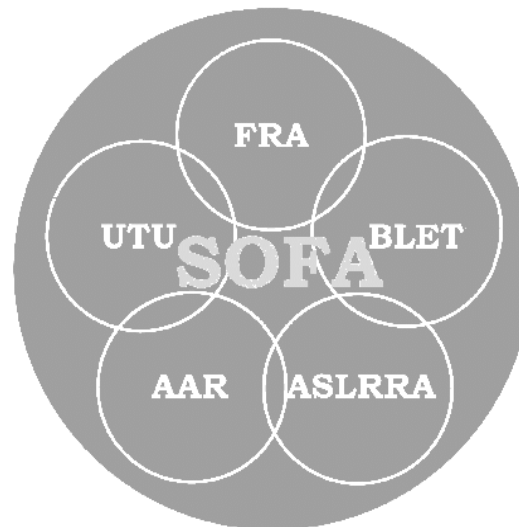


PLEASE POST IMMEDIATELY

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

- **Test your Switching Fatality knowledge**
pgs 3 and 4
- **Review SOFA Operating Recommendations**
pg 5
- **Recognize Special Switching Hazards**
pg 7
- **New Hires and Recommendation 5**
pgs 8, 9, and 10



FATALITIES to DATE

2

July 8, Berry, AZ

July 27, Fulton, KY

(for 2007, through August 15; pg 2)

Switching Fatality and Severe Injury Update 2007 Third Quarter

Two Switching Fatalities in 2007 (through August 15; information preliminary)

Date: July 8, 2007, Sunday
Location: Berry, AZ
Railroad: BNSF
SOFA Fatality Type: possible Special Switching Hazard (employee tripping, slipping, falling)

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.

Date: July 27, 2007, Friday
Location: [Fulton, KY](#)
Railroad: CN
SOFA Fatality Type: possible Recommendation 3

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.

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.

SOFA Safety Scramblegram (Fill in blanks by unscrambling the letters)

There are _____SOFA Operating Recommendations.

I E F V

Recommendation 1: stresses importance of _____ equipment when fouling track in certain situations.

G E R N I U C S

Recommendation 2: necessity of communication when two or more _____ are working together or nearby.

W E R S C

Recommendation 3: at beginning of work, or when the nature of work changes, there should be a safety _____.

I I F G B E R N

Recommendation 4: when controlling train and engine movements, hand and radio signals should not be _____.

X I D E M

Recommendation 5: _____ is a way for new employees to learn safe practices from experienced employees.

N I T M G E O R N

(Review SOFA Operating Recommendations to discover answers, pg 5)

Test Your Knowledge of Switching Fatalities

1) Reasons why Switching Fatalities occur?

- a) Cannot be understood. Switching Fatalities are random acts of nature. It is inevitable some will occur.
- b) Are partially understood. But preventive recommendations are limited.
- c) Vary depending on the perspective of labor, management, or government.
- d) Are well understood. Reasons were determined by consensus of labor, management, and government representatives.

2) The Five SOFA Operating Recommendations should be applied in appropriate situations?

- a) If time permits.
- b) Only during periods of increased risk: holidays, winter months, poor weather conditions, etc.
- c) If crew has less than three years of total experience, or is unfamiliar with the territory.
- d) Always. A switching operation omitting an appropriate Recommendation and resulting in a Fatality can never be redone.

3) If Switching Fatalities are low in the first 8 months of a year?

- a) Safety efforts should be deemphasized. A trend has developed. Eventually Fatalities will be eliminated without additional effort.
- b) Only reasons why the few Fatalities occurred should be stressed.
- c) Only new employees should receive instruction on Switching Fatality causes and prevention.
- d) Safety efforts should be relentlessly pursued. Historically, the number of Fatalities occurring in the first 8 months of a year is not a good predictor of the number occurring in the remaining 4 months.

4) How important is railroad safety to the US economy?

- a) Not significant. The US economy is a service economy.
- b) Marginally significant. Most commodities can otherwise be efficiently transported.
- c) Important, but only for limited sectors.
- d) Crucial. If chemicals, coal, and other commodities cannot be efficiently transported...there is no economy.

(All answers are d)

SOFA Operating Recommendations are important: a switching operation omitting one or more appropriate Recommendations, and leading to a Fatality – cannot be undone.

