Fatal and non-fatal accidents in railroad service in Japan in 1999-2022

railroad service industry Code No.040101

Type of accidents in railroad 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	63	52	49	54	65	73	62	69	61	55	61	61	59	58	46	50	48	55	54	66	65	62	69	62	1,419
falling to same level	84	71	59	52	74	85	76	62	72	70	76	84	80	103	88	87	83	81	87	88	74	75	114	100	1,925
crash	18	21	17	26	22	20	25	39	25	22	27	20	12	22	25	29	15	25	24	26	21	27	31	33	572
struck by flying or falling object	13	12	10	10	10	13	11	9	9	8	7	8	12	10	2	4	6	6	7	9	5	12	5	5	203
collapse	1	1	3			1	1	4	1	2			1	5	1	1	4	1	1	1	3				32
crashed by	18	14	18	12	9	16	18	11	16	9	15	10	7	16	16	13	7	14	6	4	17	6	8	7	287
caught in/between	41	38	31	24	32	44	40	46	40	39	33	34	27	30	56	29	27	26	39	26	33	27	31	37	830
cut	5	4	6	1	7	8	6	4	5	8	9	7	4	5	9	6	6	1	6	6	5	2	4	2	126
injury to the sole of the foot			1			2	1	1		1		1	3				1		2			2		1	16
drown																									
contact to high/low-	2	3	4	2	1	2	2	3	3		4	1	2	1	3	3	2	5	4	7	4	6	3	9	76

temperature																									
contact to harmful substance		1			2	1			1			1	2			1	3	1				1	1		15
electric shock	2	5	2	4	2		4	2	5	3	1	2	1	1	3	2	2	2		3		2	1	5	54
explosion										1					1				1						3
burst							2						1												3
fire													1												1
traffic accident (public road)	12	9	14	10	15	10	13	11	12	7	14	3	8	4	11	5	11	2	2	11	5	6	9	3	207
traffic accident (others)	3	6	3	3	6	3	8	11	4	2	2	4	1	2	3	3	2		4		5	1	2	2	80
reaction to motion/improper motion	46	51	40	55	62	42	33	57	66	54	49	52	66	61	65	52	49	51	67	47	63	80	79	76	1,363
others	13	14	15	14	7	8	19	12	11	27	14	14	16	17	8	10	18	13	8	14	14	21	143	6	456
unclassifiable	6	2	5	8	11	10	3	7	6	8	7	5		6	2	2	5	3	3	2	1	1	1	1	105
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Causal agents (large) of fatal and non-fatal accidents in railroad 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	13	10	10	5	5	12	7	7	5	5	11	7	10	7	6	6	6	3	9	10	9	2	4	5	174

crane, conveying machine	63	77	66	60	81	74	79	81	79	59	77	64	64	61	84	53	43	53	56	56	65	68	69	63	1,595
other equipment	46	37	31	36	25	33	42	35	31	49	31	32	30	37	36	39	25	36	33	36	26	38	37	46	847
temporary buildings, establishments	119	101	90	83	119	135	115	131	134	118	109	121	106	130	125	111	114	111	132	128	129	113	165	141	2,880
substance, material	5	12	5	8	8	9	9	10	8	6	10	11	12	8	4	6	15	4	6	7	10	10	7	3	193
load	6	9	7	9	8	4	5	10	7	2	5	3	2	3	7	2	3	6	9	3	9	6	6	7	138
environment	25	18	21	21	27	22	14	25	20	12	15	15	24	29	27	26	22	25	26	28	20	23	26	31	542
others	50	40	47	53	52	49	53	49	53	65	61	54	55	66	50	54	61	48	44	42	47	71	187	53	1,404
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Causal agents (middle) of fatal and non-fatal accidents in railroad 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	1																							2
power transmission mechanism	1		1	2			1	1		1			3	1	1	1			2	2	2				19
woodworking machine	1		1		2	2				1		1	1			2	1				1				13

