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Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

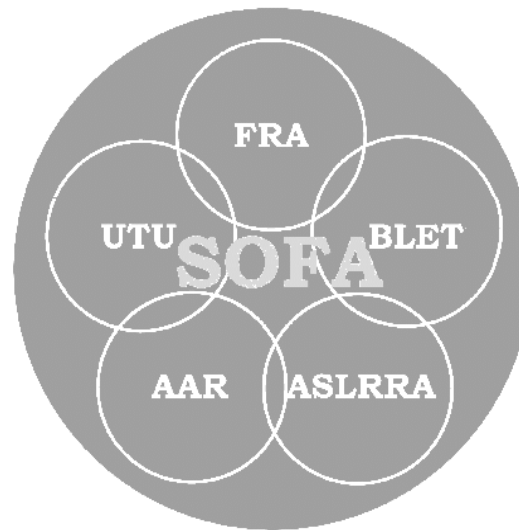
Risk on the Railroad is a Formidable Foe

10 Switching Fatalities in 2008

(preliminary summaries on *pages 2-3*)

- 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**
- Jul 10: Minneapolis, MN**
- Sept 10: Terre Haute, IN**
- Sept 23: Darby, PA**
- Oct 15: Decatur, Al**

Team Safety vs. Team Risk
Draft SOFA Operating Recommendation players for your Team Safety who will best perform against Team Risk. *pages 4-6*



Which Months, and Days of the Week, have the most Switching Fatalities?
page 7

**Switching Fatalities
and
Employee On-Duty Fatalities**
page 8

Switching Fatality and Severe Injury Update – 2008 Third Quarter

Summaries of 2008 Switching Fatalities to-date

(based on preliminary information)

10 Switching Fatalities

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.

Summaries of 2008 Switching Fatalities to-date (continued)

(based on preliminary information)

10 Switching Fatalities

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.

7. July10 – BNSF – Minneapolis, MN

A utility employee was in the process of “bleeding off” cars on track 11 in Northtown Yard when the leading end of a shoving move passed him. Shortly thereafter, a car inspector found the body of the utility employee.

8. September 10 – INRD – Terre Haute, IN

An employee was riding the leading end of a two car shove into an Industrial track when the car he was riding rode up on material build-up in the crossing, derailing the car into a pile of railroad track ties and crushing the employee to death.

9. September 23 – CSX – Darby, PA

A 46-year-old conductor was securing his train on one main track when he was struck and killed by another train passing him on the adjacent main track.

10. October 15, 2008 – CSX – Decatur, AL

A 28-year-old conductor was riding a shove move into a track when the opposite side of the car he was riding struck the corner of the leading end of his train causing the car he was riding, and others to derail crushing the conductor under the derailed cars.

SOFA Safety Recommendation Draft Picks

Team SOFA vs. Team Risk

(Please note: The purpose of this presentation is to illustrate safety information in an attention-gaining manner. Intent is not to trivialize railroad safety. Or, in any way, to disrespect employees who lost their lives in switching operations.)

This is not a ‘fantasy league draft.’ The opponent, **Team Risk**, is real. And it is an imposing schedule. There are no days off. Because each day **Team Risk** presents risk of casualty to employees engaged in switching operations.

You need to assemble a **Team SOFA**, consisting of Five SOFA Operating Recommendation players that will shutdown **Team Risk**. The situations you are drafting against are actual events where tragically **Team Risk** has prevailed. So you need to bring your A-game...or more to the point, your SOFA-game.

However, before drafting you need to thoroughly scout the Five SOFA Operating Recommendation players. Full scouting reports are contained in:

SOFA Report: Findings and Recommendations of the SOFA Working Group (October 1999)

Findings and Recommendations of the SOFA Working Group, August 2004 Update

<http://www.fra.dot.gov/us/content/1781> [accessed October 20, 2008]

After you have scouted **Team SOFA** draft picks, make your selections based on situations on the next page. While drafting keep in mind: **Risk on the Railroad is Formidable Foe.**

Team SOFA vs. Team Risk

SOFA Operating Recommendation Draft Picks

Team SOFA Draft Pick #1

Draft a SOFA Operating Recommendation player who will best perform in a situation similar to the one that occurred on May 14, 2002, at Pine Bluff, AR:

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

Team SOFA Draft Pick #2

Draft a SOFA Operating Recommendation player who will best perform in a situation similar to the one that occurred on August 11, 2000, at 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.

Team SOFA Draft Pick #3

Draft an Operating Recommendation player who will best perform in a situation similar to the one that occurred on October 15, 2000, at Houston, TX:

Employees failed to discuss movement, resulting in employee falling from locomotive platform and being rolled between the locomotive and the elevated walkway.

TEAM SOFA DRAFT CONTINUES ON NEXT PAGE

Team SOFA vs. Team Risk

SOFA Operating Recommendation Draft Picks

Team SOFA Draft Pick #4

Draft an Operating Recommendation player who will best perform in a situation similar to the one that occurred on July 16, 2002 at 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.