Recommendation 1

Any crew member intending to foul track or equipment must notify the locomotive engineer before such action can take place. The locomotive engineer must then apply locomotive or train brakes, have the reverser centered, and then confirm this action with the individual on the ground. Additionally, any crew member that intends to adjust knuckles/drawbars, or apply or remove EOT device, must insure that the cut of cars to be coupled into is separated by no less than 50 feet. Also, the person on the ground must physically inspect the cut of cars not attached to the locomotive to insure that they are completely stopped and, if necessary, a sufficient number of hand brakes must be applied to insure the cut of cars will not move.

Discussion

This recommendation emphasizes the importance of securing the equipment. A thorough understanding by all crew members that the area between cars is a hazardous location, whether equipment is moving or standing, is imperative.

Recommendation 2

When two or more train crews are simultaneously performing work in the same yard or industry tracks, extra precautions must be taken:

SAME TRACK

- Two or more crews are prohibited from switching into the same track at the same time, without establishing direct communication with all crew members involved.

ADJACENT TRACK

- Protection must be afforded when there is the possibility of movement on adjacent track(s). Each crew will arrange positive protection for (an) adjacent track(s) through positive communication with yardmaster and/or other crew members.

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.

Recommendation 4

When using radio communication, locomotive engineers must not begin any shove move without a specified distance from the person controlling the move. Strict compliance with “distance to go” communication must be maintained.

When controlling train or engine movements, all crew members must communicate by hand signals or radio signals. A combination of hand and radio signals is prohibited. All crew members must confirm when the mode of communication changes.

