

PLEASE POST IMMEDIATELY

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

Postponing Casualty does not Prevent Casualty

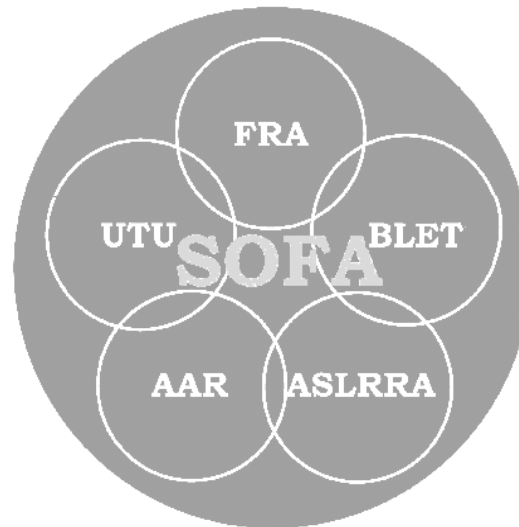
SOFA-defined Severe Injuries

Slipping, tripping, stumbling, and losing balance were events associated with nearly half of the 1,380 Severe Injuries occurring from Jan 1, 1997 through Dec 31, 2007.

What were some of the other events? *page 8*

Why is this statement not quite true?

In 2005 there were 11 Switching Fatalities. In 2006 and 2007 there were 7 Switching Fatalities each, per year. So 8 lives were saved. *Answer on page 4*



2008 Fatalities to-date

2

Jan 8: 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.

Feb 3: 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.

Switching Fatality and Severe Injury Update 2008 First Quarter

Fill in the Missing Words in the Five SOFA Operating Recommendations

(Advisory: This is a challenging safety exercise!)

Recommendation 1

Any crew member intending to _____ 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 _____ 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 _____.

Recommendation 2

When _____ 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 _____ 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 _____ with yardmaster and/or other crew members.

Fill in the Missing Words in the Five SOFA Operating Recommendations

Recommendation 3

At the beginning of each tour of duty, all crew members will meet and discuss all _____ matters and work to be accomplished. Additional _____ will be held _____ 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 _____ move without a specified _____ 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 _____ of hand and radio signals is prohibited. All crew members must confirm when the mode of communication changes.

Recommendation 5

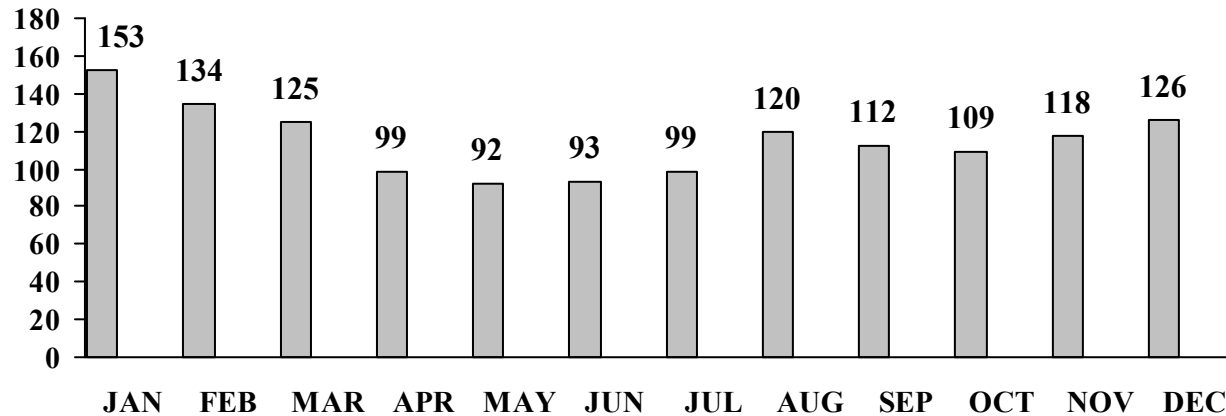
Crew members with less than one year of _____ must have special attention paid to safety awareness, service qualifications, on-the-job training, physical plant familiarity, and overall ability to perform service safely and efficiently. Programs such as peer review, _____, and supervisory observation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

Answers:

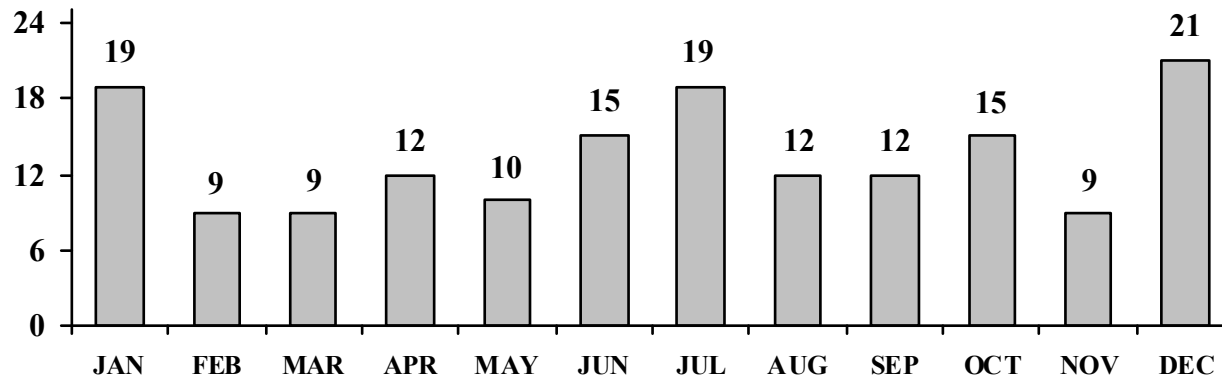
Recommendation 1: *foul, inspect, move*
Recommendation 2: *two, switching, communication*
Recommendation 3: *safety, briefings, any*
Recommendation 4: *shove, distance, combination*
Recommendation 5: *service, mentoring, safe*

