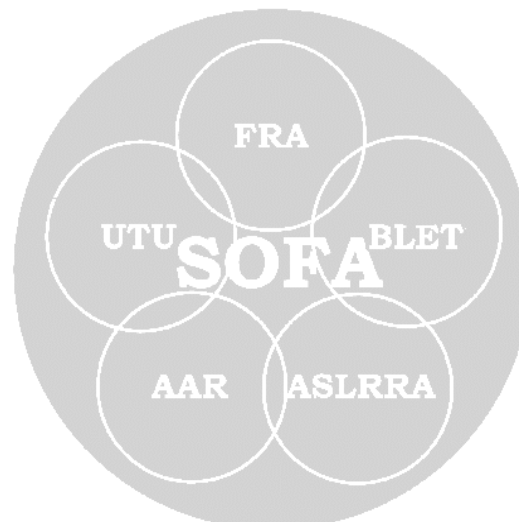


Please Post Immediately

Feel free to use, reproduce, and circulate this information in your safety efforts

Make Switching Fatality Free:

Apply SOFA Operating Recommendations – Recognize Special Switching Hazards



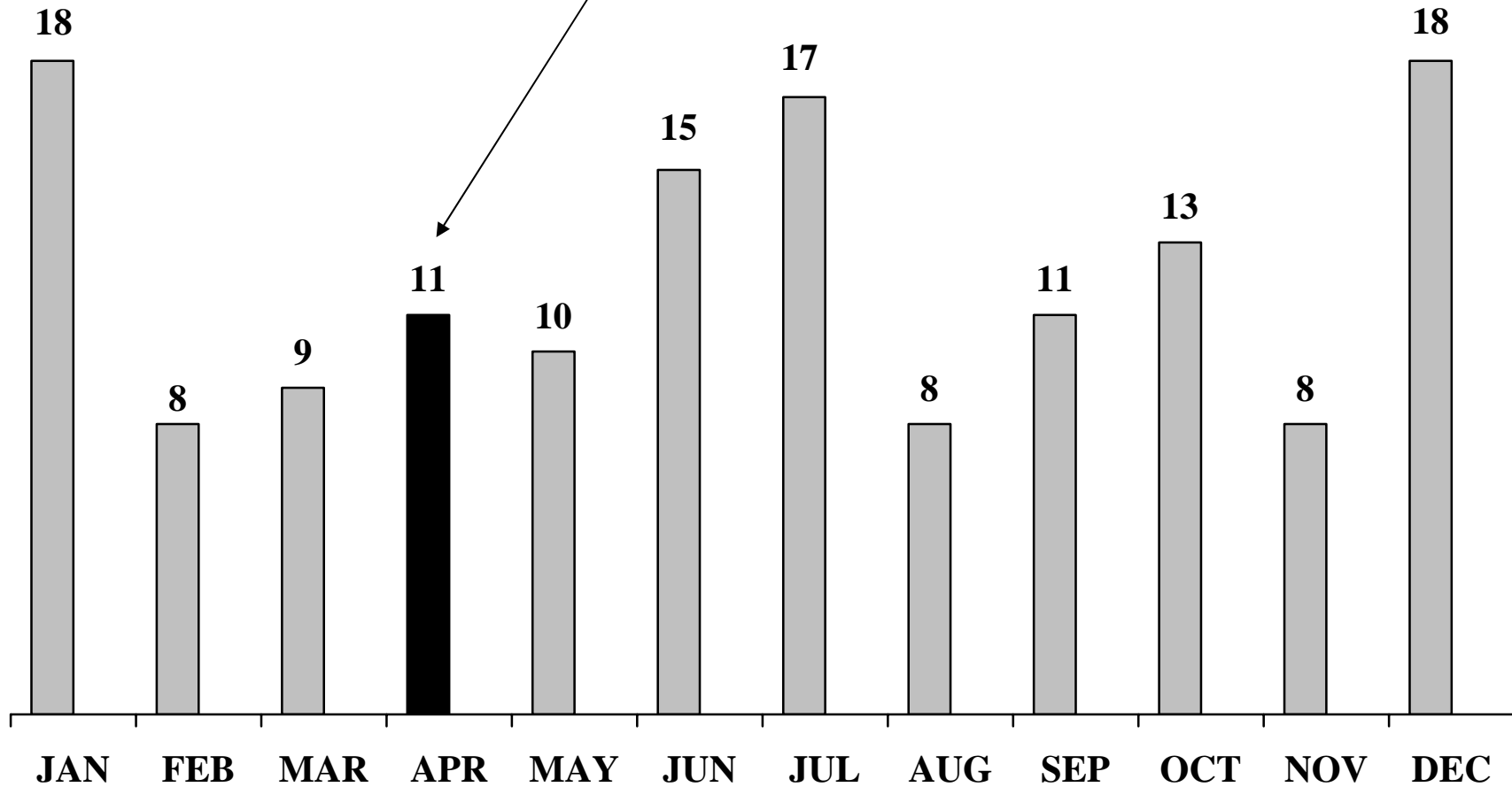
April 2006 Switching Fatality and Severe Injury Update

The SOFA Working Group

Comprised of union, management, and government representatives, the SOFA Working Group is trying to *Make Switching Fatality Free* through education and monthly dissemination of information on how Fatalities occur – and how such events, averaging 10.4 per year, can be prevented.

11 Switching Fatalities in April since 1992

There is always risk to employees engaged in switching

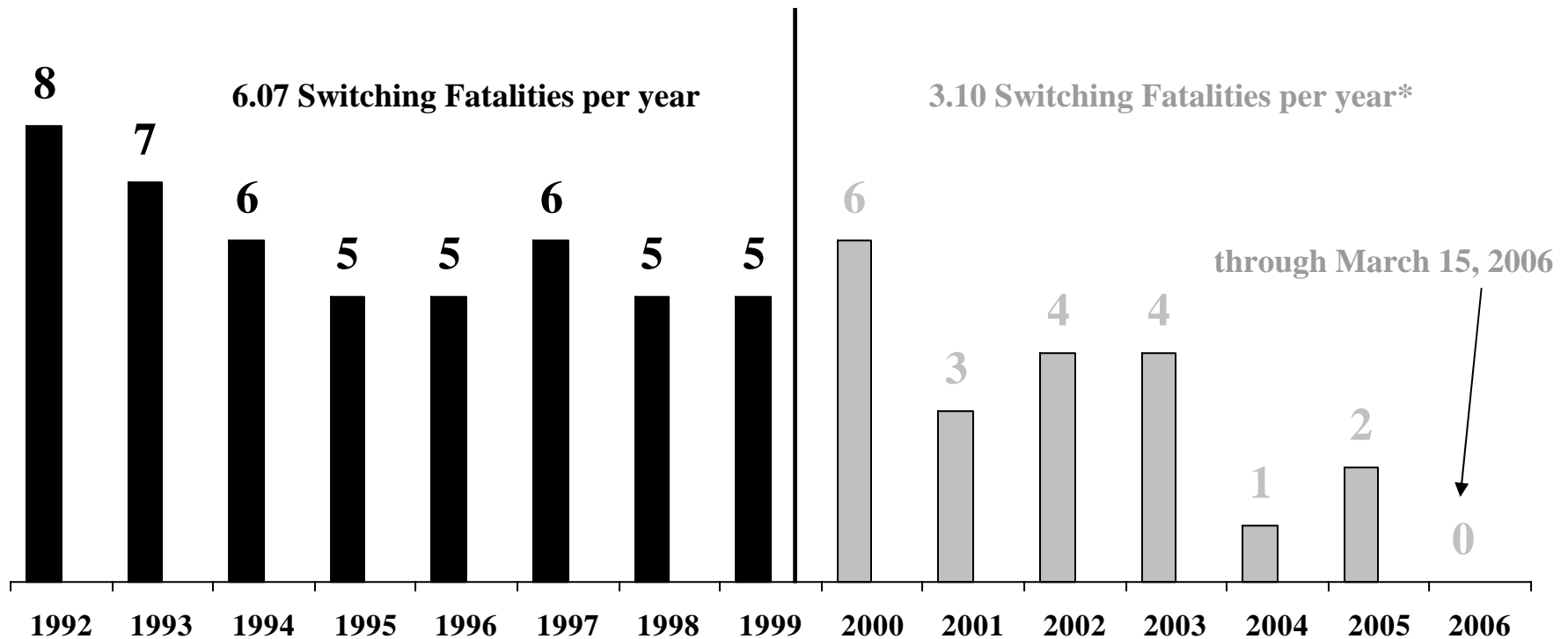


10.4 Fatalities occur each year to employees engaged in switching

Applying SOFA Operating Recommendations is having an effect

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

In the post-SOFA Report period of 6.46 years, October 1, 1999 through March 15, 2006, there were 20 Switching Fatalities related to the Five Operating Recommendations. Expressed as a rate, there were 3.12 Switching Fatalities per year* related to Operating Recommendations.



* The Switching Fatality at Burlington, IA, on December 4, 2005, is believed to involve a Close Clearance Special Switching Hazard. If further review by the SOFA Working Group determines one or more Operating Recommendations were involved, the Switching Fatality rate after the release of the *SOFA Report* would increase from 3.10 to 3.25.

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

79 Special Switching Hazard Fatalities since 1992

54.1 percent of Switching Fatalities since 1992 involved Special Switching Hazards



SOFA Working Group

Apply SOFA Operating Recommendations — Recognize Special Switching Hazards

- 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/102>

11 April Switching Fatalities

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendations	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	n/a	n/a	To be reviewed by SOFA Working Group					Special Switching Hazard
11	04/11/05	UP	Ogden, UT	n/a	n/a	To be reviewed by SOFA Working Group					Special Switching Hazard

Two April Switching Fatalities involved SOFA Operating Recommendation 3

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.

Lifesaver 3

Discuss safety at the beginning of a job or when a project changes.

Discussion 3

Safe switching operations require teamwork and accountability among all crew members. Each crew member takes responsibility for their own and their fellow crew member's safety. Team work begins with a detailed, effective job briefing, but includes continued updates to all crew members describing the current state of each move as it is executed.

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.

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 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.

April 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 11: 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:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Direction of Movement:

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

Free-Rolling Railcars

Switching movement, excessive speed

Walkway conditions

Thursday

2:39 PM

4:39

free-running

couple to train

yes

no

main/storage

yes

no

10

3

no

no

yes

April 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. 2 of 11: 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

April 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. 3 of 11: 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 forth leading car, and was later pronounced dead at the hospital.

Special Switching Hazard(s):

Possible Contributing Factor:

Day of Week:

Close Clearance

Close or no clearance

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

April 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. 4 of 11: April 06, 1995 – WC – Argoe, 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):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Unsecured Cars

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

Improper operation of train line air connections (bottling the air)

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?

Y; 30 min. EMS response time

April 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. 5 of 11: 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

April 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. 6 of 11: 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):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Equipment

Failure to stop locomotive in clear

Locomotive defect

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

April 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. 7 of 11: 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:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Direction of Movement:

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

Free-Rolling Railcars

Employee on or fouling track

Windy

Friday

9:28 AM

1:29

43

free-running

pull track

yes

yes

yard/hump/classification

no

yes

7

yes

3

no

no

yes

April 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. 8 of 11: 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:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Direction of Movement:

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Miscellaneous

Switch improperly lined

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

Sunday

9:18 PM

1:48

70

shoved

couple to standing cars

yes

no

yard/flat/industrial

no

no

1

yes

3

no

no

Emergency Response Procedures Followed? yes

April 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. 9 of 11: 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

April 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. 10 of 11: April 5, 2005 – NS – Selma, AL

(To be reviewed by SOFA Working Group)

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 11: April 11, 2005 – UP – Ogden, UT

(To be reviewed by SOFA Working Group)

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.

10.4 Fatalities occur each year on average to employees engaged in switching

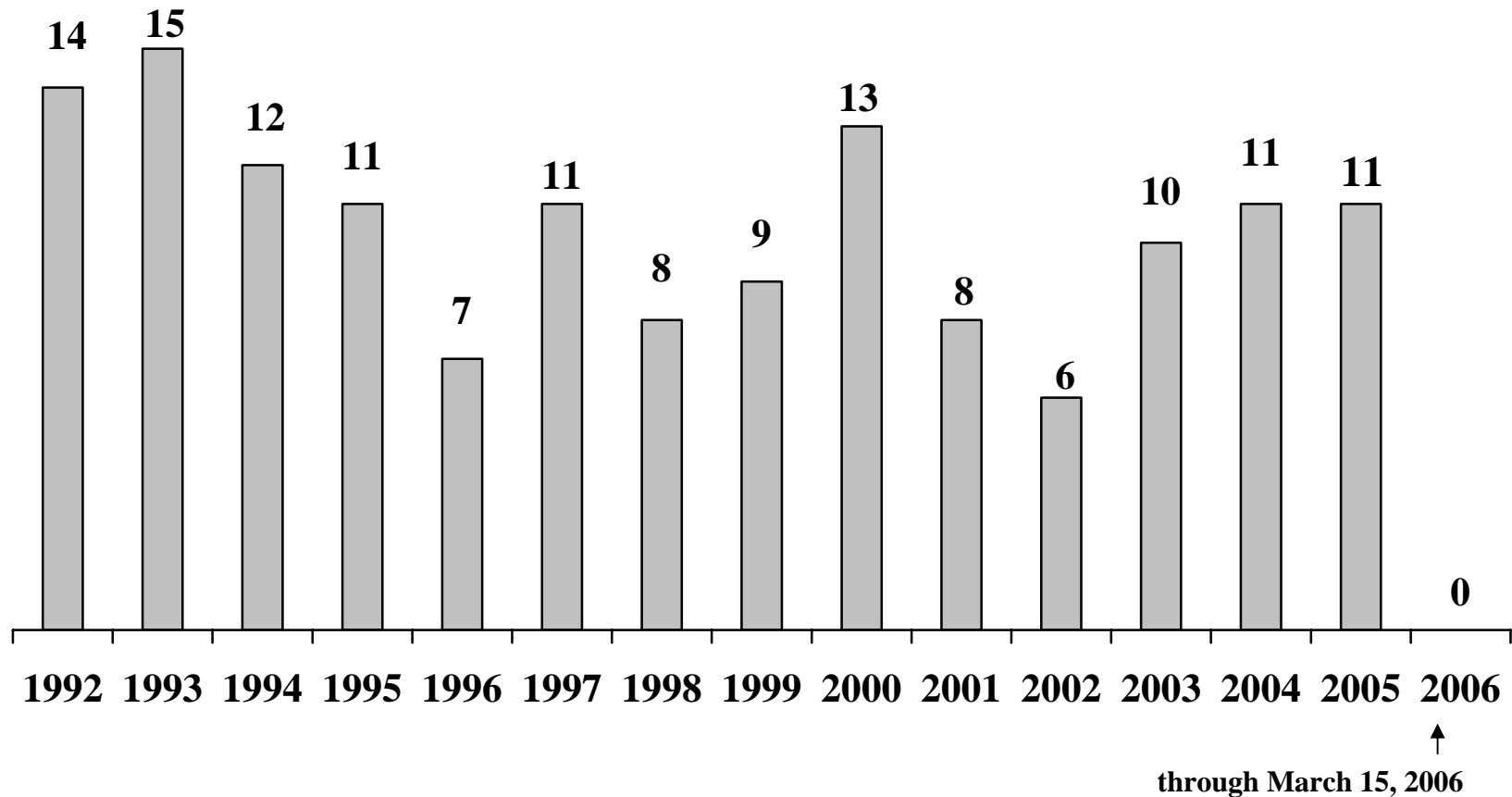
***Make Switching Fatality Free:
Apply SOFA Operating Recommendations – Recognize Special Switching Hazards***

146 Switching Fatalities Since 1992

The SOFA Working Group reviews each Switching Fatality after the Federal Railroad Administration completes its investigation. There have been 146 Fatalities since 1992. In the last three years, 10, 11, and 11 Fatalities respectively have occurred.

The last Switching Fatality occurred on December 4, 2005 at Burlington, IA: A Burlington Northern Santa Fe (BNSF) brakeman, riding the side of a car into an area posted as “close clearance,” was killed when he was crushed between the car he was riding and a steel walkway support beam.

Through March 15, 2006 there have been 101 Switching-Fatality-Free Days



137 Switching Fatalities, January 1992 to February 2006, by Age

(Age is not known for 9 of the 146 Switching Fatalities occurring during period)

State	All Ages	Average Age	24 or less	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 or older	State	All Ages	Average Age	24 or less	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 or older
AL	0										NE	5	45.2	0	0	1	0	1	2	0	1
AK	2	52	0	0	0	0	0	1	0	1	NV	1	53.0	0	0	0	0	0	0	1	0
AZ	4	50	0	0	0	0	0	2	2	0	NH	0									
AR	1	54	0	0	0	0	0	0	1	0	NJ	1	54.0	0	0	0	0	0	0	1	0
CA	10	48.7	0	0	0	3	0	2	1	4	NM	2	41.5	0	1	0	0	0	0	0	1
CO	0										NY	5	43.4	0	1	0	1	0	1	1	1
CT	2	43.0	0	0	0	0	1	1	0	0	NC	4	48.8	0	0	0	1	0	0	2	1
DE	1	45.0	0	0	0	0	0	1	0	0	ND	1	43.0	0	0	0	0	1	0	0	0
DC	0										OH	5	50.2	0	0	0	1	0	1	2	1
FL	2	34.0	0	0	1	1	0	0	0	0	OK	2	38.5	0	0	0	1	1	0	0	0
GA	6	48.8	0	0	0	0	0	5	0	1	OR	2	53.5	0	0	0	0	0	0	2	0
HI	0										PA	4	50.0	0	1	0	0	0	0	1	2
ID	2	55.0	0	0	0	0	0	0	0	2	RI	0									
IL	12	45.6	0	1	0	1	5	1	1	3	SC	4	35.8	1	1	0	0	0	2	0	0
IN	6	44.0	0	1	0	1	1	0	3	0	SD	0									
IA	3	50.7	0	0	0	0	0	1	2	0	TN	2	27.5	1	0	0	1	0	0	0	0
KS	3	38.3	0	1	0	1	0	0	1	0	TX	14	45.5	1	0	1	2	3	2	1	4
KY	7	46.3	0	0	0	2	1	1	3	0	UT	1	53.0	0	0	0	0	0	0	1	0
LA	1	36.0	0	0	0	1	0	0	0	0	VT	0									
ME	0										VA	2	34.0	0	0	1	1	0	0	0	0
MD	0										WA	2	50.0	0	0	0	0	1	0	0	1
MA	0										WV	0									
MI	6	43.7	1	0	0	1	1	1	1	1	WI	2	39.5	0	0	1	0	0	1	0	0
MN	3	49.0	0	0	0	1	0	0	1	1	WY	1	29.0	0	1	0	0	0	0	0	0
MS	1	55.0	0	0	0	0	0	0	0	1	total	137		5	9	5	20	16	27	28	27
MO	2	37.0	0	1	0	0	0	1	0	0	%	100.0		3.6	6.7	3.6	14.6	11.7	19.7	20.4	19.7
MT	3	42.7	1	0	0	0	0	1	0	1											

1,172 SOFA-defined Severe Injuries, January 1997 to December 2005, by Age

State	All Ages	Average Age	24 or less	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 or older	State	All Ages	Average Age	24 or less	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 or older
AL	22	46.3	1	1	2	4	0	3	2	9	NE	30	48.0	0	2	1	3	6	1	6	11
AK	2	40.0	0	0	1	0	0	1	0	0	NV	5	40.8	1	0	0	0	1	2	1	0
AZ	13	43.8	0	1	1	2	2	3	4	0	NH	1	63.0	0	0	0	0	0	0	0	1
AR	24	45.3	0	2	3	5	2	1	4	7	NJ	22	44.5	0	1	3	3	3	5	5	2
CA	80	46.3	3	6	6	9	5	15	15	21	NM	5	40.6	0	1	1	1	0	0	1	1
CO	19	51.6	0	1	0	1	1	2	8	6	NY	59	44.2	3	1	7	7	6	16	12	7
CT	8	48.3	0	0	1	1	0	2	2	2	NC	11	39.4	0	2	1	3	2	1	2	0
DE	6	48.8	0	0	0	0	2	1	2	1	ND	13	50.1	0	0	1	0	0	4	5	3
DC	2	51.5	0	0	0	0	0	1	1	0	OH	62	44.9	0	9	4	8	6	12	8	15
FL	24	47.8	1	0	2	4	1	1	6	9	OK	11	40.2	0	2	2	1	1	3	2	0
GA	29	43.0	2	6	2	2	1	5	4	7	OR	18	45.1	0	1	2	3	2	1	6	3
HI	0										PA	53	45.2	0	4	5	5	8	11	8	12
ID	8	50.1	0	0	0	0	2	3	0	3	RI	0									
IL	91	44.5	1	9	13	13	2	15	18	20	SC	18	44.3	2	0	4	1	1	1	4	5
IN	36	44.9	2	3	4	3	2	5	8	9	SD	5	44.6	0	0	0	2	0	1	2	0
IA	32	44.4	0	4	3	5	3	6	5	6	TN	22	47.0	1	1	2	1	3	2	5	7
KS	25	50.3	0	0	0	4	3	2	7	9	TX	107	46.1	1	8	14	10	12	11	24	27
KY	31	47.0	2	3	1	3	1	3	8	10	UT	12	52.4	0	0	1	0	0	2	5	4
LA	33	44.2	3	2	4	2	2	5	5	10	VT	0									
ME	5	48.2	0	0	0	2	0	1	1	1	VA	26	48.8	1	1	1	0	4	6	6	7
MD	10	47.3	0	0	1	2	1	1	3	2	WA	29	43.6	1	2	8	2	1	3	4	8
MA	16	43.9	0	1	2	1	3	6	1	2	WV	11	47.5	0	0	1	2	1	3	2	2
MI	28	50.4	1	0	1	0	3	6	8	9	WI	31	45.4	1	5	3	3	1	2	7	9
MN	22	44.8	0	1	2	3	2	8	3	3	WY	12	44.6	1	0	1	0	4	3	1	2
MS	14	43.6	0	1	4	0	2	2	2	3	total	1,172		28	84	117	124	103	194	243	279
MO	24	46.3	0	2	2	2	1	5	8	4	%	100.0		2.4	7.2	10.0	10.6	8.8	16.5	20.7	23.8
MT	5	43.8	0	1	0	1	0	1	2	0											

SOFA-defined Severe Injuries

January 1992 to December 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005	totals	average
JAN	11	13	16	15	21	12	11	11	20	130	14.4
FEB	17	15	9	9	9	13	17	14	11	114	12.7
MAR	14	12	17	11	10	10	13	10	9	106	11.8
APR	8	10	6	10	12	6	9	13	10	84	9.3
MAY	6	12	8	8	12	14	9	6	6	81	9.0
JUN	9	10	8	11	8	5	10	9	7	77	8.6
JUL	9	14	10	8	10	7	6	10	5	79	8.8
AUG	13	10	11	14	8	10	7	14	10	97	10.8
SEP	10	11	15	10	20	12	5	4	9	96	10.7
OCT	12	12	16	10	5	11	9	7	10	92	10.2
NOV	12	9	12	11	13	14	10	10	12	103	11.4
DEC	18	9	7	22	12	9	8	15	13	113	12.6
totals	139	137	135	139	140	123	114	123	122	1,172	

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

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

Severe Injuries are defined by the SOFA Working Group as (1) potentially life threatening; (2) high likelihood of permanent loss of function, permanent occupational limitation, or other permanent disability; (3) likely to result in significant work restrictions; and (4) result from a high-energy impact to the human body. 'Severe Injuries' include amputation, dislocation of the neck, loss of eye, electric shock or burn, and fracture to any bone except the lower arm, fingers, foot, and toes, See *Severe Injuries to Train and Engine Service Employees: Data Description and Injury Characteristics*. July 2001. Available at: <http://www.fra.dot.gov/us/content/102>

Amputations

A type of SOFA-defined Severe Injuries

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

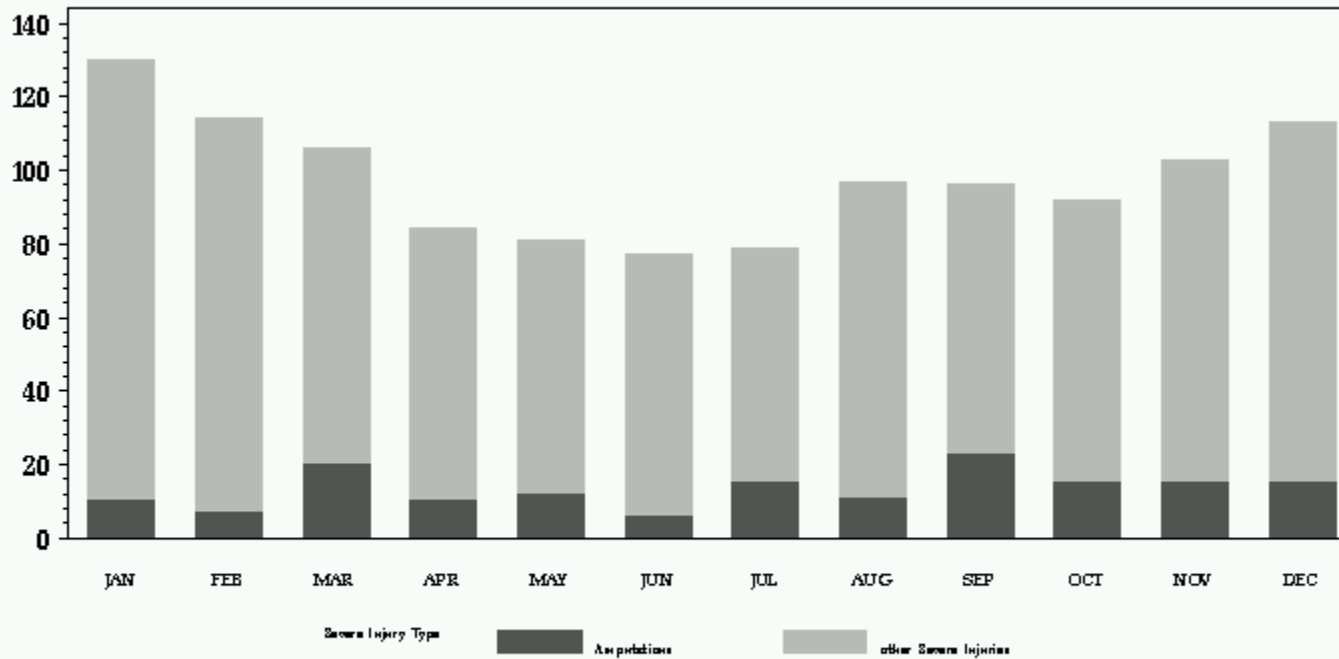
January 1992 to December 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005	totals	average
JAN	1	0	2	1	0	0	2	2	2	10	1.1
FEB	0	1	0	1	0	2	1	2	0	7	0.8
MAR	3	4	3	2	1	1	3	1	2	20	2.2
APR	1	2	0	1	2	0	1	1	2	10	1.1
MAY	1	2	3	0	2	2	2	0	0	12	1.3
JUN	2	1	1	0	1	0	0	1	0	6	0.7
JUL	1	5	1	0	4	0	1	2	1	15	1.7
AUG	1	0	1	4	0	1	0	2	2	11	1.2
SEP	2	4	3	2	5	4	0	0	3	23	2.6
OCT	2	5	2	2	0	0	2	2	0	15	1.7
NOV	2	2	2	2	3	0	1	1	2	15	1.7
DEC	4	1	0	4	1	1	2	1	1	15	1.7
totals	20	27	18	19	19	11	15	15	15	159	

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

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

Severe Injuries and Amputations by Month, January 1997 through December 2005



1,172 Severe Injuries occurred from January 1997 through December 2005
 (Severe Injuries included 159 Amputations = 13.6 percent)