

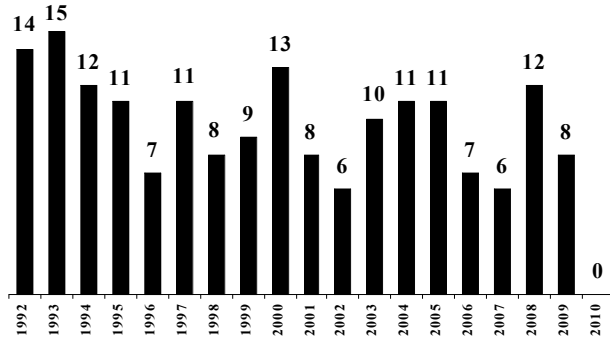
PLEASE POST IMMEDIATELY
Apply SOFA Findings...Recognize Special Switching Hazards

The Zero Switching Fatality Goal Remains

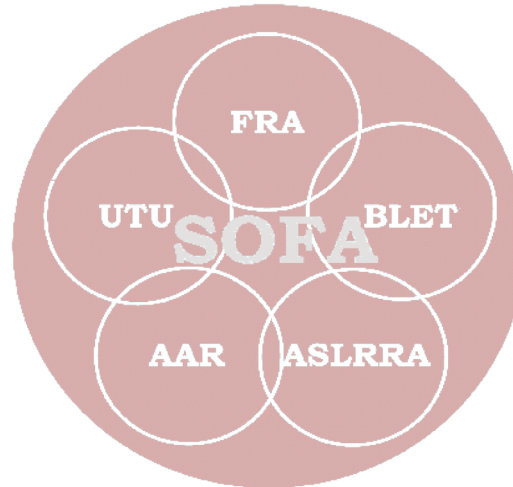
Zero Switching Fatality Goal

While elusive, the SOFA Working Group's vision of Zero Switching Fatalities remains:

When work is done, all should return home safely...and return again to their proud tradition of performing service essential to economic growth



179 Switching Fatalities
 January 1, 1992 through March 15, 2010



2009 Switching Fatalities
 cases for review
pages 2-3

Zero Switching Fatalities
in 2010
through March 15

Release of new SOFA Report
in Fall 2010

SOFA Working Group activities
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Declines in SOFA-defined
Severe Injuries

Now at a 13-year low
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Switching Fatality and Severe Injury Update – 2010 First Quarter

Preliminary Summaries of 8 Switching Fatalities in 2009

(March 15, 2010: Information is preliminary, and not based on investigation)

1. January 16 – BNSF – Fort Sumner, NM

A locomotive engineer operating a moving train was later found dead by the crew of a following train. He was lying along the right of way near the 17th Street crossing east of town.

Near-by train movements were involved in the next three Fatalities:

2. January 28 – UP – Council Bluffs, IA

A 41-year-old switch foreman was working in the yard when he was struck and killed by a **passing mainline train** moving on an adjacent track.

3. February 7 – BNSF – Holbrook, AZ

A conductor was releasing hand brakes on his train when he was struck and killed by **another train** moving on the adjacent track.

4. February 8 – UP – Harrington, KS

A 26-year-old conductor was using hand signals to bring his engines back onto his train when he was struck and killed by **another train** moving on the adjacent track.

Preliminary Summaries of 8 Switching Fatalities in 2009 (continued)

(March 15, 2010: Information is preliminary, and not based on investigation)

5. February 28 – BNSF – Buchanan, NM

A 59-year-old conductor was riding the side of the leading end of a shove move into a siding when he was knocked from the side of the car near a pile of cross ties stacked too close to the siding track.

6. May 10 – CSX – Selkirk, NY

A 32-year-old yard foreman operating a one-person remote control locomotive went in between the equipment to make an adjustment after the equipment had started back toward the car he intended to couple up to. The yard foreman was not able to get out from between the cars in time and was crushed between the standing equipment and the equipment he was operating.

7. June 24 – ATR – Albertville, AL

A 33-year-old conductor was riding the leading end of 75 car cut (his train) to a position where he intended to spot the first—or leading 12 cars. As he was riding the car to the spot, it struck a piece of metal near the location of the intended spot crushing him between the tank car railing and the end dome of the tank car.

8. December 29 – BNSF – Minneapolis, MN

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.

Recent SOFA Working Group Activities

Recent SOFA Working Group (SWG) activities include:

- Review of an additional 55 cases (2004 through 2009), bringing the total number of cases reviewed to 179 (1992 through 2009)

Review of each case included (1) transcription of factual content into a database, (2) full discussion of events and circumstances, and (3) consensus agreement on Possible Contributing Factors (PCF). (Note: 466 PCFs have been associated with the 179 cases.)

Then, each case was classified into one of three types (discussed in this *Update*). Classification helps link cases by commonalities. Finally, and importantly, findings were made to help in prevention efforts

- Held a SOFA Safety Forum (February 25 in Washington, DC) for union, government, and industry representatives. SWG discussed its review process, presented findings; and invited and received comments that will prove helpful to prevention
- The SWG is now in the process of writing a final report to be released this Fall. This report will be the fourth released by the SWG since 1999
- Summary: Based on efforts by all stakeholders, the SWG believes progress has been made in reducing risk associated with some types of Switching Fatalities. However, additional efforts are needed

The Zero Switching Fatality Goal Remains

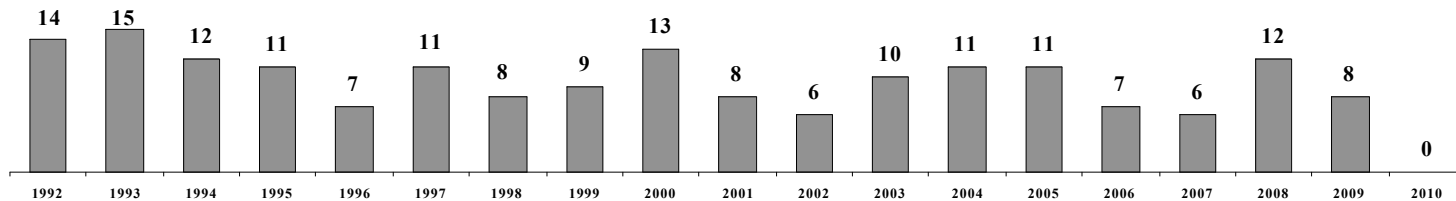
179 Switching Fatalities by SOFA Type

January 1, 1992 through March 15, 2010

Recently, the SOFA Working Group (SWG) developed a new classification system for Switching Fatalities. Under the old system, Switching Fatalities were classified either as a *SOFA 1-5* (based on SWG findings), or a *Special Switching Hazard* (SSH). The new classification recognizes that some Fatalities involve both types. Hence, now the classification of Fatalities is not necessarily mutual exclusive. The new system provides additional specificity to the mechanisms descriptive of events associated with Fatalities. And, hopefully, will aid preventive efforts. Release of a new *SOFA Report* (Fall 2010) will provide more detail about the new classification system.