Selected Casualty on the Railroad by Month

1,380 SOFA-defined Severe Injuries: January 1, 1997 to December 31, 2007



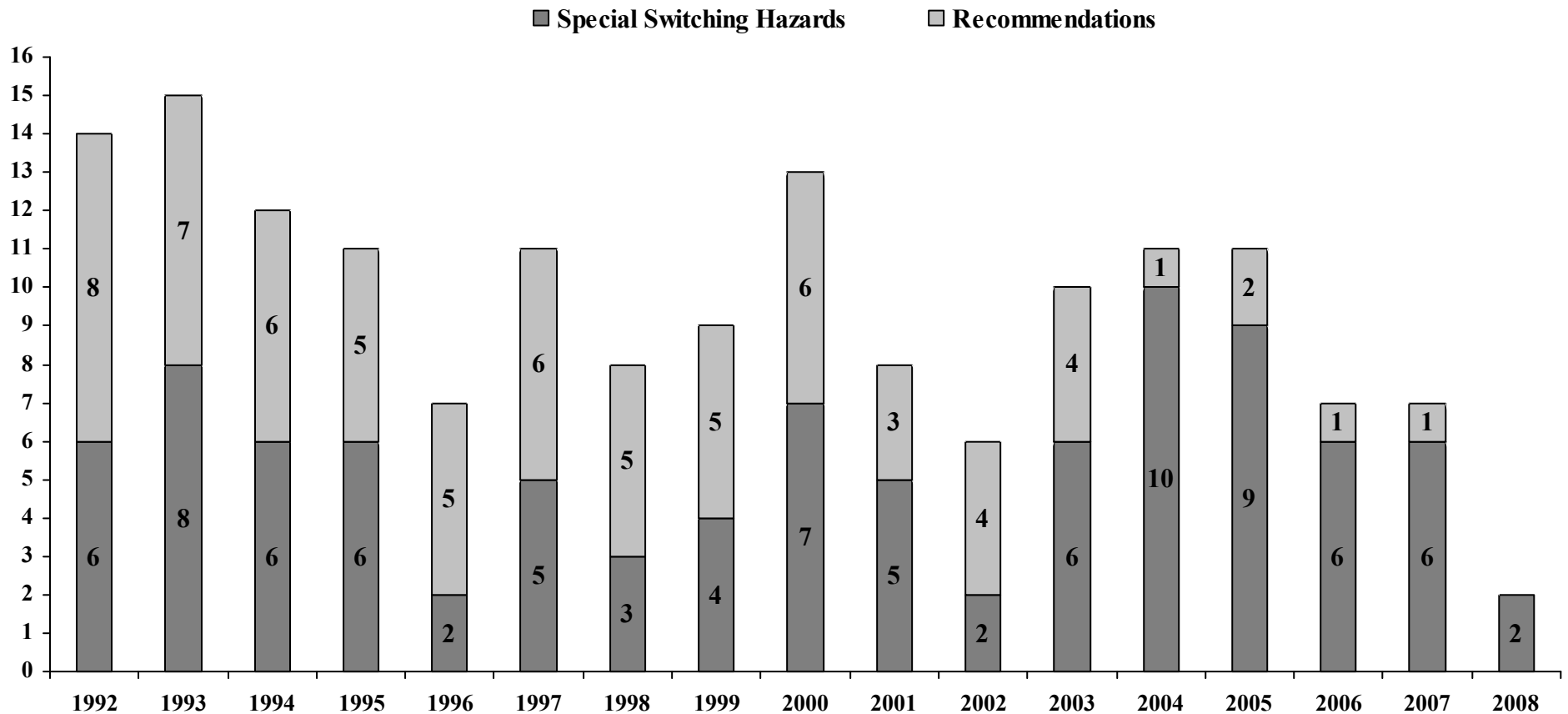
162 Switching Fatalities: Jan 1, 1992 through March 15, 2008



Why statement on page 1 is not quite true:

If crews work safely and avoid casualty in one year, as by *Applying SOFA Operating Recommendations – Recognizing Special Switching Hazards*, they must also work safely throughout their careers. When studying the Switching Fatality cases in the *Review Section*, note the ages and years of service of the deceased. Crews must always work safely. **Postponing casualty does not prevent casualty.**