construction machine	1	4				1	1	2	1		2		3		1		1	1	2	2	1	1	4	2	30
metal manufacturing machine	4	2	4		2	2	1	1	1	1	2	1	3	2			1		2		1			1	31
general machine	5	3	4	3	1	7	4	3	3	2	7	5		4	4	3	3	2	3	6	4	1		2	79
mobile silviculture machine																									
crane	1	3	2	2	2	2			1	2	3		3		1	2		2	3	3	3	6		2	43
conveying machine	14	8	11	15	16	13	13	12	12	8	10	10	2	8	9	7	5	6	10	4	5	7	5	9	219
vehicle	48	66	53	43	63	59	66	69	66	49	64	54	59	53	74	44	38	45	43	49	57	55	64	52	1,333
pressure vessel																1									1
chemical facilities																									
welding equipment				1			1																	1	3
kiln, caldron			1																						1
electric equipment	3	3	2	5	2	1	7	2	5	4	1	3		1	3	4	2	3	2	4	1	1	2	6	67
human power machine, tools	9	7	6	8	9	11	11	8	5	16	8	4	5	12	13	7	3	7	7	7	7	7	9	9	195
tools	23	16	16	19	10	15	17	14	15	20	9	14	13	14	15	19	8	14	14	17	10	20	15	19	366
other equipments,																									

facilities	11	11	6	3	4	6	6	11	6	9	13	11	12	10	5	8	12	12	10	8	8	10	11	11	214
temporary buildings, establishments	119	101	90	83	119	135	115	131	134	118	109	121	106	130	125	111	114	111	132	128	129	113	165	141	2,880
hazards, harmful substances		1			1	1	1	1	1		3		2		1	1	4	1	2		2				22
materials	5	11	5	8	7	8	8	9	7	6	7	11	10	8	3	5	11	3	4	7	8	10	7	3	171
load	6	9	7	9	8	4	5	10	7	2	5	3	2	3	7	2	3	6	9	3	9	6	6	7	138
natural environment	25	18	21	21	27	22	14	25	20	12	15	15	24	29	27	26	22	25	26	28	20	23	26	31	542
other causal agent	26	20	23	16	13	18	26	26	19	29	30	22	25	18	14	20	20	16	15	18	15	20	140	8	597
no causal agent	17	18	21	29	29	24	25	18	29	22	26	27	28	39	33	34	38	30	26	24	30	50	46	44	707
unclassifiable	7	2	3	8	10	7	2	5	5	14	5	5	2	9	3		3	2	3		2	1	1	1	100
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Causal agents (small) of fatal and non-fatal accidents in railroad 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			1				1	1		1			3	1	1	1			2	2	2				16

circular sawing machine			1		1							1				1	1				1				6
band sawing machine																									
wood planer machine																									
hollow chisel mortiser, wood borer																									
chamfering machine, router, woodworking milling machine																									
chain saw					1					1			1			1									4
other woodworking machines																									
leveling, transporting or loading machine											1		1							1		1	1		5
excavating machine								1																	1
foundation work machine							1																		1
hardening machine																									

demolition machine																									
vehicle for high lift work													2					1					1		4
other construction machines								1	1		1				1		1		2	1	1		2	2	13
lathe			1		2		1				1	1	1												7
drill press, milling machine			1							1									1						3
grinding machine, buffing machine			1						1		1		1	2			1		1		1				9
power press																									
forging pressure hammer																									
shearing machine																									
other metal manufacturing machines			1					1					1											1	4
centrifugal machine																									
mixer, grinder												1													1
roll machine (except printingroll machine)																									

injection molding machine																									
food manufacturing machine																									
printing machine																									
industrial robot																									
other general power machines			4		1		4	3	3	2	7	4		4	4	3	3	2	3	6	4	1		2	60
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane									1	2			1			1		1	1	2		1			10
mobile crane					1						1					1		1		1					5
derrick crane																									
elevator, lift			1								1								1		1	4		2	10
cargo lifting appliance																									
gondola																					1				1