Directly below, is a display of 179 Switching Fatalities by year. Also, shown is a listing of *SOFA 1-5*, and *Special Switching Hazards*. Displays on subsequent pages, decompose the yearly and monthly counts of Fatalities into the three possible categories: ‘Special Switching Hazards only,’ ‘Special Switching Hazards and SOFA 1-5,’ and ‘SOFA 1-5 only.’

179 Switching Fatalities: January 1, 1992 through March 15, 2010



SOFA 1-5 (based on SWG findings)

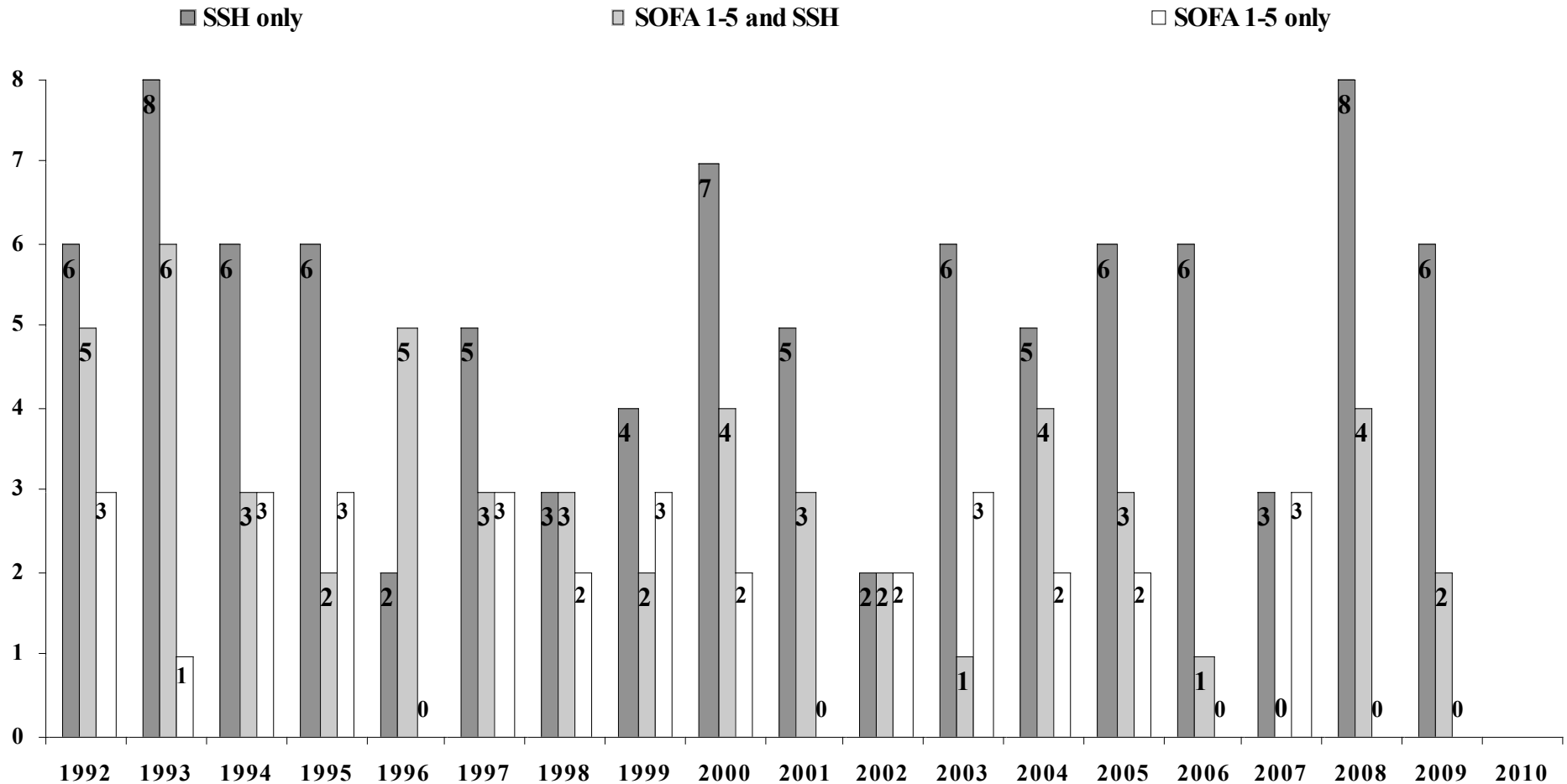
SOFA 1: Adjusting knuckles, adjusting drawbars, or installing EOT
SOFA 2: Struck by equipment other than their own on yard or industry track
SOFA 3: Lack of or inadequate job safety briefing
SOFA 4: Move controlled by a combination of hand and radio signals or specific distances were not given
SOFA 5: FE (Employee, Fatality) had 1.5 years of experience or less or had inadequate training.

15 Special Switching Hazards

SSHCC: Close Clearance	SSHET: Employee Tripping	SSHMV: Struck by Motor Vehicle
SSHDA: Drugs and Alcohol	SSHEV: Environment	SSHST: Struck by Mainline Trains
SSHDR: Derailment	SSHFC: Failure to Confirm Route of Movement	SSHUC: Unsecured Cars
SSHED: Electronic Device	SSHFR: Free-Rolling Cars	SSHUM: Unexpected Movement of Railcars
SSHEQ: Equipment	SSHHI: Industrial Hazard	SSHMC: Miscellaneous