162 Switching Fatalities Classified by Type: Jan 1, 1992 through Mar 15, 2008 Involving Operating Recommendations; and Involving only Special Switching Hazards



SOFA-defined Severe Injuries January 1992 through December 2007

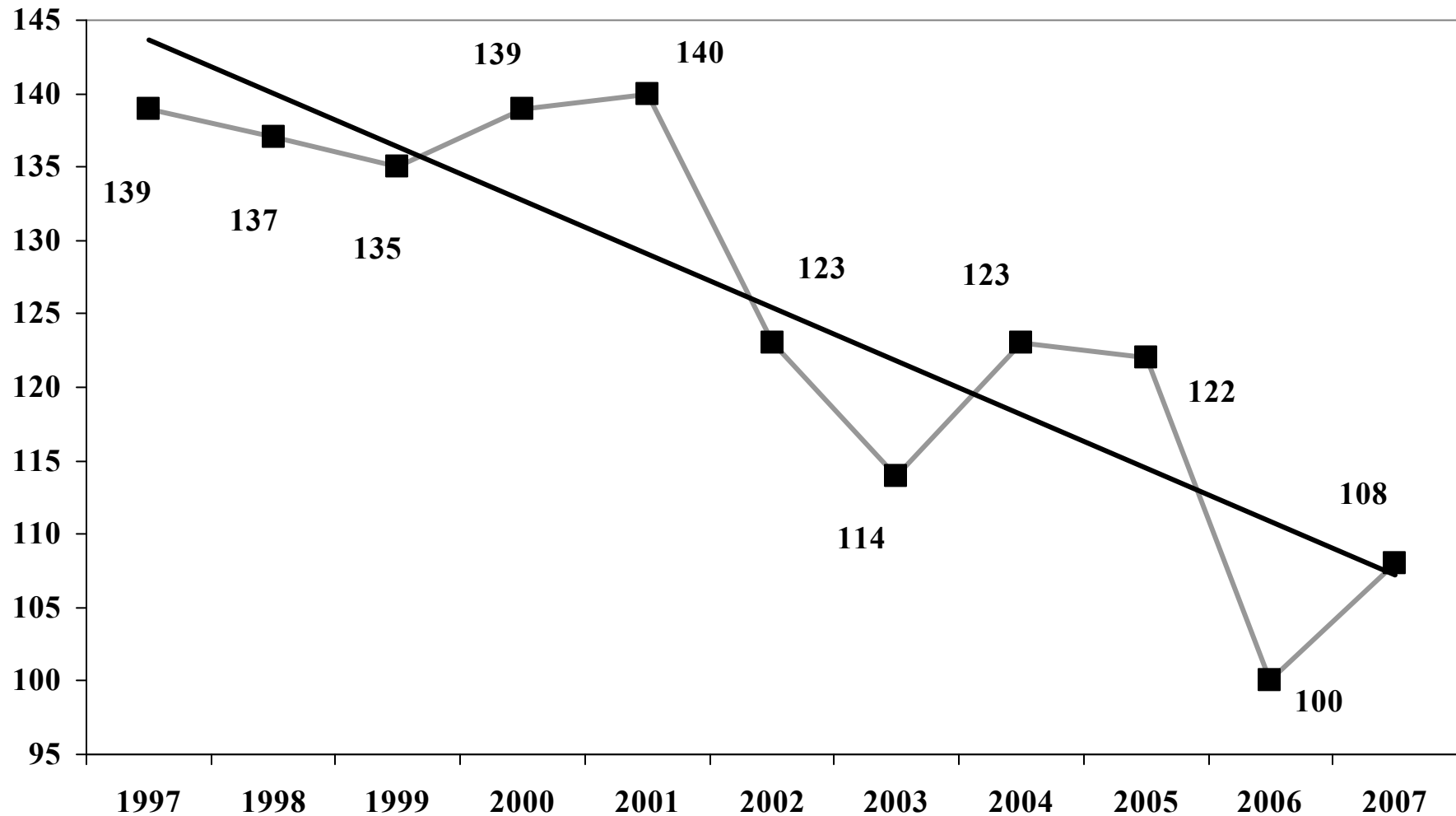
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	total	average
JAN	11	13	16	15	21	12	11	11	20	10	13	153	13.9
FEB	17	15	9	9	9	13	17	14	10	6	15	134	12.2
MAR	14	12	17	11	10	10	13	10	9	9	10	125	11.4
APR	8	10	6	10	12	6	9	13	10	7	8	99	9.0
MAY	6	12	8	8	12	14	9	6	6	8	3	92	8.4
JUN	9	10	8	11	8	5	10	9	7	11	5	93	8.5
JUL	9	14	10	8	10	7	6	10	5	12	8	99	9.0
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	108	1,380	

- **138.0** **Severe Injuries per year on average: 1997 through 2001**
- **115.0** **Severe Injuries per year on average: 2002 through 2007**
- **108** **Severe Injuries in 2007: second lowest count in 11 years**

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 March 15, 2008]