lumberyard equipment, logging cableway			1																						1
simple skyline yarding equipment																									
other powered crane					1						1		2		1				1		1	1			8
truck			2		7		5	4	5	3	2	4	1	4		2	1		3	2	1	2	3	5	56
forklift			2		1		1	1			4	1		1		1		1	1	1		3	2	2	22
railway equipment			3		5		4	4	3	4	2	1	1		4	2	1	2	3	1	1			2	43
conveyor							2	1									1								4
loader																									
straddle carrier																									
rough terrain hauler																						1			1
other powered conveying machines			4		3		1	2	4	1	2	4		3	5	2	2	3	3		3	1			43
cars, bus, motorcycle			14		21		14	8	15	9	13	6	12	9	10	5	10	4	2	7	7	5	9	3	183
railway vehicle			36		38		47	58	45	38	43	43	42	42	62	33	24	38	36	39	45	41	49	44	843
other vehicles			3		4		5	3	6	2	8	5	5	2	2	6	4	3	5	3	5	9	6	5	91
boiler																									

pressure vessel																									
other pressure vessels																1									1
chemical facilities																									
gas welding equipment							1																	1	2
arc welding equipment																									
other welding equipment																									
kiln, caldron			1																						1
industrial dryer																									
other kiln, caldron																									
transmission			1		1		2	2	5	2		2			1	1		1	1	1					20
electric power facilities			1		1		4			1	1			1	1	2	2	2	1	2		1	1	4	25
other electrical equipment							1			1		1			1	1				1	1		1	2	10
human power cranes								1		3			1									1		1	7
human power hauling equipment			2		4		4	5	3	2	5	2	1	6	6	4	2	4	3	2	1	4	5	4	69

human power machine																					1	1		1	3
hand tool			4		5		7	2	2	11	3	2	3	6	7	3	1	3	4	5	5	1	4	3	81
ladder			13		7		11	8	7	12	5	6	8	10	8	11	5	10	6	9	5	15	10	12	178
slinging tool			1						2					1											4
other tools			2		3		6	6	6	8	4	8	5	3	7	8	3	4	8	8	5	5	5	7	111
other equipment, facilities			6		4		6	11	6	9	13	11	12	10	5	8	12	12	10	8	8	10	11	11	183
scaffolding			2		1			1	1	1		1	1		1	1						1	2		13
timbering																									
stairs, landing stage			18		30		28	36	38	33	25	27	23	41	27	17	28	26	43	33	37	30	38	39	617
opening			2		1		4	4	1	3	4	2	2	2	4	3	2	2	3	2	3	5	1	2	52
roof, beam, haze, crossbeam, principal rafter					2		3	4			1	1	1	1	2	1	2		1	1	1		1	1	23
working platform, boot board			12		10		7	7	9	10	8	14	11	15	10	11	5	11	12	10	9	8	11	13	203
passage			21		36		36	37	36	38	34	41	32	42	40	43	43	40	47	52	43	31	74	53	819
building, establishment			22		24		25	26	34	18	24	21	22	14	25	24	19	16	16	17	17	18	22	21	425
other temporary buildings,			13		15		12	16	15	15	13	14	14	15	16	11	15	16	10	13	19	20	16	12	290

establishments																									
explosive substance											1														1
inflammable substance																					2				2
inflammable gas															1										1
harmful substance					1				1								2								4
radiation																									
other hazards, harmful substances							1	1			2		2			1	2	1	2						12
metal material			4		5		5	3	2	2	1	3	5	2	1	2	4	2	2	3	1	6	4	1	58
lumber, bamboo					1		1	3		1	1	3	2	3	1	1	3				2	2	2		26
stone, sand, substance			1				2	2	4	3	4	4	2	1	1		1	1	2	3	4	1	1	1	38
other materials					1			1	1		1	1	1	2		2	3			1	1	1		1	17
load			3		6		5	9	7	2	5	3	1	3	6	2	2	6	8	2	9	5	4	6	94
machine/equipment as load			4		2			1					1		1		1		1	1		1	2	1	16
natural ground, rock			3		2		2	4	4	4	2	2	7	4	8	2	2	2	4		4	1	5		62
standing tree			3		4		2	1	2	1	1	2	1	1	1	1	1	1				2	1	2	27
water														1	1						1				3
abnormal																									