179 Switching Fatalities by SOFA Type (continued)

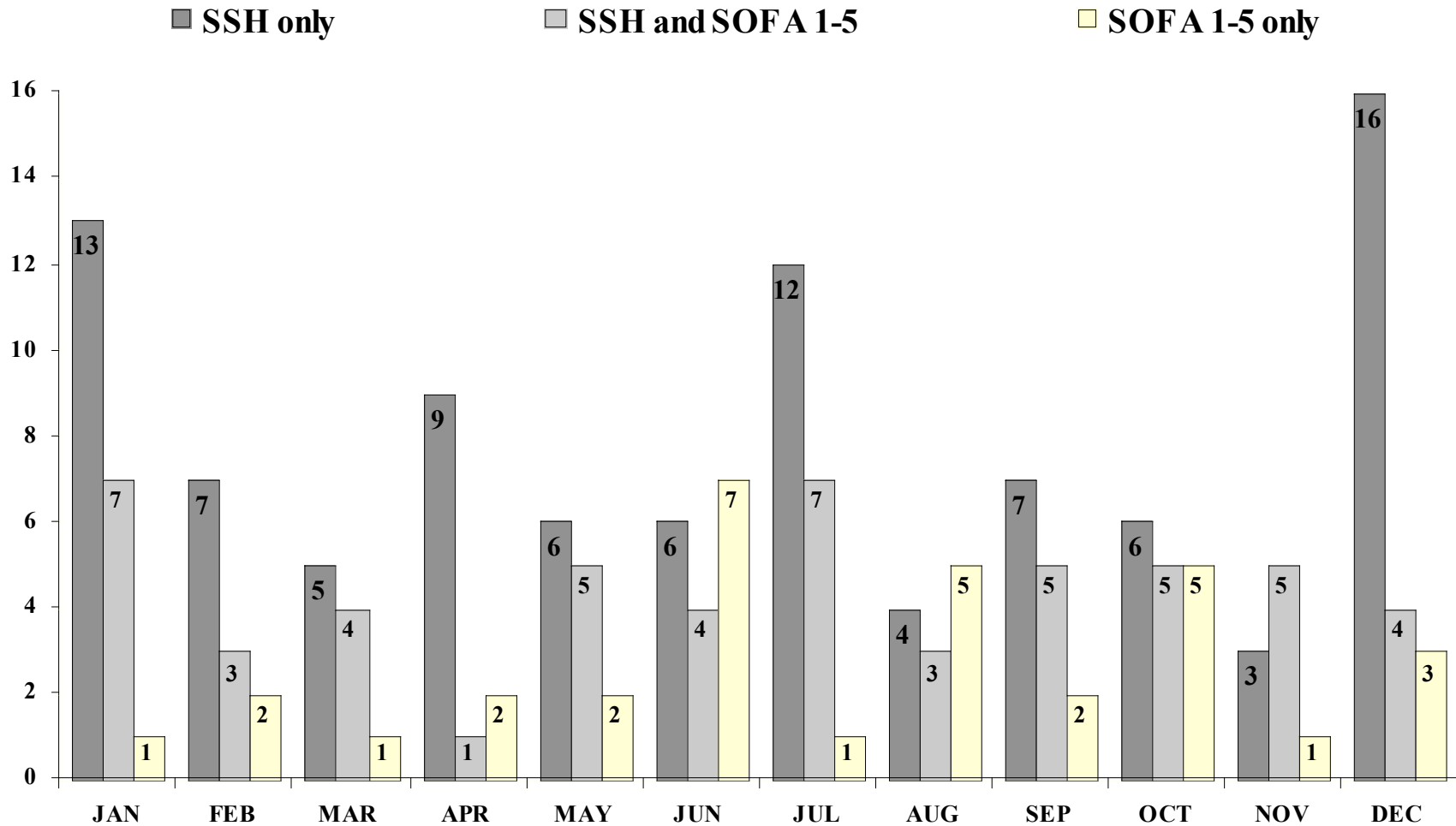
By Year: January 1, 1992 through March 15, 2010



Note: While cluttered, this display decomposes total yearly Fatality counts into three groups based on the new SWG classification system. At least two facts are apparent: (1) Special Switching Hazards (bars with darker colors) are involved in a large number of Fatalities; and (2) in more recent years fewer Fatalities involved SOFA 1-5.

179 Switching Fatalities by SOFA Type (continued)

by Month: January 1, 1992 through March 15, 2010

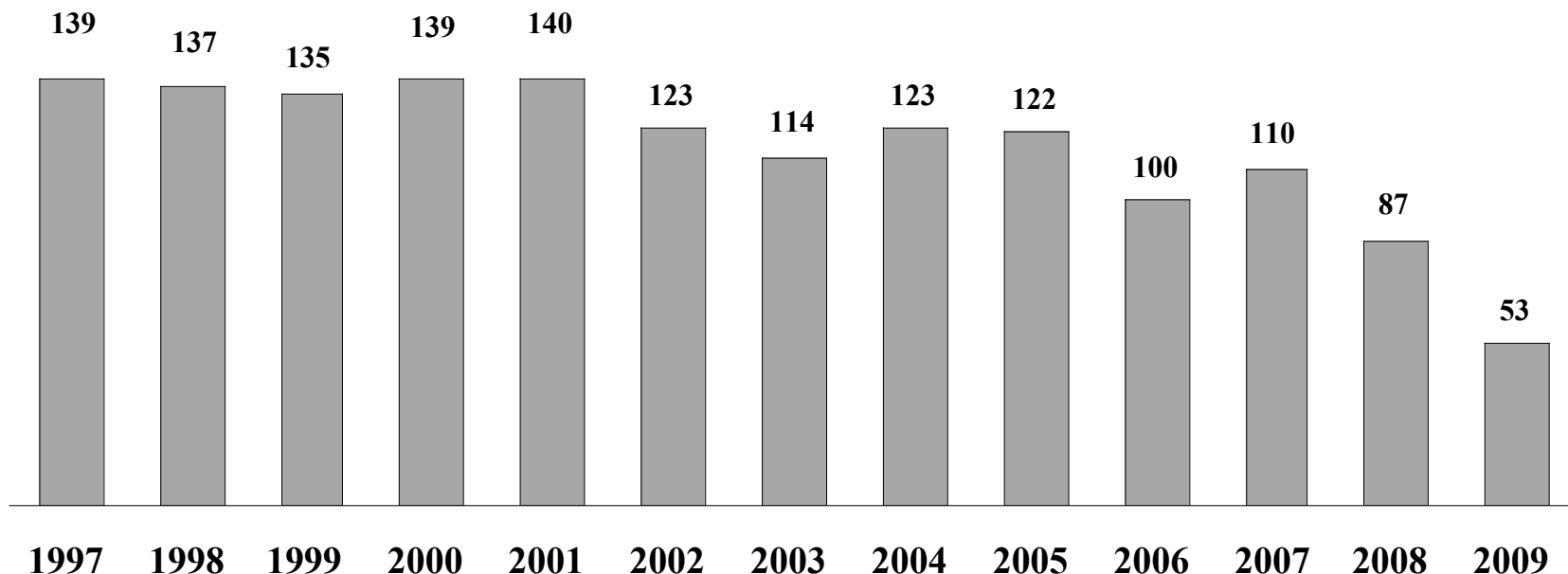


Note: In the three months with the largest number of Switching Fatalities – January, July, and December – there are high numbers of Fatalities involving only Special Switching Hazards (SSH only).