SOFA-defined Severe Injuries are Trending Downward

January 1, 1997 through December 31, 2007

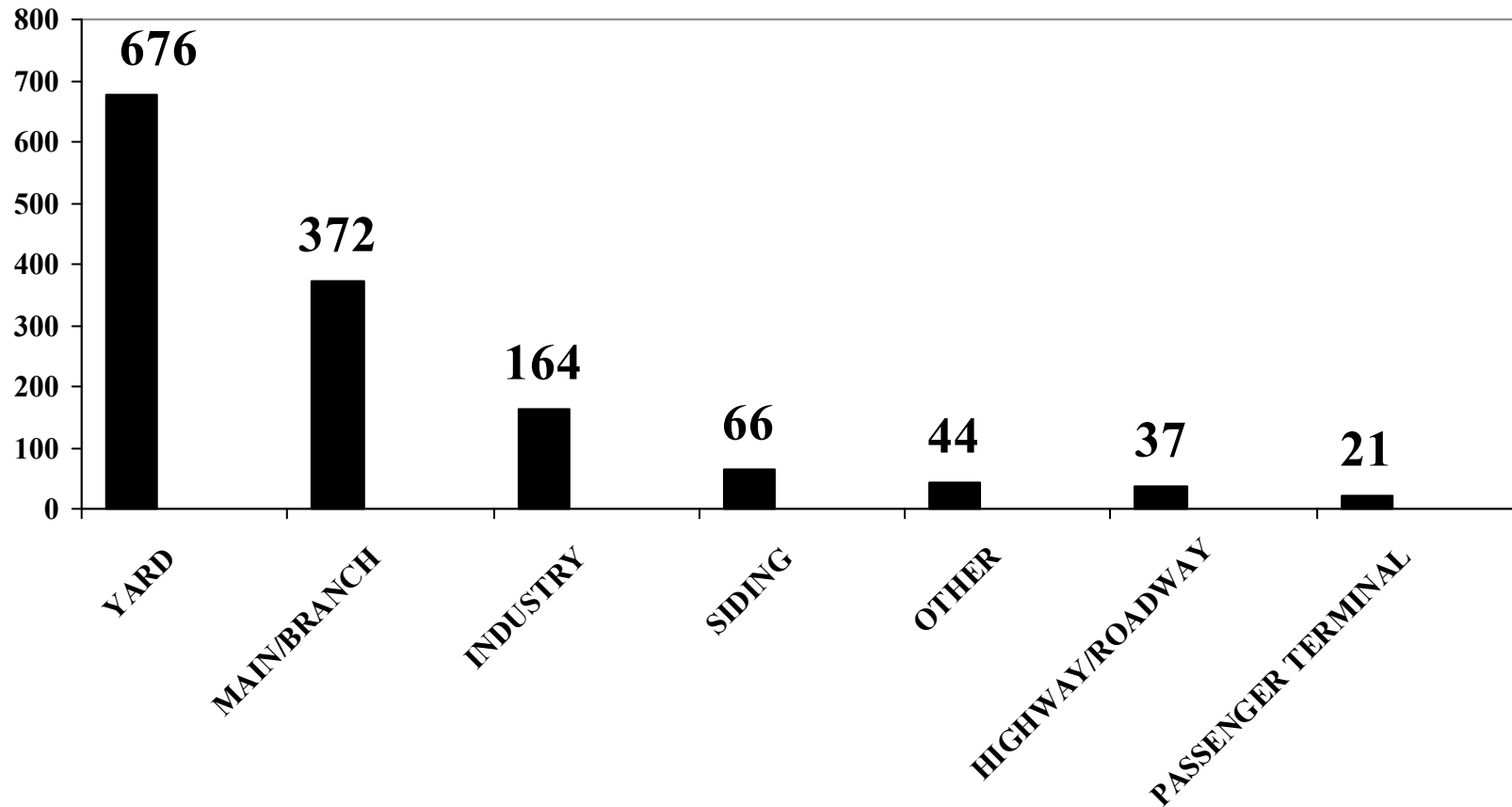


Events associated with 1,380 SOFA-defined Severe Injuries
January 1, 1997 through December 31, 2007

FRA Event Code	Short Description	Number	Percent of All	Cumulative Percent
70	slipped, fell, stumbled, other	175	12.7	12.7
54	slipped, fell, stumbled, etc. due to object	154	11.2	23.8
52	slipped, fell, stumbled, etc. due to climatic condition	132	9.6	33.4
34	lost balance	98	7.1	40.5
51	slipped, fell, stumbled, etc. due to irregular surface	94	6.8	47.3
59	struck by on-track equipment	90	6.5	53.8
17	collision between on-track equipment	68	4.9	58.8
61	struck against object	51	3.7	62.5
35	missed handhold, grabiron, step, etc.	44	3.2	65.7
99	other (describe in narrative)	39	2.8	68.5
68	caught, crushed, pinched, other	38	2.8	71.2
18	collision/impact-auto, truck, bus, van, etc.	32	2.3	73.6
64	sudden/unexpected movement of on-track equipment	31	2.3	75.8
50	slack action, draft, compressive buff/coupling	30	2.2	78.0
21	derailments	29	2.1	80.1
32	highway-rail collision/impact	27	2.0	82.0
56	stepped on object	26	1.9	83.9
58	struck by object	26	1.9	85.8
27	exposure to chemicals-external	17	1.2	87.0
53	slipped, fell, stumbled, etc. on oil, grease	17	1.2	88.3
38	overexertion	14	1.0	89.3
10	caught in or crushed by materials	11	0.8	90.1
20	defective/malfunctioning equipment	11	0.8	90.9
71	sudden, unexpected movement, other	11	0.8	91.7
7	bodily function/sudden movement, e.g., sneezing	10	0.7	92.4
	ALL OTHER	105	7.6	100.0

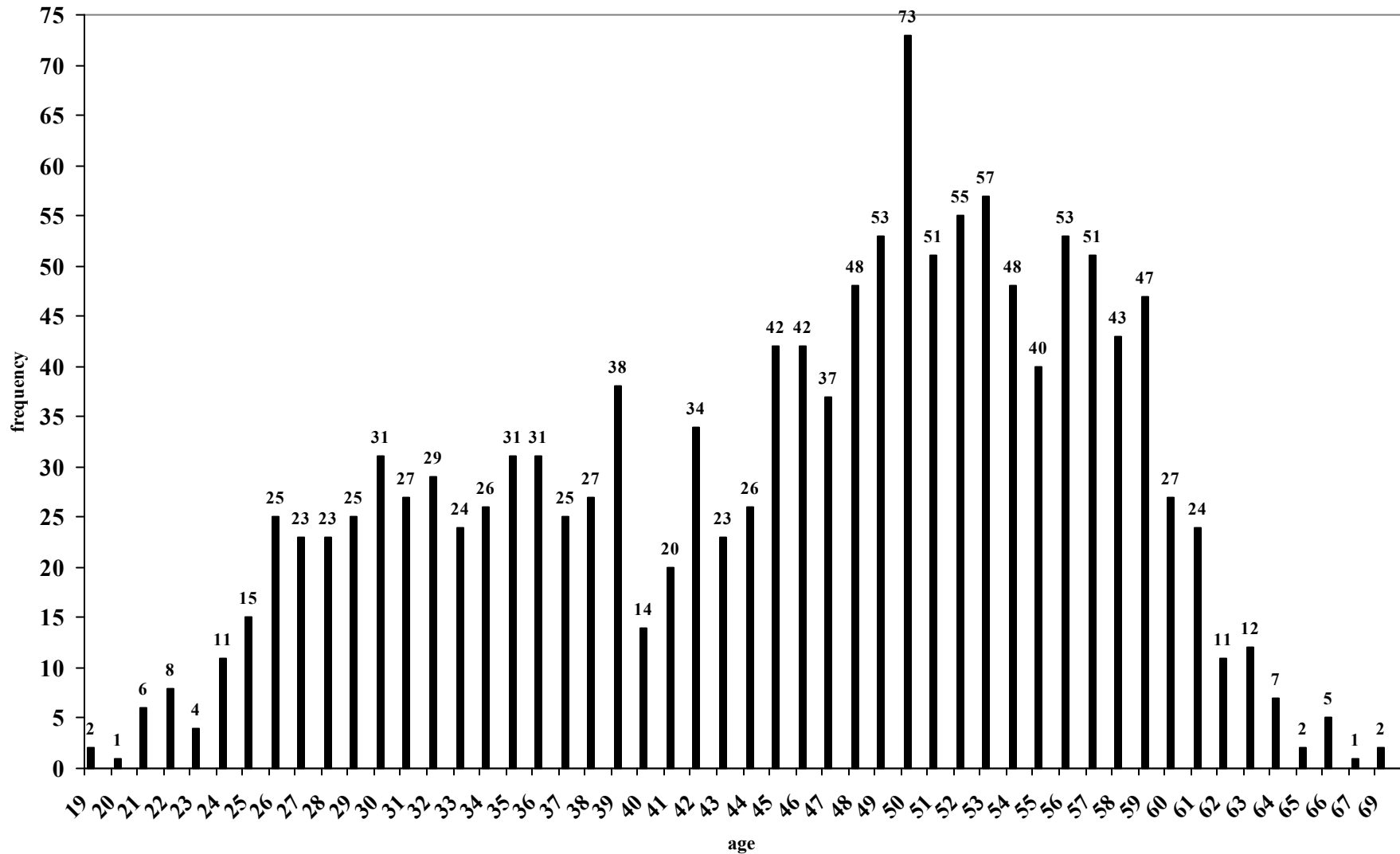
Occurrence Location (Line of Road) of 1,380 SOFA-defined Severe Injuries

January 1, 1997 through December 31, 2007



Distribution of Employee Ages for 1,380 SOFA-defined Severe Injuries

January 1, 1997 through December 31, 2007



Amputations

January 1992 through December 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
JUN	2	1	1	0	1	0	0	1	0	0	1	7	0.6
JUL	1	5	1	0	4	0	1	2	1	2	2	19	1.7
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	1.6
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	187	

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

Switching Fatality Review Section

This section contains:

- **Summaries of the Seven Switching Fatalities in 2007.** The information contained in these summaries is preliminary, pending investigation.
- **Switching Fatality Cases for Review: February, March, and April.** 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 March 15, 2008]

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

Summaries of the Seven Switching Fatalities in 2007

(Information is preliminary, pending investigation)

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

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.

Date: August 25, 2007, Saturday
Location: East Chicago, IN
Railroad: IHBR
SOFA Fatality Type: possible Special Switching Hazard (tripping, slipping, falling)

A two person conventional yard switching assignment was shoving a cut of cars into a track and the move was being controlled by the conductor. Radio communication between the conductor and the engineer ceased, the movement was stopped, and the conductor was found by the engineer dead and under the leading wheels of the second leading car of the shove.

Summaries of the Seven Switching Fatalities in 2007(cont.)

(Information is preliminary, pending investigation)

Date: August 30, 2007, Thursday
Location: Stockton, CA
Railroad: BNSF
SOFA Fatality Type: possible Special Switching Hazard (close clearance)

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

Date: October 27, 2007, Saturday
Location: Russell, KY
Railroad: CSX
SOFA Fatality Type: possible Special Switching Hazard

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.

Date: November 02, 2007, Friday
Location: Mayflower, AR
Railroad: UP
SOFA Fatality Type: possible Special Switching Hazard

A 33 year-old conductor had dismounted his locomotive and lined the switch ahead of his train for the siding in anticipation of a meet with an opposing train. As the opposing train began passing the conductor, he was apparently struck a glancing blow by the train and was later pronounced dead by attending medical personnel.

Date: December 28, 2007, Friday
Location: Bristol, IL
Railroad: BNSF
SOFA Fatality Type: possible Special Switching Hazard

A 61 year-old conductor was switching cars at an industry when he was struck and killed by rolling on track equipment.

9 February Switching Fatalities: January 1, 1992 through March 15, 2008

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendation(s)	Special Switching Hazard
1	02/17/95	CR	St. James, OH	48	29	road conductor	walking	near on-track equip-on ground	struck by on-track equipment	3, 4	
2	02/24/95	ATSF	Amarillo, TX	44	19	yard conductor	installing	on track	struck by on-track equipment	1, 2	
3	02/02/97	CR	Burns Harbor, IN	54	27	yard conductor	standing	beside track	struck by on-track equipment	2	
4	02/04/98	BRC	Bedford Park, IL	42	23	yard conductor	standing	between tracks	sudden/unexpected movement of on-track equipment	2	
5	02/17/99	KCS	Kansas City, MO	26	7	yard conductor	walking	beside track	struck by object		Struck by Motor Vehicle
6	02/11/03	CNIC	Flat Rock, MI	57	31	yard brakeman	walking	on track	struck by on-track equipment	2	
7	02/16/03	CSXT	Syracuse, NY	36	2.5	yard brakeman	walking	on track	struck by on-track equipment		Free-Rolling Railcars
8	02/18/03	CSXT	Cheektowaga, NY	51	29	road conductor	handbrakes, releasing	on end of car	sudden/unexpected movement of on-track equipment		Unsecured Cars
9	02/03/08	NS	Chicago, IL	--	--	To be reviewed					Special Switching Hazard

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

No. 1 of 9: February 17, 1995 – CR – St. James, OH

Arbitrary change in switching operations by conductor resulted in him being unexpectedly struck and fatally injured by approaching cars while he was fouling the track.

SOFA Operating Recommendation(s):	3, 4
Possible Contributing Factor:	Switch improperly lined
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Radio communication, improper
Day of Week:	Friday
Time of Fatal Event:	11:15 AM
Time on Duty (hours: minutes):	4:45
Temperature (Fahrenheit):	39
Direction of Movement:	shoved
Crew's Next Move:	cut cars
Death Result of Train Movement?	yes
Track Type:	industrial/spot/load-unload/stub track
Hit by Own Equipment?	yes
Striking Train Within Rules?	no
Speed of Equipment (mph):	2
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 2 of 9: February 24, 1995 – ATSF – Amarillo, TX

Two crews working in the same yard from opposite ends, one crew dropped ten free rolling cars in on top of the cut where the other crew's foreman was installing the E.O.T. at the opposite end. Cars impacted with sufficient force to knock down and run over the foreman.

SOFA Operating Recommendation(s):	1, 2
Possible Contributing Factor:	Instructions to train/yard crew improper
Day of Week:	Friday
Time of Fatal Event:	9:45 AM
Time on Duty (hours: minutes):	2:15
Temperature (Fahrenheit):	48
Direction of Movement:	free-running
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/flat/rec/dept
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	6
Deceased Regular Job?	yes
Crew Size:	4
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 3 of 9: February 02, 1997 – CR – Burns Harbor, IN

Two yard jobs working on adjacent tracks. The conductor of one is studying his switch list as the other job is shoving into the adjacent track. Conductor is struck and killed by the lead car of the adjacent track shove move.

SOFA Operating Recommendation(s):	2
Possible Contributing Factor:	Shoving movement, absence of a man on or at leading end of movement
Day of Week:	Sunday
Time of Fatal Event:	9:55 PM
Temperature (Fahrenheit):	30
Direction of Movement:	shoved
Crew's Next Move:	begin switching
Death Result of Train Movement?	yes
Other Movements Nearby?	yes
Track Type:	yard/flat/classification
Hit by Own Equipment?	no
Striking Train Within Rules?	no
Speed of Equipment (mph):	11
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no

No. 4 of 9: February 04, 1998 – BRC – Bedford Park, IL

Conductor and switchman making hoses on track 12, last transmission by conductor is “I think I got all the hoses after that next one....” Conductor later found to have been struck and killed by a free rolling car on the adjacent track.

SOFA Operating Recommendation(s):	2
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Close or no clearance
External Circumstances:	Track centerline at 13 feet
Day of Week:	Wednesday
Time of Fatal Event:	5:33 PM
Time on Duty (hours: minutes):	3:03
Temperature (Fahrenheit):	35
Direction of Movement:	free-running
Crew's Next Move:	couple track
Death Result of Train Movement?	no
Other Movements Nearby?	yes
Track Type:	yard/hump/classification
Hit by Own Equipment?	no
Striking Train Within Rules?	yes
Speed of Equipment (mph):	1
Deceased Regular Job?	yes
Crew Size:	3
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 5 of 9: February 17, 1999 – BRC – Kansas City, MO

A three-person switching crew was working in a piggy-back facility and had just finished shoving a cut of cars down a track to be worked by the piggy-packers (equipment used to load and unload TOFC/COFC rail shipments). The conductor was returning to the locomotive when he was struck and killed by one of the piggy-packers.

Special Switching Hazard(s):

Possible Contributing Factor:

External Circumstances:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Crew's Next Move:

Death Result of Train Movement?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

Struck by Motor Vehicle

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

Poor lighting

Wednesday

7:05 PM

4:05

42

cut off power

no

yard/flat/industrial

no

no

0

3

no

no

yes

No. 6 of 9: February 11, 2003 – CNIC – Flat Rock, MI

A three-person crew (engineer, conductor, brakeman) were stopped and the engineer and conductor were awaiting the brakeman's return from the "Trim Shanty". During this time, another crew was in the process of shoving a cut of cars down a track that was located between where the brakeman's crew were waiting and the Shanty. The brakeman exited the Shanty and was struck by the shove move as he crossed the tracks to get to his crew. The shove move was being preceded by two of the striking train's crew who were riding in a van at the time.

SOFA Operating Recommendation(s):

Possible Contributing Factor:

Possible Contributing Factor:
movement

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

2

Employee on or fouling track

Shoving movement, absence of a man on or at leading end of

Other general switching rules

Poor crew utilization

Shove protected from within moving taxi rather than from the actual leading point of movement because of cool weather

Day of Week:

Tuesday

Time of Fatal Event:

4:55 PM

Time on Duty (hours: minutes):

1:30

Temperature (Fahrenheit):

21

Direction of Movement:

shoved

Crew's Next Move:

stop train

Death Result of Train Movement?

yes

Other Movements Nearby?

yes

Track Type:

yard/lead

Hit by Own Equipment?

no

Speed of Equipment (mph):

8

Deceased Regular Job?

yes

Crew Size:

3

Drugs Present?

no

Drugs a Factor?

no

No. 7 of 9: February 16, 2003 – CSX – Syracuse, NY

A two-person crew was flat switching in a yard when the switchman, needed a break. He mentioned it to the yard foreman and they decided to go to break after one last car was “kicked” into a specific track. A short time after the car had been released, the foreman’s operating control unit indicated a “no poll” failure and the locomotive shut down. When the foreman couldn’t contact the switchman he went looking for him. The brakeman was found struck and killed by the last car that had been “kicked”.

Special Switching Hazard(s):	Free-Rolling Railcars
Possible Contributing Factor:	Employee on or fouling track
Possible Contributing Factor:	Other extreme environmental condition
Possible Contributing Factor:	Employee physical condition, other
External Circumstances:	Slipped, tripped or fell due to climatic conditions
Day of Week:	Sunday
Time of Fatal Event:	12:24 AM
Time on Duty (hours: minutes):	1:24
Temperature (Fahrenheit):	-15
Direction of Movement:	shoved/free-running
Crew's Next Move:	switch cars
Death Result of Train Movement?	yes
Other Movements Nearby?	no
Track Type:	yard/lead
Hit by Own Equipment?	yes
Striking Train Within Rules?	yes
Speed of Equipment (mph):	8
Deceased Regular Job?	no
Had Deceased Worked There Before?	yes
Crew Size:	2
Drugs Present?	no
Drugs a Factor?	no
Emergency Response Procedures Followed?	yes

No. 8 of 9: February 18, 2003 – CSX – Cheektowaga, NY

A three-person switching crew was in the process of shoving cars into a track at an industry. The switch foreman was riding the leading end of the shove and directing the move when he was struck by the cut of cars that they had left on another track and which had rolled out and into his shove move.

Special Switching Hazard(s):	Unsecured Cars
Possible Contributing Factor:	Failure to properly secure hand brake on car(s)
Possible Contributing Factor:	Failure to couple
Possible Contributing Factor:	Passed couplers
Day of Week:	Tuesday
Time of Fatal Event:	12:45 PM
Time on Duty (hours: minutes):	5:54
Temperature (Fahrenheit):	18
Direction of Movement:	shoved/free-running
Crew's Next Move:	spot
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. 9 of 9: February 3, 2008 – 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.

9 March Switching Fatalities: January 1, 1992 through March 15, 2008

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendation(s)	Special Switching Hazard	
1	03/11/92	FEC	Fort Pierce, FL	36	16	yard conductor	riding	near on-track equip-on ground	derailments	4		
2	03/27/93	SP	Guadalupe, CA	39	19	road brakemen	riding	on end of car	struck by object		Employee Tripping	
3	03/02/95	NS	Aiken, SC	46	22	road brakemen	adjusting coupler	on track	struck by on-track equipment	1, 3		
4	03/21/95	SP	Bassett, CA	55	24	road brakemen	walking	on track	struck by on-track equipment		Miscellaneous	
5	03/20/96	BRC	Bedford Park, IL	28	0.34	yard conductor	adjusting coupler	between cars/loc	struck by on-track equipment	1, 5		
6	03/09/00	IHB	Riverdale, IL	43	24	yard conductor	crossing between	between cars/loc	sudden/unexpected movement of on-track equipment	1		
7	03/03/01	BNSF	Willmar, MN	36	3.75	yard brakeman	standing	between cars/loc	struck by on-track equipment	1		
8	03/21/02	NS	Claymont, DE	45	13	road engineer	getting on	near on-track equip-on ground	struck by on-track equipment		Close Clearance and Struck by Mainline Trains	
9	03/10/04	MNCW	Stamford, CT	46	To be reviewed							Involved Operating Recommendation(s)

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards

No. 1 of 9: March 11, 1992 – FEC – Fort Pierce, FL

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

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

No. 2 of 9: March 27, 1993 – SP – Guadalupe, CA

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

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

No. 3 of 9: March 02, 1995 –NS – Aiken, SC

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

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

No. 4 of 9: March 21, 1995 – SP – Bassett, CA

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

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

No. 5 of 9: March 20, 1996 – BRC – Bedford Park, IL

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

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

No. 6 of 9: March 09, 2000 – IHB – Riverdale, IL

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

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

No. 7 of 9: March 03, 2001 – BNSF – Willmar, MN

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

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

No. 8 of 9: March 21, 2002 – NS – Claymont, DE

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

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

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

(Information is preliminary, pending investigation)

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

12 April Switching Fatalities: January 1, 1992 through March 15, 2008

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendation(s)	Special Switching Hazard
1	04/09/92	ATSF	Cheto, AZ	54	13	road engineer	opening/closing angle cock	near on-track equip-on ground	struck by on-track equipment		Free-Rolling Railcars
2	04/13/93	CSX	Dwale, KY	44	16	road brakemen	walking	on track	struck by on-track equipment		Struck by Mainline Trains
3	04/12/94	SP	Houston, TX	62	37	yard conductor	riding	on side of car	struck against object		Close Clearance
4	04/06/95	WC	Argoe, WI	45	7	road conductor	riding	on end of car	collision between on-track equipment		Unsecured Cars
5	04/02/99	DME	Waseca, MN	54	21	yard brakeman	coupling air hose	between cars/loc	struck by on-track equipment	3	
6	04/09/99	UP	Richland, WA	58	39	road conductor	standing	in/on loc	collision between on-track equipment		Equipment
7	04/21/00	BNSF	Galesburg, IL	60	32	yard conductor	standing	beside track	struck by on-track equipment		Free-Rolling Railcars
8	04/08/01	BNSF	Clark, OK	35	3.75	road conductor	riding	on side of car	collision between on-track equipment		Miscellaneous
9	04/11/03	UP	Pocatello, ID	55	23	road conductor	riding	on end of car	derailments	3	
10	04/06/05	NS	Selma, AL			To be reviewed					Special Switching Hazard
11	04/11/05	UP	Ogden, UT			To be reviewed					Special Switching Hazard
12	04/02/06	UP	Palmer, MI			To be reviewed					Tripping, Slipping, Falling

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

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

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Free-Rolling Railcars

Switching movement, excessive speed
Walkway conditions

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

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

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

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Struck by Mainline Trains

Employee on or fouling track
Shocked by crossing gate arm

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Special Switching Hazard(s):

Possible Contributing Factor:
External Circumstances:

Free-Rolling Railcars

Employee on or fouling track
Windy

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

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

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

Special Switching Hazard(s):

Possible Contributing Factor:
Possible Contributing Factor:
failure to control

Miscellaneous

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

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

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

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

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

No. 10 of 12: April 5, 2005 – NS – Selma, AL **(Information is preliminary, pending investigation)**

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

No. 11 of 12: April 11, 2005 – UP – Ogden, UT **(Information is preliminary, pending investigation)**

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

No. 12 of 12: April 02, 2006 – UP – Palmer, MI **(Information is preliminary, pending investigation)**

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