environment					1																1				2
high/cold temperature environment			1					1	2			1		1	2	1	1	2	3	6	2	5	1	7	36
other environments			14		20		10	19	12	7	12	10	16	22	15	22	18	20	19	22	12	15	19	22	326
other causal agent			23		13		26	26	19	29	30	22	25	18	14	20	20	16	15	18	15	20	140	8	517
no causal agent			21		29		25	18	29	22	26	27	28	39	33	34	38	30	26	24	30	50	46	44	619
unclassifiable			3		10		2	5	5	14	5	5	2	9	3		3	2	3		2	1	1	1	76
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Workers age of fatal and non-fatal accidents in railroad 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	6	4	3	7	2	3	3	6	4	6	6	4	7	6	2	3	2	3	5	4	6	3	11	6	112
20-29	64	67	64	60	80	77	80	72	69	56	66	58	61	72	83	59	51	62	61	62	69	82	108	69	1,652
30-39	70	62	41	53	58	58	64	78	73	69	78	68	63	82	78	61	67	53	62	51	63	65	109	61	1,587
40-49	98	72	73	75	96	97	80	96	97	86	64	69	51	64	50	49	50	56	62	67	66	62	94	71	1,745
50-59	71	86	85	65	80	87	72	76	77	77	77	78	91	94	90	98	86	87	91	86	70	68	123	70	1,985
60 years old or more	18	13	11	15	9	16	25	20	17	22	28	30	30	23	36	27	33	25	34	40	41	51	56	72	692
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Workers' number of workplace of fatal and non-fatal accidents in railroad 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	25	16	16	11	15	17	18	23	13	19	9	16	11	19	10	7	9	10	11	11	12	19	12	12	341
10-29	39	38	34	39	31	34	27	22	34	27	33	29	32	27	20	24	23	25	28	28	30	43	30	35	732
30-49	47	39	36	33	38	33	37	47	29	29	29	38	24	42	42	38	32	35	28	28	34	36	47	27	848
50-99	54	45	37	47	62	49	63	56	56	59	61	43	62	56	61	59	42	52	54	60	56	55	84	69	1,342
100-299	121	127	106	108	136	157	140	157	160	144	149	152	141	154	165	140	144	132	157	147	146	145	269	163	3,560
300 workers or more	41	39	48	37	43	48	39	43	45	38	38	29	33	43	41	29	39	32	37	36	37	33	59	43	950
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Month of fatal and non-fatal accidents in railroad 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	25	22	30	33	36	27	36	35	27	37	32	40	53	33	45	33	34	27	35	35	44	30	39	52	840
February	40	30	26	25	31	37	37	37	31	32	31	32	29	37	39	35	33	29	31	37	32	31	52	35	809
March	38	29	29	34	31	34	27	30	39	31	31	32	27	42	29	32	30	33	29	22	27	32	26	27	741
April	27	21	16	16	28	28	25	30	24	22	39	31	20	23	27	29	18	24	29	26	31	24	31	28	617
May	25	17	21	19	25	21	25	20	24	16	19	24	19	30	18	19	16	23	11	21	21	23	57	26	540
June	24	26	24	22	32	22	25	37	22	21	21	24	16	33	24	19	25	19	28	22	19	28	33	22	588