Team SOFA Draft Pick #5

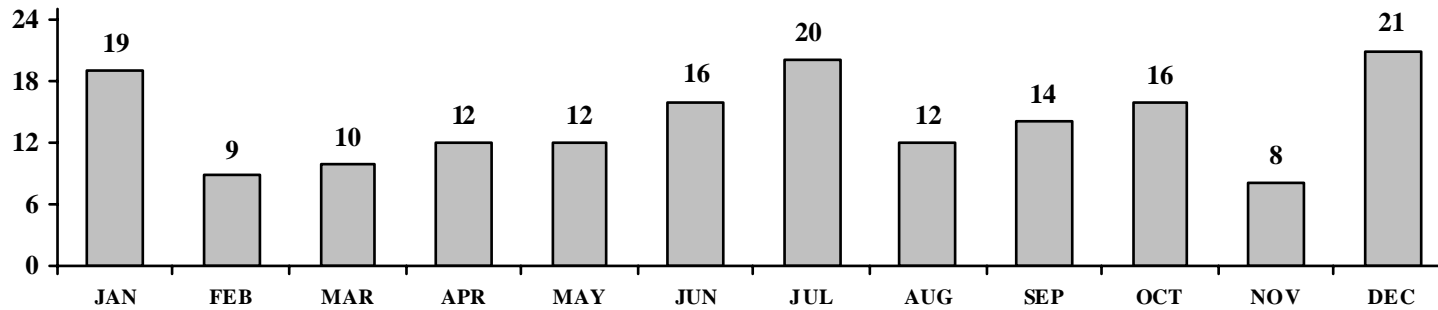
Draft an Operating Recommendation player who will best perform in a situation similar to the one that occurred on May 19, 1999, at Cincinnati, OH:

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

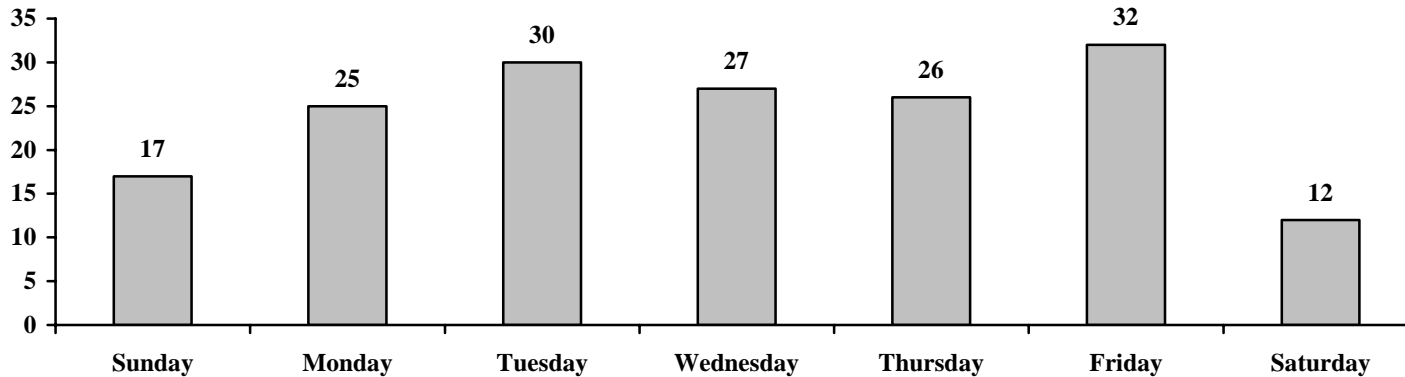
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(Again, please note: The purpose of this presentation is to illustrate safety information in an attention-gaining manner. Intent is not to trivialize railroad safety. Or, in any way, to disrespect employees who lost their lives in switching operations.)

169 Switching Fatalities: by Month
January 1, 1992 through October 20, 2008
(Note: All months have risk for Switching Fatalities)



169 Switching Fatalities: by Day of Week
January 1, 1992 through October 20, 2008
(Note: All days have risk for Switching Fatalities)