Declines in SOFA-defined Severe Injuries

Full Year: 1997 through 2009

- Beginning in 2002, Severe Injuries began to decline, although not consistently year-to-year
- Now, in 2009, these Injuries are at a 13-year low



Importance of SOFA-defined Severe Injuries: Since 1997, there have been 1,522 of these Injuries, 201 of which were amputations. (Note: 1997 is the first year these Injuries to *train and engine employees* can be determined as defined by the SOFA Working Group.) While in recent years these Injuries have declined, the continuing existence of these Injuries indicates the importance of safety efforts devoted towards complete elimination.

SOFA-defined Severe Injuries*

January 1997 through December 2009

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	total	average
JAN	11	13	16	15	21	12	11	11	20	10	14	13	6	173	13.3
FEB	17	15	9	9	9	13	17	14	10	6	15	12	4	150	11.5
MAR	14	12	17	11	10	10	13	10	9	9	11	5	5	136	10.5
APR	8	10	6	10	12	6	9	13	10	7	8	9	5	113	8.7
MAY	6	12	8	8	12	14	9	6	6	8	3	7	1	100	7.7
JUN	9	10	8	11	8	5	10	9	7	11	5	3	6	102	7.8
JUL	9	14	10	8	10	7	6	10	5	12	8	1	4	104	8.0
AUG	13	10	11	14	8	10	7	14	10	10	13	5	4	129	9.9
SEP	10	11	15	10	20	12	5	4	9	6	10	12	5	129	9.9
OCT	12	12	16	10	5	11	9	7	11	5	11	4	2	115	8.8
NOV	12	9	12	11	13	14	10	10	13	8	6	8	3	129	9.9
DEC	18	9	7	22	12	9	8	15	12	8	6	8	8	142	10.9
totals	139	137	135	139	140	123	114	123	122	100	110	87	53	1,522	

- **138.0** Severe Injuries per year on average: January 1997 through December 2001
- **115.3** Severe Injuries per year on average: January 2002 through December 2007
- **87** Severe Injuries per year: in 2008
- **53** Severe Injuries per year: in 2009

**Severe Injuries* are defined by the SOFA Working Group as (1) potentially life threatening; (2) high likelihood of permanent loss of function, permanent occupational limitation, or other permanent disability; (3) likely to result in significant work restrictions; and (4) result 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, See *Severe Injuries to Train and Engine Service Employees: Data Description and Injury Characteristics*. July 2001. <http://www.fra.dot.gov/Pages/1781.shtml> [accessed March 15, 2009]

Amputations

January 1997 through December 2009

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	total	average
JAN	1	0	2	1	0	0	2	2	2	0	1	1	1	13	1.0
FEB	0	1	0	1	0	2	1	2	0	2	1	0	0	10	0.8
MAR	3	4	3	2	1	1	3	1	2	1	0	1	1	23	1.8
APR	1	2	0	1	2	0	1	1	2	2	3	3	1	19	1.5
MAY	1	2	3	0	2	2	2	0	0	1	1	0	0	14	1.1
JUN	2	1	1	0	1	0	0	1	0	0	1	1	0	8	0.6
JUL	1	5	1	0	4	0	1	2	1	2	2	0	1	20	1.5
AUG	1	0	1	4	0	1	0	2	2	0	3	0	1	15	1.2
SEP	2	4	3	2	5	4	0	0	3	1	1	2	0	27	2.1
OCT	2	5	2	2	0	0	2	2	0	0	2	0	0	17	1.4
NOV	2	2	2	2	3	0	1	1	2	3	1	0	0	19	1.6
DEC	4	1	0	4	1	1	2	1	1	0	0	0	1	15	1.3
totals	20	27	18	19	19	11	15	15	15	12	16	8	6	201	

- **20.6** Amputations per year on average: January 1997 through December 2001
- **14.0** Amputations per year on average: January 2002 through December 2007
- **8** Amputations per year: in 2008
- **6** Amputations per year: in 2009

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.

Switching Fatality Review Section

This section contains:

Switching Fatality Cases for Review: March, April, and May. The Switching Fatality narrative summaries are from *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. All other information about each Fatality is taken from the *SOFA Matrix*, the SOFA Working Group's electronic database. Note: the 'SOFA type of event' is based on the older system of classifying Switching Fatalities.

Intent is that review will prove preventive. In reviewing, please be mindful that these employees lost their lives in railroad service, an activity essential to economic growth.

SOFA reports, including a complete discussion of findings, are available at:

<http://www.fra.dot.gov/Pages/1781.shtml>

[accessed March 15, 2009]

The Zero Switching Fatality Goal Remains

10 March Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Finding(s)	Special Switching Hazard
1	03/11/92	FEC	Fort Pierce, FL	36	16	yard conductor	riding	near on-track equip-on ground	derailments	4	
2	03/27/93	SP	Guadalupe, CA	39	19	road brakemen	riding	on end of car	struck by object		Employee Tripping
3	03/02/95	NS	Aiken, SC	46	22	road brakemen	adjusting coupler	on track	struck by on-track equipment	1, 3	
4	03/21/95	SP	Bassett, CA	55	24	road brakemen	walking	on track	struck by on-track equipment		Miscellaneous
5	03/20/96	BRC	Bedford Park, IL	28	0.34	yard conductor	adjusting coupler	between cars/loc	struck by on-track equipment	1, 5	
6	03/09/00	IHB	Riverdale, IL	43	24	yard conductor	crossing between	between cars/loc	sudden/unexpected movement of on-track equipment	1	
7	03/03/01	BNSF	Willmar, MN	36	3.75	yard brakeman	standing	between cars/loc	struck by on-track equipment	1	
8	03/21/02	NS	Claymont, DE	45	13	road engineer	getting on	near on-track equip-on ground	struck by on-track equipment		Close Clearance and Struck by Mainline Trains
9	03/10/04	MNCW	Stamford, CT	46	na	(Information is preliminary, and not based on investigation)					
10	03/05/08	WSOR	Random Lake, WI	50	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard

The Zero Switching Fatality Goal Remains

No. 1 of 10: March 11, 1992 – FEC – Fort Pierce, FL

This case involved the conductor riding a car into Track 8. The car derailed at the spiked switch and the conductor was subsequently killed. The conductor's last radio transmission was "...we're lined in eight rail, three or four cars to a joint." Movement stopped after car had derailed and side swiped adjacent car.