July	23	27	25	29	23	27	16	29	24	27	22	22	22	27	25	16	30	31	28	21	22	18	53	28	615
August	24	28	27	20	27	17	22	20	24	21	26	25	17	15	26	25	16	20	21	30	20	27	79	20	597
September	23	28	17	18	24	41	32	26	39	22	27	20	26	32	26	26	27	22	25	31	23	26	33	32	646
October	28	22	17	16	29	22	16	26	29	26	25	17	19	26	31	15	18	18	20	17	28	27	36	24	552
November	28	27	25	24	18	28	30	29	27	28	22	22	23	19	22	16	23	18	23	19	23	20	23	22	559
December	22	27	20	19	21	34	33	29	27	33	24	18	32	24	27	32	19	22	35	29	25	45	39	33	669
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

Prefecture of fatal and non-fatal accidents in railroad 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	11	15	12		15		16	8	14	10	12	14	16	16	19	10	13	23	20	18	25	29	45	33	394
Aomori	2	4	2		4		8	1	3	1	3	3	5	7	2	3				1	3	3	3	2	60
Iwate	2		3		2		3	1	1	1	1	1		1	3	4	3	1	1	2	2	1	4	1	38
Miyagi	5	7	7		9		5	3	10	6	5	13	8	6	6	3	6	3	7	4	4	4	6	5	132
Akita	2	2	3		2		3	2	4	3	2	3	3	5	5	2	1	6	4	4	4	2	4	5	71
Yamagata	2	5	3		2			3	4	2	2	6	6	1	6	1		2	7	1	1	4	4	9	71
Fukushima	8	5	3		4		9	9	5	6	5	9	3	5	6	4	1	2	4	3	2	2	3	1	99
Ibaraki	7	7	11		11		2	7	5	1	3	3	2	7	8	4	1	1	3			3	5	4	95
Tochigi	2	2	2		2			4	3		1	1	2	2	1	3	1	1	2	4	1				34
Gunma	11	16	8		12		14	5	6	10	15	4	11	15	12	12	18	6	11	7	8	5	6	6	218

Saitama	15	9	12		15		15	21	9	17	8	14	12	16	16	10	9	10	6	7	6	14	17	7	265
Chiba	22	16	15		24		22	14	15	8	14	11	12	15	11	16	11	15	16	13	14	13	18	24	339
Tokyo	48	25	41		45		36	53	47	55	42	59	42	51	31	38	46	46	43	43	47	37	45	48	968
Kanagawa	18	24	21		20		19	38	32	29	22	21	23	33	28	20	15	16	24	23	25	31	30	21	533
Niigata	24	10	9		6		7	10	12	9	9	6	8	11	6	10	2	8	8	4	5	11	15	6	196
Toyama	1	4	2		6		2	2	2		1	3	4	1	1	1	6	2	3	4	5	4	5	1	60
Ishikawa	1		1		2		2	3	4	2		1	1	1	2	1	3	4	2	8	5	2	21	3	69
Fukui	1	8	2		1		1	1		4	3	2	1	2		2		1	1			3	3	1	37
Yamanashi	1		3		4		2	3	1	1	2		1		2		1	2	2	1		2	1	1	30
Nagano	30	18	15		25		29	21	25	24	26	17	23	24	30	33	25	20	24	27	32	37	28	20	553
Gifu		4	2		2		6	4	4	3	2	5	3	2	3	2	2		4	5	3	1	2	1	60
Shizuoka	2	3	4		11		4	3	7	8	5	3	6	8	4	6	5	4	3	6	3	1	3	10	109
Aichi	11	11	10		3		18	18	17	10	18	11	12	15	13	12	14	6	9	12	11	7	11	15	264
Mie	5		4		2		4	4	3	3	4	2	2	1	4		3	5	2	2	4	2	2	3	61
Shiga	2	7	4		3		1	5	2	1	1	4	6	4	6	3	1	5	1	1	1	4	10	2	74
Kyoto	6	1	2		1		9	8	8	3	8	4	9	8	16	17	7	11	11	12	10	11	13	11	186
Osaka	28	36	28		33		27	32	31	37	40	30	26	33	33	23	27	28	31	39	33	28	110	42	775
Hyogo	15	14	11		5		12	12	10	10	5	13	12	14	12	9	16	12	13	11	11	19	15	14	265
Nara	1	1	2		1		1	1	3	3	1	1	1	1	3	2	4	4	4	1	1	4	3	4	47
Wakayama	2		1		1		3	2		2			2	1	1		1	3	2		1	1	4	2	29
Tottori	2				2		1	6			2						2				1	3		2	21

