

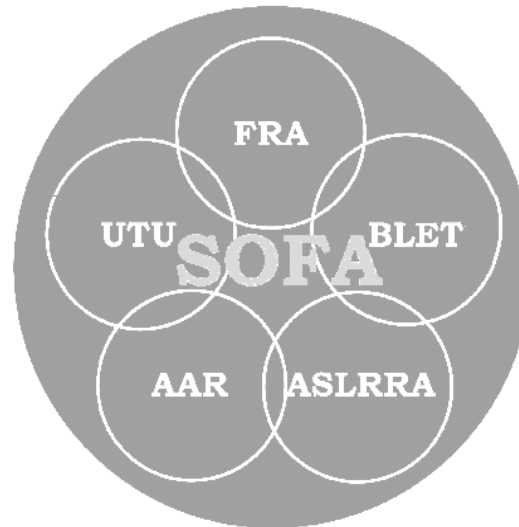
# PLEASE POST IMMEDIATELY

*Apply SOFA Operating Recommendations – Recognize Special Switching Hazards*

## Work Safely this Summer (...and All Career Long)

**Take the ‘Work Safely this Summer’ Test**  
47 Switching Fatalities have occurred since 1992 in the months of June, July, and August.

Test your knowledge about these events.  
*pages 3-4*



### **Summer Severe Injuries**

Learn about events associated with the 312 SOFA-defined Severe Injuries that occurred in June, July, and August from 1997 through 2007. *pages 11-14*

### **2008 Fatalities to-date**

# 6

- Jan 08:** Waukegan, IL
- Feb 03:** Chicago, IL
- Mar 05:** Random Lake, WI
- May 26:** Lumberton, NC
- May 29:** Amarillo, TX
- Jun 08:** Houston, TX

(preliminary summaries on page 2)

## **Switching Fatality and Severe Injury Update 2008 Second Quarter**

# Summaries of 2008 Switching Fatalities to-date

(based on preliminary information)

## **1. January 08 – UP – Waukegan, IL**

A UP conductor, working a METRA commuter train, was struck by another METRA commuter train while he was stooped over the crossover switch connecting the two main tracks located just South of the passenger station.

## **2. February 03 – NS – Chicago, IL**

A brakeman, working between cars in his train, stepped out from between two cars and into the path of a main track Canadian National train that was passing the stopped NS train.

## **3. March 05 – WSOR – Random Lake, WI**

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.

## **4. May 26 – CSX – Lumberton, NC**

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.

## **5. May 29 – UP – Amarillo, TX**

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.

## **6. June 08 – UP – Houston, TX**

A brakeman was lining switches ahead of a shove move during an industrial switching operation. The brakeman was directing the shove move via radio. Radio communication ceased, the conductor went back to check on the brakeman and found him dead within the gage of the rail.

# **‘Work Safely this Summer’ QUESTIONS**

- **How many Switching Fatalities have occurred in June, July, and August since 1992?**

a) 10      b) 20      c) 30      d) 47

- **What was the average age of the deceased with known ages?**

a) 26.5      b) 33.4      c) 39.9      d) 44.1

- **Which Summer month had the most Switching Fatalities?**

a) June      b) July      c) August

- **Which SOFA Operating Recommendation would have reduced risk in June at Henderson, KY?**

A two-person crew was switching an industry. The conductor had 11 months service with the railroad and, as the last move of the night, was to pull one car and set another in its place. As he set out the car and separated it from the car to go into the spot location, it began to roll away. He chased after it, tried to mount the end of the car with the handbrake and was killed when he slipped and fell under the car.

a) Rec. #1      b) Rec. #2      c) Rec. #3      d) Rec. #4      e) Rec. #5

- **How well does this July Fatality at Conlen Siding, TX, illustrate the risk of switching operations?**

A two-person crew was called to deadhead to a siding and bring the train that was there and tied down into the yard. Upon arrival at the train, the conductor began releasing handbrakes on the train and the engineer began releasing handbrakes and inspecting the four head end locomotives. An approaching 60 MPH mainline train whistled for a highway crossing at grade and the conductor stopped what he was doing and positioned himself to do a roll by train inspection. His engineer was killed when he was struck by the passing train as he stepped out from between two of his units and began walking adjacent to, and in the foul of, the main track.

a) somewhat      b) very much so

## **‘Work Safely this Summer’ QUESTIONS (continued)**

- **Which SOFA Operating Recommendation would have reduced risk in August at Elko, NV?**

Crew was switching in class yard. Helper was attempting to adjust the drawbar in order to couple to three cars about forty feet away that had not coupled the first time. While adjusting the drawbar, the helper did not notice the three free-rolling cars coming back in on him and the cars coupled him up.

- a) Rec. #1      b) Rec. #2      c) Rec. #3      d) Rec. #4      e) Rec. #5

- **Why have certain months since 1992 had more Switching Fatalities than others? For instance, there have been 21 Fatalities in December, 19 in January, and 19 in July. Compared to 8 in November, 9 in February, and 10 in March.**

- a) random variation  
b) not all factors influencing these tragic events are understood  
c) regardless, employees engaged in switching operations need to work safely at all times: Summer, Fall, Winter, Spring

- **312 SOFA-defined Severe Injuries have occurred from 1997 through 2007. What was the most frequent location of employees incurring these Injuries?**

- a) along side on-track equipment, on ground  
b) locomotive, in cab or on walkway  
c) car, on side of (railcar)  
d) track, beside  
e) *a* and *b*

- **What is the main reason to ‘Work Safely this Summer’?**

- a) when work is done, all should return safely    b) doing so contributes to a safe career    c) both

# 'Work Safely this Summer' ANSWERS

- How many Switching Fatalities have occurred in June, July, and August since 1992?

d) 47

- What was the average age of the deceased with known ages?

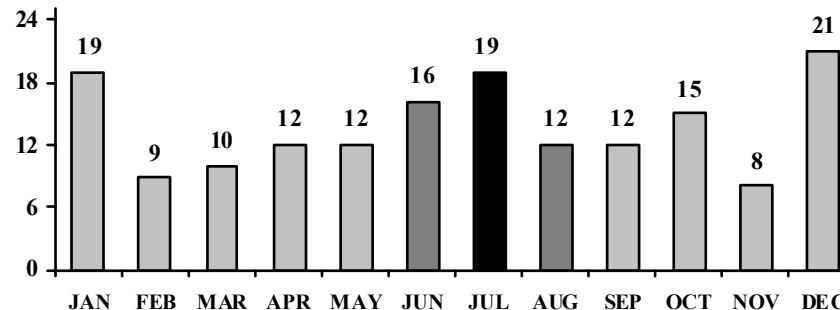
d) 44.1 years-old

- Which Summer month had the most Switching Fatalities?

b) July

**165 Switching Fatalities: January 1, 1992 through June 16, 2008**

**(Note: All months have risk for Switching Fatalities)**



- Which SOFA Operating Recommendation would have reduced risk in June at Henderson, KY?

e) Rec. #5

## ‘Work Safely this Summer’ ANSWERS (continued)

- How well does this July Fatality at Conlen Siding, TX, illustrate the risk of switching operations?
  - b) very much so

**Special Switching Hazard(s):**

Possible Contributing Factor:

External Circumstances:

**Struck by Mainline Trains**

Employee on or fouling track

Noise from FE’s locomotives

Day of Week:

Tuesday

Time of Fatal Event:

8:37 AM

Time on Duty (hours: minutes):

0:37

Direction of Movement:

pulled

Crew’s Next Move:

depart siding

Death Result of Train Movement?

yes

Other Movements Nearby?

yes

Track Type:

main/siding

Hit by Own Equipment?

no

Striking Train Within Rules?

yes

Speed of Equipment (mph):

60

Had Deceased Worked There Before?

yes

Crew Size:

2

Drugs Present?

no

Drugs a Factor?

no

- Which SOFA Operating Recommendation would have reduced risk in August at Elko, NV?

