

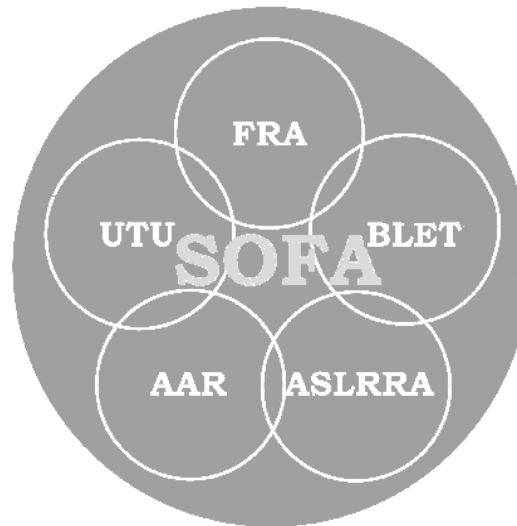
# PLEASE POST IMMEDIATELY

## *Apply SOFA Operating Recommendations – Recognize Special Switching Hazards*

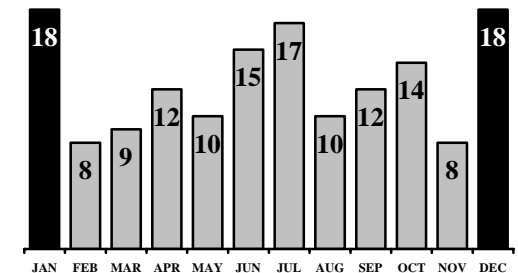
### Amputations

an acute type of SOFA-defined Severe Injury, resulting in likelihood of permanent occupational and lifestyle limitations ...page 2 and 3

Upcoming period of increased casualty risk...page 4



Since 1992, Switching Fatalities have increased in December and January



through November 3,  
Five Switching Fatalities in 2006:

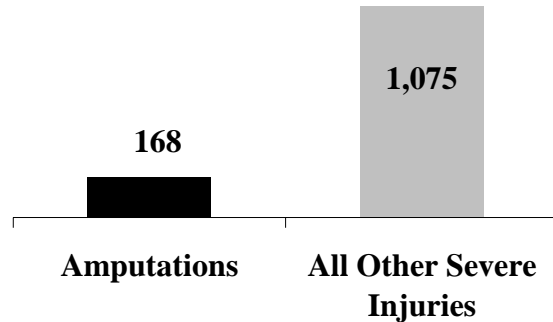
- April 2, at Palmer, MI
- August 21, at Bonaventure, FL
- August 25, at Chicago, IL
- September 10, East St. Louis, IL
- October 13, Pajaro, CA

## Switching Fatality and Severe Injury Update: 2006 Fourth Quarter

(Note: Update is now being published quarterly. Expect next Update in February 2007.)

# Amputations, an acute type of SOFA-defined Severe Injury

January 1, 1997 through August 31, 2006



Location	Amputations	percent
yard	108	64.3
main/branch	31	18.5
industry	21	12.5
siding	6	3.5
other	2	1.2
<b>total</b>	<b>168</b>	<b>100.0%</b>

Job Code	Amputations	percent
yard conductor (614)	39	23.2
yard brakeman (615)	30	17.8
road freight conductor, freight local (609)	22	13.1
road freight conductor, freight through (608)	19	11.3
road freight brakemen, local (613)	14	8.3
road freight engineers, through (617)	13	7.7
remote control locomotive operator – not operating (631)	4	2.4
road freight brakemen, through (612)	4	2.4
road passenger engineers (616)	4	2.4
yard engineers (619)	4	2.4
road freight engineers, local (618)	3	1.8
road pass conductor (606)	3	1.8
remote control locomotive operator – not operating (630)	3	1.8
misc. (600)	2	1.2
switch tender (601)	2	1.2
asst. road passenger conductor (607)	1	0.6
lead passenger brakeman (611)	1	0.6
<b>total</b>	<b>168</b>	<b>100.0%</b>

Cause	Amputations	percent
human factors	70	41.6
undetermined	50	29.7
equipment procedures not followed	30	17.9
equipment	5	3.0
environment	3	1.8
other	10	6.0
<b>total</b>	<b>168</b>	<b>100.0%</b>

45.0 is average age of 168 employees receiving amputations

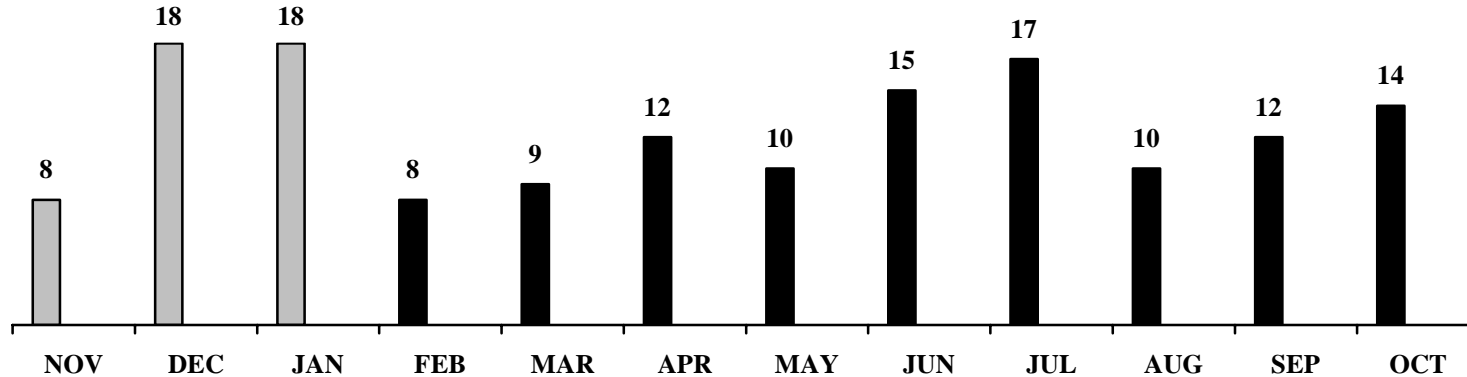
## Events Causing Amputations, January 1, 1997 through August 31, 2006

Event	Amputations	percent
struck by on-track equipment	52	30.9
caught, crushed, pinched, other	22	13.0
slipped, fell, stumbled, other	13	7.7
sudden unexpected movement of on track equipment	11	6.5
lost balance	10	5.9
caught in or crushed by materials	8	4.8
other (describe in narrative)	8	4.8
slack action, draft, compressive buff/coupling	6	3.6
collision between on-track equipment	4	2.4
missed handhold, grabiron, step, etc.	4	2.4
caught in or compressed by other machinery	3	1.8
struck by object	3	1.8
struck by own remote control locomotive controlled equipment	3	1.8
highway-rail collision/impact	2	1.2
ran into object/equipment	2	1.2
slipped, fell, stumbled, etc. due to climatic condition	2	1.2
sudden, unexpected movement, other	2	1.2
sudden/unexpected movement of material	2	1.2
struck by other remote control locomotive controlled equipment	1	0.6
caught between equipment	1	0.6
caught in or compressed by hand tools	1	0.6
caught in or compressed by power hand tools	1	0.6
derailments	1	0.6
pushed/shoved into/against	1	0.6
rubbed, abraded, etc.	1	0.6
slipped, fell, stumbled, etc. due to irregular surface	1	0.6
slipped, fell, stumbled, etc. due to object	1	0.6
struck against object	1	0.6
struck by falling object	1	0.6
<b>total</b>	<b>168</b>	<b>100.0%</b>

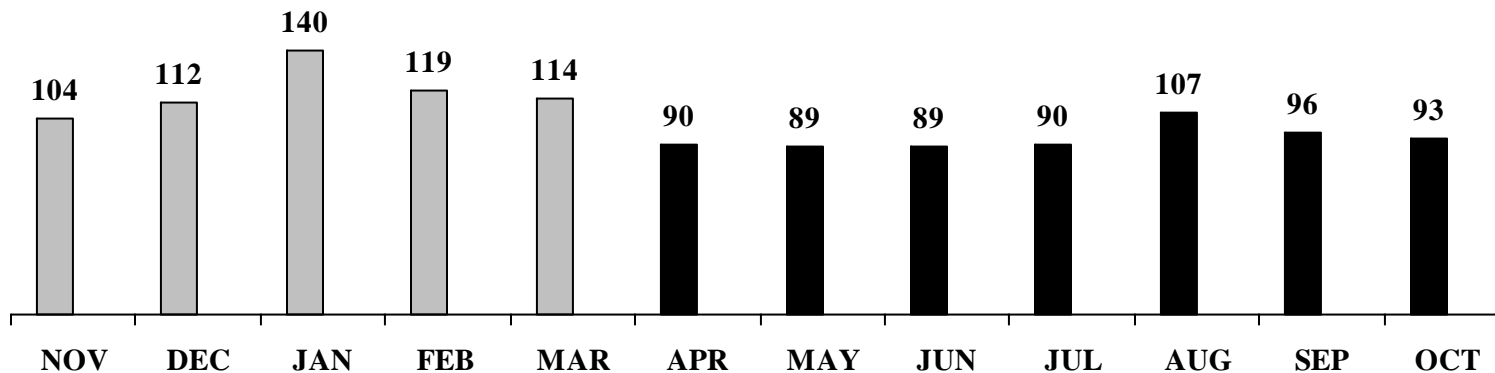
# Approaching Period of Increased Casualty Risk

Casualty risk to employees always exists. In the upcoming months this risk increases.

## 151 Switching Fatalities, January 1, 1992 through November 3, 2006

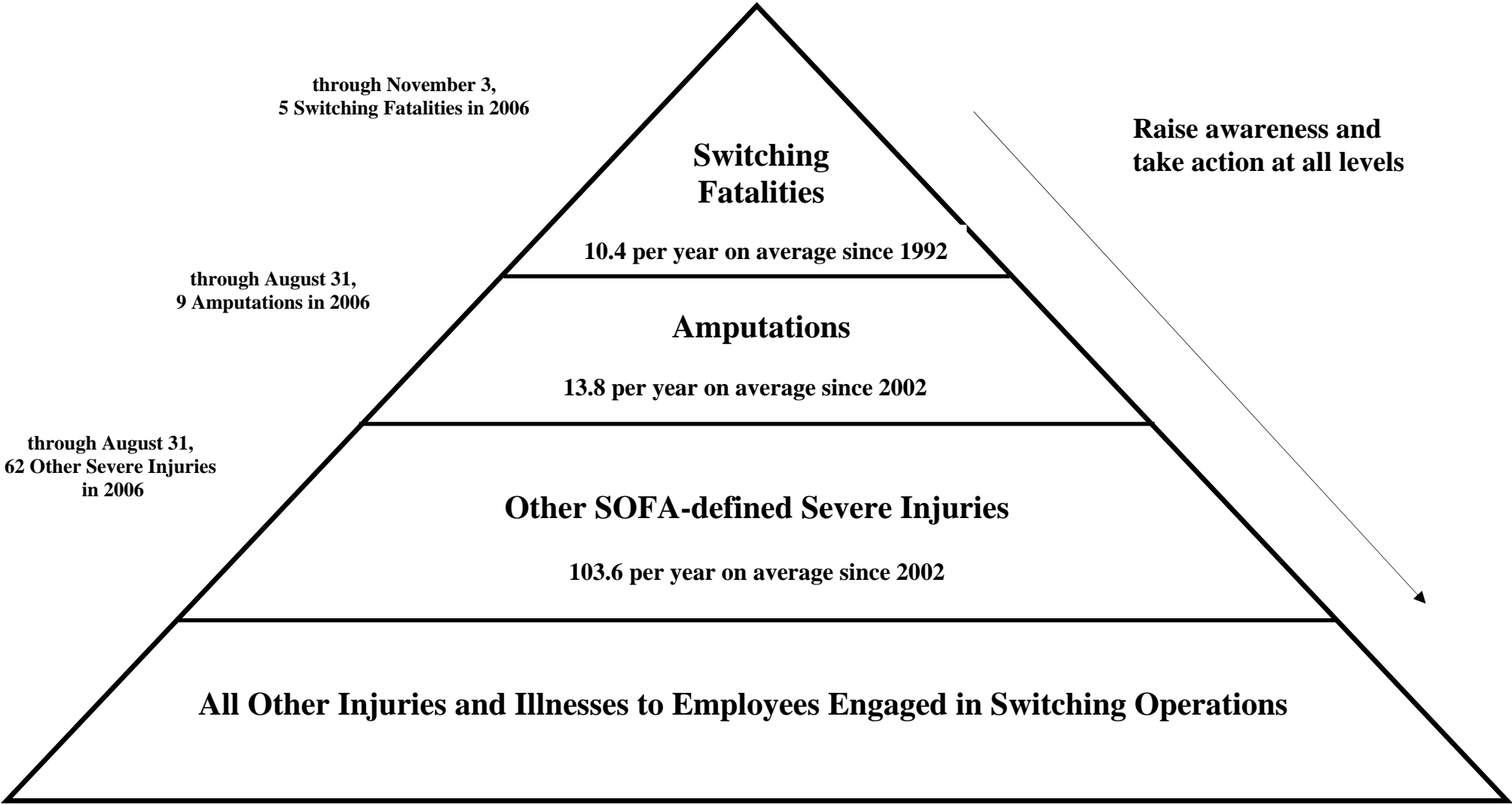


## 1,243 SOFA-defined Severe Injuries, January 1, 1997 through August 31, 2006



# Switching Casualty Pyramid

Engaged in switching operations, employees are exposed daily to risk of fatality, life-long disability, and injury and illness.



Raise awareness and take action at all levels

# SOFA-defined Severe Injuries

January 1992 through August 2006

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	totals	average
<b>JAN</b>	11	13	16	15	21	12	11	11	20	10	140	14.0
<b>FEB</b>	17	15	9	9	9	13	17	14	10	6	119	11.9
<b>MAR</b>	14	12	17	11	10	10	13	10	9	8	114	11.4
<b>APR</b>	8	10	6	10	12	6	9	13	10	6	90	9.0
<b>MAY</b>	6	12	8	8	12	14	9	6	6	8	89	8.9
<b>JUN</b>	9	10	8	11	8	5	10	9	7	12	89	8.9
<b>JUL</b>	9	14	10	8	10	7	6	10	5	11	90	9.0
<b>AUG</b>	13	10	11	14	8	10	7	14	10	10	107	10.7
<b>to-date</b>	<b>87</b>	<b>96</b>	<b>85</b>	<b>86</b>	<b>90</b>	<b>77</b>	<b>82</b>	<b>87</b>	<b>77</b>	<b>71</b>		<b>83.8</b>
<b>SEP</b>	10	11	15	10	20	12	5	4	9		96	10.7
<b>OCT</b>	12	12	16	10	5	11	9	7	11		93	10.3
<b>NOV</b>	12	9	12	11	13	14	10	10	13		104	11.6
<b>DEC</b>	18	9	7	22	12	9	8	15	12		112	12.4
<b>totals</b>	<b>139</b>	<b>137</b>	<b>135</b>	<b>139</b>	<b>140</b>	<b>123</b>	<b>114</b>	<b>123</b>	<b>122</b>		<b>1,243</b>	

**138.0 Severe Injuries occurred on average per year from 1997 through 2001**

**120.5 Severe Injuries occurred on average per year from 2002 through 2005**

*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. Available at: <http://www.fra.dot.gov/us/content/102>

# Amputations

## A type of SOFA-defined Severe Injury

Amputations are shown separately because of the extreme trauma to employees engaged in switching, and the likelihood of permanent occupational and lifestyle limitations.