Shimane		2	1		1			2	1	3	1					1			3			1	1		17
Okayama	1	8	2		1		5	4	3	6	2	2	1	3	2	4	2	3	4	2	2	4	3	3	67
Hiroshima	5	9	6		18		6	9	8	4	10	6	9	7	8	3	6	7	9	7	12	7	10	8	174
Yamaguchi		1			2		1	2		3	4	1	4	3	4	1	3	3	3	3	5	2	2	4	51
Tokushima	1				2		4		2	3	5	1			1	1	5	4	3	2		1		4	39
Kagawa	7	3	6		7		6	8	10	2	7	5		4	4	2	2	4	3	5	5	3	13	2	108
Ehime	4	5	2		3		3	3	3	5	5	2	5	2	5	6	2	2	2	2	2	6	1	2	72
Kochi	1	4	1		1		6	2	1	1	1	2	1		2	1		3	2	2	1	1	1		34
Fukuoka	4	11	3		8		9	9	13	9	9	11	11	8	14	11	14	6	8	14	14	6	18	17	227
Saga	1	1	1					1	1	2		2		2	1		1			1				1	15
Nagasaki	4		5		3		1	4	5	7	9	3	4	3	3	5	3	2	2	1	1	7	3		75
Kumamoto	2	5	2						1	1	4	7	1	2	2	3	1	2	3	2	2	2	5	1	48
Oita	3		3		2				2				1		1	2	2	1	1	3			1		22
Miyazaki	1				1							1	2						1	1		1	1	1	10
Kagoshima	6	1	2		1		2			1			1	1	1	4	4	2	3	2	3	2	6	2	44
Okinawa													1		1	2									4
total	327	304	277	275	325	338	324	348	337	316	319	307	303	341	339	297	289	286	315	310	315	331	501	349	7,773

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 railroad service in Japan in 1999-2022

railroad service industry Code No.040101

Type of fatal accidents in railroad 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						1	1			1							1			2	1	2		2	11
falling to same level													1		1	1						1			4
crash																									
struck by flying or falling object																									
collapse																			1						1
crashed by			1				1																		2
caught in/between				1				1		1		1						1		1					6
cut																									
injury to the sole of the foot																									

drown																									
contact to high/low-temperature																									
contact to harmful substance																	1								1
electric shock			1	1			1																		3
explosion																									
burst																									
fire																									
traffic accident (public road)																						2			2
traffic accident (others)		1	1		2	1	2	6	2			1							1					1	18
reaction to motion/improper motion																									
others			1												1								1		3
unclassifiable																									
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Causal agents (large) of fatal accidents in railroad 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			3
crane, conveying machine		1	2	1	2	1	3	7	2	1		1			1	1	1	1	1	1		3		2	32
other equipment			1	1			1																		3
temporary buildings, establishments							1			1			1							1					4
substance, material																	1								1
load																									
environment						1													1		1			1	4
others			1												1							1	1		4
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Causal agents (middle) of fatal accidents in railroad 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																				1					1

woodworking machine																									
construction machine																									
metal manufacturing machine																									
general machine												1										1			2
mobile silviculture machine																									
crane																									
conveying machine								1														2		1	4
vehicle		1	2	1	2	1	3	6	2	1		1			1	1	1	1	1	1		1		1	28
pressure vessel																									
chemical facilities																									
welding equipment																									
kiln, caldron																									
electric equipment			1	1			1																		3
human power machine, tools																									
tools																									
other equipments,																									

facilities																									
temporary buildings, establishments							1			1			1							1					4
hazards, harmful substances																	1								1
materials																									
load																									
natural environment						1													1		1			1	4
other causal agent			1																				1		2
no causal agent															1							1			2
unclassifiable																									
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Causal agents (small) of fatal accidents in railroad 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																				1					1