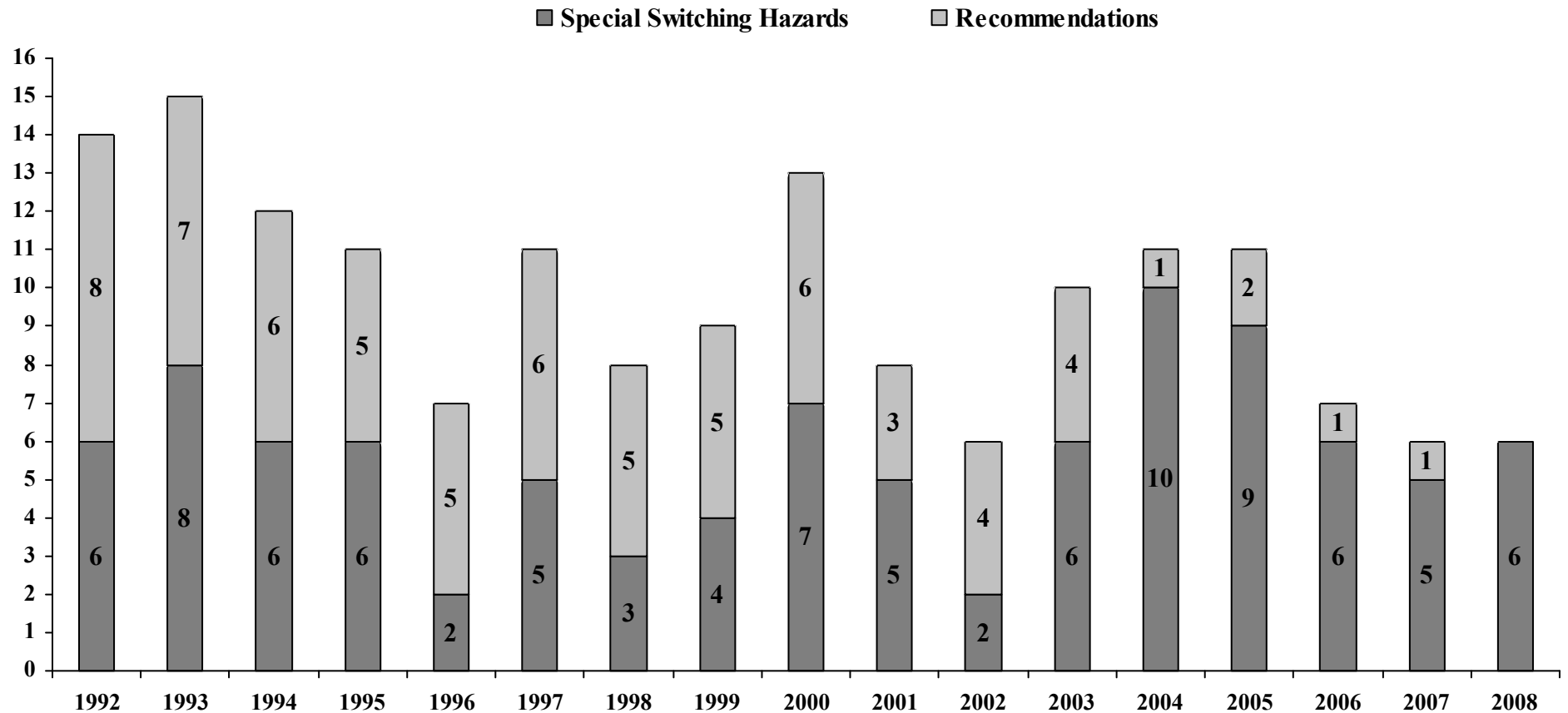
a) Rec. #1

## **‘Work Safely this Summer’ ANSWERS (continued)**

- **Why have certain months since 1992 had more Switching Fatalities than others? For instance, there have been 21 Fatalities in December, 19 in January, and 19 in a Summer month (a previous question). Compared to 8 in November, 9 in February, and 10 in March.**
  - c) regardless, employees engaged in switching operations need to work safely at all times: Summer, Fall, Winter, Spring
  
- **312 SOFA-defined Severe Injuries have occurred from 1997 through 2007. What was the most frequent location of employees incurring these Injuries?**
  - e) *along side on-track equipment, on ground; and locomotive, in cab or on walkway*  
  
*see chart on page 14: ‘312 SOFA-defined Severe Injuries in June, July, and August, 1992 through 2007 by Employee Location’*
  
- **What is the main reason to ‘Work Safely this Summer’?**
  - c) both: Working safely this Summer contributes to a safe career

## **Work Safely this Summer (...and All Career Long)**

## 165 Switching Fatalities Classified by Type: Involving Operating Recommendations; and Involving only Special Switching Hazards January 1, 1992 through June 16, 2008



**Note:** Starting in 2001, and more so by 2004, the composition of Switching Fatalities by type changes. Fatalities involving the Five SOFA Operating Recommendations decline relative to Fatalities involving only Special Switching Hazards.



## SOFA-defined Severe Injuries January 1992 through March 2008

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	total	average
<b>JAN</b>	11	13	16	15	21	12	11	11	20	10	14	14	168	14.0
<b>FEB</b>	17	15	9	9	9	13	17	14	10	6	15	12	146	12.2
<b>MAR</b>	14	12	17	11	10	10	13	10	9	9	11	5	131	10.9
subtotals	<b>42</b>	<b>40</b>	<b>42</b>	<b>35</b>	<b>40</b>	<b>35</b>	<b>41</b>	<b>35</b>	<b>39</b>	<b>25</b>	<b>40</b>	<b>31</b>		<b>37.1</b>
<b>APR</b>	8	10	6	10	12	6	9	13	10	7	8		99	9.0
<b>MAY</b>	6	12	8	8	12	14	9	6	6	8	3		92	8.4
<b>JUN</b>	9	10	8	11	8	5	10	9	7	11	5		93	8.5
<b>JUL</b>	9	14	10	8	10	7	6	10	5	12	8		99	9.0
<b>AUG</b>	13	10	11	14	8	10	7	14	10	10	13		120	10.9
<b>SEP</b>	10	11	15	10	20	12	5	4	9	6	10		112	10.2
<b>OCT</b>	12	12	16	10	5	11	9	7	11	5	11		109	9.9
<b>NOV</b>	12	9	12	11	13	14	10	10	13	8	6		118	10.7
<b>DEC</b>	18	9	7	22	12	9	8	15	12	8	6		126	11.5
<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>100</b>	<b>110</b>		<b>1,413</b>	

- **138.0**     **Severe Injuries per year on average: 1997 through 2001**
- **115.0**     **Severe Injuries per year on average: 2002 through 2007**
- **108**        **Severe Injuries in 2007: second lowest count in 11 years**
- **31**         **Severe Injuries in 2008, January through March: second lowest count in 12 years**

*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/1781> [accessed June 16, 2008]

# Amputations

## January 1992 through March 2008

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.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	total	average
<b>JAN</b>	1	0	2	1	0	0	2	2	2	0	1	1	12	1.0
<b>FEB</b>	0	1	0	1	0	2	1	2	0	2	1	0	10	0.8
<b>MAR</b>	3	4	3	2	1	1	3	1	2	1	0	1	22	1.8
subtotals	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>2</b>		<b>3.7</b>
<b>APR</b>	1	2	0	1	2	0	1	1	2	2	3		15	1.4
<b>MAY</b>	1	2	3	0	2	2	2	0	0	1	1		14	1.3
<b>JUN</b>	2	1	1	0	1	0	0	1	0	0	1		7	0.6
<b>JUL</b>	1	5	1	0	4	0	1	2	1	2	2		19	1.7
<b>AUG</b>	1	0	1	4	0	1	0	2	2	0	3		14	1.3
<b>SEP</b>	2	4	3	2	5	4	0	0	3	1	1		25	2.3
<b>OCT</b>	2	5	2	2	0	0	2	2	0	0	2		17	1.6
<b>NOV</b>	2	2	2	2	3	0	1	1	2	3	1		19	1.7
<b>DEC</b>	4	1	0	4	1	1	2	1	1	0	0		15	1.4
<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>12</b>	<b>16</b>	<b>189</b>		