### January 1992 through August 2006

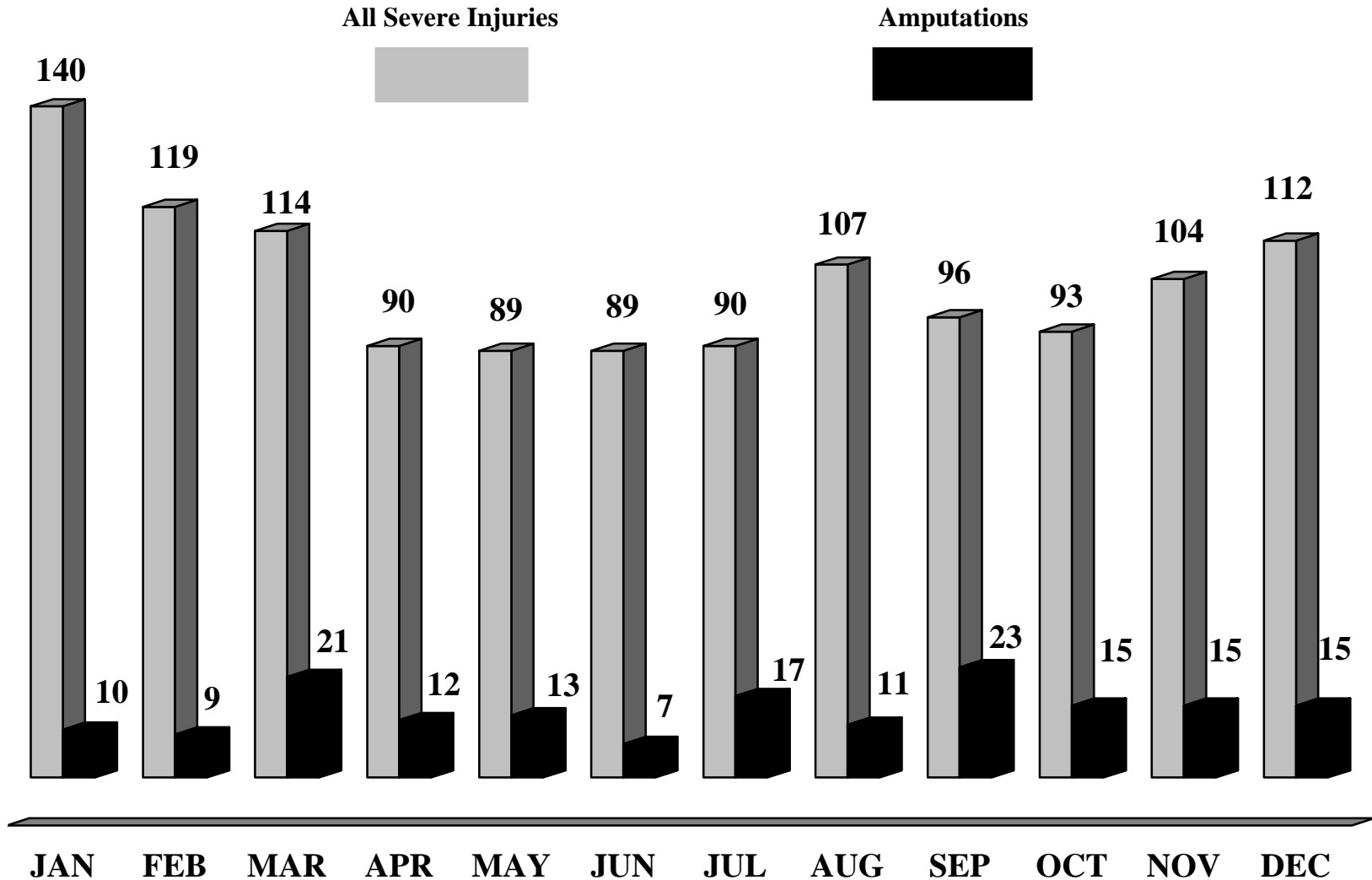
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	totals	average
<b>JAN</b>	1	0	2	1	0	0	2	2	2	0	10	1.0
<b>FEB</b>	0	1	0	1	0	2	1	2	0	2	9	0.9
<b>MAR</b>	3	4	3	2	1	1	3	1	2	1	21	2.1
<b>APR</b>	1	2	0	1	2	0	1	1	2	2	12	1.2
<b>MAY</b>	1	2	3	0	2	2	2	0	0	1	13	1.3
<b>JUN</b>	2	1	1	0	1	0	0	1	0	1	7	0.7
<b>JUL</b>	1	5	1	0	4	0	1	2	1	2	17	1.7
<b>AUG</b>	1	0	1	4	0	1	0	2	2	0	11	1.1
<b>to-date</b>	<b>10</b>	<b>15</b>	<b>11</b>	<b>9</b>	<b>10</b>	<b>6</b>	<b>10</b>	<b>11</b>	<b>9</b>	<b>9</b>		<b>10.0</b>
<b>SEP</b>	2	4	3	2	5	4	0	0	3		23	2.6
<b>OCT</b>	2	5	2	2	0	0	2	2	0		15	1.7
<b>NOV</b>	2	2	2	2	3	0	1	1	2		15	1.7
<b>DEC</b>	4	1	0	4	1	1	2	1	1		15	1.7
<b>totals</b>	<b>20</b>	<b>27</b>	<b>18</b>	<b>19</b>	<b>19</b>	<b>11</b>	<b>15</b>	<b>15</b>	<b>15</b>		<b>168</b>	

**20.6 Amputations occurred on average per year from 1997 through 2001**

**14.0 Amputations occurred on average per year from 2002 through 2005**

# Severe Injuries and Amputations by Month, January 1997 through August 2006

Amputations are a type of Severe Injuries and are contained in the Severe Injuries counts