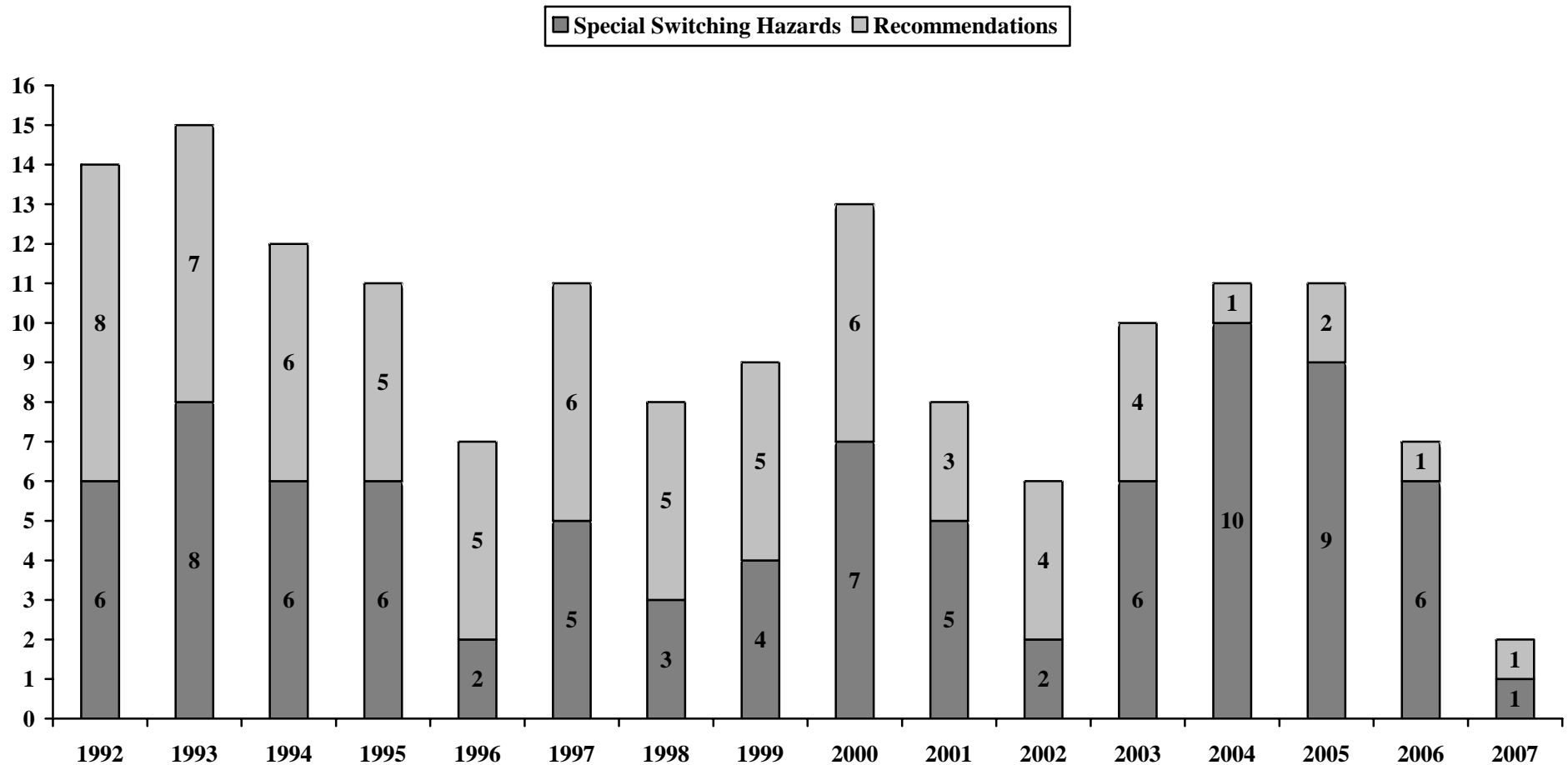
Recommendation 5

Crew members with less than one year of service must have special attention paid to safety awareness, service qualifications, on-the-job training, physical plant familiarity, and overall ability to perform service safely and efficiently. Programs such as peer review, mentoring, and supervisory observation must be utilized to insure employees are able to perform service in a safe manner.

Refer to SOFA Reports for complete discussion of the Five Operating Recommendations. Available at: <http://www.fra.dot.gov/us/content/1781>

155 Switching Fatalities Classified by Type: Involving Operating Recommendations and Involving only Special Switching Hazards January 1, 1992 through August 15, 2007

Switching Fatalities involving Operating Recommendations have declined absolutely, and as a proportion of all Fatalities. These declines are particularly evident in the years 2004 through 2006. (Fatalities for 2007 are for the first 8.5 months.) Special Switching Hazards are now the more prevalent Fatality type. These Hazards are described on page 7.



Recognize Special Switching Hazards

“In addition to the Five Operating Recommendations, the SWG (SOFA Working Group) wants to make those engaged in switching operations aware of Special Switching Hazards. In its review of each of the 124 fatalities, the SWG identified a number of fatalities involving close clearances (10 fatalities), being struck by mainline trains (8 fatalities), and occurring during shove movements (61 fatalities). The number of fatalities involving close clearance and being struck by mainline trains would be greater if those classified both as a Special Switching Hazard and an Operating Recommendation were included in these fatality counts.” – from *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. p. xiv.

- Close Clearances*
- Free Rolling Railcars
- Exposure to Mainline Trains
- Tripping, Slipping, or Falling Exposures
- Adverse Environmental Conditions
- Shoving Movements
- Unsecured Cars
- Unexpected Movement of Cars
- Equipment Defects
- Motor Vehicles or Loading Devices
- Drugs and Alcohol
- Other Special Hazards or Events

* The SOFA Working Group has broadened the traditional definition of ‘close clearances’ to include situations “When an employee is passing, or being passed, by an object or equipment and the conditions are such that there is not enough room for the employee to avoid being struck.” From *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. p.48-50. Available at: <http://www.fra.dot.gov/us/content/1781>

Emphasis needed in Recognizing Special Switching Hazards

There has been a shift in proportion among the two general reasons the SOFA Working Group has identified as causing Switching Fatalities: Operating Recommendations and Special Switching Hazards. Most Switching Fatalities now involve one or more Special Switching Hazards. The SOFA Working Group (SWG) believes the industry’s emphasis on *Applying SOFA Operating Recommendations* has had a positive effect – as will continued emphasis. But to *Make Switching Fatality Free*, additional emphasis is needed in *Recognizing Special Switching Hazards*.

Important for New Hires: SOFA Operating Recommendation 5

Crew members with less than one year of service must have special attention paid to safety awareness, service qualifications, on-the-job training, physical plant familiarity, and overall ability to perform service safely and efficiently. Programs such as peer review, mentoring, and supervisory observation must be utilized to insure employees are able to perform service in a safe manner.