Switching Fatalities and Total Employee On-Duty (EOD) Fatalities

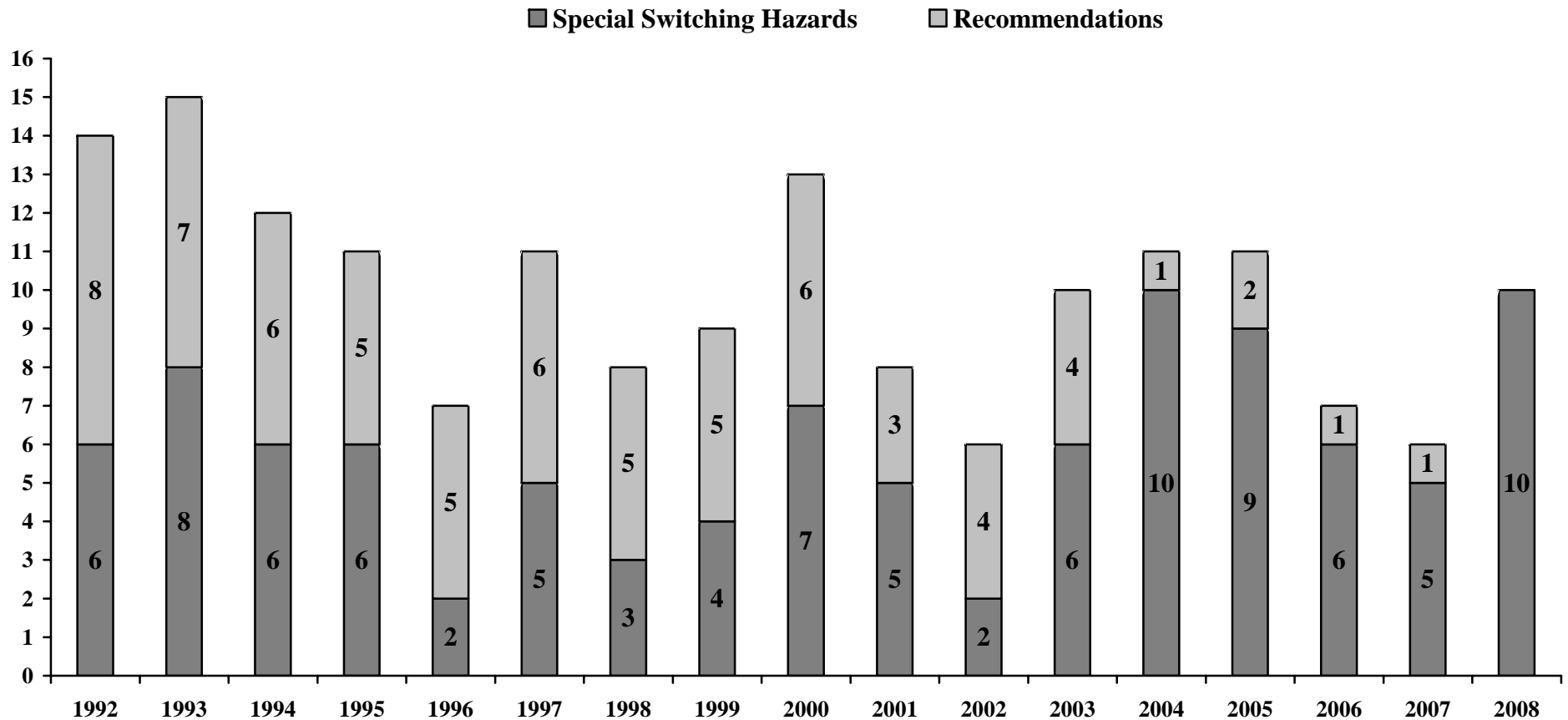
January 1, 1992 through October 20, 2008

(source: Switching Fatalities from *SOFA Matrix*; EOD Fatalities from FRA website)

Year	Switching Fatalities	Total Employee On Duty Fatalities	Switching Fatalities as Percent of Total Employee Fatalities
	(1)	(2)	(1) / (2)
1992	14	34	41%
1993	15	47	32%
1994	12	31	39%
1995	11	34	32%
1996	7	33	21%
1997	11	37	30%
1998	8	27	30%
1999	9	31	29%
2000	13	24	54%
2001	8	22	36%
2002	6	20	30%
2003	10	19	53%
2004	11	25	44%
2005	11	25	44%
2006	7	16	44%
2007	6	17	35%
2008 (through October 20)	10	19	53%
total	166	456	36%

While the focus of the SOFA Working Group has been to understand the causes of Switching Fatalities, and making Recommendations for prevention, the Group recognizes the importance of addressing all types of Fatalities. Death on the railroad is a tragic event.

169 Switching Fatalities Classified by Type: Involving Operating Recommendations; and Involving only Special Switching Hazards January 1, 1992 through October 20, 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 July 2008

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	total	average
JAN	11	13	16	15	21	12	11	11	20	10	14	14	168	14.0
FEB	17	15	9	9	9	13	17	14	10	6	15	12	146	12.2
MAR	14	12	17	11	10	10	13	10	9	9	11	5	131	10.9
APR	8	10	6	10	12	6	9	13	10	7	8	9	108	9.0
MAY	6	12	8	8	12	14	9	6	6	8	3	6	98	8.2
JUN	9	10	8	11	8	5	10	9	7	11	5	3	96	8.0
JUL	9	14	10	8	10	7	6	10	5	12	8	1	100	8.3
subtotals	74	86	74	72	82	67	75	73	67	63	64	50		70.6
AUG	13	10	11	14	8	10	7	14	10	10	13		120	10.9
SEP	10	11	15	10	20	12	5	4	9	6	10		112	10.2
OCT	12	12	16	10	5	11	9	7	11	5	11		109	9.9
NOV	12	9	12	11	13	14	10	10	13	8	6		118	10.7
DEC	18	9	7	22	12	9	8	15	12	8	6		126	11.5
totals	139	137	135	139	140	123	114	123	122	100	110		1,432	

- **138.0** **Severe Injuries per year on average: 1997 through 2001**
- **115.0** **Severe Injuries per year on average: 2002 through 2007**
- **64** **Severe Injuries in 2007, January through July**
- **50** **Severe Injuries in 2008, January through July**

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 July 2008

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

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
JAN	1	0	2	1	0	0	2	2	2	0	1	1	12	1.0
FEB	0	1	0	1	0	2	1	2	0	2	1	0	10	0.8
MAR	3	4	3	2	1	1	3	1	2	1	0	1	22	1.8
APR	1	2	0	1	2	0	1	1	2	2	3	3	18	1.5
MAY	1	2	3	0	2	2	2	0	0	1	1	0	14	1.2
JUN	2	1	1	0	1	0	0	1	0	0	1	1	8	0.7
JUL	1	5	1	0	4	0	1	2	1	2	2	0	19	1.6
subtotals	9	15	10	5	10	5	10	9	7	8	9	6		8.6
AUG	1	0	1	4	0	1	0	2	2	0	3		14	1.3
SEP	2	4	3	2	5	4	0	0	3	1	1		25	2.3
OCT	2	5	2	2	0	0	2	2	0	0	2		17	1.5
NOV	2	2	2	2	3	0	1	1	2	3	1		19	1.7
DEC	4	1	0	4	1	1	2	1	1	0	0		15	1.4
totals	20	27	18	19	19	11	15	15	15	12	16		193	