SOFA Finding(s):	4
Possible Contributing Factor:	Switch point gapped (between switch point and stock rail)
Possible Contributing Factor:	Damaged flange or tread (build up)
External Circumstances:	Track conditions
Day of Week:	Wednesday
Time of Fatal Event:	1:15 AM
Time on Duty (hours: minutes):	6:15
Temperature (Fahrenheit):	71
Direction of Movement:	shoved
Crew's Next Move:	couple
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/classification/flat
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	5
Deceased Regular Job?	no
Had Deceased Worked There Before?	no
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 2 of 10: March 27, 1993 – SP – Guadalupe, CA

A four-person crew (engineer, conductor, 2 brakemen) were in the process of pulling one track out and then intended to shove back into another track to pick up more cars. The head brakeman was in control of the move. The rear brakeman was found dead adjacent to the track that was pulled. Evidence suggests that the rear brakeman may have mounted, or tried to mount the car that ran him over as the cut was pulled out of the track.

Special Switching Hazard(s):	Employee Tripping
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Snow, ice, mud, gravel, coal etc. on the track
Day of Week:	Saturday
Time of Fatal Event:	12:30 PM
Time on Duty (hours: minutes):	1:00
Temperature (Fahrenheit):	60
Direction of Movement:	pulled
Crew's Next Move:	couple track
Death Result of Train Movement?	yes
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	2
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 3 of 10: March 02, 1995 –NS – Aiken, SC

Switch crew was pulling a cut of cars out of an industry. Brakeman stepped in track gauge to open knuckle on the rear car at the same time crew shoved back to kick two cars that ran over the brakeman.

SOFA Finding(s):	1, 3
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Day of Week:	Thursday
Time of Fatal Event:	9:44 AM
Time on Duty (hours: minutes):	2:15
Temperature (Fahrenheit):	45
Direction of Movement:	shoved
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	6 minutes to tell dispatcher, 30 min. for EMS arrival

No. 4 of 10: March 21, 1995 – SP – Bassett, CA

A three-person crew was called to operate a road local and arrived at a location where some plant switching was to take place. After lining up their cars, the two locomotives and two cars began a shove move on the brakeman's radio command. The brakeman was walking adjacent to the track on which the cars were being shoved and had his back to the move. He was killed when he suddenly crossed the tracks in front of the movement and was struck. The move stopped immediately. Post accident investigation revealed that the brakeman was concerned about the results of a medical examination that were due the next day.

Special Switching Hazard(s):	Other Special Hazard or Event (fouling track)
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Employee physical condition, other
Day of Week:	Friday
Time of Fatal Event:	8:40 AM
Time on Duty (hours: minutes):	1:40
Direction of Movement:	shoved
Crew's Next Move:	coupling
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	industrial/outside/stub/track
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	4
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	No

No. 5 of 10: March 20, 1996 – BRC – Bedford Park, IL

Three-person crew was switching in class yard, coupling between sixth and seventh car failed to couple. Conductor stopped locomotive and went between the cars to straighten the drawbar, and twenty-three cars rolled in behind him and coupled him up.

SOFA Finding(s):	1, 5
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Failure to apply handbrakes on car(s)
External Circumstances:	Crew experience
Day of Week:	Wednesday
Time of Fatal Event:	11:25 PM
Time on Duty (hours: minutes):	0:25
Temperature (Fahrenheit):	28
Direction of Movement:	free-running
Crew's Next Move:	couple track
Death Result of Train Movement?	yes
Track Type:	classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 6 of 10: March 09, 2000 – IHB – Riverdale, IL

The employee was struck by an unsecured cut of cars that rolled into him while he was attempting to adjust the coupler or drawbar.

SOFA Finding(s):	1
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Failure to apply handbrakes on car(s)
Possible Contributing Factor:	Employee on or fouling track
Day of Week:	Thursday
Time of Fatal Event:	4:20 AM
Time on Duty (hours: minutes):	5:05
Temperature (Fahrenheit):	54
Direction of Movement:	free-running
Crew's Next Move:	pull track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	hump/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no

No. 7 of 10: March 03, 2001 – BNSF – Willmar, MN

The switchman of a three-person yard switching crew made a cut on a block of cars sitting on a yard track and told the engineer to pull the cars out. Apparently, as the cars were being pulled out, the switchman stepped between the gauge of the track and was struck and killed by the remaining cars on the track that had begun to roll in the same direction as the cars being pulled out of the track.

SOFA Finding(s):	1
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Snow, ice, mud, gravel, coal etc. on the track
External Circumstances:	3' of snow
Day of Week:	Saturday
Time of Fatal Event:	7:15 PM
Time on Duty (hours: minutes):	3:45
Temperature (Fahrenheit):	30
Direction of Movement:	pulled/free-running
Crew's Next Move:	couple to another track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	7
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 8 of 10: March 21, 2002 – NS – Claymont, DE

A locomotive engineer had been dropped off at the head end of his train while the conductor was taken to the rear to check on the REM. After crossing over the ATK corridor mainline tracks, and beginning to board his locomotive, the engineer was dragged off the stairs of the locomotive and killed by a passing 110 MPH passenger train.

Special Switching Hazard(s):	Close Clearance and Struck by Mainline Trains
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Other miscellaneous causes
Possible Contributing Factor:	Speed, other
External Circumstances:	Struck by 111 mph train at night
Day of Week:	Thursday
Time of Fatal Event:	12:24 PM
Time on Duty (hours: minutes):	2:26
Direction of Movement:	pulled
Crew's Next Move:	brake test
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	main
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	110
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no

No. 9 of 10: March 10, 2004 – MNCW – Stamford, CT

(Information is preliminary, and not based on investigation)

A 46-year old Metro North Commuter Rail (MNCW) conductor, with 27-years service, killed when struck by his own equipment at the Metro North Stamford Yard, Stamford, CT.

No. 10 of 10: March 05, 2004 – WSOR – Random Lake, WI

(Information is preliminary, and not based on investigation)

A 50-year-old conductor was riding the side of a car into an industry when the car derailed, struck a car on an adjacent track, and resulted in the death of the employee.