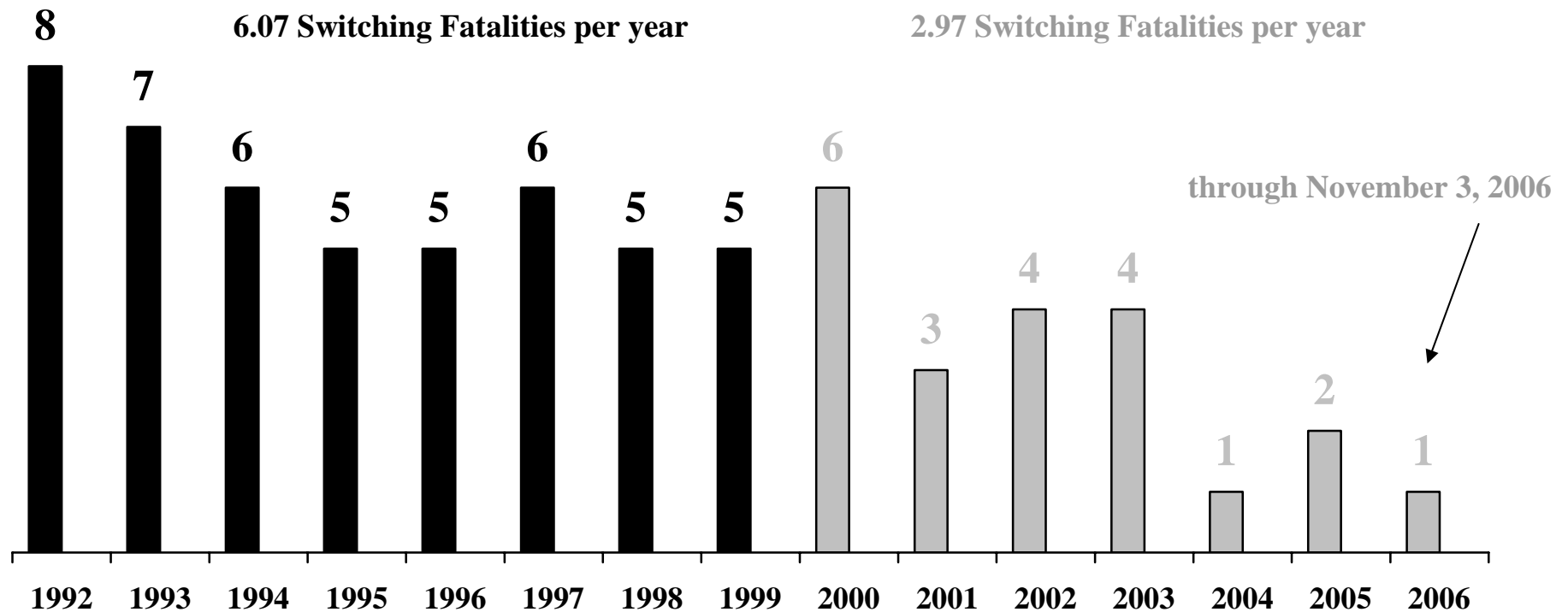


# Reduction in Switching Fatalities involving the Five SOFA Operating Recommendations

## 51.1 percent decline in yearly rate – 6.07 vs. 2.97 deaths per year

The original *SOFA Report*<sup>1</sup> was released in October 1999. Prior to the release, there were 47 Switching Fatalities related to the Five Operating Recommendations in the 7.75-year period January 1992 through September 1999. Expressed as a rate, there were 6.07 Switching Fatalities per year related to Operating Recommendations.

In the post-SOFA Report period of 7.08 years, October 1, 1999 through November 3, 2006, there were 21 Switching Fatalities related to the Five Operating Recommendations. Expressed as a rate, there were 2.97 Switching Fatalities per year related to Operating Recommendations.



<sup>1</sup> Findings and Recommendations of the SOFA Working Group. October 1999. Available at <http://www.fra.dot.gov/us/content/102>

# Five Switching Fatalities in 2006

(Information contained in these Fatality summaries is preliminary pending investigation.)

## **April 02, 2006...Lake Superior & Ishpeming Railroad...Palmer, Michigan**

A 51-year-old conductor was apparently riding the point of a 60 ore-car (empties) shove move, and may have fallen off, and was run over.

## **August 21, 2006...Florida East Coast Railroad...Bonaventure, Florida**

A three-person crew (and a locomotive engineer learning the territory) was shoving a cut of cars over a highway rail grade crossing equipped with passive warning devices. The conductor was riding the leading end of the movement when he suddenly told the locomotive engineer to dump the train line air. Subsequent investigation revealed that the leading end of the movement had struck a truck at the crossing, and as a result of the collision, the conductor was killed.

## **August 25, 2006...Norfolk Southern Railroad...Chicago, Illinois**

A three-person crew was flat switching when it became necessary to couple a cut of cars into a standing two-car cut. As the conductor directed the cut of cars into the two-car cut, radio communication with the conductor ended, the movement stopped, and the conductor was found run over by one of the cars being coupled to.

## **September 10, 2006...Alton & Southern Railroad...East St. Louis, Illinois**

A two-person crew was in the process of making up a locomotive consist using two adjacent tracks. After having set over one of the locomotives, the conductor was riding the leading end of the two locomotives into the adjacent track when his hand signals went out of sight, the movement was stopped and the engineer went back to discover the conductor had been crushed between the locomotive he had just set out and the locomotive he was riding.

## **October 13, 2006...Union Pacific Railroad...Pajaro, California**

A two-person crew, performing switching operations with a remote control locomotive, were in the process of shoving three cars with the intent of cutting them off and letting them free roll into a track at Watsonville Junction. The two men were working on opposite sides of the on-track movement. The cars were cut off, the conductor noticed something under the cars and, upon further investigation determined that his helper had been run over.

***Apply SOFA Operating Recommendations – Recognize Special Switching Hazards***

## 8 November Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	11/16/92	TTIS	Maysville, KY	35	13	road conductor	standing	between cars/loc	collision between on-track equipment		Miscellaneous
2	11/12/93	ATSF	Farewell, TX	41	21	road conductor	riding	on side of car	struck by on-track equipment		Unsecured Cars and Drugs and Alcohol
3	11/13/93	GC	Macon, GA	47	1	yard conductor		on track	struck by on-track equipment	3, 5	
4	11/10/94	PTRA	Houston, TX	31	0.5	yard brakeman	activity not witnessed	industrial chipper	caught in or compressed by other machinery	5	
5	11/15/94	CR	Painted Post, NY	57	38	road brakemen	standing	on track	struck by on-track equipment	3, 4	
6	11/17/99	UP	Lincoln, NE	57	35	road brakemen	walking	on track	struck by on-track equipment		Unexpected Movement of Railcars
7	11/01/04	BNSF	Bowdoin, MT	47							Special Switching Hazard
8	11/16/05	CSX	Lugoff, SC	47							Special Switching Hazard



**Fatalities occurring within a few days**

*Apply SOFA Operating Recommendations – Recognize Special Switching Hazards*

## No. 1 of 8: November 16, 1992 – TTIS – Maysville, KY

A two-person train crew was taking a coal train down a 3 percent grade and through an eight-degree curve when the train separated at the 17<sup>th</sup> head car. The cause of the separation was a broken knuckle. To remove the partially broken knuckle, the conductor decided that he had to impact the standing cars with the 17 head cars. On his third attempt, the couplers by-passed and the corners of the 18<sup>th</sup> and 17<sup>th</sup> head cars came together at the push pole pads crushing the conductor between them.

### Special Switching Hazard(s):

Possible Contributing Factor:

External Circumstances:

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?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

### Miscellaneous

Employee on or fouling track

Jammed knuckle pin

Monday

6:05 PM

4:05

45

shoved

replace knuckle

yes

main

yes

yes

1

yes

2

no

no

yes

## No. 2 of 8: November 12, 1993 – ATSF – Farewell, TX

A ~~three person~~three-person industrial switching crew had been working together to get the switches lined and the derail off in preparation for a shove move into the plant. The conductor was on the leading end of the lead car and the brakeman was on the trailing end of the same car. The conductor was crushed by a car he had set out without setting a hand brake. The car rolled into a car he and his brakeman were riding and impairment (drugs) contributed to the fatality.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Direction of Movement:

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

### Unsecured Cars and Drugs and Alcohol

Failure to apply handbrakes on car(s)

Failure to couple

Impairment of efficiency or judgment because of drugs or alcohol

Friday

6:40 AM

5:55

shoved

spot car

yes

no

main/industrial

yes

no

4

3

yes

yes

### No. 3 of 8: November 13, 1993 – GC – Macon, GA

Trainmaster became involved with crew performing switching in class yard without knowledge of the conductor who was coupling air hoses on a cut of cars. Cars were shoved without his knowledge while he was in the foul of the movement. Movement ran over conductor and killed him.

#### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

3, 5

Poor intra-crew communication about work in progress

Employee on or fouling track

Train master assisted crew

Saturday

8:30 AM

0:30

50

pull another track

yes

no

yard/flat/classification

yes

1

3

no

no

### No. 4 of 8: November 10, 1994 – PTR A – Houston, TX

Yard switch crew, engineer, conductor and brakeman, spotting paper mill. FE (brakeman) instructed by conductor to de-train and stay at road crossing while he spotted track. FE found in nearby wood chip auger/conveyer system after mill crew started up the system while crew searched for missing FE. Mill crew was instructed by conductor not to start equipment until FE was located. FE was not familiar with the dangers associated with this mill process. FE had 5 months experience.

#### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Track Type:

Speed of Equipment (mph):

Deceased Regular Job?