Examples of Switching Fatalities involving Operating Recommendation 5. “From *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. Available at: <http://www.fra.dot.gov/us/content/1781>
(Note ‘FE’ means fatality, employee.)

January 30, 1992 – AGC – Polk County, FL

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

Recommendation 5

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.

Recommendation 5

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.

Recommendation 5

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.

Recommendation 5 also Recommendation 3

November 10, 1994 – PTRR – 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.

Recommendation 5

December 06, 1994 – CR – Campbell Hall, NY

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

Recommendation 5 also Recommendation 2 and 4

Important for New Hires: SOFA Operating Recommendation 5

Crew members with less than one year of service must have special attention paid to safety awareness, service qualifications, on-the-job training, physical plant familiarity, and overall ability to perform service safely and efficiently. Programs such as peer review, mentoring, and supervisory observation must be utilized to insure employees are able to perform service in a safe manner.

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(Note 'FE' means fatality, employee.)

October 04, 1995 – CSX – Riverdale, IL

Crew performing switching in class yard. Switch foreman, with 5 months service, placed himself between the rails to adjust a misaligned couple 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.

Recommendation 5 also Recommendation 1

March 20, 1996 – BRC – Bedford Park, IL

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

Recommendation 5 also Recommendation 1

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.

Recommendation 5

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.

Recommendation 5

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.

Recommendation 5

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.

Recommendation 5 also Recommendation 1

Important for New Hires: SOFA Operating Recommendation 5

Crew members with less than one year of service must have special attention paid to safety awareness, service qualifications, on-the-job training, physical plant familiarity, and overall ability to perform service safely and efficiently. Programs such as peer review, mentoring, and supervisory observation must be utilized to insure employees are able to perform service in a safe manner.

Examples of Switching Fatalities involving Operating Recommendation 5. From *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. Available at: <http://www.fra.dot.gov/us/content/1781>
(Note 'FE' means fatality, employee.)

October 16, 1997 – MRL – Laurel, MT

Recommendation 5

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.

June 01, 1998 – BNSF – Lubbock, TX

Recommendation 5 also Recommendation 2

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.

May 19, 1999 – NS – Cincinnati, OH

Recommendation 5

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 too late that the move would not clear the standing equipment. He was crushed between the handrail of his locomotive and the standing locomotive.

September 14, 1999 – AM – Van Buren, AR

Recommendation 5 also Recommendation 1

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.

January 10, 2001 – CSX – Chicago, IL

Recommendation 5

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

June 16, 2002 – BNSF – Memphis, TN

Recommendation 5 also Recommendation 1 and 3

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.

September 12, 2003 – GC – Dublin, GA

Recommendation 5

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-defined Severe Injuries January 1992 through May 2007

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	total	average
JAN	11	13	16	15	21	12	11	11	20	10	13	153	13.9
FEB	17	15	9	9	9	13	17	14	10	6	15	134	12.2
MAR	14	12	17	11	10	10	13	10	9	9	10	125	11.4
APR	8	10	6	10	12	6	9	13	10	6	8	98	8.9
MAY	6	12	8	8	12	14	9	6	6	8	3	92	8.4
year-to-date	56	62	56	53	64	55	59	54	55	39	49		54.7
JUN	9	10	8	11	8	5	10	9	7	11		88	8.8
JUL	9	14	10	8	10	7	6	10	5	12		91	9.1
AUG	13	10	11	14	8	10	7	14	10	10		107	10.7
SEP	10	11	15	10	20	12	5	4	9	6		102	10.2
OCT	12	12	16	10	5	11	9	7	11	5		98	9.8
NOV	12	9	12	11	13	14	10	10	13	7		111	11.1
DEC	18	9	7	22	12	9	8	15	12	8		120	12.0
totals	139	137	135	139	140	123	114	123	122	98		1,319	

- **138.0 Severe Injuries per year on average: 1997 through 2001**
- **116.5 Severe Injuries per year on average: 2002 through 2005**
- **98 Severe Injuries in 2006: historically low annual total**
- **49 Severe Injuries in 2007, January through May: second lowest count for these months**