12 April Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Finding(s)	Special Switching Hazard
1	04/09/92	ATSF	Cheto, AZ	54	13	road engineer	opening/closing angle cock	near on-track equip-on ground	struck by on-track equipment		Free-Rolling Railcars
2	04/13/93	CSX	Dwale, KY	44	16	road brakemen	walking	on track	struck by on-track equipment		Struck by Mainline Trains
3	04/12/94	SP	Houston, TX	62	37	yard conductor	riding	on side of car	struck against object		Close Clearance
4	04/06/95	WC	Argoe, WI	45	7	road conductor	riding	on end of car	collision between on-track equipment		Unsecured Cars
5	04/02/99	DME	Waseca, MN	54	21	yard brakeman	coupling air hose	between cars/loc	struck by on-track equipment	3	
6	04/09/99	UP	Richland, WA	58	39	road conductor	standing	in/on loc	collision between on-track equipment		Equipment
7	04/21/00	BNSF	Galesburg, IL	60	32	yard conductor	standing	beside track	struck by on-track equipment		Free-Rolling Railcars
8	04/08/01	BNSF	Clark, OK	35	3.75	road conductor	riding	on side of car	collision between on-track equipment		Miscellaneous
9	04/11/03	UP	Pocatello, ID	55	23	road conductor	riding	on end of car	derailments	3	
10	04/06/05	NS	Selma, AL	na	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
11	04/11/05	UP	Ogden, UT	na	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
12	04/02/06	LSI	Palmer, MI	na	na	(Information is preliminary, and not based on investigation)					Tripping, Slipping, Falling

No. 1 of 12: April 09, 1992 – ATSF – Cheto, AZ

A three-person crew was called to operate a road local and arrived at a location where an eight-car drop would be necessary. After a job briefing, the engineer was at the throttle, the conductor at the switch and the brakeman was riding the first car of the drop, “A” end. The engineer began to pull, the brakeman lifted the pin, the engineer accelerated the locomotive beyond the switch, the conductor got the switch and the cars began free rolling into the yard. However, the speed of the movement would not allow the brakeman to safely dismount and, just before impact with another cut of cars, the brakeman attempted to dismount from the car he was riding and was killed as the cars rolled over him.

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Free-Rolling Railcars

Switching movement, excessive speed
Walkway conditions

Day of Week:	Thursday
Time of Fatal Event:	2:39 PM
Time on Duty (hours: minutes):	4:39
Direction of Movement:	free-running
Crew's Next Move:	couple to train
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main/storage
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	10
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 2 of 12: April 13, 1993 – CSX - Dwale, KY

A three-person crew reported for duty and was transported to a location where they took control of a mainline train. En-route, their work included swapping rear end marking devices. The brakeman apparently became confused, stepped into and began walking within the gauge of the main track, and was struck in the back by a passing mainline train.

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Struck by Mainline Trains

Employee on or fouling track
Shocked by crossing gate arm

Day of Week:	Tuesday
Time of Fatal Event:	6:40 PM
Time on Duty (hours: minutes):	5:25
Direction of Movement:	pulled
Crew's Next Move:	run around train
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	main
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	18
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no

No. 3 of 12: April 12, 1994 – SP – Houston, TX

A three-person switching crew was in the process of switching out the car repair shop. The foreman had taken a position on the trailing end of the third leading car as the move was being shoved into a track having a close clearance condition that involved a protective grate that covered a winch. The foreman was knocked off the car by the covering, fell in front of the leading wheels of the fourth leading car, and was later pronounced dead at the hospital.

Special Switching Hazard(s):	Close Clearance
Possible Contributing Factor:	Close or no clearance
Day of Week:	Tuesday
Time of Fatal Event:	7:45 AM
Time on Duty (hours: minutes):	8:45
Direction of Movement:	pulled
Crew's Next Move:	make cut
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	repair/storage/inside
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	5
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 4 of 12: April 06, 1995 – WC – Argoe, WI

A two-person crew was switching at a siding in single-track territory. The conductor left a portion of his train on the mainline and went into the siding with a cut of cars. While in on the siding, the cars left on the mainline and, as post accident investigation revealed, had been left with the air “bottled”, rolled away. The crew chased the runaway cars with the conductor riding the leading end of the lead car and the engineer, 23 cars away, shoving as directed by radio commands from the conductor. The shove move struck the runaway cars and the conductor was crushed to death as a result of the collision.

Special Switching Hazard(s):	Unsecured Cars
Possible Contributing Factor:	Failure to properly secure hand brake on car(s) railroad employee
Possible Contributing Factor:	Improper operation of train line air connections (bottling the air)
Possible Contributing Factor:	Failure to comply with restricted speed (engineer had history of speeding)
Day of Week:	Thursday
Time of Fatal Event:	1:56 AM
Time on Duty (hours: minutes):	7:11
Temperature (Fahrenheit):	18
Direction of Movement:	shoved
Crew's Next Move:	coupling
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	14
Deceased Regular Job?	yes
Crew Size:	2
Emergency Response Procedures Followed?	yes; 30 min. EMS response time

No. 5 of 12: April 02, 1999 – DME – Waseca, MN

A three-person yard switching crew was switching and the conductor was pulling pins while the brakeman was taking orders from him and working the yard tracks during a flat switching operation. The conductor cut off three cars that rolled into other cars on the track. The brakeman was run over by these cars.

SOFA Finding(s):	3
Possible Contributing Factor:	Employee on or fouling track
Day of Week:	Monday
Time of Fatal Event:	1:03 PM
Time on Duty (hours: minutes):	6:38
Temperature (Fahrenheit):	60
Direction of Movement:	free-running
Crew's Next Move:	switch cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 6 of 12: April 09, 1999 – UP – Richland, WA

A three-person road switcher was in the process of dropping a car into a track. However, the locomotive was fouling the track the car was to enter. The brakeman, realizing this, jumped from the trailing end of the car and ran to the leading end to try and stop the car. The conductor, who was standing near the fouling corner of the locomotive, started up the stairwell of the locomotive when he realized what was happening. However, the stairwell was obstructed with a metal rod that had been welded into place and prevented the conductor an escape route. He was subsequently crushed between the striking car and the metal rod.

Special Switching Hazard(s):	Equipment
Possible Contributing Factor:	Failure to stop locomotive in clear
Possible Contributing Factor:	Locomotive defect
Possible Contributing Factor:	Failure to communicate unsafe condition
Day of Week:	Friday
Time of Fatal Event:	9:30 PM
Time on Duty (hours: minutes):	3:30
Temperature (Fahrenheit):	45
Direction of Movement:	free-running
Crew's Next Move:	line switch
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	main/lead/industrial
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	8
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 7 of 12: April 21, 2000 – BNSF – Galesburg, IL

A three-person switching crew was in the process of hauling cars over the hump and the foreman of the crew was observing the move from between his track and another track that was being used by another yard job. The foreman was killed when he fouled and then was struck by a free rolling car on the adjacent track.

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Free-Rolling Railcars

Employee on or fouling track
Windy

Day of Week:	Friday
Time of Fatal Event:	9:28 AM
Time on Duty (hours: minutes):	1:29
Temperature (Fahrenheit):	43
Direction of Movement:	free-running
Crew's Next Move:	pull track
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/hump/classification
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	7
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 8 of 12: April 08, 2001 – BNSF – Clark, OK

The conductor of a road switcher pulled his train into a yard, got off, made a cut behind three cars and told the engineer to pull ahead to clear a crossover switch he intended to use. After getting the crossover, he mounted the leading end of the move and told the engineer to come back seven cars. Three car lengths later, the movement passed through one end of another crossover switch in reverse position and diverted the movement into the side of a standing cut of cars crushing the conductor to death.

Special Switching Hazard(s):

Possible Contributing Factor:
Possible Contributing Factor:
failure to control

Miscellaneous

Switch improperly lined
Shoving movement, man on or at leading end of movement,

Day of Week:	Sunday
Time of Fatal Event:	9:18 PM
Time on Duty (hours: minutes):	1:48
Temperature (Fahrenheit):	70
Direction of Movement:	shoved
Crew's Next Move:	couple to standing cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/industrial
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 9 of 12: April 11, 2003 – UP – Pocatello, ID

A road conductor was riding the point of a 122-car shove down a track that was partially out of service. The out of service portion was marked by a red flag and derail. The crew was not able to stop the movement before the car being ridden by the conductor went over the derail, landed on its side and crushed the conductor to death.

SOFA Finding(s):	3
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Possible Contributing Factor:	Emergency brake application to avoid accident
Possible Contributing Factor:	Poor intra-crew communication about work in progress
External Circumstances:	Buffing or slack action excessive, train make-up
Day of Week:	Friday
Time of Fatal Event:	10:43 PM
Time on Duty (hours: minutes):	10:39
Temperature (Fahrenheit):	55
Direction of Movement:	shoved
Crew's Next Move:	spot train
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	8
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no

No. 10 of 12: April 5, 2005 – NS – Selma, AL

(Information is preliminary, and not based on investigation)

A Norfolk Southern (NS) brakeman, part of a road crew, was assisting in and working with the local yard assignment in putting his train away. During a shove move, the brakeman was struck and killed by the leading end of a cut of cars the local yard assignment was moving.

No. 11 of 12: April 11, 2005 – UP – Ogden, UT

(Information is preliminary, and not based on investigation)

An Union Pacific (UP) switchman was riding on a car that was located at other than the leading end of a shove move and giving radio commands to the RCL operator who was controlling the locomotive being used to shove the cars into a track. Radio communication ceased, the move stopped and the switchman was found dead adjacent to the track being shoved.

No. 12 of 12: April 02, 2006 – LSI – Palmer, MI

(Information is preliminary, and not based on investigation)

A conductor, while riding the leading end of a shove move, fell off and was struck and killed by the car he had been riding.

The Zero Switching Fatality Goal Remains

12 May Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Finding(s)	Special Switching Hazard
1	05/22/93	ATSF	El Paso, TX	46	27	yard conductor	standing	near on-track equip-on ground	collision/impact-auto, truck, bus, van, etc.		Other Special Hazards or Events
2	05/03/95	CSXT	Evansville, IN	52	32	yard conductor	standing	between tracks	struck by on-track equipment	2	
3	05/26/98	BRC	Bedford Park, IL	57	36	yard conductor	adjusting coupler	on track	sudden/unexpected movement of on-track equipment	1	
4	05/19/99	NS	Cincinnati, OH	36	1	road conductor	riding	other location on loc	collision between on-track equipment	5	
5	05/22/00	CSX	Richmond, VA	38	2	road brakemen	riding	on side of car	struck against object		Close Clearance
6	05/31/00	UP	Pine Bluff, AR	47	2	yard conductor	riding	other location on loc	collision between on-track equipment		Other Special Hazards or Events
7	05/14/02	UP	Pine Bluff, AR	53	2.5	yard brakeman	adjusting coupler	on track	struck by on-track equipment	1	
8	05/13/04	MSO	Sturgis, MI	38	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
9	05/18/04	NS	Elwood, IN	35	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
10	05/13/05	DCRR	Detroit, MI	24	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
11	05/26/08	CSX	Lumberton, NC	45	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
12	05/29/08	UP	Amarillo, TX	na	na	(Information is preliminary, and not based on investigation)					Special Switching Hazard
13	05/10/09	CSX	Selkirk, NY	32	na	(Information is preliminary, and not based on investigation)				1	

The Zero Switching Fatality Goal Remains

No. 1 of 13: May 22, 1993 – ATSF – El Paso, TX

A three-person switching crew was in the process of shoving cars into a track in the TOFC yard. The switch foreman was directing the move when he was struck from behind by the left front fender of a hostler truck and run over by its rear wheels.

Special Switching Hazard(s):

Possible Contributing Factor:
Possible Contributing Factor:

Other Special Hazards or Events

Highway user inattentiveness
Interference (other than vandalism) with railroad operations by non-railroad employee

Day of Week:

Saturday

Time of Fatal Event:

10:30 AM

Time on Duty (hours: minutes):

4:00

Temperature (Fahrenheit):

82

Crew's Next Move:

spot cars

Death Result of Train Movement?

no

Track Type:

spot(load/unload)/outside/stub track

Hit by Own Equipment?

no

Speed of Equipment (mph):

0

Crew Size:

3

Emergency Response Procedures Followed?

yes

No. 2 of 13: May 03, 1995 – CSX – Evansville, IN

Conductor was struck and killed by a shove move on the track adjacent to where he was working. Communication about the move on that adjacent track had been conveyed to the conductor via the "bleeder," a utility type employee.

SOFA Finding(s):

Possible Contributing Factor:
External Circumstances:

2

Employee on or fouling track
Two radio channels used

Day of Week:

Wednesday

Time of Fatal Event:

5:55 PM

Time on Duty (hours: minutes):

3:00

Temperature (Fahrenheit):

60

Direction of Movement:

shoved

Crew's Next Move:

switch car

Death Result of Train Movement?

yes

Other Movements Nearby?

yes

Track Type:

yard/lead/classification

Hit by Own Equipment?

no

Speed of Equipment (mph):

5

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

No. 3 of 13: May 26, 1998 – BRC – Bedford Park, IL

Crew was working in one track in class yard with helper controlling engine moves, conductor was adjusting coupler when three free rolling cars struck him from behind and coupled him up.