Had Deceased Worked There Before?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

5

Insufficient training

Failure to follow instructions

Thursday

4:15 AM

4:16

70

industrial/spot(load/unload)/outside

0

no

yes

3

no

no

yes

## No. 5 of 8: November 15, 1994 – CR – Painted Post, NY

Crew switching in class yard failed to establish and maintain effective communications. Subsequent changes in switching line-up by the conductor resulted in trainman who was in the foul of Track 7 being struck by unexpected movement of equipment.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

3, 4

Poor intra-crew communication about work in progress

Failure to comply with restricted speed

Tuesday

9:35 AM

1:35

55

shoved

couple track

yes

no

yard/classification/flat

yes

no

6

yes

3

no

no

yes

## No. 6 of 8: November 17, 1999 – UP – Lincoln, NE

A ~~three-person~~~~three-person~~ local switching crew had cut away from their train on the main track and proceeded to pull by the switch providing access to a clear track. The brakeman was at the switch and the conductor had removed the derail from the clear track and was awaiting the shove move at the point where the cut would be made. Meanwhile, the brakeman, who was to have gotten the switch from the main to the clear track, was walking between the gauge of the mainline track toward the remaining portion of his train. The conductor saw the cars being shoved toward the remaining portion of his train and shouted to the brakeman and then to the engineer to stop. The brakeman with his back to the move was hit and run over by the leading car of the shove.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

### Unexpected Movement of Railcars

Employee on or fouling track

Switch improperly lined

Employee physical condition, other

Other extreme environmental condition

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

Wednesday

12:40 PM

5:40

65

shoved

make joint

yes

no

main

yes

yes

7

yes

3

no

no

yes

**No. 7 of 8: November 01, 2004 – BNSF – Bowdoin, MT**

*(Information preliminary pending review by SOFA Working Group.)*

A conductor stopped on a siding track to meet an opposing train. Conductor detrained to perform a roll-by inspection of a passing train. Conductor stepped off his train and was apparently struck by the opposing train.

**No. 8 of 8: November 16, 2005 – CSX – Lugoff, SC**

*(Information preliminary pending review by SOFA Working Group.)*

A 47-year-old conductor was killed during an industrial switching operation. The brakeman, who was uncoupling cars, requested more slack from the engineer, while the conductor was getting the numbers of cars previously switched. Shortly thereafter, the conductor was found crushed between the knuckles of those cars.

# 18 December Switching Fatalities, January 1992 through September 2004

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	12/05/93	SOU	Atlanta, GA	59	29	road conductor	getting off	between tracks	struck by on-track equipment	3	
2	12/30/93	CR	Brook Park, OH	61	38	yard conductor	riding	on side of car	derailments		Environment
3	12/06/94	CR	Campbell Hall, NY	28	0.17	brakeman trainee	riding	in caboose	ran into on-track equipment	2, 4, 5	
4	12/13/94	UP	Thorton, CA	48	26	road brakemen	adjusting coupler	between cars/loc	sudden/unexpected movement of on-track equipment	1	
5	12/11/95	NS	Toledo, OH	53	32	yard brakeman	standing	on ground near on-track equip.	rolled between fixed		Close Clearance
6	12/14/95	CSXT	Monroe, NC	54	33	road conductor	riding	on side of car	struck against object		Close Clearance
7	12/16/96	UP	Clinton, IA	51	21	road brakemen	riding	between cars/loc	struck by on-track equipment		Employee Tripping and Drugs and Alcohol
8	12/18/96	IC	Chicago, IL	45	26	yard conductor	riding	on end of car	struck by on-track equipment		Unsecured Cars
9	12/02/97	BNSF	Emporia, KS	50	30	road conductor	standing	between tracks	struck by on-track equipment		Struck by Mainline Trains
10	12/26/97	UP	Boise, ID	55	32	road conductor	opening/closing angle cock	on track	sudden/unexpected movement of on-track equipment	4	
11	12/28/98	IC	Durrant, MS	55	26	road conductor	riding	other location	derailments	4	
12	12/28/00	UP	Dupo, IL	52	30	yard brakeman	standing	on track	struck by on-track equipment		Struck by Mainline Trains
13	12/29/00	BNSF	Gillette, WY	29	6	road conductor	walking	on track	struck by on-track equipment		Struck by Mainline Trains
14	12/22/01	NS	Eden, NC	50	29	road brakemen	riding	on side of car	collision/impact-auto, truck, bus, van, etc.		Struck by Motor Vehicle
15	12/24/01	NS	Lynchburg, VA	30	4.5	road conductor	walking	near on-track equip-on ground	struck by on-track equipment		Close Clearance and Struck by Mainline Trains
16	12/07/03	UP	San Antonio, TX	37	5.75	remote control operator (RCO)	operating	on track	struck by on-track equipment		Unexp. Movement of Railcars
17	12/17/04	BNSF	Radium, CO	<b>Being reviewed by SOFA Working Group</b>							
18	12/04/05	BNSF	Burlington, IA	<b>Being reviewed by SOFA Working Group</b>							

## No. 1 of 18: December 05, 1993 – SOU – Atlanta, GA

Change in operating procedure between two crews swapping equipment resulted in conductor being struck by unexpected movement while he was in the foul of the track.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

3  
Employee on or fouling track  
Dismounted moving equipment at 8 mph  
Elevation difference between tracks and large ballast

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Sunday  
7:00 AM  
3:15  
55  
pulled  
line switch  
yes  
yes  
main/siding  
no  
yes  
2  
no  
2  
no  
no  
yes

## No. 2 of 18: December 30, 1993 – CR – Brook Park, OH

A ~~three person~~three-person industrial switching crew was shoving over an industrial crossing within the confines of a plant. The conductor was riding the leading end of the lead car when it rode up on ice, built up within the flange-ways, and derailed the car into the side of the building. The conductor was crushed between the car he was riding and the building.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

### Environment

Other roadbed defects  
Snow, ice, mud, gravel, coal etc. on the track  
Switching movement, excessive speed  
Others assisted crew

Day of Week:  
Time of Fatal Event:  
Time on Duty (hours: minutes):  
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):  
Had Deceased Worked There Before?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Thursday  
9:20 AM  
1:21  
shoved  
spot car  
yes  
no  
industrial/outside/stub track  
yes  
8  
yes  
3  
no  
no  
yes

### No. 3 of 18: December 06, 1994 – CR – Campbell Hall, NY

First local had left the immediate location of the work area to be used by the second local without notifying the second local of the position of the switches, derails or returning the switches to a non-conflicting position. Second local shoving three cars and a caboose with a two-month trainee directing the move, struck standing equipment after traversing switches that were unexpectedly lined for the equipment.

#### SOFA Operating Recommendation(s):

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

2, 4, 5

Poor crew utilization  
Radio communication, improper  
Shoving movement, man on or at leading end of movement, failure to control  
Failure to comply with restricted speed  
Radio communication, failure to give/receive  
Derail, failure to apply or remove  
Speed, other

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Had Deceased Worked There Before?  
Crew Size:  
Emergency Response Procedures Followed?

Tuesday  
2:52 AM  
6:52  
51  
shoved  
set out cars  
yes  
no  
yard/flat/storage  
no  
no  
19  
no  
yes  
3  
yes

### No. 4 of 18: December 13, 1994 – UP – Thorton, CA

Crew coupling up cars in an industry track, brakeman attempted to couple air between cars when unexpected movement of railcars occurred, resulting in his fatal injury.

#### SOFA Operating Recommendation(s):

Possible Contributing Factor:  
External Circumstances:

1

Failure to provide adequate space between equipment  
Employee on or fouling track

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Had Deceased Worked There Before?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Tuesday  
12:01 AM  
2:16  
34  
pulled  
CO power  
yes  
no  
industrial/spot/ load and unload/outside  
yes  
yes  
1  
no  
yes  
4  
no  
no  
yes

## No. 5 of 18: December 11, 1995 – NS – Toledo, OH

A three-person crew was called to switch an industry that all were very familiar with. During the switching moves, the brakeman was inside an area with no clearances between the cars and the hand railings installed on the walls. He was making coupling and, according to the conductor and engineer, upon completion of that work, ordered the engineer to haul out of the building where the conductor would take over the next move to be performed. Subsequently, a plant employee observed the brakeman slumped beside the track, rushed to assistance, call 911 and notified the conductor that his man was down. The brakeman died later on at the hospital of crushing wounds incurred when he was rolled between the cars being pulled out and the railing.

### Special Switching Hazard(s):

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

### Close Clearance

Snow, ice, mud, gravel, coal etc. on the track  
Close or no clearance  
Employee on or fouling track

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Monday  
6:25 PM  
2:25  
12  
pulled  
set out cars  
yes  
no  
industrial/spot/load and unload/inside  
yes  
yes  
3  
yes  
3  
no  
no  
yes

## No. 6 of 18: December 14, 1995 – CSX – Monroe, NC

A three-person crew (engineer, conductor & conductor trainee) was called to operate a local freight train. During a switching operation at a yard, the conductor was riding nine cars down a clear track and directing the shove move by radio. When the engineer did not hear any more radio transmissions from the conductor, he stopped the move and found the conductor dead and lying beside the track he had been shoving down. Post accident investigation revealed that he had been struck by a truck trailer door positioned on a flat car standing on an adjacent track and that had been left open and swinging freely. The investigation revealed that a vandal had broken into the trailer and stolen material from it.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:

### Close Clearance

Vandalism of on-track equipment, i.e. brakes released  
Object or equipment on or fouling the tracks (other than above) not vandalism

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Thursday  
4:30 AM  
7:30  
44  
shoved  
cut engine off  
yes  
no  
yard/flat/classification  
yes  
yes  
8  
yes  
3  
no  
no  
yes

## No. 7 of 18: December 16, 1996 – UP – Clinton, IA

A three-person crew was in the process of switching a plant when the conductor sent the locomotive and cars out of one track toward the brakeman who was to handle the switches and direct the cars into another track. The conductor stopped the move after the cars had cleared an industry road crossing and the engineer waited to receive instructions from the brakeman. However, the brakeman had mounted the second head car behind the locomotives and had apparently slipped or fell from that position and was found dead by the engineer and conductor lying between and beneath the fourth head car. The brakeman tested positive for THCA & THC.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

### Employee Tripping and Drugs and Alcohol

Employee falling from moving equipment

Impairment of efficiency or judgment because of drugs or alcohol

Monday

8:40 PM

5:40

32

pulled

CO power

yes

no

outside

yes

yes

1

yes

3

yes

yes

## No. 8 of 18: December 18, 1996 – IC – Chicago, IL

A three-person yard crew was in the process of switching a plant. The brakeman was at the plant doors and the conductor and engineer had hauled out to put away a car that had been removed from the plant. After the conductor had tied onto the cars to go into the plant and begun to shove toward the plant, the car that had just been placed on an adjacent track rolled out, fouled the conductor's movement, and crushed him between the leading car and the rolling car.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

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?

### Unsecured Cars

Failure to properly secure hand brake on car(s) railroad employee

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

Broken brake pipe or connections

Wednesday

11:40 AM

5:55

15

shoved/free-running

spot cars

yes

no

outside

yes

4

yes

3

no

no

yes

## No. 9 of 18: December 02, 1997 – BNSF – Emporia, KS

The three-person crew had just finished making up their train at the yard. The conductor, for unknown reasons, had positioned himself on the “live” main trackside of his train, near the second and third locomotives. The conductor was struck and killed by a passing main track train that had approached the area from the opposite direction than that the conductor’s train was to proceed.

### Special Switching Hazard(s):

Possible Contributing Factor:

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

### Struck by Mainline Trains

Employee on or fouling track

Tuesday  
9:45  
43  
pulled  
couple train  
yes  
yes  
main/yard  
no  
yes  
54  
yes  
3  
no  
no  
yes

## No. 10 of 18: December 26, 1997 – UP – Boise, ID

Conductor was riding equipment while setting hand brakes. Move was being shoved; improper radio communication.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

4  
Employee on or fouling track  
Poor intra-crew communication about work in progress  
Radio communication, improper  
Grade crossing placement

Friday  
5:45 PM  
9:30  
27  
shoved  
uncouple cars to spot  
yes  
no  
main/industrial  
yes  
no  
3  
yes  
3  
no  
no  
yes

## No. 11 of 18: December 28, 1998 – IC – Durrant, MS

Shove movement was not properly controlled by radio communication and resulted in a collision with a fallen tree which caused the derailment and death of the conductor.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:	4
Possible Contributing Factor:	Radio communication, failure to give/receive
Possible Contributing Factor:	Train on main track inside yard limits, excessive speed
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Possible Contributing Factor:	Object or equipment on or fouling the tracks (other than above) not vandalism
External Circumstances:	Extended shove move and type of equipment
Day of Week:	Monday
Time of Fatal Event:	4:32 PM
Time on Duty (hours: minutes):	0:33
Temperature (Fahrenheit):	36
Direction of Movement:	shoved
Crew's Next Move:	stop at switch
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):	22
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

## No. 12 of 18: December 28, 2000 – UP – Dupo, IL

A three-person yard switching crew was in the process of pulling cars down a long lead that ran parallel to a main track. The switchman was standing between the cars that were being pulled out onto the lead and the main track. While the cars were being moved, a main line train approached his location. The switchman, with nowhere to go, was struck by the passing main line train and killed by a blow to the head.

### Special Switching Hazard(s):

Possible Contributing Factor:	<b>Struck by Mainline Trains</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Insufficient ballast section
External Circumstances:	Snow and ice
Day of Week:	Thursday
Time of Fatal Event:	8:10 AM
Time on Duty (hours: minutes):	1:40
Temperature (Fahrenheit):	8
Direction of Movement:	pulled
Crew's Next Move:	line switch
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):	29
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

## No. 13 of 18: December 29, 2000 – BNSF – Gillette, WY

A two-person freight train crew was about to be passed by another freight train at a location on line-of-road. The conductor of the stopped train got up out of his seat, exited the leading locomotive and crossed over the track on which the on-coming train was proceeding. The conductor was struck and killed by the lead locomotive of the passing train.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

### Struck by Mainline Trains

Employee physical condition, other  
Employee on or fouling track  
Using cell phone

Friday  
9:28 PM  
4:08  
20  
pulled  
inspect train  
yes  
yes  
main  
no  
yes  
43  
yes  
2  
no  
no  
yes

## No. 14 of 18: December 22, 2001 – NS – Eden, NC

A three-person, local switching crew that included a conductor in training were in the process of shoving a cut of cars over a highway road crossing at grade. The brakeman was riding one corner of the leading car and the conductor in training was riding the opposite side of the car. All warning devices were in operation when a van struck the leading end of the car knocking the brakeman off the car and under the leading wheels.

### Special Switching Hazard(s):

Possible Contributing Factor:  
External Circumstances:

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Had Deceased Worked There Before?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

### Struck by Motor Vehicle

Highway user inattentiveness  
Employee physical condition, other

Saturday  
9:45 AM  
3:54  
45  
shoved  
switch plant  
yes  
no  
main/industrial  
yes  
yes  
3  
yes  
yes  
4  
no  
no  
yes

## No. 15 of 18: December 24, 2001 – NS – Lynchburg, VA

A conductor, engineer and conductor in training had been transported to an unattended train standing on a siding a portion of which was in a tunnel adjacent to the main track. After storing their equipment, the conductor and the conductor in training left the locomotive to release hand brakes on the train. The conductor was killed when she failed to step in between two boxcars of her train as the conductor in training had done and was subsequently struck by a passing mainline train.

**Special Switching Hazard(s):**  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

**Close Clearance and Struck by Mainline Trains**  
Employee on or fouling track  
Other train operation/human factors  
Other train operation/human factors  
Close or no clearance  
Employee physical condition, other  
Monday  
3:43 AM  
4:15  
35  
pulled  
brake test  
yes  
no  
main  
no  
yes  
38  
no  
3  
no  
no  
yes

## No. 16 of 18: December 07, 2003 – UP – San Antonio, TX

A pitch/catch remote control operation was being run by a single operator who was struck and killed during a yard operation by his own locomotive. He stepped in front of its movement as he was headed for the other end of a crossover switch that he intended to line for the route he intended his engine to use.

**Special Switching Hazard(s):**  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:  
  
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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

**Unexp. Movement of Railcars**  
Employee on or fouling track  
Switch improperly lined  
Spring/power switch mechanism malfunction  
Other miscellaneous causes  
Quit offered  
  
Sunday  
12:12 AM  
1:12  
39  
pulled  
line switch  
yes  
no  
yard  
yes  
no  
12.65  
yes  
1  
yes  
no  
yes

**No. 17 of 18: December 17, 2004 – BNSF – Radium, CO**

*(Information preliminary pending review by SOFA Working Group.)*

A conductor, with 25 years of service, was struck by a passing train he was trying to observe.

**No. 18 of 18: December 04, 2005 – BNSF – Burlington, IA**

*(Information preliminary pending review by SOFA Working Group.)*

A brakeman, riding the side of a car into an area posted as “close clearance,” was killed when he was crushed between the car he was riding and a steel walkway support beam.

# 18 January Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	01/28/92	BN	Willmar, MN	57	22	yard brakeman	walking	on track	struck by on-track equipment	4	
2	01/30/92	AGC	Polk County, FL	32	0.5	yard brakeman	getting on	other location on locomotive	missed handhold, grabiron, step, etc.	5	
3	01/04/94	BN	Hastings, NE	46	20	yard conductor	walking	between cars/loc	sudden/unexpected movement of on-track equipment		Unsecured Cars
4	01/14/94	BN	Amarillo, TX	57	36	yard conductor	standing	between tracks	derailments		Equipment
5	01/18/94	CSXT	Bainbridge, GA	45	25	road conductor	riding	on end of car	sudden/unexpected movement of on-track equipment		Miscellaneous
6	01/20/94	UP	Fall City, NE	44	16	road conductor	riding	on side of car	rolled between moving rolling stock and stationary rolling stock	2	
7	01/11/95	CR	Indianapolis, IN	51	30	yard conductor	riding	on side of car	struck by on-track equipment		Equipment
8	01/12/97	UP	S. Fontana, CA	60	35	road conductor	riding	on side of car	slack action, draft, compressive buff/coupling		Employee Falling
9	01/29/97	UP	Mason City, IA	48	28	road conductor	walking	on track	struck by on-track equipment	4	
10	01/24/98	BNSF	Omaha, NE	47	26	yard conductor	lining switches	beside track	struck by object		Drugs and Alcohol
11	01/12/99	CR	Port Newark, NJ	54	5.5	yard conductor	walking	on track	struck by on-track equipment	3, 4	
12	01/22/99	CR	Alexandria, NY	45	1	road conductor	riding	on side of car	derailments		Environment
13	01/02/00	CIRR	Cedar Springs, GA	49	21	yard conductor	riding	on side of car	collision between on-track equipment		Environment
14	01/10/01	CSX	Chicago, IL	42	1	road conductor	walking	near on-track equipment/on ground	struck by on-track equipment	5	
15	01/11/01	NS	South Fork, PA	52	34	road engineer	inspecting	between tracks	struck by on-track equipment	3	
16	01/14/04	NS	Kankakee, IL	n/a	n/a	Being reviewed by SOFA Working Group					
17	01/10/05	UP	Buena Vista, AR	53	n/a	Being reviewed by SOFA Working Group					
18	01/26/05	PHL	Los Angeles, CA	52	n/a	Being reviewed by SOFA Working Group					

***Apply SOFA Operating Recommendations – Recognize Special Switching Hazards***

## No. 1 of 18: January 28, 1992 – BN - Willmar, NM

A four-person crew (engineer, switch foreman, 2 switchman) had just shove cars into track 11 and held onto one for track 9. The switch foreman got the switch for 9, noticed his front switchman standing near cars on track 11, and rode the locomotive onto the lead. After the 11th switch was lined for the lead, the switch foreman kicked the single car into track 9. The front switchman was struck and killed by the free rolling car.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

4

Employee on or fouling track

Employee involved with two movements of separate crews

Heavy clothing, hood(s)

Day of Week:

Tuesday

Time of Fatal Event:

5:30 PM

Time on Duty (hours: minutes):

2:00

Direction of Movement:

shoved/free-running

Crew's Next Move:

engine to track #2

Death Result of Train Movement?

yes

Other Movements Nearby?

yes

Track Type:

yard/flat/classification

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

Emergency Response Procedures Followed?

yes

## No. 2 of 18: January 30, 1992 – AGC – Polk County, FL

Industry switch crew, engineer and two flagmen, both flagmen rode the lower steps of the leading end of the lead locomotive. FE (flagman) was on left side, the other flagman on right side. After 2000 feet into this lite engine movement the surviving flagman noticed the FE stopped talking and he crossed over to the FE's side and saw FE lying next to the track behind movement. Investigation showed FE either slipped off the fireman's side or tripped while dismounting or attempting to remount from the fireman's side. FE had six months experience.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

External Circumstances:

5

Poor intra-crew communication about work in progress

Board/dis-board wrong side

Day of Week:

Thursday

Time of Fatal Event:

3:00 PM

Time on Duty (hours: minutes):

0:10

Temperature (Fahrenheit):

75

Direction of Movement:

pulled

Crew's Next Move:

wye engine

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

yard/flat/lead/industrial

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. 3 of 18: January 04, 1994 – BN – Hastings, NE

A three-person crew was in the process of pulling a cut of cars out of a track and leaving two additional cuts sitting separately in the track. The helper was riding the cut out of the track and the foreman was last seen walking between the two remaining cuts of cars. Evidence suggests that the foreman attempted to cross over the tracks between the cars being pulled out and the first of two remaining cuts of cars when he was crushed between the cars being pulled out and the second cut of cars after they were impacted by the third, unsecured cut.

#### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

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?

#### Unsecured Cars

Employee on or fouling track

Failure to couple

Tuesday

7:00 PM

2:00

31

pulled/free-running

stop to uncouple

yes

no

yard/flat/classification

yes

6

yes

3

no

no

yes

### No. 4 of 18: January 14, 1994 – BN – Amarillo, TX

A three-person crew reported for duty and later was in the process of shoving cars down a track with the switch foreman riding the point. At the same time, another yard switching job was pulling cars in the opposite direction on an adjacent track and derailed. The foreman immediately told the other crew that they were on the ground and then told his engineer to stop the shove he was riding. The foreman was found crushed between the car he was riding and the car that derailed on the adjacent track.

#### Special Switching Hazard(s):

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

#### Equipment

Friday

11:15 AM

4:16

48

pulled

cut engine off

yes

yes

yard/flat/classification

no

yes

6

3

no

no

## No. 5 of 18: January 18, 1994 – CSX – Bainbridge, GA

A ~~three person~~ three-person switching crew was in the process of shoving cars down an industrial lead. The conductor and brakeman were riding the end platform of a tank car and, as the move approached a highway/rail grade crossing, the brakeman gave the engineer a car count in which to stop. As a result, there was some “slack action” and the conductor fell from the end platform onto the rail and was pronounced dead at the hospital over five hours later.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

### Miscellaneous

Employee falling from moving equipment

Slack action

Tuesday

6:10 PM

1:10

38

shoved

spot

yes

no

industrial/spot/(load-unload/outside

yes

yes

6

3

no

no

yes

## No. 6 of 18: January 20, 1994 – UP – Fall City, NE

Conductor riding side of two cars to be kicked, he moves to the opposite side of car to work hand brake and is immediately struck by locomotives standing on adjacent track creating a no-clearance condition. Conductor was not aware that the locomotives had arrived at that location since he had last been there.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

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:

Emergency Response Procedures Followed?

2

Close or no clearance

Poor crew utilization

Thursday

8:00 PM

0:30

16

free-running

stop car

yes

no

yard/flat/classification

no

6

yes

3

yes

## No. 7 of 18: January 11, 1995 – CR – Indianapolis, IN

A three-person crew was in the process of switching a plant. The conductor was riding the leading end of the lead car during an eight-car shove. He had notified the engineer that he had mounted the moving car and told him by radio to continue shoving. When the engineer did not hear any more from the conductor, he stopped and the brakeman walked back to find the conductor had been run over by five of the eight cars being shoved. An exception was taken by the FRA for the absence of the "BR" end handhold that could have been used to assist the conductor in moving from the side of the car to the end of the car.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Direction of Movement:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

### Equipment

Employee falling from moving equipment

Defective BR end hand hold

Wednesday

11:30 PM

8:31

shoved

yes

no

industrial/spot/load-unload/inside/stub track

yes

yes

3

3

no

no

yes

## No. 8 of 18: January 12, 1997 – UP – S. Fontana, CA

A three-person road crew arrived at a siding, pulled into the siding and stopped their train. They then cut off their locomotive consist, ran around the 50 loaded cars in their train, and tied onto the opposite end. The conductor and brakeman then positioned themselves on the leading end of the shove move and directed the engineer by radio to begin the shove into the plant. As the move entered a descending grade into the plant, the slack ran out, the conductor lost his hold on the leading car, fell in front of the car he was riding, was run over and died.

### Special Switching Hazard(s):

Possible Contributing Factor:

External Circumstances:

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Had Deceased Worked There Before?

Crew Size:

Drugs Present?

Drugs a Factor?

### Employee Falling

Buffing or slack action excessive, train handling

Unfamiliar with territory

Sunday

10:15 PM

4:15

42

shoved

stop

yes

no

siding/lead

yes

no

8

no

no

3

no

no

## No. 9 of 18: January 29, 1997 – UP – Mason City, IA

Conductor and engineer were moving toward engine house area with lite engines and using hand signals. The conductor stopped the movement to line a switch. The engineer while waiting heard and acted upon an unidentified radio transmission “come ahead 21.” The engineer initiated the shove movement and eventually, the conductor was struck from behind and killed.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

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?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

4

Radio communication, improper

Employee on or fouling track

Wednesday

12:55 PM

4:55

0

shoved

switch off power

yes

no

yard/flat/lead

yes

no

1

2

no

no

## No. 10 of 18: January 24, 1998 – BNSF – Omaha, NE

A ~~three-person~~ ~~three-person~~ switching crew was working in close proximity to another switching crew and, after some discussion, but no absolute understanding of the move just made by the other crew, began to pull down the switching lead. As they approached a mis-aligned switch, the foreman jumped off the moving locomotive, ran to the switch and was in the process of “flopping it over” when the leading wheels of the locomotive entered the switch, popped the handle up, striking the foreman in the face and killing him. Post accident testing indicated that drug impairment may have contributed to the fatality.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

### Drugs and Alcohol

Failure to comply with restricted speed

Poor inter-crew communications

Switch improperly lined

Impairment of efficiency or judgment because of drugs or alcohol

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?

Track Type:

Hit by Own Equipment?

Speed of Equipment (mph):

Had Deceased Worked There Before?

Crew Size:

Drugs Present?

Emergency Response Procedures Followed?

Saturday

10:15 AM

2:45

20

pulled

go to industry

yes

yard/flat/lead

no

9

yes

3

yes

yes

## No. 11 of 18: January 12, 1999 – CR – Port Newark, NJ

A ~~three person~~~~three-person~~ industry switching crew was in the process of switching cars back and forth over a private crossing equipped with an in-ground hand throw switch. The brakeman was at the switch and the conductor was going back and forth from one set of cars to another. The conductor shouted to the brakeman that he wanted the next move down one track but the cars started down the other. The brakeman tried to warn the conductor who had his back to the move and then stopped the move but to late to save the conductor who was hit and run over by the leading car of the shove.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

3, 4

Employee on or fouling track

Poor intra-crew communication about work in progress

Radio communication, improper

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

Switch improperly lined

Day of Week:

Tuesday

Time of Fatal Event:

1:03 AM

Time on Duty (hours: minutes):

9:04

Direction of Movement:

shoved/free-running

Crew's Next Move:

couple track

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

flat/lead/industrial

Hit by Own Equipment?

yes

Striking Train Within Rules?

no

Speed of Equipment (mph):

6

Deceased Regular Job?

no

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

## No. 12 of 18: January 22, 1999 – CR – Alexander, NY

A ~~three person~~~~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.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

### Environment

Employee falling from moving equipment

Snow, ice, mud, gravel, coal etc. on the track

Build up frozen material in flange way

Day of Week:

Friday

Time of Fatal Event:

6:19 PM

Time on Duty (hours: minutes):

6:49

Temperature (Fahrenheit):

35

Direction of Movement:

shoved

Crew's Next Move:

stop at switch

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

main/industrial

Hit by Own Equipment?

yes

Striking Train Within Rules?

no

Speed of Equipment (mph):

7

Deceased Regular Job?

no

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

## No. 13 of 18: January 02, 2000 – CIRR – Cedar Springs, GA

A ~~two-person~~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.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

### Environment

Shoving movement, man on or at leading end of movement, failure to control  
Failure to comply with restricted speed  
Impairment of efficiency or judgment because of drugs or alcohol  
Car(s) shoved out and left out of clear  
Did not have a lantern & no lighting at site

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Sunday  
4:20 AM  
0:50  
40  
shoved  
spot cars  
yes  
no  
yard/flat/classification  
yes  
no  
9  
yes  
2  
yes  
no  
yes

## No. 14 of 18: January 10, 2001 – CSX – Chicago, IL

Conductor with 14-months service was struck and killed by passing mainline train while attempting to board locomotive at crew-change point.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

5  
Employee on or fouling track  
Other extreme environmental condition  
Other miscellaneous causes  
Poor intra-crew communication about work in progress  
10" snow on the ground

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?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

Wednesday  
1:05 AM  
0:50  
33  
pulled  
depart  
yes  
yes  
main/siding  
no  
no  
27  
no  
3  
no  
no  
yes

## No. 15 of 18: January 11, 2001 – NS – South Fork, PA

The engineer and conductor of a road train were told to stop and check their locomotives for flat spots. Once stopped, and without a job briefing the locomotive engineer left the lead unit and shortly thereafter, was struck and killed by a passing mainline train.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:	3
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Failure to communicate unsafe condition
Possible Contributing Factor:	Damaged flange or tread

Day of Week:	Thursday
Time of Fatal Event:	2:37 AM
Time on Duty (hours: minutes):	3:17
Temperature (Fahrenheit):	20
Direction of Movement:	pulled
Crew's Next Move:	inspect flat spots on engine
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):	36
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

## No. 16 of 18: January 14, 2004 – NS – Kankakee, IL

*(Information preliminary pending review by SOFA Working Group.)*

A conductor, with 4-years service, was killed when struck by a train he was switching in Kankakee Yard.

## No. 17 of 18: January 10, 2005 – UP – Buena Vista, AR

*(Information preliminary pending review by SOFA Working Group.)*

A 53-year-old conductor was struck and killed by lite engines that were running down the main track to the head-end of his train, which was standing on the siding, to deliver a locomotive unit.

## No. 18 of 18: January 26, 2005 – PHL – Los Angeles, CA

*(Information preliminary pending review by SOFA Working Group.)*

A 52-year-old conductor was struck and killed by his own cut of cars when he lined switches, thought the cars were going to one track, turned his back, and the cars came down the track he was fouling.