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																									
excavating machine																									
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												1										1			2
felling machine																									
mobile logging machine																									
skyline yarding machine																									
other mobile silviculture machine																									
crane																									
mobile crane																									
derrick crane																									
elevator, lift																									
cargo lifting appliance																									
gondola																									

lumberyard equipment, logging cableway																									
simple skyline yarding equipment																									
other powered crane																									
truck																						2		1	3
forklift																									
railway equipment																									
conveyor								1																	1
loader																									
straddle carrier																									
rough terrain hauler																									
other powered conveying machines																									
cars, bus, motorcycle																									
railway vehicle		1	2	1	2	1	3	6	2			1							1					1	21
other vehicles										1					1	1	1	1		1		1			7
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			1																						1
electric power facilities				1			1																		2
other electrical equipment																									
human power cranes																									
human power hauling equipment																									

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

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

environment																									
high/cold temperature environment																									
other environments																			1		1			1	3
other causal agent			1																				1		2
no causal agent															1							1			2
unclassifiable																									
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Workers age of fatal accidents in railroad 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																									
20-29			2	1	1		3	1				1						1				2		1	13
30-39						1	1		1	1										1					5
40-49					1		1	5	1						1		1			1		2			13
50-59		1				1				1					1	1			2	1		1	1	1	11
60 years old or more			2	1				1				1	1				1				1			1	9
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Workers' number of workplace of fatal accidents in railroad 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									1						1										2
10-29			1			1		2	1						1					1	1	1		2	11
30-49			1	1	2	1	1	5		2		1				1			1	1		1			18
50-99																	1		1			3		1	6
100-299		1	1	1			3						1					1		1			1		10
300 workers or more			1				1					1					1								4
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Month of fatal accidents in railroad 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			1					3							1	1	1								7
February			2							1			1				1		1		1				7
March					1	1	1					2								1				1	7
April							2																	1	3
May																							1		1
June				1	1																				2

July									1																1
August			1					1														3			5
September																						1			1
October				1				1	1															1	4
November						1				1										1					3
December		1					2	2							1			1	1	1		1			10
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

Prefecture of fatal accidents in railroad 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				1										1	1				2			6
Aomori									1																1
Iwate																									
Miyagi																									
Akita																						1			1
Yamagata																								2	2
Fukushima																									
Ibaraki																									
Tochigi								1																	1
Gunma																									

Saitama												1													1
Chiba					1							1													2
Tokyo				1																		1			2
Kanagawa						1		2							1					1					5
Niigata																									
Toyama																									
Ishikawa															1										1
Fukui		1		1																					2
Yamanashi																									
Nagano										2						1	1		1	1	1	1			8
Gifu			1																						1
Shizuoka						1																			1
Aichi							1						1												2
Mie			1																						1
Shiga																									
Kyoto									1																1
Osaka					1		2																1		4
Hyogo			1					1																1	3
Nara																									
Wakayama																									
Tottori								3																	3

Shimane																									
Okayama																									
Hiroshima																									
Yamaguchi																									
Tokushima																				1					1
Kagawa																									
Ehime																									
Kochi							1																		1
Fukuoka																			1						1
Saga																									
Nagasaki																									
Kumamoto																									
Oita																									
Miyazaki																									
Kagoshima																									
Okinawa																									
total		1	4	2	2	2	5	7	2	2		2	1		2	1	2	1	2	3	1	5	1	3	51

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

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