- **20.6** Amputations per year on average: 1997 through 2001
- **13.6** Amputations per year on average: 2002 through 2007
- **9** Amputations in 2007, January through July
- **6** Amputations in 2008, January through July

Switching Fatality Review Section

This section contains:

- **Switching Fatality Cases for Review: September, October, and November.** 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 October 20, 2008]

Risk on the Railroad is a Formidable Foe

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

14 September Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	09/02/93	ATSF	Carlsbad, NM	55	24	road conductor	crossing between	on track	struck by on-track equipment		Miscellaneous
2	09/20/94	ARR	Clear Site, AK	49	20	road brakemen	sitting	in car	derailments		Struck by Motor Vehicle
3	09/03/96	DGNO	Dallas, TX	43	.06*	road brakemen	standing	on end of car	ran into on-track equipment	5	
4	09/14/99	AM	Van Buren, AR	47	0.5	road conductor	adjusting coupler	between tracks	struck by on-track equipment	1, 5	
5	09/09/00	BNSF	Keokuk, IA	53	27	yard conductor	walking	on track	struck by on-track equipment	4	
6	09/02/02	CSXT	Madisonville, KY	52	24	road conductor	walking	on track	struck by on-track equipment		Unexp. Movement of Railcars
7	09/12/03	GC	Dublin, GA	45	0.2	road brakemen	walking	on track	struck by on-track equipment	5	
8	09/14/03	UP	Ogden, UT	53	26	yard conductor	handbrakes, releasing	on end of car	lost balance		Equipment
9	09/24/03	BNSF	Fresno, CA	35	2.3	yard conductor	riding	on side of car			Miscellaneous
10	09/02/04	BNSF	Clovis, NM	26	n/a	(based on preliminary information)					Special Switching Hazard
11	09/20/04	AA	Saline, MI	44	n/a	(based on preliminary information)					Special Switching Hazard
12	09/10/06	ALS	East St. Louis, IL	n/a	n/a	(based on preliminary information)					Special Switching Hazard
13	09/10/08	INRD	Terre Haute, IN	n/a	n/a	(based on preliminary information)					Special Switching Hazard
14	09/23/08	CSX	Darby, PA	46	n/a	(based on preliminary information)					Special Switching Hazard

* Employee returned to work for three weeks after 10-year gap in service. Had 10 years and three weeks of total experience.

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

14 September Switching Fatality

Note: The Switching Fatality narrative summary is from *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. All other information is from the SOFA Matrix, the SOFA Working Group's electronic database.

No. 1 of 14: September 02, 1993 – ATSF – Carlsbad, NM

A three-person crew, accompanied by an engineer and a brakeman trainee, were trying, for the second time to make a coupling between two cars in a yard. The conductor was allowing the brakeman trainee to learn radio use and had just told him to tell the engineer to come back for another attempt at coupling. The brakeman turned toward the locomotives, relayed the conductor's instructions, looked back at the conductor and saw him impaled between the knuckles of the two cars.

Special Switching Hazard(s):

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

Miscellaneous

Employee on or fouling track
Failure to provide adequate space between equipment
Passed couplers
Too many students assigned to job

Day of Week:	Thursday
Time of Fatal Event:	12:30 PM
Time on Duty (hours: minutes):	2:00
Temperature (Fahrenheit):	88
Direction of Movement:	shoved
Crew's Next Move:	couple
Death Result of Train Movement?	yes
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	3
Crew Size:	5
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 2 of 14: September 20, 1994 – ARR – Clear Site, AK

A three-person work train crew was shoving their train on the main line. The locomotive engineer was operating the locomotive and the brakeman and conductor were in the caboose. A tractor-trailer pulled over the crossing and was struck by the shove move, derailling the caboose and killing the brakeman.

Special Switching Hazard(s):

Possible Contributing Factor:
Possible Contributing Factor:
External Circumstances:

Struck by Motor Vehicle

Highway user inattentiveness
Highway user cited for violation of highway-rail grade crossing traffic laws
Highway user unawareness due to environmental factors (angle of sun, etc.)

Day of Week:	Tuesday
Time of Fatal Event:	7:19 PM
Time on Duty (hours: minutes):	11:19
Temperature (Fahrenheit):	50
Direction of Movement:	shoved
Crew's Next Move:	shove cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	no
Speed of Equipment (mph):	19
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. 3 of 14: September 03, 1996 – DGNO – Dallas, TX

Yard switch crew, engineer, conductor and brakeman, while switching at an industry on a downhill grade experienced an unwanted run away car. While FE (brakeman) was in position on a car and setting a hand brake, the car started to roll away from the crew. FE continued to try to apply hand brake in an effort to stop the car. When discovering that the car was rolling away, the conductor attempted to slow and stop it by putting wood blocks under the wheels. The car accelerate to 30 to 35 mph. FE did not detrain before car collided with seven other cars at that speed. FE had three weeks experience.