- **20.6** Amputations per year on average: 1997 through 2001
- **13.6** Amputations per year on average: 2002 through 2007
- **16** Amputations in 2007: an increase of 4 from 2006; and higher than recent average
- **2** Amputations in 2008, January through March

## 312 SOFA-defined Severe Injuries in June, July, and August 1992 through 2007

### by Event

Event	Frequency	Percent	Cumulative Percent
slipped, fell, stumbled, other	51	16.35	16.35
slipped, fell, stumbled, etc. due to object	31	9.94	26.28
slipped, fell, stumbled, etc. due to irregular surface	27	8.65	34.94
lost balance	24	7.69	42.63
struck by on-track equipment	17	5.45	48.08
collision between on-track equipment	16	5.13	53.21
collision/impact-auto, truck, bus, van, etc.	11	3.53	56.73
highway-rail collision/impact	11	3.53	60.26
slack action, draft, compressive buff/coupling	11	3.53	63.78
exposure to chemicals-external	10	3.21	66.99
missed handhold, grabiron, step, etc.	9	2.88	69.87
struck against object	9	2.88	72.76
caught, crushed, pinched, other	8	2.56	75.32
struck by object	6	1.92	77.24
assaulted by other	5	1.60	78.85
derailments	5	1.60	80.45
other (describe in narrative)	5	1.60	82.05
stepped on object	5	1.60	83.65
sudden/unexpected movement of on track equipment	5	1.60	85.26
overexertion	4	1.28	86.54
slipped, fell, stumbled, etc. on oil, grease	4	1.28	87.82
bodily function/sudden movement, e.g., sneezing	3	0.96	88.78
caught in or crushed by materials	3	0.96	89.74
defective/malfunctioning equipment	3	0.96	90.71
other impacts-on track equipment	3	0.96	91.67
ran into object/equipment	3	0.96	92.63
slipped, fell, stumbled, etc. due to climatic condition	3	0.96	93.59
struck by falling object	3	0.96	94.55
caught between equipment	2	0.64	95.19
caught in or compressed by other machinery	2	0.64	95.83
pushed/shoved into/against	2	0.64	96.47
ran into on-track equipment	2	0.64	97.12
aggregated pre-existing condition	1	0.32	97.44
burned	1	0.32	97.76
caught in or compressed by hand tools	1	0.32	98.08
caught in or compressed by power hand tools	1	0.32	98.40
slack adjustment during switching operation	1	0.32	98.72
struck by own remote control locomotive controlled equipment	1	0.32	99.04
struck by thrown or propelled object	1	0.32	99.36
sudden release of air	1	0.32	99.68
sudden/unexpected movement of material	1	0.32	100.00

**312 SOFA-defined Severe Injuries in June, July, and August  
1992 through 2007**

**by Injury Cause**

<b>Injury Cause</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
human factor	155	49.84	49.84
undetermined	94	30.23	80.06
procedures for operating/using equipment not followed	22	7.07	87.14
equipment	11	3.54	90.68
environmental	7	2.25	92.93
human factor, unrelated to using RCL	4	1.29	94.21
track	4	1.29	95.50
trespassing	3	0.96	96.46
act of God	1	0.32	96.78
equipment, unrelated to using RCL	1	0.32	97.11
failure to provide adequate space between equipment during switching operation	1	0.32	97.43
human factor, related to using RCL	1	0.32	97.75
impairment, physical condition, e.g., fatigue	1	0.32	98.07
object fouling track	1	0.32	98.39
outside caused (e.g., assaulted/attacked)	1	0.32	98.71
procedures for operating/using equipment not followed, unrelated to using RCL	1	0.32	99.04
safety equipment not worn or in place	1	0.32	99.36
slack adjustment during switching operation	1	0.32	99.68
undetermined, unrelated to using RCL	1	0.32	100.00
<i>The cause of one Severe Injury was unavailable.</i>			
<i>Percentages were calculated based on 311 Severe Injuries.</i>			

**Work Safely this Summer (...and All Career Long)**

**312 SOFA-defined Severe Injuries in June, July, and August  
1992 through 2007**

**by Physical Act**

<b>Physical Act</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
walking	73	24.01	24.01
riding	59	19.41	43.42
getting off	33	10.86	54.28
stepping down	26	8.55	62.83
standing	12	3.95	66.78
operating	11	3.62	70.39
other	9	2.96	73.36
climbing over/on	7	2.30	75.66
jumping from	6	1.97	77.63
pulling pin lifter/uncoupling	5	1.64	79.28
stepping	5	1.64	80.92
coupling air hose	4	1.32	82.24
crossing over	4	1.32	83.55
getting on	4	1.32	84.87
handling other	4	1.32	86.18
lining switches	4	1.32	87.50
adjusting, other	3	0.99	88.49
closing	3	0.99	89.47
handbrakes, applying	3	0.99	90.46
inspecting	3	0.99	91.45
opening	3	0.99	92.43
sitting	3	0.99	93.42
adjusting coupler	2	0.66	94.08
crossing between	2	0.66	94.74
handbrakes, releasing	2	0.66	95.39
reaching	2	0.66	96.05
cutting vegetation	1	0.33	96.38
derail, removing	1	0.33	96.71
driving (vehicle, forklift, etc.)	1	0.33	97.04
handling tie plates	1	0.33	97.37
installing	1	0.33	97.70
jumping onto	1	0.33	98.03
maintaining	1	0.33	98.36
opening/closing angle cock	1	0.33	98.68
pulling	1	0.33	99.01
pushing	1	0.33	99.34
running	1	0.33	99.67
stepping over	1	0.33	100.00
<i>The physical acts for 8 Severe Injury were unavailable. Percentages were calculated based on 304 Severe Injuries.</i>			

**312 SOFA-defined Severe Injuries in June, July, and August  
1992 through 2007**

**by Line**

<b>Line</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
YARD	147	47.12	47.12
MAIN/BRANCH	93	29.81	76.92
INDUSTRY	40	12.82	89.74
SIDING	17	5.45	95.19
HIGHWAY/ROADWAY	9	2.88	98.08
OTHER	3	0.96	99.04
PASSENGER TERMINAL	3	0.96	100.00

**312 SOFA-defined Severe Injuries in June, July, and August  
1992 through 2007**

**by Employee Location**

<b>Employee Location</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
alongside of on-track equipment - on ground	63	20.19	20.19
locomotive, in cab or on walkways	63	20.19	40.38
car, on side of (rail car)	42	13.46	53.85
track, beside	33	10.58	64.42
car, on end of (rail car)	24	7.69	72.12
locomotive, other location	15	4.81	76.92
between cars/locomotives	11	3.53	80.45
track, between	11	3.53	83.97
at work station	7	2.24	86.22
on highway-rail crossing	7	2.24	88.46
on ladder	7	2.24	90.71
in/operating vehicle	6	1.92	92.63
track, on	6	1.92	94.55
on stairs	5	1.60	96.15
car, in (rail car)	4	1.28	97.44
on platform	4	1.28	98.72
on bridge/trestle	2	0.64	99.36
on escalator	1	0.32	99.68
on other rail crossing	1	0.32	100.00

# Switching Fatality Review Section

**This section contains:**

- **Switching Fatality Cases for Review: June, July, and August.** 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.

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 the American economy.

SOFA reports, including a complete discussion of the Five Operating Recommendations and Special Switching Hazards, are available at: <http://www.fra.dot.gov/us/content/1781> [accessed June 16, 2008]

## **Work Safely this Summer (...and All Career Long)**

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

# 16 June Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	06/01/92	ATSF	Escondido, CA	58	29	road conductor	climbing over/on	between cars/loc	sudden/unexpected movement of on-track equipment	4	
2	06/01/92	BN	Seattle, WA	42	22	yard brakeman	riding	on end of car	collision between on-track equipment		<b>Employee Tripping and Unsecured Cars</b>
3	06/02/92	IHRC	Henderson, KY	52	23	road conductor	running	on track	struck by on-track equipment	5	
4	06/20/92	CNW	Northlake, IL	42	15	yard conductor	adjusting coupler	on track	defective/malfunctioning equipment	1	
5	06/04/93	SEPTA	Devon, PA	29	6	road pass engineer	standing	in/on loc	lost balance		<b>Miscellaneous (falling)</b>
6	06/07/93	IC	Fulton, KY	49	20	yard brakeman	standing	on track	sudden/unexpected movement of on-track equipment	3	
7	06/15/96	CSX	Charlotte, NC	36	1	yard brakeman	standing	near on-track equip-on ground	pushed/shoved into/against	5	
8	06/06/97	CMRC	Bay City, MI	50	7	road conductor	riding	on end of car	collision between on-track equipment	4	
9	06/24/97	UP	Portland, OR	53	28	yard conductor	walking	near on-track equip-on ground	struck by on-track equipment		<b>Employee Tripping</b>
10	06/24/97	NS	Rowesville, SC	21	2.5	road conductor	walking	on track	struck by on-track equipment		<b>Unexpected Movement of Railcars</b>
11	06/01/98	BNSF	Lubbock, TX	24	0.83	yard conductor	riding	other location on loc	collision between on-track equipment	2, 5	
12	06/05/98	NS	Hapeville, GA	48	27	yard conductor	adjusting coupler	between tracks	collision between on-track equipment	1	
13	06/23/99	UP	Redding, CA	57	35	road conductor	standing	on track	struck by on-track equipment	1, 4	
14	06/16/02	BNSF	Memphis, TN	20	1.5	yard conductor	handbrakes, applying	between cars/loc	struck by on-track equipment	1, 3, 5	
15	06/06/03	CSXT	Kingsport, TN	35	3	road brakemen	riding	on side of car	collision/impact-auto, truck, bus, van, etc.		<b>Struck by Motor Vehicle</b>
16	06/08/08	UP	Houston, TX	n/a	n/a	(based on preliminary information)					<b>Special Switching Hazard</b>



# June Switching Fatalities

## No. 1 of 16: June 01, 1992 – ATSF – Escondido, CA

Brakeman had control of the move and told the engineer, by radio, to back up six cars to a coupling. The brakeman assumed that the conductor would “pick-up” the move when it came into his (the conductor’s) view. The movement continued until it struck sitting cars on the track which, when moved, killed the conductor who was in between them.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Radio communication, failure to comply
Possible Contributing Factor:	Shoving movement, absence of a man on or at leading end of movement
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Day of Week:	Monday
Time of Fatal Event:	1:05 PM
Time on Duty (hours: minutes):	6:05
Direction of Movement:	free-running
Crew’s Next Move:	couple to car
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	industrial
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
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. 2 of 16: June 01, 1992 – BN – Seattle, WA

A four-person crew (engineer, switch foreman, 2 switchmen) had 3 cars with them when they coupled onto 56 cars standing on a yard track. They were told to pull the head 16 cars and leave the remaining 40 there. They were also told that the 16 had been separated from the remaining 40. The crew pulled the 19 cars out of the track and per radio instructions from the switchman, began a shove into another track. As the movement entered the track it was struck by the 40 car cut that had been left on the first track. The switchman died falling from the cars while getting on and off the free rolling cut to set hand brakes in an attempt to stop them.

<b>Special Switching Hazard(s):</b>	<b>Employee Tripping and Unsecured Cars</b>
Possible Contributing Factor:	Failure to properly secure hand brake on car(s) railroad employee
Possible Contributing Factor:	Failure to communicate unsafe condition
External Circumstances:	Poor operating practices
Day of Week:	Monday
Time of Fatal Event:	4:15 PM
Time on Duty (hours: minutes):	0:45
Temperature (Fahrenheit):	66
Direction of Movement:	free-running
Crew’s Next Move:	shove to clear
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	5
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 3 of 16: June 02, 1992 – IHRC – Henderson, KY**

A two-person crew was switching an industry. The conductor had 11 months service with the railroad and, as the last move of the night, was to pull one car and set another in its place. As he set out the car and separated it from the car to go into the spot location, it began to roll away. He chased after it, tried to mount the end of the car with the handbrake and was killed when he slipped and fell under the car.

<b>SOFA Operating Recommendation(s):</b>	<b>5</b>
Possible Contributing Factor:	Failure to properly secure hand brake on car(s) railroad employee
Possible Contributing Factor:	Employee on or fouling track
Day of Week:	Tuesday
Time of Fatal Event:	5:55 AM
Time on Duty (hours: minutes):	10:25
Direction of Movement:	free-running
Crew's Next Move:	spot car
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	industrial/outside
Hit by Own Equipment?	yes
Speed of Equipment (mph):	1
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 4 of 16: June 20, 1992 – CNW – Northlake, IL**

Crew was in the process of coupling cars together in a class track. Standing equipment was not properly secured before conductor fouled the track to adjust couplers and the equipment rolled back in and coupled him up.

<b>SOFA Operating Recommendation(s):</b>	<b>1</b>
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Failure to couple
Possible Contributing Factor:	Passed couplers
External Circumstances:	Close or no clearance
Day of Week:	Saturday
Time of Fatal Event:	11:45 AM
Time on Duty (hours: minutes):	7:45
Temperature (Fahrenheit):	54
Direction of Movement:	free-running
Crew's Next Move:	couple track
Death Result of Train Movement?	yes
Track Type:	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. 5 of 16: June 04, 1993 – SEPTA – Devon, PA**

A commuter train locomotive engineer fell from the operating compartment of the train he was operating while it was moving. Two minutes before he fell speed had been reduced from 61 to 51 MPH.

<b>Special Switching Hazard(s):</b>	<b>Miscellaneous (falling)</b>
Possible Contributing Factor:	Possible electric door control system
Day of Week:	Friday
Time of Fatal Event:	11:25 PM
Time on Duty (hours: minutes):	8:10
Temperature (Fahrenheit):	70
Direction of Movement:	pulled
Crew's Next Move:	stop at station
Death Result of Train Movement?	yes
Track Type:	main
Hit by Own Equipment?	no
Speed of Equipment (mph):	51
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 6 of 16: June 07, 1993 – IC – Fulton, KY**

Crew performing switching duties in class yard failed to have a clear understanding of movements being made. Results were that the rear brakeman was run over by moving equipment. There were no witnesses, but a hand brake was applied. It was thought that the brakeman had gone between the equipment on the ground to release the low hand brake.

<b>SOFA Operating Recommendation(s):</b>	<b>3</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Poor intra-crew communication about work in progress
External Circumstances:	X-car-/Ilist chng
Day of Week:	Monday
Time of Fatal Event:	11:55 AM
Time on Duty (hours: minutes):	4:25
Temperature (Fahrenheit):	87
Direction of Movement:	free-running
Crew's Next Move:	switch cars
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 7 of 16: June 15, 1996 – CSX – Charlotte, NC**

Yard crew, engineer, conductor and switchman, switching at an industry. While crew was shoving two cars to a spot inside an industry building, FE (switchman) was rolled between lead box car and unloading platform. Platform or building was not marked with any type of 'no-clearance' or 'close clearance' signage. FE was last seen by the conductor on the ground next to movement in a 'cut-out' space in the unloading platform. The conductor reported that there is enough room for a man to clear the movement in this 'cut-out'. After hearing a strange noise the conductor instructed engineer to stop the movement. FE was rolled for 21 feet between boxcar and platform. FE had one year of experience.

<b>SOFA Operating Recommendation(s):</b>	<b>5</b>
Possible Contributing Factor:	Failure to remain clear of moving equipment
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Design and location of dock ladder
Day of Week:	Wednesday
Time of Fatal Event:	8:30 AM
Time on Duty (hours: minutes):	8:30
Temperature (Fahrenheit):	50
Direction of Movement:	shoved
Crew's Next Move:	spot car
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	inside
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	3
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 8 of 16: June 06, 1997 – CMRC – Bay City, MI**

Conductor began a move using radio communication to shove a cut of cars approximately twenty-five car lengths to a coupling. After the move had begun the engineer didn't hear another radio transmission from his conductor. The shove move eventually collided with the cars that were to be coupled to. The conductor was crushed in the collision and it was later determined that the portable radio being used by the conductor may have lost enough of its charge to effect the transmission.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Radio communication, failure to comply
Possible Contributing Factor:	Radio communication, equipment failure
External Circumstances:	Radio failure
Day of Week:	Friday
Time of Fatal Event:	9:35 PM
Temperature (Fahrenheit):	76
Direction of Movement:	shoved
Crew's Next Move:	coupling
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	7
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no

**No. 9 of 16: June 24, 1997 – UP – Portland, OR**

A three-person yard switching crew was in the process of pulling a five car articulated cut of cars from out of one track with the intent of moving them to another. The yard foreman was killed when he was run over by the leading wheels of the trailing car. It appears that the foreman tried to release a hand brake at the trailing end of the second to the last car and while attempting to do so, stumbled, fell and was run over by the trailing car.

**Special Switching Hazard(s):**

Possible Contributing Factor:  
Possible Contributing Factor:

**Employee Tripping**

Failure to release hand brakes on car(s)  
Employee on or fouling track

Day of Week:	Tuesday
Time of Fatal Event:	4:30 AM
Time on Duty (hours: minutes):	4:31
Temperature (Fahrenheit):	52
Direction of Movement:	pulled
Crew's Next Move:	back to coupling
Death Result of Train Movement?	yes
Track Type:	yard/flat/lead
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	5
Had Deceased Worked There Before?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 10 of 16: June 24, 1997 – NS – Rowesville, SC**

The engineer and conductor of a local road switcher were reassembling their train at a siding halfway through their work assignment. After running around the inbound cars, making a couple of switches to line up their train for the return trip, the conductor tied the EOT device onto the rear car, came back to the switch, and told the engineer to back up five cars. The engineer did not get any other radio instructions after three cars and stopped. The conductor was found dead having been run over by the leading car and not having reversed the siding switch as he had intended to do.

**Special Switching Hazard(s):**

Possible Contributing Factor:

**Unexpected Movement of Railcars**

Switch improperly lined

Day of Week:	Tuesday
Time of Fatal Event:	8:58 PM
Time on Duty (hours: minutes):	0:00
Temperature (Fahrenheit):	80
Direction of Movement:	shoved
Crew's Next Move:	make cut
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	siding
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	8
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no

**No.11 of 16: June 01, 1998 – BNSF – Lubbock, TX**

Two yard engines working on adjacent tracks. One left a car fouling a clear track being used by the other engine. The foreman directing the shove move of the lite locomotives was crushed when his engine consist cornered the car fouling the adjacent track.

<b>SOFA Operating Recommendation(s):</b>	<b>2, 5</b>
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Possible Contributing Factor:	Car left afoul
Possible Contributing Factor:	Insufficient training
Day of Week:	Monday
Time of Fatal Event:	12:30 PM
Time on Duty (hours: minutes):	10:00
Temperature (Fahrenheit):	72
Crew's Next Move:	run around yard
Track Type:	yard/flat/lead
Hit by Own Equipment?	no
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. 12 of 16: June 05, 1998 – NS – Hapeville, GA**

A three-person crew was performing industrial switching using a runaround track, the yard foreman was attempting to couple up two super-cushion boxcars in a curve with power attached in a shove movement. Drawbars bypassed and yard foreman was crushed between the ends of the two cars.

<b>SOFA Operating Recommendation(s):</b>	<b>1</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Long drawbar, auto parts car
Possible Contributing Factor:	Failure to couple
External Circumstances:	No devise to asst. aligning drawbar
Day of Week:	Friday
Time of Fatal Event:	6:40 AM
Time on Duty (hours: minutes):	6:41
Direction of Movement:	shoved
Crew's Next Move:	spot car
Death Result of Train Movement?	yes
Track Type:	yard/lead/industrial
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. 13 of 16: June 23, 1999 – UP – Redding, CA**

A three-person switching crew was shoving a cut of cars down a track with the intent of coupling to another cut that was sitting in the track. It was hard to shove the cars and the conductor told the brakeman to look for closed angle cocks. The brakeman found a closed angle cock when the shove move was within two car lengths of a coupling and opened it. The conductor was crushed and killed between the leading car of the shove and the head car to be coupled to when the shove move unintentionally accelerated just prior to coupling.

<b>SOFA Operating Recommendation(s):</b>	<b>1, 4</b>
Possible Contributing Factor:	Radio communication, failure to comply
Possible Contributing Factor:	Improper train inspection
Possible Contributing Factor:	Failure to allow air brakes to fully release before preceding
Possible Contributing Factor:	Excessive horsepower
External Circumstances:	Closed angle cock
Day of Week:	Wednesday
Time of Fatal Event:	11:00 AM
Time on Duty (hours: minutes):	6:00
Temperature (Fahrenheit):	90
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/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	2
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 14 of 16: June 16, 2002 – BNSF – Memphis, TN**

A yard foreman, with 18-months of service, along with his helper, engineer and a utility employee had just finished making up a train in the yard. However, the crossover from the track on which the train had been made had to be cut. This last minute instruction led to an increased level of conversation among the crew, yard foreman, utility employee and the yardmaster. The yard foreman jumped on an ATV, rode it to the cut point, separated the train; and, when the cut not attached to the locomotive rolled, he was caught between the two sections of the train and killed.

<b>SOFA Operating Recommendation(s):</b>	<b>1, 3, 5</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Slack action
Possible Contributing Factor:	Use of brakes, other
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Day of Week:	Sunday
Time of Fatal Event:	3:15 PM
Time on Duty (hours: minutes):	7:16
Temperature (Fahrenheit):	94
Direction of Movement:	shoved
Crew's Next Move:	clear cross-over
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/receiving dept
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
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. 15 of 16: June 06, 2003 – CSX – Kingsport, TN

A three-person industrial switching crew was shoving one car on a track that ran down the middle of a two-lane road and that was located in an industrial area. The conductor was riding on one side of the car and the brakeman was riding on the other. As the move approached a standing eighteen-wheel truck awaiting permission to back into the same area that the railroad was servicing, the driver began to back up, jack-knifed the trailer, and struck the brakeman crushing him between the truck box and the car he was riding.

#### 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 Motor Vehicle

Highway user inattentiveness

Interference (other the vandalism) with railroad operations by non-railroad employee

Jack-knifed positioned truck ran into side of lead car in shove move

Friday

8:25 AM

1:25

65

shoved

exit industry lead shoving one car

yes

no

industrial

no

no

1

yes

3

no

no

yes

### No. 16 of 16: June 08, 2008 – UP – Houston, TX

A brakeman was lining switches ahead of a shove move during an industrial switching operation. The brakeman was directing the shove move via radio. Radio communication ceased, the conductor went back to check on the brakeman and found him dead within the gage of the rail.

## Work Safely this Summer (...and All Career Long)

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards



## 19 July Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	07/07/92	SSW	Conlen Siding, TX	58	12	road engineer	walking	between tracks	struck by on-track equipment		Struck by Mainline Trains
2	07/24/92	GBW	Wisconsin Rapids, WI	34	13	road brakemen	coupling air hose	on track	struck by on-track equipment	2, 3	
3	07/25/92	UP	Portland, OR	54	28	road brakemen	walking	between tracks	struck by on-track equipment	4	
4	07/15/93	CR	Anderson, IN	43	25	yard brakeman	coupling air hose	on track	struck by on-track equipment	4	
5	07/05/94	BN	Essex, MT	59	35	road brakemen	operating	between cars/loc	crushed while operating		Free-Rolling Railcars
6	07/21/95	CR	Hershey, PA	61	40	yard conductor	riding	between cars/loc	fell from equipment		Employee Tripping
7	07/07/96	NS	Sidney, IN	29	1	yard conductor	standing	on track	struck by on-track equipment	5	
8	07/18/97	MNCW	Stamford, CT	40	7.58	road conductor	flagging	on track	struck by on-track equipment		Struck by Mainline Trains
9	07/01/98	NS	Buechel, KY	54	30	misc.	riding	on side of car	rolled between car a		Close Clearance
10	07/07/00	CKRY	Wichita, KS	39	19	road conductor	adjusting coupler	on track	struck by on-track equipment	1	

(Continued on next page)

## 19 July Switching Fatalities (continued)

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard	
11	07/24/00	PARN	Skagway, AK	55	22	yard conductor	walking	on track	struck by on-track equipment	4		
12	07/28/00	UP	St. Louis, MO	48	27	yard brakeman	walking	near on-track equip-on ground	other impacts-on track equipment		Close Clearance	
13	07/13/01	CPRS	Bensenville, IL	55	32	yard conductor	riding	on side of car	collision between on-track equipment		Free-Rolling Railcars	
14	07/16/02	NS	Bonlee, NC	55	34	road conductor	standing	in/on loc	collision between on-track equipment	4		
15	07/05/05	BNSF	Emporia, KS	26	6 months	(based on preliminary information)						Special Switching Hazard
16	07/18/05	UP	Memphis, TN	n/a.	n/a	(based on preliminary information)						Special Switching Hazard
17	07/22/05	ATRR	Ragland, AL	n/a	n/a	(based on preliminary information)						Special Switching Hazard
18	07/08/07	BNSF	Berry, AZ	37	n/a	(based on preliminary information)						Special Switching Hazard
19	07/27/07	CN	Fulton, KY	46	n/a	(based on preliminary information)						Special Switching Hazard

# July Switching Fatalities

## No. 1 of 19: July 07, 1992 – SSW – Conlen Siding, TX

A two-person crew was called to deadhead to a siding and bring the train that was there and tied down into the yard. Upon arrival at the train, the conductor began releasing handbrakes on the train and the engineer began releasing handbrakes and inspecting the four head end locomotives. An approaching 60 MPH mainline train whistled for a highway crossing at grade and the conductor stopped what he was doing and positioned himself to do a roll by train inspection. His engineer was killed when he was struck by the passing train as he stepped out from between two of his units and began walking adjacent to, and in the foul of, the main track.

### Special Switching Hazard(s):

Possible Contributing Factor:  
External Circumstances:

### Struck by Mainline Trains

Employee on or fouling track  
Noise from FE's locomotives

Day of Week:	Tuesday
Time of Fatal Event:	8:37 AM
Time on Duty (hours: minutes):	0:37
Direction of Movement:	pulled
Crew's Next Move:	depart siding
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	main/siding
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	60
Had Deceased Worked There Before?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no

## No. 2 of 19: July 24, 1992 – GBW – Wisconsin Rapids, WI

The road job's brakeman was trying to help the switch crew make up his train. The brakeman was in between cars on an active track being used by the switch crew and was killed when the cars he was between moved upon being struck by a cut of free rolling cars.

### SOFA Operating Recommendation(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

**2, 3**

Employee on or fouling track  
Employee's radio harness strap caught equipment  
Improper mingling of crews members

Day of Week:	Thursday
Time of Fatal Event:	12:40 AM
Time on Duty (hours: minutes):	3:40
Temperature (Fahrenheit):	50
Direction of Movement:	free-running
Death Result of Train Movement?	yes
Track Type:	yard/classification
Hit by Own Equipment?	no
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. 3 of 19: July 25, 1992 – UP – Portland, OR**

A three-person crew had arrived at the yard, pulled their train into a track, cut off the engines and were given permission to return to the other end of the yard via an adjacent clear track. The conductor remained on the end originally entered and the brakeman stayed with the engineer. The brakeman got what he thought was the proper switch, instructed the engineer by radio to back up and, apparently turned his back on the move. Before the brakeman had a chance to mount the returning locomotives, he was struck and killed by the movement that continued for 400 feet before stopping when the engineer noticed the brakeman between the gauge of the rail in front of the locomotives.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Engineer didn't change ends
Day of Week:	Saturday
Time of Fatal Event:	11:40 AM
Time on Duty (hours: minutes):	4:40
Temperature (Fahrenheit):	76
Direction of Movement:	shoved
Crew's Next Move:	return to other end of yard
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/receiving /dept
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	3
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 4 of 19: July 15, 1993 – CR – Anderson, IN**

After the brakeman had tied the locomotives onto a cut of cars in the yard, the engineer received an instruction, via radio, from the brakeman to "shove to hold more cars." The engineer began to shove and didn't stop until he was on the other end of the track. The brakeman was run over by the shove move. There was no evidence of any other radio transmissions concerning the shove move.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Employee falling from moving equipment
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Radio communication, improper
Day of Week:	Thursday
Time of Fatal Event:	5:25 PM
Time on Duty (hours: minutes):	1:25
Temperature (Fahrenheit):	75
Direction of Movement:	shoved
Crew's Next Move:	CO engine
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):	4
Deceased Regular Job?	no
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 5 of 19: July 05, 1994 – BN – Essex, MT**

A three-person work train crew was in the process of dropping 14 cars they thought were empty into a quarry-loading track. The brakeman was riding the leading and brake end of the car. As the cars were separated from the engine, he set the high brake on the car he was riding. However, because there were residual materials in many of the cars, the weight added momentum to the cars and the brakeman got off and back on between two other cars in an attempt to set more hand brakes. When the cut of cars collided with a ballast pile, used as a bumping post, that was located at the end of the track, he was crushed to death between the two cars he was trying to apply hand brakes.

**Special Switching Hazard(s):**

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

**Free-Rolling Railcars**

Failure to control speed of car using hand brake

Crew thought they had 14 empties, had 5 partial loads - extra 52 tons

Failure to test hand brake

Day of Week:

Tuesday

Time of Fatal Event:

4:45 PM

Time on Duty (hours: minutes):

9:45

Temperature (Fahrenheit):

76

Direction of Movement:

free-running

Crew's Next Move:

stop the drop

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

industrial/spot(load/unload)/outside/stub track

Hit by Own Equipment?

yes

Striking Train Within Rules?

no

Speed of Equipment (mph):

10

Deceased Regular Job?

yes

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

## **Work Safely this Summer (...and All Career Long)**

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

**No. 6 of 19: July 21, 1995 – CR – Hershey, PA**

A three-person crew was switching an industry. The conductor had directed a few switching moves and then instructed the engineer to haul out of the plant. The conductor was observed by a plant employee riding on the trailing end of the first of two tank cars being pulled out of the plant. Moments later the conductor fell between the cars and was killed when he was run over by the trailing car in the two car move.

**Special Switching Hazard(s):**

Possible Contributing Factor:

**Employee Tripping**

Employee falling from moving equipment

Day of Week:	Friday
Time of Fatal Event:	9:10 AM
Time on Duty (hours: minutes):	3:10
Temperature (Fahrenheit):	80
Direction of Movement:	pulled
Crew's Next Move:	set out cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	industrial/spot/(load/unload)/outside
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	3
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 7 of 19: July 07, 1996 – NS – Sidney, IN**

Road crew, engineer and conductor, while stopped on siding track to meet an opposing train, FE (conductor) detrained to perform a roll-by inspection of other train. FE stepped off his train shortly before opposing trains arrival then stood in that trains track while trying to adjust his portable radio. Opposing train struck FE at this point. FE had one year of experience.

**SOFA Operating Recommendation(s):**

Possible Contributing Factor:

Possible Contributing Factor:

**5**

Employee on or fouling track

Metal stress over physical exam/lack of sleep

Day of Week:	Sunday
Time of Fatal Event:	1:08 AM
Time on Duty (hours: minutes):	5:08
Temperature (Fahrenheit):	75
Direction of Movement:	pulled
Crew's Next Move:	meet 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):	38
Deceased Regular Job?	yes
Had Deceased Worked There Before?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 8 of 19: July 18, 1997 – MNCW – Stamford, CT**

A conductor/flagman was assigned to protect contractor workers that were installing construction poles near a passenger station platform. To better observe the work, the conductor/flagman placed himself within the gauge of a “live” main track and was struck and killed by a passing train.

**Special Switching Hazard(s):**

**Struck by Mainline Trains**

Possible Contributing Factor:

Employee on or fouling track

Day of Week:	Friday
Time of Fatal Event:	1:29 AM
Time on Duty (hours: minutes):	0:00
Temperature (Fahrenheit):	75
Direction of Movement:	pulled
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	38
Crew Size:	1
Drugs Present?	no
Drugs a Factor?	no

**No. 9 of 19: July 01, 1998 – NS – Buechel, KY**

A three-person local switching crew (conductor, engineer and utility employee) had just begun to pull five cars out of an industrial loading dock while the conductor and the utility employee began to walk toward the door providing egress out of the dock area. Suddenly, according to the conductor, the utility employee allegedly tripped on some material on the dock, grabbed the side of the outgoing cut of cars and was pulled between the car he was holding onto and the handrail structure that accompanied the stairs leading from the platform to the door. He died two weeks later.

**Special Switching Hazard(s):**

**Close Clearance**

Possible Contributing Factor:

Poor intra-crew communication about work in progress

Possible Contributing Factor:

Close or no clearance

External Circumstances:

Illegal handrail

Day of Week:	Wednesday
Time of Fatal Event:	2:50 AM
Time on Duty (hours: minutes):	2:51
Temperature (Fahrenheit):	74
Direction of Movement:	pulled
Crew's Next Move:	switch cars
Death Result of Train Movement?	yes
Track Type:	industrial/spot(load/unload)/inside
Speed of Equipment (mph):	3
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 10 of 19: July 07, 2000 – CKRY – Wichita, KS**

Employee was struck by his own train when he tripped and fell onto the rail as he stepped in between moving equipment to open a knuckle while walking backwards.

<b>SOFA Operating Recommendation(s):</b>	<b>1</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Other general switching rules
Day of Week:	Friday
Time of Fatal Event:	9:55 AM
Time on Duty (hours: minutes):	15:00
Direction of Movement:	shoved
Crew's Next Move:	couple to track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main/yard/flat/lead
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	2
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 11 of 19: July 24, 2000 – PARN – Skagway, AK**

A two-person yard switching crew was in the process of moving their light locomotives to a track where it was to be stored for the night. The conductor was on the leading end of the unit and directing the move by radio communication. After instructing the engineer to stop, the conductor got off the locomotive, lined two switches and told the engineer to back up. The engineer backed up until he placed the unit at the location where it is always left without further radio contact from his conductor. The conductor was struck and killed by the locomotive and found, by the engineer, under the locomotive's fuel tanks.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Radio communication, improper
Day of Week:	Monday
Time of Fatal Event:	12:15 PM
Time on Duty (hours: minutes):	6:15
Temperature (Fahrenheit):	52
Direction of Movement:	pulled
Crew's Next Move:	tie up
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/service
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	5
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes



**No. 12 of 19: July 28, 2000 – UP – St. Louis, MO**

A three-person local switching crew was in the process of setting cars into a track within an industry. The switchman was riding the side ladder of the leading end of the leading car as it went into the building. The doorway would not clear a man riding on the side of the car and the trainman was killed as he was compressed between it and the car he was riding.

**Special Switching Hazard(s):**

Possible Contributing Factor:

Possible Contributing Factor:

**Close Clearance**

Close or no clearance

Failure to communicate unsafe condition

Day of Week:

Friday

Time of Fatal Event:

8:45 AM

Time on Duty (hours: minutes):

9:15

Direction of Movement:

shoved

Crew's Next Move:

spot cars

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

industrial/spot(load/unload)/inside

Hit by Own Equipment?

yes

Striking Train Within Rules?

yes

Speed of Equipment (mph):

3

Deceased Regular Job?

yes

Crew Size:

4

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

**No. 13 of 19: July 13, 2001 – CPRS – Bensenville, IL**

The three-person crew had just finished kicking a flat car into a clear track and the conductor was about to mount the leading end of a cut of cars to be kicked into another track further down the lead. As the conductor issued instructions to the engineer to begin the move, and to the crew, the flat car had not cleared the fouling point to the lead. The shove move rode up onto the flat car derailing the car the conductor was riding on which crushed him to death.

**Special Switching Hazard(s):**

Possible Contributing Factor:

Possible Contributing Factor:

**Free-Rolling Railcars**

Car left afoul

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

Possible Contributing Factor:

Other miscellaneous causes

External Circumstances:

Location of pile of cross ties

Day of Week:

Friday

Time of Fatal Event:

11:10 PM

Time on Duty (hours: minutes):

8:10

Temperature (Fahrenheit):

69

Direction of Movement:

shoved

Crew's Next Move:

line switch

Death Result of Train Movement?

yes

Other Movements Nearby?

no

Track Type:

yard/classification

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. 14 of 19: July 16, 2002 – NS – Bonlee, NC**

While shoving lite engines back to train on mainline, employees failed to control the movement by radio, resulting in a collision with a standing train.

<b>SOFA Operating Recommendation(s):</b>	<b>4</b>
Possible Contributing Factor:	Radio communication, failure to give/receive
Possible Contributing Factor:	Other causes relating to train handling or makeup
Possible Contributing Factor:	Radio communication, failure to comply
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Day of Week:	Tuesday
Time of Fatal Event:	11:59 AM
Time on Duty (hours: minutes):	5:59
Temperature (Fahrenheit):	85
Direction of Movement:	shoved
Crew's Next Move:	couple
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):	13
Deceased Regular Job?	yes
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 15 of 19: July 5, 2005 □ BNSF □ Emporia, KS**

(based on preliminary information)

A 26-year-old trainman, with six months experience, was crushed when the car he was riding during a shove move impacted a standing cut of cars.

**No. 16 of 19: July 18, 2005 □ UP □ Memphis, TN**

(based on preliminary information)

A conductor died when the car he was riding on the point of a shove move was struck at a private crossing by a semi-tractor trailer truck at an industrial location.

**No. 17 of 19: July 22, 2005 □ ATRR □ Ragland, AL**

(based on preliminary information)

An Alabama & Tennessee Railway Company conductor died when crushed against a wall when the car he was riding on the point of a shove move was derailed.

**No. 18 of 19: July 8, 2007 □ BNSF □ Berry, AZ**

(based on preliminary information)

A 37-year-old conductor was in the process of setting off nine cars on the siding at Berry when radio communication ceased. The locomotive engineer stopped, walked back to check on the conductor, and found him pinned under the wheel of a freight car. He was later pronounced dead. Possible **Special Switching Hazard (tripping, slipping, falling)**.

**No. 19 of 19: July 27, 2007 □ CN □ Fulton, KY**

(based on preliminary information)

A 46-year-old conductor was a member of a 3 person switching crew that was classifying cars into various tracks in the yard. The trainman was making the final few switching moves and heard the conductor state that he was hurt. The trainman found the conductor between two cars and determined that he had been knocked down and run over by a rail car. Possible **Recommendation 3**: At the beginning of each tour of duty, all crew members will meet and discuss all safety matters and work to be accomplished. Additional briefings will be held any time work changes are made and when necessary to protect their safety during their performance of service.

## 12 August Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	08/04/93	UP	Pryor, OK	42	18	road brakemen	riding	on end of car	derailments		Close Clearance
2	08/11/93	SP	Tracy, CA	47	29	road brakemen	getting on	on end of car	struck by on-track equipment	3, 4	
3	08/12/93	ATSF	Evandale, TX	52	31	road brakemen	standing	on track	struck by on-track equipment	2	
4	08/15/97	UP	Elko, NV	53	28	yard brakeman	adjusting coupler	between cars/loc	sudden/unexpected movement of on-track equipment	1	
5	08/11/00	BNSF	Port of Los Angeles, CA	36	4	road brakemen	walking	on track	struck by on-track equipment	2	
6	08/08/02	CWRO	Cleveland, OH	53	34	yard conductor	riding	on side of car	struck against object	2	
7	08/26/03	LC	Chester, SC	29	4	road conductor	adjusting coupler	between cars/loc	sudden/unexpected movement of on-track equipment	1	
8	08/15/05	AM	Rogers, AR	n/a	n/a	(based on preliminary information)				Operating Recommendation	
9	08/21/06	FEC	Bonaventure, FL	45	n/a	(based on preliminary information)					Struck by Motor Vehicle
10	08/25/06	NS	Chicago, IL	n/a	n/a	(based on preliminary information)				Operating Recommendation 1	
11	08/25/07	IHBR	East Chicago, IN	n/a	n/a	(based on preliminary information)					Special Switching Hazard
12	08/30/07	BNSF	Stockton, CA	n/a	n/a	(based on preliminary information)					Special Switching Hazard

# 12 August Switching Fatalities

## No. 1 of 12: August 04, 1993 – UP – Pryor, OK

A three-person industrial switching crew was shoving three cars down a track. The conductor was on the ground, ahead of the move and the brakeman was riding the side of the leading end of the leading car. A bush created a clearance issue and the brakeman stepped around the side of the leading car to the end of the car just as it began to derail. The brakeman was killed when he fell from the derauling car.

### Special Switching Hazard(s):

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

### Close Clearance

Worn rail  
Close or no clearance  
Employee falling from moving equipment

Day of Week:	Wednesday
Time of Fatal Event:	4:45 PM
Time on Duty (hours: minutes):	6:45
Direction of Movement:	shoved
Crew's Next Move:	couple
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	inspection/stub track
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	6
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

## No. 2 of 12: August 11, 1993 – SP – Tracy, CA

Crew performing industry switching. Brakeman attempted to couple air hoses while conductor gave engineer instructions to shove the movement. Resulting movement was unexpected to brakeman who was fatally injured.

### SOFA Operating Recommendation(s):

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

### 3, 4

Poor intra-crew communication about work in progress  
Hand signal, failure to comply  
Other body defects (car)  
Poor crew utilization

Day of Week:	Wednesday
Time of Fatal Event:	11:52 AM
Time on Duty (hours: minutes):	2:52
Direction of Movement:	shoved
Crew's Next Move:	shove to yard
Death Result of Train Movement?	yes
Track Type:	lead/industrial
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	5
Deceased Regular Job?	no
Had Deceased Worked There Before?	yes
Crew Size:	5
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 3 of 12: August 12, 1993 – ATSF – Evandale, TX**

Upon detrainning, brakeman was struck and killed by another railroad's yard job working in the same small yard. Members of both crews saw each other but the brakeman apparently did not see the short line crews shove move.

<b>SOFA Operating Recommendation(s):</b>	<b>2</b>
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Failure to communicate unsafe condition
Day of Week:	Thursday
Time of Fatal Event:	1:25 PM
Time on Duty (hours: minutes):	3:25
Temperature (Fahrenheit):	100
Direction of Movement:	shoved
Crew's Next Move:	make cut
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	siding/industrial
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	5
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 4 of 12: August 15, 1997 – UP – Elko, NV**

Crew was switching in class yard. Helper was attempting to adjust the drawbar in order to couple to three cars about forty feet away that had not coupled the first time. While adjusting the drawbar, the helper did not notice the three free-rolling cars coming back in on him and the cars coupled him up.

<b>SOFA Operating Recommendation(s):</b>	<b>1</b>
Possible Contributing Factor:	Failure to apply handbrakes on car(s)
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Yard track grade
Day of Week:	Friday
Time of Fatal Event:	3:30 AM
Time on Duty (hours: minutes):	3:31
Temperature (Fahrenheit):	65
Direction of Movement:	free-running
Crew's Next Move:	couple track
Death Result of Train Movement?	no
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Had Deceased Worked There Before?	no
Crew Size:	3
Emergency Response Procedures Followed?	yes

**No. 5 of 12: August 11, 2000 – BNSF – Port of Los Angeles, CA**

Employee was struck and killed by the lead car of another switching movement that was operating on the adjacent yard track.

<b>SOFA Operating Recommendation(s):</b>	<b>2</b>
Possible Contributing Factor:	Failure to communicate unsafe condition
Possible Contributing Factor:	Shoving movement, absence of a man on or at leading end of movement
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Poor inter-crew communications
External Circumstances:	Joint operations
Day of Week:	Friday
Time of Fatal Event:	10:50 PM
Time on Duty (hours: minutes):	7:50
Temperature (Fahrenheit):	65
Direction of Movement:	shoved
Crew's Next Move:	shove drag
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/flat/lead
Hit by Own Equipment?	no
Striking Train Within Rules?	no
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. 6 of 12: August 08, 2002 – CWRO – Cleveland, OH**

A two-person crew was switching cars in a yard and, without the trainman's knowledge, another switching crew had set cars into a track adjacent to the one being used by the first crew. The set out included a wide ladle car and it created a clearance issue on the adjacent track. Some time later, the trainman was riding the lead car down the track adjacent to the wide ladle car and was killed when he was rolled between the car he was riding and the wide ladle car sitting on the adjacent track.

<b>SOFA Operating Recommendation(s):</b>	<b>2</b>
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Failure to communicate unsafe condition
Possible Contributing Factor:	Poor inter-crew communications
External Circumstances:	Other body defects (car)
Day of Week:	Thursday
Time of Fatal Event:	4:15 AM
Time on Duty (hours: minutes):	5:15
Temperature (Fahrenheit):	65
Direction of Movement:	shoved
Crew's Next Move:	spot
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/industrial/spot(load/unload)/outside
Hit by Own Equipment?	yes
Speed of Equipment (mph):	2
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 7 of 12: August 26, 2003 – LC – Chester, SC**

A three-person crew that included a brakeman trainee was switching an industry when the conductor requested a short backup move when the cars he intended to couple to did not couple. A short time later and after failed attempts to contact the conductor the trainee discovered him dead and lying between the cars he had been trying to couple together.

<b>SOFA Operating Recommendation(s):</b>	<b>1</b>
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Other miscellaneous causes
Possible Contributing Factor:	Coupler mismatch, high/low
External Circumstances:	Radio communication, improper
Day of Week:	Tuesday
Time of Fatal Event:	12:30 PM
Time on Duty (hours: minutes):	5:00
Temperature (Fahrenheit):	89
Direction of Movement:	shoved
Crew's Next Move:	couple
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	lead/industrial
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. 8 of 12: August 08, 2005 – AM – Rogers, AR**

(based on preliminary information)

An Arkansas & Missouri Railroad Company (AM) brakeman was directing a car to a spot within a plant when he was crushed to death between the car and a close clearance structure.

**No. 9 of 12: August 21, 2006 – FEC – Bonaventure, FL**

(based on preliminary information)

A 45-year-old conductor was riding the leading end of a cut of cars into a plant and over a road crossing in the plant when the movement struck a truck fatality injuring the conductor. Possible **Special Switching Hazard: Struck by Motor Vehicle.**

**No. 10 of 12: August 25, 2006 – NS – Chicago, IL**

(based on preliminary information)

During a flat switching operation, the conductor attempted to couple cars attached to his locomotive with 2 cars standing on a track. The coupling did not occur and a short time later, the conductor was found run over by one of the two standing cars. Possible **Recommendation 1.**

**No. 11 of 12: August 25, 2007 – IHBR – East Chicago, IN**

(based on preliminary information)

A two person conventional yard switching assignment was shoving a cut of cars into a track and the move was being controlled by the conductor. Radio communication between the conductor and the engineer ceased, the movement was stopped, and the conductor was found by the engineer dead and under the leading wheels of the second leading car of the shove. Possible **Special Switching Hazard (tripping, slipping, falling).**

**No. 12 of 12: August 30, 2007 – BNSF – Stockton, CA**

(based on preliminary information)

A Remote Control Operator was riding the leading end of a two car shove move and in control of the move when he struck the side of another car that was fouling the crossover switch he was lined to operate through. As a result, the RCO was killed. Possible **Special Switching Hazard (close clearance).**