SOFA Finding(s):	1
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Instructions to train/yard crew improper
Possible Contributing Factor:	Failure to apply handbrakes on car(s)
Possible Contributing Factor:	Failure to provide adequate space between equipment
Day of Week:	Tuesday
Time of Fatal Event:	7:33 AM
Time on Duty (hours: minutes):	1:03
Temperature (Fahrenheit):	8
Direction of Movement:	free-running
Crew's Next Move:	couple track
Death Result of Train Movement?	no
Track Type:	yard/hump/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 4 of 13: May 19, 1999 – NS – Cincinnati, OH

A conductor with one year of service was riding in the stairwell of the leading locomotive. He was directing the move by radio when he realized to late that the move would not clear the standing equipment. He was crushed between the handrail of his locomotive and the standing locomotive.

SOFA Finding(s):	5
Possible Contributing Factor:	Car left afoul.
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
External Circumstances:	Lack of defined foul point
Day of Week:	Wednesday
Time of Fatal Event:	5:30 PM
Time on Duty (hours: minutes):	1:50
Temperature (Fahrenheit):	70
Direction of Movement:	shoved
Crew's Next Move:	couple to train
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/lead
Hit by Own Equipment?	yes
Speed of Equipment (mph):	7
Deceased Regular Job?	no
Had Deceased Worked There Before?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 5 of 13: May 22, 2000 – CSX – Richmond, VA

A three-person road switching crew was in the process of spotting loaded coal cars at a unloading facility that was equipped with a “shaker” that helped empty each car. The shaker’s position causes a close clearance condition. The conductor was riding one side of the leading coal car and the brakeman was riding the other. Although having a clear view of the fouling equipment, the brakeman did not get off the car as the conductor had expected and was crushed between it and the fouling shaker equipment.

Special Switching Hazard(s):	Close Clearance
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Failure to communicate unsafe condition
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
External Circumstances:	Close clearance
Day of Week:	Monday
Time of Fatal Event:	11:30 AM
Time on Duty (hours: minutes):	10:30
Temperature (Fahrenheit):	70
Direction of Movement:	shoved
Crew's Next Move:	spot cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main/industrial/spot(load/unload)/outside
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Deceased Regular Job?	no
Had Deceased Worked There Before?	no
Crew Size:	3

No. 6 of 13: May 31, 2000 – UP – Pine Bluff, AR

A three-person yard switching crew was in the process of moving their light locomotives through a series of crossover switches however, the switchman had gone to the yard office for another list of cars to switch and the foreman, who had two (2) years of service, was directing the lite engine move by radio. The foreman told the engineer to stop, the foreman got off the leading end of the lead locomotive to line switches, he then told the engineer to continue backing up. Shortly thereafter, the foreman was crushed in a side collision between the locomotive consist he was directing and other cars standing on an adjacent track.

Special Switching Hazard(s):	Other Special Hazards or Events
Possible Contributing Factor:	Switch improperly lined
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Day of Week:	Wednesday
Time of Fatal Event:	3:15 AM
Time on Duty (hours: minutes):	3:16
Temperature (Fahrenheit):	70
Direction of Movement:	shoved
Crew's Next Move:	couple to track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	hump/rec/dept
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 7 of 13: May 14, 2002 – UP – Pine Bluff, AR

The switchman of a three-person yard switching crew asked the engineer to stretch a track. Noticing that there was a separation between the fourth and fifth head cars, the switchman went in to align the couplers. The switchman was coupled up when unsecured cars rolled in on him.

SOFA Findings(s):

Possible Contributing Factor:
Possible Contributing Factor:
Possible Contributing Factor:
Possible Contributing Factor:

1

Employee on or fouling track
Failure to apply handbrakes on car(s)
Failure to provide adequate space between equipment
Poor crew utilization

Day of Week:
Time of Fatal Event:
Time on Duty (hours: minutes):
Temperature (Fahrenheit):
Direction of Movement:
Crew's Next Move:
Death Result of Train Movement?
Other Movements Nearby?
Track Type:
Hit by Own Equipment?
Speed of Equipment (mph):
Deceased Regular Job?
Crew Size:
Drugs Present?
Drugs a Factor?
Emergency Response Procedures Followed?

Tuesday
8:40 AM
1:40
61
free-running
couple track
yes
no
yard/hump
yes
1
yes
3
no
no
yes

The Zero Switching Fatality Goal Remains

No. 8 of 13: May 13, 2004 – MSO – Sturgis, MI
(Information is preliminary, and not based on investigation)

A 38-year-old conductor was killed when he apparently slipped and fell from a car he was riding.

No. 9 of 13: May 18, 2004 – NS – Elwood, IN
(Information is preliminary, and not based on investigation)

A 35-year-old brakeman, with 6-years of service, was killed when the lead car he was riding was struck by a tractor-trailer.

No. 10 of 13: May 13, 2005 – DCRR – Detroit, MI
(Information is preliminary, and not based on investigation)

A 24-year-old conductor died of injuries sustained when the car he was riding derailed. He was crushed between the car and a cement abutment.

No. 11 of 13: May 26, 2008 – CSX – Lumberton, NC
(Information is preliminary, and not based on investigation)

A 45-year-old conductor was riding the leading end of 97 loaded coal hoppers and directing the move to the unloading spot by radio commands to his engine crew. Once the move was stopped, the conductor could not be contacted and was subsequently found dead, under a pile of coal located near the unloading area.

No. 12 of 13: May 29, 2008 – UP – Amarillo, TX
(Information is preliminary, and not based on investigation)

A brakeman was riding the leading end of a four car cut of cars that was free rolling into a track. As the brakeman went to position himself to begin controlling the speed of the free rolling cars by using the handbrake, the hand brake support gave way, the hand brake apparatus broke off and the employee fell under the leading end of the free rolling cars.

No. 13 of 13: May 10, 2009 – CSX – Selkirk, NY
(Information is preliminary, and not based on investigation)

A 32-year-old yard foreman operating a one-person remote control locomotive went in between the equipment to make an adjustment after the equipment had started back toward the car he intended to couple up to. The yard foreman was not able to get out from between the cars in time and was crushed between the standing equipment and the equipment he was operating.

The Zero Switching Fatality Goal Remains