SOFA Operating Recommendation(s):	5
Possible Contributing Factor:	Failure to properly secure hand brake on car(s)
Possible Contributing Factor:	Release lever would not set in the on position properly
Possible Contributing Factor:	Insufficient training
Day of Week:	Tuesday
Time of Fatal Event:	6:30 PM
Time on Duty (hours: minutes):	10:55
Temperature (Fahrenheit):	85
Direction of Movement:	free-running
Crew's Next Move:	spot cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	industrial/mainline
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	25
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 4 of 14: September 14, 1999 – AM – Van Buren, AR

A two-person switching crew was in the process of shoving ten cars onto a clear track, with the intention of cutting three off, and pulling out the other seven out. The conductor counted down the cars via radio, and the engineer stopped one half-car lengths after the last radio transmission of one-half cars to go. Subsequently, the engineer discovered that the conductor had stepped in between the cars and had been coupled up.

SOFA Operating Recommendation(s):	1, 5
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Impairment of efficiency or judgment because of drugs or alcohol
Day of Week:	Tuesday
Time of Fatal Event:	3:00 PM
Time on Duty (hours: minutes):	8:00
Temperature (Fahrenheit):	84
Direction of Movement:	shoved
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/industrial
Hit by Own Equipment?	yes
Crew Size:	2
Drugs Present?	yes
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 5 of 14: September 09, 2000 – BNSF – Keokuk, IA

While shoving one car into an industry site, and using radio communication, the switch foreman was run over by the leading wheel as the shove move continued until coupling was made.

SOFA Operating Recommendation(s):	4
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Radio communication, improper
External Circumstances:	Radio holster/suspenders may have been hooked by movement
Day of Week:	Saturday
Time of Fatal Event:	11:22 AM
Time on Duty (hours: minutes):	4:22
Temperature (Fahrenheit):	80
Direction of Movement:	shoved
Crew's Next Move:	pull car
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/industrial/spot(load/unload)/outside
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
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. 6 of 14: September 02, 2002 – CSX – Madisonville, KY

A two-person road crew stopped at a yard to make a set-off. The conductor made the cut on his train, instructed the engineer to haul ahead to clear the switches into the yard, lined the switches into what he thought was Track 4 and told the engineer to begin backing the set off into the yard. The conductor was struck and killed by the leading end of the shove move as it entered Track 3.

Special Switching Hazard(s):	Unexpected Movement of Railcars
Possible Contributing Factor:	Radio communication, failure to comply
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Other general switching rules
Day of Week:	Monday
Time of Fatal Event:	4:05 AM
Time on Duty (hours: minutes):	5:35
Direction of Movement:	shoved
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	9
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 7 of 14: September 12, 2003 – GC – Dublin, GA

A two-person train crew was in the process of setting off and picking up cars in a small yard. The conductor, who had 8 weeks of experience, was killed when the leading car of the shove struck him as he stepped into its path.

SOFA Operating Recommendation(s):	5
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Shoving movement, man on or at leading end of movement, failure to control
Possible Contributing Factor:	Insufficient training
Day of Week:	Friday
Time of Fatal Event:	10:45 AM
Time on Duty (hours: minutes):	4:45
Temperature (Fahrenheit):	78
Direction of Movement:	shoved
Crew's Next Move:	shove cars into track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/lead
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 8 of 14: September 14, 2003 – UP – Ogden, UT

A four-person yard switching crew had been working together and classifying cars into various tracks throughout the morning. The conductor was on the leading end of a two car free rolling cut of cars moving at 3 miles per hours when he fell from the leading end and was run over by the car he had been riding.

Special Switching Hazard(s):	Equipment
Possible Contributing Factor:	Employee falling from moving equipment
Possible Contributing Factor:	Other body defects (car) (requires a description)
Possible Contributing Factor:	Other body defects (car) (requires a description)
Day of Week:	Sunday
Time of Fatal Event:	1:15 PM
Time on Duty (hours: minutes):	6:15
Temperature (Fahrenheit):	69
Direction of Movement:	free-running
Crew's Next Move:	line switch
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/lead/flat/lead/classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	2
Deceased Regular Job?	yes
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 9 of 14: September 24, 2003 – BNSF – Fresno, CA

A three-person switching crew was shoving a cut of cars into a yard track and the switching foreman was riding the leading end of the 35 car cut. There was no air in the train line and the engineer was using engine brake to control the shove during the 50 car lengths of clear track to be shoved prior to making a coupling on other cars in the same track. Twenty cars into the move the foreman was either dislodged or fell from the leading end of the movement and was run over by the sixth head car of the shove.

Special Switching Hazard(s):

Miscellaneous

Day of Week:	Wednesday
Time of Fatal Event:	1:15 AM
Time on Duty (hours: minutes):	2:15
Temperature (Fahrenheit):	73
Direction of Movement:	shoved
Crew's Next Move:	couple
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	5
Deceased Regular Job?	yes
Crew Size:	3
Emergency Response Procedures Followed?	yes

No. 10 of 14: September 02, 2004 – BNSF – Clovis, NM

(Information is preliminary, and not based on the investigation.)

A 28-year old switchman was killed when the tank car he was riding derailed during a shove move near Clovis, NM.

No. 11 of 14: September 20, 2004 – AA – Saline, MI

(Information is preliminary, and not based on the investigation.)

A 44-year old brakeman killed when crushed between track equipment and the car he was handling.