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>

Amputations

January 1992 through May 2007

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	total	average
JAN	1	0	2	1	0	0	2	2	2	0	1	11	1.0
FEB	0	1	0	1	0	2	1	2	0	2	1	10	0.9
MAR	3	4	3	2	1	1	3	1	2	1	0	21	1.9
APR	1	2	0	1	2	0	1	1	2	2	3	15	1.4
MAY	1	2	3	0	2	2	2	0	0	1	1	14	1.3
year-to-date	6	9	8	5	5	5	9	6	6	6	6		6.5
JUN	2	1	1	0	1	0	0	1	0	0		6	0.6
JUL	1	5	1	0	4	0	1	2	1	2		17	1.7
AUG	1	0	1	4	0	1	0	2	2	0		11	1.1
SEP	2	4	3	2	5	4	0	0	3	1		24	2.4
OCT	2	5	2	2	0	0	2	2	0	0		15	1.5
NOV	2	2	2	2	3	0	1	1	2	3		18	1.8
DEC	4	1	0	4	1	1	2	1	1	0		15	1.5
totals	20	27	18	19	19	11	15	15	15	12		177	

- **20.6 Amputations per year on average: 1997 through 2001**
- **13.6 Amputations per year on average: 2002 through 2006**
- **6 Amputations in 2007, January through May**

10 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	preliminary pending further review				Operating Recommendation	
9	08/21/06	FEC	Bonaventure, FL	45	n/a	preliminary pending further review					Struck by Motor Vehicle
10	08/25/06	NS	Chicago, IL	n/a	n/a	preliminary pending further review				Operating Recommendation 1	

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

12 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	28	n/a	preliminary pending further review					Special Switching Hazard
11	09/20/04	AA	Saline, MI	44	n/a	preliminary pending further review					Special Switching Hazard
12	09/10/06	ALS	East St. Louis, IL	n/a	n/a	preliminary pending further review					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 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	
7	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	preliminary pending further review					Special Switching Hazard
12*	10/07/04	UP	Springfield, IL	n/a	a/a	preliminary pending further review					Special Switching Hazard
13*	10/07/04	BNSF	Teague, TX	60	n/a	preliminary pending further review					Special Switching Hazard
14	10/13/06	UP	Pajaro, CA	n/a	n/a	preliminary pending further review					Trip, Slip, Fall

*Same day Fatalities

10 August Switching Fatalities

Note: The Switching Fatality narrative summaries are taken 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 10: 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 10: 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):

3, 4

Possible Contributing Factor:

Poor intra-crew communication about work in progress

Possible Contributing Factor:

Hand signal, failure to comply

Possible Contributing Factor:

Other body defects (car)

External Circumstances:

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 10: 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.

SOFA Operating Recommendation(s):	2
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 10: 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.

SOFA Operating Recommendation(s):	1
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 10: 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.

SOFA Operating Recommendation(s):	2
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 10: 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.

SOFA Operating Recommendation(s):	2
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 10: 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.

SOFA Operating Recommendation(s):	1
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 10: August 08, 2005 – AM – Rogers, AR

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. **(preliminary pending further review)**

No. 9 of 10: August 21, 2006 – FEC – Bonaventure, FL

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. **(Special Switching Hazard: Struck by Motor Vehicle) (preliminary pending further review)**

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

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. **(Recommendation 1) (preliminary pending further review)**

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

12 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 12: 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 12: 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 12: 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 12: 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 12: 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 12: 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 12: 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 12: 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 12: 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 12: September 02, 2004 – BNSF – Clovis, NM

A 28-year old switchman was killed when the tank car he was riding derailed during a shove move near Clovis, NM. **(preliminary pending further review)**

No. 11 of 12: September 20, 2004 – AA – Saline, MI

A 44-year old brakeman killed when crushed between track equipment and the car he was handling. **(preliminary pending further review)**

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

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) (preliminary pending further review)**

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

14 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: 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 14: October 04, 2004 – NS – Harrisburg, PA

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. **(preliminary pending further review)**

No. 12 of 14: October 07, 2004 – UP – Springfield, IL

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 14: October 07, 2004 – BNSF – Teague, TX

A trainman age 60 was killed when cars he was between moved. **(preliminary pending further review)**

No. 13 of 14: October 13, 2006 – UP – Pajaro, CA

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) (preliminary pending further review)**

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards