

PLEASE POST IMMEDIATELY

SOFA Switching Fatality and Severe Injury Update – 2013 Fourth Quarter

Winter-Related Safety Issues: Weather, Extended Darkness, Working Along Mainlines,...

Winter-Related Safety Issues

Severe weather can cause risk in switching. Daylight is already noticeably shorter in many parts of the country. Weather and extended darkness are among the winter-related safety issues identified by SOFA:

- weather
- extended darkness
- winter clothing affecting hearing and vision
- housekeeping (e.g., shoveling walkways)
- winter safety preparation
- working along mainlines (SOFA Advisory 5)

pages 6-11
pages 7-10

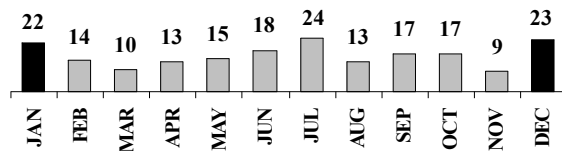
Happy Holidays...and Work Safely

SOFA wishes all a happy and healthy holiday season. Work safely throughout the winter months...and all career long

see *A Message from SOFA*, page 5

Fatalities Spike in December and January

195 Switching Fatalities, by month,
January 1, 1992 through December 03, 2013



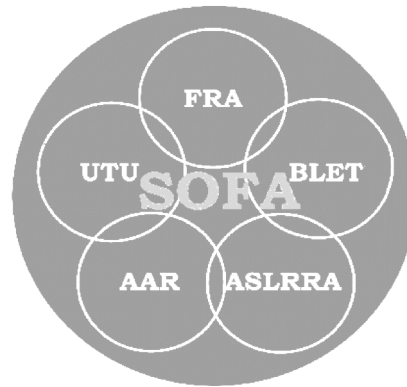
page 9

Six Examples of Winter Risk: Fatality Cases

pages 17-19

Zero Switching Fatality Goal

SOFA's mission is the elimination of Fatalities in switching operations



SOFA is a voluntary, non-regulatory, railroad-safety partnership comprised of representatives from AAR, ASLRRRA, BLET, FRA, and UTU

SOFA seeks to prevent switching Fatalities through education based on facts about causes. SWG is not part of a rulemaking or regulatory process

SOFA recognizes that all have responsibility for switching safety: employees, managers, and regulators
SOFA's vision is Zero Switching Fatalities achieved through education and non-punitive interactions among stakeholders

One Switching Fatality in 2013

through December 03

Feb 16.....Cleveland, OH

preliminary summary, page 2

Recent Switching Fatality History

- 1 Fatality in 2013 through December 03
- 3 Fatalities in 2012
- 4 Fatalities in 2011
- Fatality counts are historically low in the last three years

page 3

Recent SOFA-defined Severe Injury History

- 42 Severe Injuries (including 4 amputations) in 2013 through September (latest month available) vs. 38 (including 3 amputations) for the same nine months of 2012
- 47 Severe Injuries in 2012, the lowest count at least back to 1997 (first year SOFA can determine counts); 53 Severe Injuries in 2009 was previous low

pages 12-15

Severe Injuries Spike in Winter Months

- Like Fatalities, SOFA-defined Severe Injury counts are higher in December and January...and continue to be higher into February
- One reason is increases in 'slipped, fell, stumbled' events during winter...stay on your feet!

pages 10-11

One Switching Fatality in 2013 through December 03

Preliminary summary, not based on investigation

1) February 16 – CWRO – Cleveland, OH

A 50 year-old conductor switching cars inside a steel mill fell or was dislodged from the car he was riding; and was subsequently run over by the equipment. The incident occurred at approximately 5:00 pm (local time) on Saturday.

Comment based on preliminary information: Shoving was the direction of movement. Employee fell or was dislodged from car, which is a Special Switching Hazard (SSHET). This SSH, involving slipping, tripping, or falling (not necessarily while riding cars), occurs in about 10 percent of switching Fatalities.

Fatality involved Shoving...a frequent direction of movement in switching Fatalities

Based on preliminary information, the Cleveland, OH, Fatality involved shoving. An employee fell or was dislodged from a shove move. Table 4-3, shown below, is from the *2011 SOFA Report, Vol. I, p. 48*. At the time of the report, 179 switching Fatalities had been reviewed, 100 (56 percent) of which involved equipment being shoved.

Table 4-3: SOFA Fatalities by Type of Movement

Movement	Conventional	RCL	Without Motive Power / Unknown	Total
Equipment Being Pulled	38	1		39
Equipment Being Shoved	93	7		100
Equipment Free Running	3	2	31	36
Not Applicable			4	4
Total	134	10	35	179

Note: In four cases, the FE encountered an industrial hazard while walking and was not struck by train equipment. These cases are listed as “Not Applicable.”

Recent Switching Fatalities

January 01, 2011 through December 03, 2013

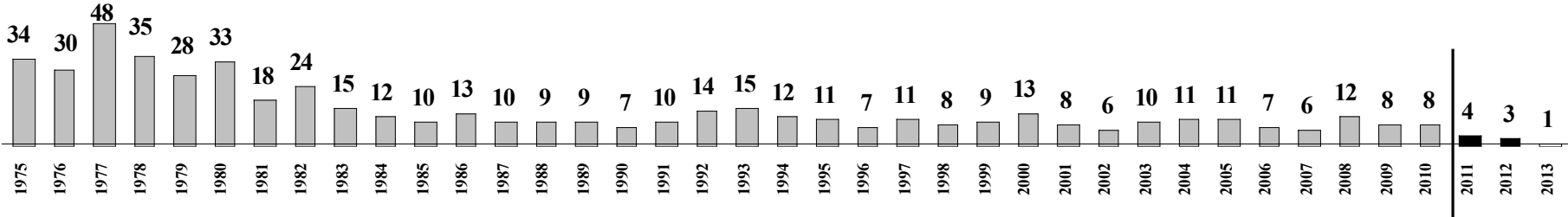
Year	Count	Date	Days between Fatalities	City	State	Reviewed or Preliminary	<u>Brief Description</u> Factors other than those listed may be involved. Listed factors for cases classified as 'preliminary' (previous column) may change based on SOFA review of FRA investigations
2011	1	02/08/11	--	Kankakee	IL	reviewed	<ul style="list-style-type: none"> • Temporary close clearance (Advisory 2), car left afoul • Switch improperly lined • Failure to communicate unsafe condition. Another crew saw car left afoul • Deceased conductor was training new employee, which affected where conductor rode lead car of shove move
	2	07/25/11	167	Bedford Park	IL	reviewed	<ul style="list-style-type: none"> • Going between rolling equipment (Lifesaver/Recommendation 1) • Unsecured cars • Failure to secure hand brakes • Employee on or fouling track
	3	08/15/11	21	Kansas City	KS	reviewed	<ul style="list-style-type: none"> • Going between rolling equipment (Lifesaver/Recommendation 1) • Unexpected movement of cars
	4	09/08/11	24	Botkins	OH	reviewed	<ul style="list-style-type: none"> • Going between rolling equipment (Lifesaver/Recommendation 1) • Unexpected movement of cars • Slack action • Lack of experience in choosing stop location • Employee on or fouling track
2012	5	01/30/12	144	Gary	IN	preliminary	<ul style="list-style-type: none"> • Shoving was direction of movement
	6	05/28/12	119	Kenmare	ND	preliminary	<ul style="list-style-type: none"> • Temporary close clearance (Advisory 2), cars left afoul
	7	07/31/12	64	Mason City	IA	preliminary	<ul style="list-style-type: none"> • Going between rolling equipment (Lifesaver/Recommendation 1)
2013	8	02/16/13	200	Cleveland	OH	preliminary	<ul style="list-style-type: none"> • Fell or dislodged from car being shoved
			290				<ul style="list-style-type: none"> • 290 SWITCHING FATALITY FREE DAYS (as of December 03, 2013)

Winter Risk...being struck by mainline trains

65 percent of Fatalities resulting from being struck by mainline trains occurred in December through February. Remedies for preventing harm from this risk are addressed by SOFA Advisory 5. Consult the 2011 SOFA Report

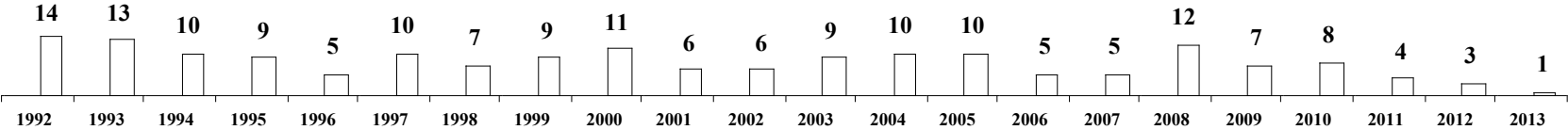
Switching Fatality History...Fatalities have declined...achieve Zero Fatalities

Annual Switching Fatality Counts, 1975 through 2012, full year; 2013, through December 03
 540 Fatalities over approximately 39 years; Fatalities have declined particularly in the last three years



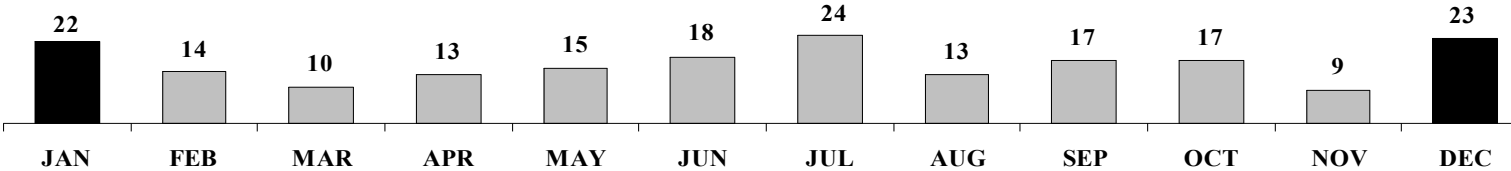
Fatalities through December 03, by year: 1992 through 2013

Fatalities have averaged 7.9 for this period, with a range of 1 to 14, and a most frequent value of 10



195 Switching Fatalities, by month: January 01, 1992 through December 03, 2013

Historically, December and January have higher risk...identify any winter risks in your switching environment



A Message from SOFA: Work Safely this Winter

As winter approaches, recognize what history teaches: the incidence of switching fatalities and severe injuries to train and engine employees increases. SOFA, in its 2011 report, identified the following winter-related issues:

- **weather**
- **extended darkness**
- **winter clothing affecting hearing and vision**
- **housekeeping (e.g., shoveling walkways)**
- **winter preparation**
- **working along mainlines (SOFA Advisory 5)**

Emphasis on winter safety should also include consideration of any local conditions that change during winter – in yards, out on the mainline, and at industrial sites. Relevant company policies should be stressed, as well as other factors specific to your duties and railroad.

While railroad casualties have declined, it is historically true that casualty increases during winter. It need not be so. Risk can be recognized and remedied.

Safely in winter is the responsibility of everyone – those who switch, and those who influence switching safety. Get the word out: winter brings additional risk to those engaged in switching. Consider placing special emphasis on winter risks.

- The SOFA Working Group

Winter-Related Safety Issues

Quotations below are from the *2011 SOFA Report, Vol. I and II*. Consult the report for the full context

Weather

“...ice can increase the risk of derailment, snow can reduce visibility, and mud can create unsafe footing conditions.”
Vol. II, p. H-6

Extended darkness

“Lack of daylight can compromise visibility and may affect the mood and alertness of the workforce.” *Vol. II, p. H-6*

Winter clothing affecting hearing and vision

“...outer clothing worn during winter months can restrict hearing and peripheral vision; therefore, extra caution should be exercised.” *Vol. I, p. 40*

Housekeeping

[In reference to industrial sites] **“Maintenance of track and walkways...This includes ice and snow removal, clearing of debris alongside the track, and immediate removal of objects or debris blocking the track or walkway. This directly impacts the decision of the ground service employee[s] to walk or ride equipment.”** *Vol. I, p. 36*

Winter safety preparation

“The railroad industry may want to consider additional preparation and education of the workforce on adapting to changing conditions in summer and winter.” *Vol. I, p. 51*

“Make cold weather an issue in upcoming safety awareness campaigns. Increasing workforce awareness of this problem could be an important step in reducing fatalities in cold weather during the winter. Since many fatalities occur right at the beginning of winter, get an early start with a weather awareness campaign. Emphasize the increase risk on main track, particularly the risk of being struck by a passing train. Include alerts about weather conditions and how to operate safely in icy conditions in safety briefings and bulletins. Ensure customers do their part to keep industrial track and walkways clear of mud, ice, and snow. Advise management and crews to think safety first and adjust productivity expectations to suit the challenging conditions which occur in cold weather states in the winter.”
Vol. II, p. H-6

Winter-Related Safety Issues (continued)

Quotations below are from the *2011 SOFA Report, Vol. I and II*. Consult the report for the full context

Working along mainlines (SOFA Advisory 5):

“65% of the Struck by Mainline Trains fatalities occurred from December through February.” *Vol. I, p. 40*

“...communication is essential to eliminating fatalities related to Struck by Mainline Trains. Fatalities occur when employees are unaware of risks associated with doing work along mainline track – particularly at times of darkness and during winter months.” *Vol. I, p. xxii*

SOFA Advisory 5: Struck by Mainline Train – section 3.7.5 of 2011 SOFA Report

“The SWG [SOFA Working Group] reemphasizes that communication is essential to eliminating fatalities related to Struck by Mainline Trains. Fatalities occur when employees are unaware of risks associated with doing work along mainline track – particularly at times of darkness and during winter months. Therefore, the railroad industry should insist upon consistent use of multiple methods to warn employees about oncoming on-track movements. Equally, warnings should be made to the approaching on-track movement of an employee’s location when a crew member is outside of the locomotive cab. In addition, the railroad industry should consider improving employee visibility when performing work on the ground.

Employees must use job briefing procedures before dismounting the locomotive or doing work along mainline track to establish a safe method for performing their work. When possible, employees must dismount to the safe side. Empower employees to establish a safe location when stopping and/or performing work when on or near mainline track. The railroad industry must support employees in the use of individual discretion as part of an effort to determine a safe location to perform work.”

SOFA Advisory 5 (Struck by Mainline Train): Some Basic Points

- **Communication is essential to eliminating fatalities. Fatalities occur when employees are unaware of risks associated with doing work along mainline track, particularly during darkness and winter months.**
- **Insist upon consistent use of multiple methods to warn employees about oncoming on-track movements.**
- **Warnings should be made to the approaching on-track movement of an employee’s location when a crew member is outside of the locomotive cab.**
- **Consider improving employee visibility when performing work on the ground.**

Winter-Related Safety Issues (continued)

SOFA Advisory 5 (Struck by Mainline Train): Some Basic Points

- Use job briefing procedures before locomotive dismount or work along mainline track to establish a safe method for performing work.
- When possible, employees must dismount to the safe side.
- Empower employees to establish a safe location when stopping and/or performing work when on or near mainline track.
- The RR industry must support employees in the use of individual discretion as part of an effort to determine a safe location to perform work.
- Darkness and winter months are associated with this Fatality type. Awareness may be compromised and degraded. Darkness may impair depth perception. Use multiple warning methods (as radio, horn, bell, and headlight), both visual and auditory. A single warning from one device can be misconstrued or forgotten. Reflective clothing, and clothing that does not impair hearing and peripheral vision, are desirable.
- Mainline inspections (as locomotive, roll-by, and hotbox) can involve risks. Employees should exercise discretion about the location and timing. A job briefing should be conducted before any member exits the cab. At a minimum, a this job briefing should include:
 - Determination of a safe location to stop.
 - If inspection can be performed from the safe field side.
 - If not, can dismounting be from the field side.
- If not, there must be awareness of all approaching movements, consideration of time to dismount, avoidance of fouling track, recognition that warnings may not be adequate, and planning of a worst-case scenario that includes an escape route.
- Communication may not be adequate when work is performed along a mainline. Effective communication must exist among crew, between crews, dispatchers, and yardmasters. Effective communication includes:
 - Utilizing established programs like Crew Resource Management.
 - Not exiting the cab without verbalizing intentions.
 - Contact with, and providing warnings, for crew members outside the cab.
- Establishing a safe zone outside the cab for communication with the crew, other crews and movements, dispatcher, and yardmaster.

Switching Fatalities in December and January

45 December and January Fatalities: 1992 through 2012, full year; 2013, part year through December 03

by day periods

Monthly Period	Days In Period	Fatalities		Monthly Period	Days In Period	Fatalities
Dec. 1 - Dec 10	10	7		Jan 1 - Jan 10	10	5
Dec 11 - Dec 20	10	6		Jan 11 - Jan 20	10	9
Dec 21 - Dec 31	11	10		Jan 21 - Jan 31	11	8
Monthly totals	31	23			31	22

by state

State	IL	NY	KS	KY	TX	AZ	CA	IN	MI	MN	NM	OH	AK	AL	DE	FL	LA	MO	MS	NC	NJ	OK	OR	PA	TOTAL
Fatalities	6	4	3	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	45

by day-of-week

Day of Week	SUN	MON	TUE	WED	THU	FRI	SAT	TOTAL
Fatalities	7	7	6	6	7	6	6	45

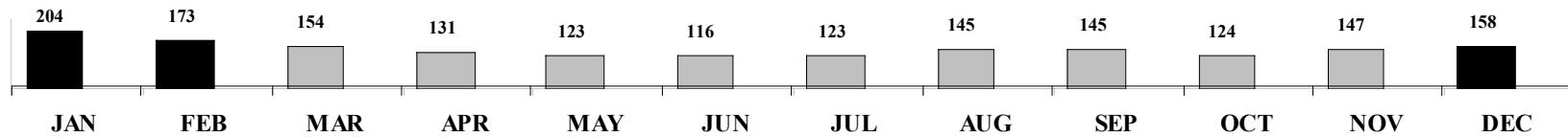
by time-of-day: note that 12 Fatalities occurred between 5:00 and 7:59 PM

Time of Day	12:00-12:59	1:00-1:59	2:00-2:59	3:00-3:59	4:00-4:59	5:00-5:59	6:00-6:59	7:00-7:59	8:00-8:59	9:00-9:59	10:00-10:59	11:00-11:59	TOTAL
Fatalities in AM	2	2	2	1	2	0	2	2	1	3	2	3	22
Fatalities in PM	3	0	0	1	1	3	6	3	2	1	1	2	23

SOFA-defined Severe Injuries in Winter Months

1,743 SOFA-defined Severe Injuries, by month, January 1997 through September 2013

31 percent of SOFA-defined Severe Injuries occurred in December, January, and February

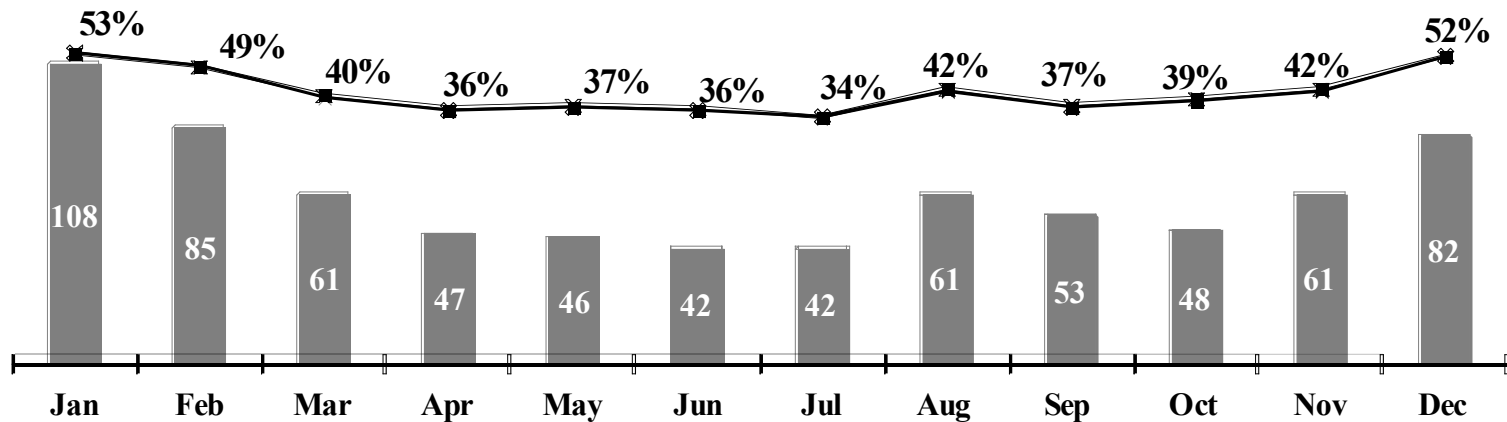


- Like Fatalities, Severe Injury counts are higher in December and January. But also remain higher in February
- One reason Severe Injuries increase in the three winter months is ‘slipped, fell, stumbled, etc.,’ as defined by five FRA event circumstance codes:

- #51: Slipped, fell, stumbled, etc., due to irregular surface, e.g., depression, slope, etc.
- #52: Slipped, fell, stumbled, etc., due to climatic condition (rain, snow, ice, etc.) [emphasis added]
- #53: Slipped, fell, stumbled, etc., on oil, grease, other slippery substance
- #54: Slipped, fell, stumbled, etc., due to object, e.g., ballast, spike, material, etc.
- #70: Slipped, fell, stumbled, other

- In the nine non-winter months, ‘slipped, fell, stumbled, etc.’ comprise 38.1 percent of Severe Injuries. In the three winter months, this type of Severe Injury increases to 51.4 percent of all Injuries. Consider giving special emphasis to this type of Severe Injury if winter weather affects operations

Severe Injuries Attributable to ‘Slipped, Fell, Stumbled, etc.’, by month, January 1997 through September 2013



SOFA-defined Severe Injuries in Winter Months (continued)

Increases in Winter Months for Selective Circumstances involved in 1,743 Severe Injuries, occurring from January 1997 through September 2013, approximately 17 years

Selective Circumstances involved in SOFA-defined Severe Injuries	FRA Circumstance Code	Number of Injuries: in Dec, Jan, Feb for approximately 17 years	Number of Injuries: in all other months for approximately 17 years	Average Per Month: Dec, Jan, Feb	Average Per Month: all other months
		(1)	(2)	(1) / 3	(2) / 9
Injury cause: environmental	01	109	86	36.3	9.6
Track location: yard	B	280	567	93.3	62.7
Physical act: walking	72	181	305	60.3	33.9
Tools (surface causing injury): ground	14	184	301	61.3	33.4
Injury cause: equipment procedures not followed	03	42	88	14.0	9.8
Location: on side of car	B8	65	146	21.7	16.2
Location: on end of car	B6	30	71	10.0	7.9
Location: other non-equipment	99	126	177	42.0	19.7
all SOFA-defined Severe Injuries		535	1208	178.3	133.7

Winter Risk...think about winter safety preparation

“The railroad industry may want to consider additional preparation and education of the workforce on adapting to changing conditions in summer and winter.” *2011 SOFA Report, Vol. I, p. 51*

Winter Risk...extended darkness

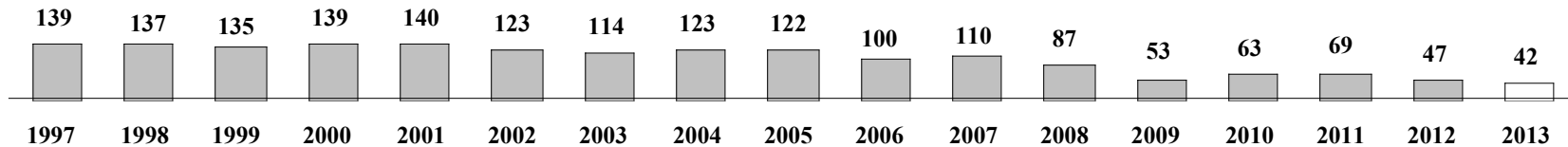
“Lack of daylight can compromise visibility and may affect the mood and alertness of the workforce.” *2011 SOFA Report, Vol. II, p. H-6*

SOFA-defined Severe Injury Update

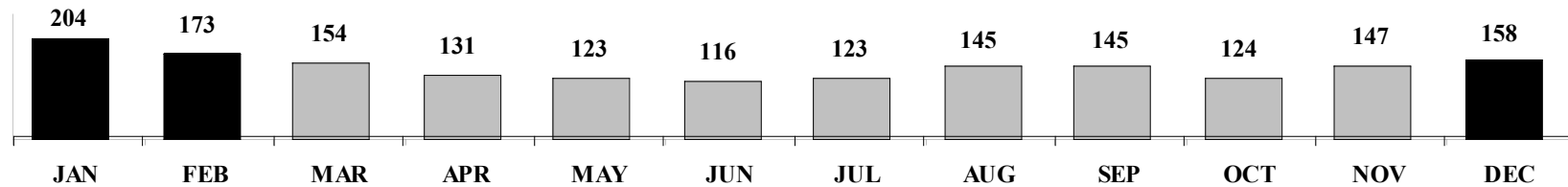
Definition: Based on its interests (i.e., potentially involving the same factors as Fatalities), *Severe Injuries* are defined by the SOFA Working Group as (1) potentially life threatening; (2) having a high likelihood of permanent loss of function, permanent occupational limitation, or other permanent disability; (3) likely to result in significant work restrictions; and (4) resulting from a high-energy impact to the human body. ‘Severe Injuries’ include amputation, dislocation of the neck, loss of eye, electric shock or burn, and fracture to any bone except the lower arm, fingers, foot, and toes. 1997 is the first year these Injuries to train and engine service employees can be determined as defined by the interest of the SOFA Working Group. For more information, see *Severe Injuries to Train and Engine Service Employees: Data Description and Injury Characteristics*. July 2001. Available electronically at the FRA’s website.

Note: The definition of SOFA-defined *Severe Injuries* is not to suggest that other injuries and illnesses resulting from operations are not also ‘severe’ and/or cause hardship to employees.

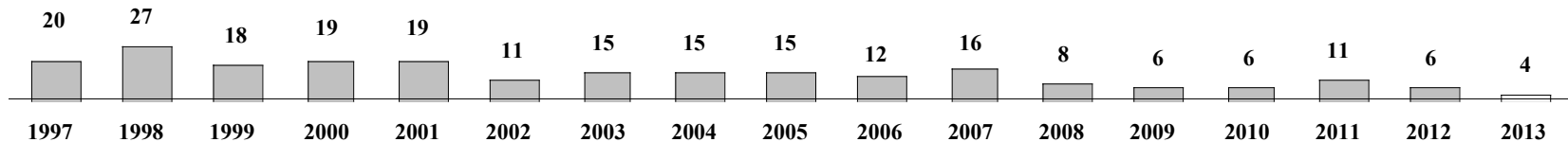
1,743 SOFA-defined Severe Injuries, by year: 1997 through 2012, full year; 2013, January through September



1,743 SOFA-defined Severe Injuries, by month, January 1997 through September 2013



228 Amputations (counts are included in Severe Injuries), by year: 1997 through 2012, full year; 2013, January through September



Characteristics of the 38 SOFA-defined Severe Injuries, occurring in 2013, January through September (latest month available)

Yearly Comparison: Compared to the previous five years: 38 in 2012; 51 in 2011; 47 in 2010; 40 in 2009; 67 in 2008

Month: Jan (8 cases); July (7 cases); Feb, Aug (5 cases); Apr, May, Sep (4 cases); Mar (3 cases); Jun (2 cases)

Injury Type: amputations (4 cases to leg or foot); fractures (37 cases); other burns (1 case)

Injury Body Location: leg or foot (25 cases); torso (9 cases); arm or hand (3 cases); head or face (3 cases); injuries to various body parts of equal severity (2 cases)

Physical Act: walking (11 cases); riding (7 cases); sitting (4 cases); getting on (3 cases); standing (3 cases); adjusting coupler (1 case); coupling electric cables (1 case); getting off (2 case); releasing handbrakes (1 case); jumping from (1 case); operating (1 cases); stepping down (2 cases); uncoupling air hoses (1 case); other (3 cases); missing data (1 case)

Injury Event: slipped, fell, stumbled, other (17 cases); lost balance (3 cases); collision/impact-auto, truck, bus, van, etc. (2 cases); struck against object (2 cases); struck by on-track equipment (2 cases); bodily function/sudden movement, e.g., sneezing (1 case); caught between equipment (1 case); collision between on-track equipment (1 case); derailments (1 case); missed handhold, grabiron, step, etc. (1 case); on track equipment, other incidents (1 case); ran into object/equipment (1 case); ran into on-track equipment (1 case); lack action, draft, compressive buff/coupling (1 case); slack adjustment during switching operation (1 case); stepped on object (1 case); struck by object (1 case); sudden release of air (1 case); sudden/unexpected movement of on-track equipment (1 case); other (2 cases)

Injury Cause: human factors (24 cases); equipment (5 cases); environmental (3 cases); undetermined, unrelated to using RCL (2 cases); equipment procedures not followed (1 case); object fouling track (1 case); undetermined (5 cases); missing data (1 case)

Age: The average age is 47.4; youngest, 24 years-old (1 case); oldest, 70 years-old (1 case); most frequent age, 46 and 59 years-old (4 cases)

Job Type: conductors (24 cases); engineers (10 cases); brakemen (5 cases); remote control locomotive operator – not operating (2 cases); misc., 600-series (1 case)

Track Type: yard (21 cases); main/branch (10 cases); passenger terminal (3 cases); highway/roadway (2 cases); industry (2 cases); siding (1 case); other track (3 cases)

Railroad Class: Class I (27 cases); Class III (14 cases); Class II (1 case)

State: IL (6 cases); NY, PA, and TX (3 cases); CO, DC, GA, KS, LA, ND, NJ, UT (2 cases); CT, FL, IA, IN, ME, MI, NE, OH, TN, VA, WA (1 case)

1,743 SOFA-defined Severe Injuries, by month and year, January 1997 through September 2013

Among *SOFA Updates*, counts previously presented may change based on revisions to FRA data. The latest month available from the FRA lags the calendar month of this *Update* by three months

Work safely this winter...and all career long

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	totals	average
JAN	11	13	16	15	21	12	11	11	20	10	14	13	6	6	8	9	8	204	12.0
FEB	17	15	9	9	9	13	17	14	10	6	15	12	4	7	9	2	5	173	10.2
MAR	14	12	17	11	10	10	13	10	9	9	11	5	5	4	5	6	3	154	9.1
APR	8	10	6	10	12	6	9	13	10	7	8	9	5	7	5	2	4	131	7.7
MAY	6	12	8	8	12	14	9	6	6	8	3	7	1	7	8	4	4	123	7.2
JUN	9	10	8	11	8	5	10	9	7	11	5	3	6	4	2	6	2	116	6.8
JUL	9	14	10	8	10	7	6	10	5	12	8	1	4	4	5	3	7	123	7.2
AUG	13	10	11	14	8	10	7	14	10	10	13	5	4	5	5	1	5	145	8.5
SEP	10	11	15	10	20	12	5	4	9	6	10	12	5	3	4	5	4	145	8.5
to date	97	107	100	96	110	89	87	91	86	79	87	67	40	47	51	38	42		
OCT	12	12	16	10	5	11	9	7	11	5	11	4	2	4	4	1		124	7.8
NOV	12	9	12	11	13	14	10	10	13	8	6	8	3	6	9	3		147	9.2
DEC	18	9	7	22	12	9	8	15	12	8	6	8	8	6	5	5		158	9.9
totals	139	137	135	139	140	123	114	123	122	100	110	87	53	63	69	47		1,743	103.4

228 Amputations (a type of Severe Injury), by month and year, January 1997 through September 2013

A type of SOFA-defined Severe Injury, Amputations are displayed separately because of the extreme trauma to employees engaged in switching, and the likelihood of permanent occupational and lifestyle limitations. Counts for Amputations are contained in the counts of SOFA-defined Severe Injuries (shown on previous page)

Work safely this winter...and all career long

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	totals	average
JAN	1	0	2	1	0	0	2	2	2	0	1	1	1	0	2	0	0	15	0.9
FEB	0	1	0	1	0	2	1	2	0	2	1	0	0	1	2	0	1	14	0.8
MAR	3	4	3	2	1	1	3	1	2	1	0	1	1	0	0	1	0	24	1.4
APR	1	2	0	1	2	0	1	1	2	2	3	3	1	0	1	0	0	20	1.2
MAY	1	2	3	0	2	2	2	0	0	1	1	0	0	1	2	0	1	18	1.1
JUN	2	1	1	0	1	0	0	1	0	0	1	1	0	0	1	0	0	9	0.5
JUL	1	5	1	0	4	0	1	2	1	2	2	0	1	1	0	0	1	22	1.3
AUG	1	0	1	4	0	1	0	2	2	0	3	0	1	1	0	0	1	17	1.0
SEP	2	4	3	2	5	4	0	0	3	1	1	2	0	1	0	2	0	30	1.8
to date	12	19	14	11	15	10	10	11	12	9	13	8	5	5	8	3	4		
OCT	2	5	2	2	0	0	2	2	0	0	2	0	0	1	1	1		20	1.2
NOV	2	2	2	2	3	0	1	1	2	3	1	0	0	0	1	0		20	1.2
DEC	4	1	0	4	1	1	2	1	1	0	0	0	1	0	1	2		19	1.2
totals	20	27	18	19	19	11	15	15	15	12	16	8	6	6	11	6		228	13.6

Switching Fatalities, SOFA-defined Severe Injuries, and Other Reportable Events

Source: Switching Fatalities from *SOFA Database*; all other series from FRA, accessed December 03, 2013

Note: Among *SOFA Updates*, counts previously presented may change based on revisions to FRA data

Year	SOFA Switching Fatalities	SOFA-defined Severe Injuries	Amputations (counts are included in SOFA-defined Severe Injuries)	All Employee On-duty Fatalities less SOFA Switching Fatalities	T&E Employee On-duty Fatalities less SOFA Switching Fatalities	All Reportable Employee Casualty to T&E Employees (includes Fatalities and Severe Injuries)	All Accidents	Human Factor Accidents	Highway-Rail Crossing Incidents	Trespasser Incidents (not at crossings)
1992	14	*	*	20	6	6,648	2,359	864	4,910	1,049
1993	15	*	*	32	16	5,649	2,611	865	4,892	1,032
1994	12	*	*	19	9	5,026	2,504	911	4,979	981
1995	11	*	*	23	10	4,215	2,459	944	4,633	955
1996	7	*	*	26	15	3,726	2,443	783	4,257	945
1997	11	139	20	26	10	3,489	2,397	855	3,865	**1,049
1998	8	137	27	19	8	3,642	2,575	971	3,508	**1,049
1999	9	135	18	22	12	3,835	2,768	1,031	3,489	924
2000	13	139	19	11	2	3,893	2,983	1,147	3,502	877
2001	8	140	19	14	6	3,561	3,023	1,035	3,237	915
2002	6	123	11	14	3	3,022	2,738	1,050	3,077	935
2003	10	114	15	9	3	2,935	3,019	1,230	2,977	896
2004	11	123	15	14	9	2,910	3,385	1,353	3,085	**878
2005	11	122	15	14	7	2,817	3,266	1,270	3,066	**878
2006	7	100	12	9	0	2,483	2,998	1,068	2,942	992
2007	6	110	16	11	4	2,520	2,693	1,047	2,778	877
2008	12	87	8	14	4	2,218	2,482	911	2,429	889
2009	8	53	6	8	2	1,972	1,911	655	1,933	759
2010	8	63	6	12	5	1,888	1,904	650	2,051	829
2011	4	69	11	17	11	1,744	2,024	747	2,059	777
2012	3	47	6	13	4	1,532	1,734	656	1,968	841
2012, JAN - SEP	3	38	3	12	4	1,132	1,329	487	1,329	641
2013, JAN - SEP	1	42	4	7	0	1,229	1,286	486	1,494	727
% change	--	--	--	--	--	+8.6%	-3.2%	-0.002%	+12.4%	+13.4%

*SOFA-defined Severe Injuries are defined only back to 1997

**Counts happened to be identical for these successive years

Six Examples of Winter Risk: Fatality Cases

January 22, 1999

Alexandria, NY

Conductor

Age: 45

A three person local switching crew was shoving a loaded covered hopper down an industrial lead. The conductor was riding on one side of the car and the brakeman was riding the other. As the car was shoved over a private crossing, the accumulation of ice and snow lifted the car off the rails and it tipped over and onto the conductor who was killed as a result of the derailment.

SOFA Categories:

Advisory 1 (FE had 1.5 years of experience or less, or had inadequate training)

Special Switching Hazard: Environment

Special Switching Hazard: Derailment

Possible Contributing Factors (PCFs):

H998: Employee falling from moving equipment

M101: Snow, ice, mud, gravel, coal, etc. on track. Build up frozen material in flange way

March 05, 2008

Random Lake,

WI Freight Conductor

Age: 55

A three-person crew (engineer, conductor, and student conductor) arrived at an industrial spot where they were required to spot 2 loads. This industry had not been spotted for about a month and three inches of accumulated snow was covering packed ice on the spur track. The conductor rode the leading end of the first car adjacent to the standing train on the main track and the student conductor rode the opposite side of the same car, controlling the movement by radio. Due to the build-up of packed ice and mud in the flange-way the car derailed into the side of cars left standing on the main track, and the conductor was crushed between the cars.

SOFA Categories:

Advisory 2 (close/no clearance)

Advisory 3 (industrial hazards)

Special Switching Hazard: Derailment

Special Switching Hazard: Environment

Possible Contributing Factor (PCF):

M101: Snow, ice, mud, gravel, coal, etc. on track. One month since last spot at this industry. Ice and snow build up

Six Examples of Winter Risk: Fatality Cases (continued)

December 29, 2009

Minneapolis, MN

RCL Operator

Age 44

A two-person RCL crew shoved five empty cars into a snow-covered industry track. Ice build-up on the track caused the lead car of the movement to derail. The RCL operator, riding the lead car and controlling the move, was crushed against the side of an industry building and fatally injured.

SOFA Categories:

Advisory 2 (close/no clearance)

Advisory 3 (industrial hazards)

Special Switching Hazard: Environment

Special Switching Hazard: Derailment

Possible Contributing Factors (PCFs):

M101: Snow, ice, mud, gravel, coal, etc. on track. Ice build-up on track caused derailment

M411: Close or no clearance. Boxcar derailed towards the building

January 14, 2004

Kankakee, IL

Freight Conductor

Age: 40

A two person crew was switching on the yard lead when the conductor, with 4 years experience, gave a "kick" sign via radio. The conductor wearing ice creepers pulled the pin and was struck by his own cut of cars and killed.

SOFA Categories:

Special Switching Hazard: Environment

Special Switching Hazard: Employee Tripping, Slipping, or Falling

Possible Contributing Factors (PCFs):

H990: Employee on or fouling track

H602: Switching movement, excessive speed

External Circumstances:

Snow, ice, mud, gravel, coal, etc. on track. Creepers (strap on winter boot chains) in use on dry ground

Six Examples of Winter Risk: Fatality Cases (continued)

February 03, 2008

Chicago, IL

Freight Conductor

Age: 28

A conductor and engineer were transported to their train on main track two and boarded. The ground conditions between main tracks two and one were very poor. The ground was covered by 5 inches of snow; however, the ambient lighting was good. On the south side of the standing train, the footing was good, but the lighting was poor. After receiving 3-Point Protection, the conductor dismounted the lead locomotive and proceeded to walk west, between the two main tracks, on the north side of his standing train, to untie handbrakes. An approaching westbound freight train sounded the whistle for the conductor walking in the foul and the conductor ducked between two freight cars to clear the oncoming movement. The conductor then reemerged from his safe location foul of the adjacent main track. He was struck by the westbound train and died 42 hours later.

SOFA Category:

Advisory 5 (struck by mainline train)

Possible Contributing Factors (PCFs):

H990: Employee on or fouling track

H317: Failure to communicate unsafe condition

January 02, 2000

Cedar Springs, GA

Conductor

Age: 49

A two person switching crew was in the process of switching cars in a storage yard and the conductor was riding the leading end of a cut of cars being shoved down a track. The move was taking place in dense fog and in darkness when the car he was riding collided with other cars on an adjacent track that were fouling the track he was on. The conductor was killed as a result of the collision.

SOFA Category:

Special Switching Hazard: Environment

Possible Contributing Factors (PCFs):

H101: Impairment of efficiency or judgment because of drugs or alcohol

H301: Car(s) shoved out and left out of clear

H307: Shoving movement, man on or at leading end of movement, failure to control

H605: Failure to comply with restricted speed

M104: Extreme environmental condition – dense fog

External Circumstance:

FE [fatality, employee] did not have a lantern and no lighting at site

SOFA Working Group (SWG)

19

current through December 03, 2013