No. 12 of 14: September 10, 2006 – ALS – East St. Louis, IL

(Information is preliminary, and not based on the investigation.)

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. **(Special Switching Hazard: Close Clearance)**

No. 13 of 14: September 10, 2008 – INRD – Terre Haute, IN

(Information is preliminary, and not based on the investigation.)

An employee was riding the leading end of a two car shove into an Industrial track when the car he was riding rode up on material build-up in the crossing, derailling the car into a pile of railroad track ties and crushing the employee to death.

No. 14 of 14: September 23, 2008 – CSX – Darby, PA

(Information is preliminary, and not based on the investigation.)

A 46-year-old conductor was securing his train on one main track when he was struck and killed by another train passing him on the adjacent main track.

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

16 October Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	Special Switching Hazard
1	10/15/92	BN	Omaha, NE	32	14	yard brakeman	other	other location	caught in or compressed by other machinery		Miscellaneous (open pit)
2	10/23/92	GTW	Dearborn, MI	49	28	road brakemen	standing	between tracks	collision between on-track equipment		Free-Rolling Railcars
3	10/19/93	SOO	Leal, ND	43	2	road brakemen	riding	on side of car	derailments	5	
4	10/17/94	UP	Donaldsonville, LA	36	16	road brakemen	crossing between	between cars/loc	sudden/unexpected movement of on-track equipment	1	
5	10/04/95	CSXT	Riverdale, IL	39	0.5	yard conductor	adjusting coupler	between cars/loc	struck by on-track equipment	1, 5	
6	10/07/96	UP	Eagle Pass, TX	35	10.1	yard conductor	adjusting coupler	between cars/loc	sudden/unexpected movement of on-track equipment	1, 5	
	10/16/97	MRL	Laurel, MT	22	0.8	yard brakeman	riding	between cars/loc	lost balance	5	
8	10/26/98	CCP	Cicero, IL	42	18	road engineer	standing	beside track	struck by on-track equipment		Miscellaneous
9	10/15/00	UP	Houston, TX	47	20	laborer, shop and engine house	getting on	other location on loc	struck against object	3	
10	10/10/01	PAL	Clayburn, KY	38	11	road conductor	riding	on side of car	struck against object		Close Clearance
11	10/04/04	NS	Harrisburg, PA	58	n/a	(based on preliminary information)					Special Switching Hazard
12*	10/07/04	UP	Springfield, IL	n/a	a/a	(based on preliminary information)					Special Switching Hazard
13*	10/07/04	BNSF	Teague, TX	60	n/a	(based on preliminary information)					Special Switching Hazard
14	10/13/06	UP	Pajaro, CA	n/a	n/a	(based on preliminary information)					Trip, Slip, Fall
15	10/27/07	CSX	Russell, TX	n/a	n/a	(based on preliminary information)					Special Switching Hazard
16	10/15/08	CSX	Decatur, Al	28	n/a	(based on preliminary information)					Special Switching Hazard

- Same day Fatalities

16 October Switching Fatality

Note: The Switching Fatality narrative summary is from *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. All other information is from the SOFA Matrix, the SOFA Working Group's electronic database.

No. 1 of 16: October 15, 1992 – BN – Omaha, NE

A three-person yard crew was in the process of spotting cars over a material unloading pit and after the first of the cars was spotted the switch foreman took the locomotive out of the plant building to get the other car for spotting. The switchman remained in the building, set a handbrake on the spotted car and awaited the return of the foreman with the engine and second car to be spotted. The switchman was killed when he ended up falling into the second pit and was crushed by the industrial machinery located within.

Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Miscellaneous

Unprotected open pit

Grain dust

Day of Week:

Thursday

Time of Fatal Event:

1:25 AM

Time on Duty (hours: minutes):

1:55

Crew's Next Move:

spot load at pit

Death Result of Train Movement?

no

Track Type:

industrial/spot(load/unload)inside

Hit by Own Equipment?

no

Speed of Equipment (mph):

0

Deceased Regular Job?

yes

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

No

Emergency Response Procedures Followed?

yes

No. 2 of 16: October 23, 1992 – GTW – Dearborn, MI

A three-person train crew found it necessary to drop a car by and in doing so, the car hung up fouling the switch and blocking the locomotive into the track it had cleared up on. The crew decided to "stake" the car to clear the track in which the locomotive sat. This process requires a board or pole placed between the locomotive and car to move the car when it cannot be coupled to. The brakeman was killed when the board used slipped, the car started to move toward the locomotive and the brakeman was caught between the two pieces of equipment.

Special Switching Hazard(s):

Possible Contributing Factor:

External Circumstances:

Free-Rolling Railcars

Failure to provide adequate space between equipment

Unsafe commonly accepted operational practice

Day of Week:

Friday

Time of Fatal Event:

10:00 AM

Time on Duty (hours: minutes):

2:30

Direction of Movement:

shoved

Crew's Next Move:

line-up car

Death Result of Train Movement?

yes

Track Type:

yard/flat/lead/storage

Hit by Own Equipment?

yes

Striking Train Within Rules?

no

Speed of Equipment (mph):

1

Deceased Regular Job?

yes

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

Emergency Response Procedures Followed?

yes

No. 3 of 16: October 19, 1993 – SOO – Leal, ND

A three-person train crew was in the process of picking up 18 cars off a siding. The trainman had 10 weeks of experience, forgot to remove the derail, and was killed when the leading car he was riding derailed on top of him. During the stop, the conductor remained in the cab of the lead locomotive with the engineer.

