kagawa	8	11	9		6		11	12	7	12	4	8	8	7	8	7	11	11	9	9	12	7	9	10	196
Ehime	7	13	16		14		6	10	9	6	6	4	9	10	4	7	10	4	7	3	8	7	8	3	171
Kochi	6	3	4		4		1			2		2	1		1	1	2			2	1	1		1	32
Fukuoka	23	35	25		40		28	20	26	20	20	25	22	29	21	21	24	31	26	34	33	28	38	16	585
Saga	2	2	1		3		1	3	1	1		1		1	1	3		1	2	4	1	2	1	6	37
Nagasaki	7	3	7		4		7	4	1	6	5	6	4	3	6	5	4	5	8	11	13	7	10	6	132
Kumamoto	5	1	3		2			3	1	2			2		1		2	3	3	4		3	3	2	40
Oita	3	5	2		3		3	1	1				3	1	1	2		2	3		3	3	3	5	44
Miyazaki	1	3	4					1	1		1								1	2	2		2	2	20
Kagoshima	16	14	15		13		11	13	13	12	10	13	17	13	8	9	10	12	22	12	26	10	14	18	301
Okinawa	10	7	8		11		12	10	12	3	3	12	8	4	6	5	8	4	8	5	9	7	14	14	180
total	574	573	590	551	546	509	489	445	452	422	307	353	373	344	296	349	284	286	331	330	376	330	382	329	9,821

Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more.

Data of 2022 year do not include Covid-19 cases. Data of 2020 & 2021 year include Covid-19 cases. Fatal and non-fatal data are same situation.

Data of 2011 year include fatal and non-fatal accidents caused by Great East Japan Earthquake in 2011.

Data sources: https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html (MHLW, Japan)

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Fatal accidents in harbor transportation service in Japan in 1999-2022

harbor transportation service industry Code No.0502

Type of fatal accidents in harbor transportation service in 1999-2022

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
fall from height	3	1	6	3	1	2	1	1	3	2	5	1	3			2		1	1	1		1			38
falling to same level			1																	1	1				3
crash		1					1																		2
struck by flying or falling object	3	2	1	1	2	2	1	4	2	1						1		1	1	1				1	24
collapse	1	2	3	1	3			1	1	1		1	1		1							1	1		18
crashed by	1	1	4	2	3	1	2	5	1	1		1	1	1		1		2	1		2		1		31
caught in/between		2	3	2	2	3	1	3	2	2	4	2	3	3	3		5	3	3	1	2	1	1		51
cut																									
injury to the sole of the foot																									

drown	1	1		5	1	2	2			1	1		8				1	2	2				1		28
contact to high/low-temperature				1											1	1									3
contact to harmful substance		1					1										1	1							4
electric shock																									
explosion																									
burst																									
fire																									
traffic accident (public road)	1						1			1			1								2	1			7
traffic accident (others)															1										1
reaction to motion/improper motion																									
others													1				1								2
unclassifiable							1							1											2
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Causal agents (large) of fatal accidents in harbor transportation service in 1999-2022

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
machine							1		1			1					2		1		1				7
crane, conveying machine	8	4	7	7	4	6	6	10	3	5	5	3	6	4	4	2	4	5	5	3	6	2	1		110
other equipment	1		2	1	3	1		1		2					1	1							1	1	15
temporary buildings, establishments		1	3	1	3		1		2		2		2					2	1			1	1		20
substance, material			1			1		1	1																4
load	1	5	5	4	1	2		2	2	2	2	1	1		1	1				1		1			32
environment		1		2	1		2				1		8			1	1	3	1				1		22
others							1						1	1			1								4
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Causal agents (middle) of fatal accidents in harbor transportation service in 1999-2022

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine																									
power transmission mechanism																									

woodworking machine																									
construction machine							1		1			1					2		1		1				7
metal manufacturing machine																									
general machine																									
mobile silviculture machine																									
crane	4	1	2	1	1	2	2	4	1	1	1	2		2	2	1	1	2	1		2	1			34
conveying machine	2	2	3	2	2	2	2	6	1	3	3	1	4	2	1		2	3	3	2	3	1	1		51
vehicle	2	1	2	4	1	2	2		1	1	1		2		1	1	1		1	1	1				25
pressure vessel																									
chemical facilities																									
welding equipment																									
kiln, caldron																									
electric equipment																									
human power machine, tools																									
tools	1		2	1	3	1		1		1					1	1							1	1	14
other equipments,																									

facilities										1															1
temporary buildings, establishments		1	3	1	3		1		2		2		2					2	1			1	1		20
hazards, harmful substances																									
materials			1			1		1	1																4
load	1	5	5	4	1	2		2	2	2	2	1	1		1	1				1		1			32
natural environment		1		2	1		2				1		8			1	1	3	1				1		22
other causal agent																									
no causal agent													1				1								2
unclassifiable							1							1											2
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Causal agents (small) of fatal accidents in harbor transportation service in 1999-2022

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
engine																									
power transmission mechanism																									

circular sawing machine																									
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw																									
other woodworking machines																									
leveling, transporting or loading machine							1					1					2		1		1				6
excavating machine									1																1
foundation work machine																									
hardening machine																									

demolition machine																									
vehicle for high lift work																									
other construction machines																									
lathe																									
drill press, milling machine																									
grinding machine, buffing machine																									
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines																									
centrifugal machine																									
mixer, grinder																									
roll machine (except printingroll machine)																									

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines																									
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane	2		1			1		2	1		1			1					1		1				11
mobile crane	2	1		1	1		2										1				1				9
derrick crane																									
elevator, lift																									
cargo lifting appliance			1			1		2		1		2		1	2	1		2				1			14
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck	1	1			1		2			1	1		1								2	1			11
forklift	1	1	3	2	1	2		5	1	1	1		1	1	1		2	1	2				1		27
railway equipment																									
conveyor											1		1	1				1	1	1					6
loader													1												1
straddle carrier										1		1						1		1	1				5
rough terrain hauler																									
other powered conveying machines								1																	1
cars, bus, motorcycle	1			1	1		1													1	1				6
railway vehicle																									
other vehicles	1	1	2	3		2	1		1	1	1		2		1	1	1		1						19
boiler																									

pressure vessel																									
other pressure vessels																									
chemical facilities																									
gas welding equipment																									
arc welding equipment																									
other welding equipment																									
kiln, caldron																									
industrial dryer																									
other kiln, caldron																									
transmission																									
electric power facilities																									
other electrical equipment																									
human power cranes																									
human power hauling equipment																									

human power machine																									
hand tool																									
ladder				1												1									2
slinging tool			1					1																1	3
other tools	1		1		3	1				1					1								1		9
other equipment, facilities										1															1
scaffolding																									
timbering																									
stairs, landing stage																		1	1						2
opening			1								1														2
roof, beam, haze, crossbeam, principal rafter			1		1																				2
working platform, boot board		1	1				1						1												4
passage									2																2
building, establishment					1						1		1												3
other temporary buildings,				1	1													1				1	1		5

establishments																									
explosive substance																									
inflammable substance																									
inflammable gas																									
harmful substance																									
radiation																									
other hazards, harmful substances																									
metal material						1		1	1																3
lumber, bamboo																									
stone, sand, substance																									
other materials			1																						1
load	1	5	5	4	1	2		2	2	2	2	1	1		1	1				1		1			32
machine/equipment as load																									
natural ground, rock																									
standing tree																									
water				1			1				1		7					2	1				1		14
abnormal																									

environment		1					1										1	1							4
high/cold temperature environment				1												1									2
other environments					1								1												2
other causal agent																									
no causal agent													1				1								2
unclassifiable							1							1											2
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Workers age of fatal accidents in harbor transportation service in 1999-2022

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
19 years old or less								1	1		1							2							5
20-29			3	2	1	1		2		1			1	1			1	1		1	2	3			20
30-39	4		3	1	4	1	1	3	3	1	3		6	1	1		6	2	2	1	1				44
40-49		1	2	2	1	1	2		1		2	2	2	1	3	3		1	4	1	3				32
50-59	3	9	5	9	5	1	6	4	2	4	1	2	6	2	2	1	1	1	2	1	1		2	1	71
60 years old or more	3	1	5	1	1	6	2	4	2	3	3	1	3			1		3				1	2		42
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Workers' number of workplace of fatal accidents in harbor transportation service in 1999-2022

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
9 workers or less	2	1	5	2	3	1	1			2	1	1	1			1	1	2	2				2		28
10-29	3	5	2	6	4	4	3	4	4	2	3	1	2	1		2	2	4	2	2	1		2	1	60
30-49		3	3	3	3		2	4	1	2	2		4	1	3		1	1	4		2	2			41
50-99	3	1	4	2	1	4	2	2		1	2	3	6	1	2		1	3		1	1	1			41
100-299		1	3	2		1	3	4	4	2	1		5		1	2	3			1	3	1			37
300 workers or more	2		1		1						1			2											7
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Month of fatal accidents in harbor transportation service in 1999-2022

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
January	2	3	1	2	1	2	1		3				1				2	1	2		3				24
February		2	2	1	2			1						1						1		1			11
March			3		2	2	1	2	2			1	9	2	2	1									27
April	2	2	1	1	2			1		1	1		1		2	1	1	1							17
May			1	2		1	1	1			1	2	2	1			1	2	1				1		17
June		1	1	1	2	1	3	1						1			1		1	2	1	1			17

July			2	2		1		2	1	2	2		1			2	1	2	1	1				1	21
August	2	1	2	2	1				1	2	1	1			2			1	1		2	1			20
September	1		3	2				2		2		1				1			1						13
October			1	1	1	1	1	1		1	3		3				1	3				1	1		19
November	1	2	1	1		1	1	2	1												1		2		13
December	2				1	1	3	1	1	1	2		1				1		1						15
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Prefecture of fatal accidents in harbor transportation service in 1999-2022

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	total
Hokkaido	1		2	4	1	1	1				1	1	1	1	1		1								16
Aomori			1									1									1				3
Iwate																									
Miyagi					1								8												9
Akita																									
Yamagata																									
Fukushima									1										1						2
Ibaraki					1			1								1	1			1					5
Tochigi																									
Gunma																									

Saitama																									
Chiba		1	2	1		1		2	2					1		2		1					2		15
Tokyo	2	3		1	3	1					1		2		1				1						15
Kanagawa	4	3	5	2		2	4	3		3	3	1	2				2	1		1	1				37
Niigata									1																1
Toyama																									
Ishikawa																									
Fukui																									
Yamanashi																									
Nagano																									
Gifu																									
Shizuoka						1	1																		2
Aichi		1		3	3	1		3	1	1					1		1	2			1	2		1	21
Mie			2													1		1							4
Shiga																									
Kyoto																									
Osaka			2	1		1		1	2	2	2	1			1		2		1						16
Hyogo			1	1		2		1		1	2	1	1		1		1	2	1		1	1			17
Nara																									
Wakayama											1														1
Tottori													1	1											2

Shimane															1										1
Okayama			1				1						2												4
Hiroshima	1	1							2				1	1				1							7
Yamaguchi	1						1														1				3
Tokushima																							1		1
Kagawa																		1							1
Ehime								2													1				3
Kochi																									
Fukuoka		2			1		1			1										2	1				8
Saga																			1						1
Nagasaki							1												1						2
Kumamoto				1															1						2
Oita							1											1				1			3
Miyazaki																									
Kagoshima	1				1			1		1				1		1			1						7
Okinawa			2	1	1																		1		5
total	10	11	18	15	12	10	11	14	9	9	10	5	18	5	6	5	8	10	8	4	7	4	4	1	214

Data sources: https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.html (MHLW, Japan)

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