SOFA Operating Recommendation(s):	5
Possible Contributing Factor:	Derail, failure to apply or remove
Possible Contributing Factor:	Insufficient training
Possible Contributing Factor:	Poor crew utilization
Day of Week:	Tuesday
Time of Fatal Event:	8:17 PM
Time on Duty (hours: minutes):	5:47
Temperature (Fahrenheit):	50
Direction of Movement:	shoved
Crew's Next Move:	make joint
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	siding
Hit by Own Equipment?	yes
Speed of Equipment (mph):	10
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. 4 of 16: October 17, 1994 – UP – Donaldsonville, LA

Crew switching in class yard, brakeman attempted to cross between equipment separated by an insufficient distance, and engineer moved locomotive in the wrong direction, coupling him up.

SOFA Operating Recommendation(s):	1
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Radio communication, failure to comply
External Circumstances:	Improper reverser position
Day of Week:	Monday
Time of Fatal Event:	12:30 PM
Time on Duty (hours: minutes):	6:30
Temperature (Fahrenheit):	76
Direction of Movement:	shoved
Crew's Next Move:	pull ahead
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/classification/flat
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Deceased Regular Job?	no
Had Deceased Worked There Before?	yes
Crew Size:	3
Emergency Response Procedures Followed?	yes

No. 5 of 16: October 04, 1995 – CSX – Riverdale, IL

Crew performing switching in class yard. Switch foreman placed himself between the rails to adjust a misaligned coupler on the fifteenth car after the cut was stretched. Switch foreman was facing the coupler with his back to a cut of seven cars that rolled in on top of him and coupled him up.

SOFA Operating Recommendation(s):	1, 5
Possible Contributing Factor:	Failure to provide adequate space between equipment
Possible Contributing Factor:	Insufficient training
External Circumstances:	Other train operation/human factors
Day of Week:	Wednesday
Time of Fatal Event:	12:40 AM
Time on Duty (hours: minutes):	1:10
Temperature (Fahrenheit):	80
Direction of Movement:	free-running
Crew's Next Move:	coupling
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):	1
Deceased Regular Job?	no
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 6 of 16: October 07, 1996 – UP – Eagle Pass, TX

Three-person crew was switching in class yard, locomotive failed to couple to cut of seven standing cars. Yard foreman used hand signals to separate the locomotive by twenty feet. While adjusting the locomotive drawbar, the seven cars rolled in and coupled him up.

SOFA Operating Recommendation(s):	1, 5
Possible Contributing Factor:	Failure to properly secure hand brake on car(s) railroad employee
Possible Contributing Factor:	Inoperable control due to bent rod
Possible Contributing Factor:	Hard to open knuckle on engine
Possible Contributing Factor:	Failure to provide adequate space between equipment
Day of Week:	Monday
Time of Fatal Event:	8:48 PM
Time on Duty (hours: minutes):	2:48
Direction of Movement:	free-running
Crew's Next Move:	shove cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	classification
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	1
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no

No. 7 of 16: October 16, 1997 – MRL – Laurel, MT

Yard switch crew, engineer, switch foreman and switchman, were shoving a cut 41 cars up a grade to a stop. While this was taking place the ground crew boarded the first two cars so they could apply the hand brakes. FE (switchman) fell off the first car while attempting this. This car was found to have a brake platform with a decreasing width. Under the hand brake this platform was found to be 2 inches under the required width over a length of about 30 inches. FE had 10 months experience.

SOFA Operating Recommendation(s):	5
Possible Contributing Factor:	Bent cross over platform under hand brake
Possible Contributing Factor:	Employee falling from moving equipment
External Circumstances:	Moving equipment
Day of Week:	Thursday
Time of Fatal Event:	10:20 PM
Time on Duty (hours: minutes):	6:20
Temperature (Fahrenheit):	63
Direction of Movement:	shoved
Crew's Next Move:	stop
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/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

No. 8 of 16: October 26, 1998 – CCP – Cicero, IL

An engineer, having just gone off duty, was distracted and subsequently struck and killed by a lite engine move being operated by a hostler. The hostler was operating the locomotive consist from the trailing end at the time and did not have anyone on the leading end when the engineer was struck.

Special Switching Hazard(s):	Miscellaneous
Possible Contributing Factor:	Failure to communicate unsafe condition
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Other general switching rules
Possible Contributing Factor:	Shoving movement, absence of a man on or at leading end of movement
External Circumstances:	Momentarily distracted
Day of Week:	Monday
Time of Fatal Event:	8:55 AM
Time on Duty (hours: minutes):	11:55
Temperature (Fahrenheit):	60
Direction of Movement:	shoved
Crew's Next Move:	tie up
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/flat/service
Hit by Own Equipment?	no
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. 9 of 16: October 15, 2000 – UP – Houston, TX

Employees failed to discuss movement, resulting in employee falling from locomotive platform and being rolled between the locomotive and the elevated walkway.

SOFA Operating Recommendation(s):	3
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Close or no clearance
External Circumstances:	Non-compliance of federal Hours of Service Regulations
Day of Week:	Sunday
Time of Fatal Event:	4:50 AM
Time on Duty (hours: minutes):	13:50
Temperature (Fahrenheit):	72
Direction of Movement:	shoved
Crew's Next Move:	spot locomotive
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/hump/service/inspect
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. 10 of 16: October 10, 2001 – PAL – Clayburn, KY

A three-person, local freight train crew was switching a plant and had 2 engines 6 cars and a caboose when they moved over a small bridge and coupled to 5 standing cars in the storage track. The conductor made the coupling and told the engineer to pull the cars out of the track. The conductor got on the side of the trailing end of the second last car in the cut and was knocked off the car by a metal pole adjacent to the storage track. He fell between the car he was riding and the last car in the cut being pulled. He died when the lead wheels of the last car rolled over him.

Special Switching Hazard(s):	Close Clearance
Possible Contributing Factor:	Close or no clearance
Possible Contributing Factor:	Employee physical condition, other
Possible Contributing Factor:	Other general switching rules
Day of Week:	Wednesday
Time of Fatal Event:	1:05 PM
Time on Duty (hours: minutes):	9:05
Direction of Movement:	pulled
Crew's Next Move:	switch plant
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main/industrial/spot(load/unload)/outside
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	6
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

**No. 11 of 16: October 04, 2004 – NS – Harrisburg, PA
(Information is preliminary, and not based on the investigation.)**

A conductor age 58 was struck and killed by a shove move performed by another crew when he stepped in front of the leading end of the move.

**No. 12 of 16: October 07, 2004 – UP – Springfield, IL
(Information is preliminary, and not based on the investigation.)**

A student trainman was killed while walking along side a shove move. Several cars derailed, one landing on the trainman. **(preliminary pending further review)**

**No. 13 of 16: October 07, 2004 – BNSF – Teague, TX
(Information is preliminary, and not based on the investigation.)**

A trainman age 60 was killed when cars he was between moved.

**No. 14 of 16: October 13, 2006 – UP – Pajaro, CA
(Information is preliminary, and not based on the investigation.)**

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. **(Special Switching Hazard: Tripping, Slipping, Falling)**

**No. 15 of 16: October 27, 2007 – CSX – Russell, KY
(Information is preliminary, and not based on the investigation.)**

A yard foreman was crushed and killed while riding the leading end of a 5 locomotive consist when it passed through a mis-aligned crossover switch and collided with a standing train on an adjacent track

**No. 16 of 16: October 15, 2008 – CSX – Decatur, AL
(Information is preliminary, and not based on the investigation.)**

A 28-year-old conductor was riding a shove move into a track when the opposite side of the car he was riding struck the corner of the leading end of his train causing the car he was riding, and others to derail crushing the conductor under the derailed cars.

Risk on the Railroad is a Formidable Foe

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	n/a	(based on preliminary information)					Special Switching Hazard
8	11/16/05	CSX	Lugoff, SC	47	n/a	(based on preliminary information)					Special Switching Hazard

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 17th 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 18th and 17th head cars came together at the push pole pads crushing the conductor between them.

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Miscellaneous

Employee on or fouling track
Jammed knuckle pin

Day of Week:	Monday
Time of Fatal Event:	6:05 PM
Time on Duty (hours: minutes):	4:05
Temperature (Fahrenheit):	45
Direction of Movement:	shoved
Crew's Next Move:	replace knuckle
Death Result of Train Movement?	yes
Track Type:	main
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

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

A 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:

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

Day of Week:	Friday
Time of Fatal Event:	6:40 AM
Time on Duty (hours: minutes):	5:55
Direction of Movement:	shoved
Crew's Next Move:	spot car
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):	4
Crew Size:	3
Drugs Present?	yes
Drugs a Factor?	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):	3, 5
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Employee on or fouling track
External Circumstances:	Train master assisted crew
Day of Week:	Saturday
Time of Fatal Event:	8:30 AM
Time on Duty (hours: minutes):	0:30
Temperature (Fahrenheit):	50
Crew's Next Move:	pull another track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/flat/classification
Hit by Own Equipment?	yes
Speed of Equipment (mph):	1
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	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):	5
Possible Contributing Factor:	Insufficient training
Possible Contributing Factor:	Failure to follow instructions
Day of Week:	Thursday
Time of Fatal Event:	4:15 AM
Time on Duty (hours: minutes):	4:16
Temperature (Fahrenheit):	70
Track Type:	industrial/spot(load/unload)/outside
Speed of Equipment (mph):	0
Deceased Regular Job?	no
Had Deceased Worked There Before?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	Yes

No. 5 of 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):	3, 4
Possible Contributing Factor:	Poor intra-crew communication about work in progress
Possible Contributing Factor:	Failure to comply with restricted speed
Day of Week:	Tuesday
Time of Fatal Event:	9:35 AM
Time on Duty (hours: minutes):	1:35
Temperature (Fahrenheit):	55
Direction of Movement:	shoved
Crew's Next Move:	couple track
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/classification/flat
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	6
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

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

A 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):	Unexpected Movement of Railcars
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Switch improperly lined
Possible Contributing Factor:	Employee physical condition, other
External Circumstances:	Other extreme environmental condition
Day of Week:	Wednesday
Time of Fatal Event:	12:40 PM
Time on Duty (hours: minutes):	5:40
Temperature (Fahrenheit):	65
Direction of Movement:	shoved
Crew's Next Move:	make joint
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	main
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	7
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

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

(Information is preliminary, and not based on the investigation.)

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 is preliminary, and not based on the investigation.)

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.

Risk on the Railroad is a Formidable Foe

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards