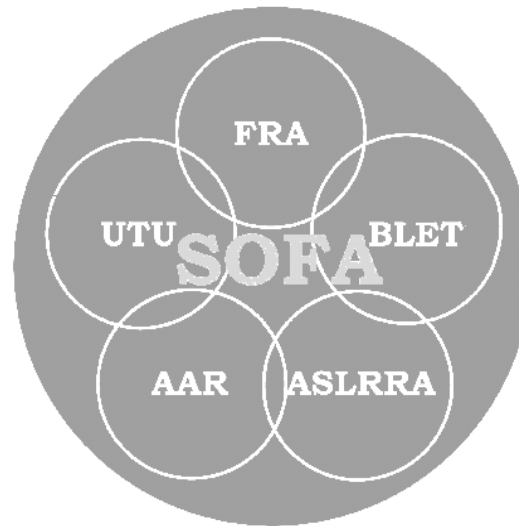


# Please Post Immediately

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



## January 2006 Switching Fatality and Severe Injury Update

### January Switching Fatality Risk

18 Switching Fatalities in January since 1992. While there is always risk to employees engaged in switching operations, January is particularly risky. In 2005, there were two January Fatalities: a 53-year-old conductor at Buena Vista, AR, on January 10; a 52-year-old conductor at Los Angeles, CA, on January 26. In 2004, one January Fatality: a conductor at Kankakee, IL, on January 14.

### January Severe Injury Risk

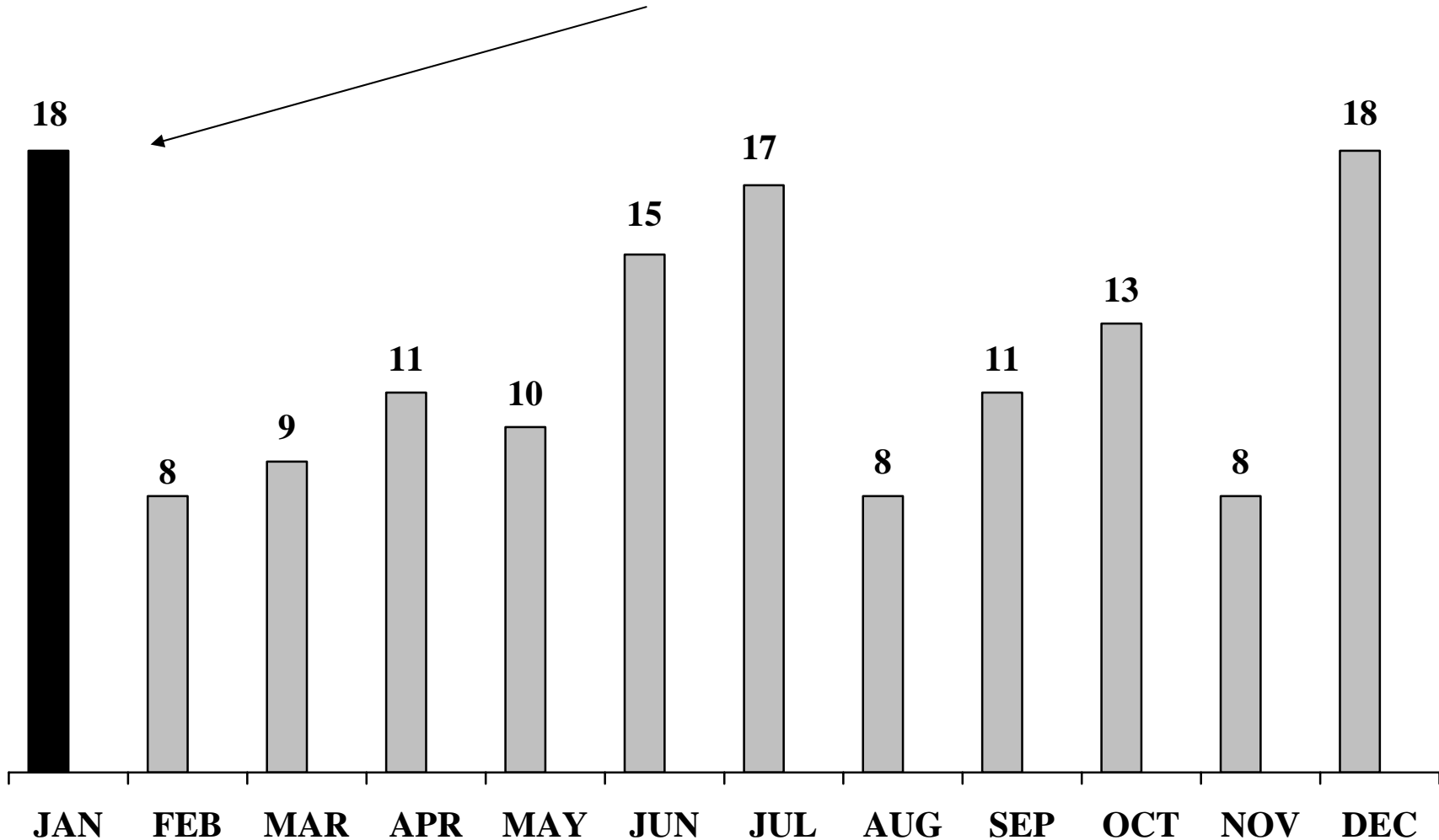
Since 1997, January with 131 is the highest month for Severe Injuries. 31 percent of Severe Injuries occur in January, February, and March. *Applying SOFA Operating Recommendations – Recognizing Special Switching Hazards* can reduce Severe Injuries, the SOFA Working Group believes. However, the SOFA Working Group has not identified all causes of Severe Injuries. Since 2002, Severe Injuries per year have declined: 138 per year on average (1997-2001) v. 120 per year on average (2001-2004).

### Switching Fatalities in 2005

11 Switching Fatalities have occurred in 2005 through 12/19/05. The last Fatality, a brakeman, occurred on December 4, at Burlington, IA. On average, 10.5 Switching Fatalities occur each year.

## 18 of 146 (12.3%) Switching Fatalities since 1992 Occurred in January

While there is always risk to employees engaged in switching operations, 18 of 146 Switching Fatalities since 1992 occurred in January, along with December the highest number of any month.



# 18 Switching in January

by Day of Week, Age, and Years of Service

| #  | Date     | Day of Week | Location          | Age | Years of Service |
|----|----------|-------------|-------------------|-----|------------------|
| 1  | 01/28/92 | Tuesday     | Willmar, MN       | 57  | 22               |
| 2  | 01/30/92 | Thursday    | Polk County, FL   | 32  | 0.5              |
| 3  | 01/04/94 | Tuesday     | Hastings, NE      | 46  | 20               |
| 4  | 01/14/94 | Friday      | Amarillo, TX      | 57  | 36               |
| 5  | 01/18/94 | Tuesday     | Bainbridge, GA    | 45  | 25               |
| 6  | 01/20/94 | Thursday    | Fall City, NE     | 44  | 16               |
| 7  | 01/11/95 | Wednesday   | Indianapolis, IN  | 51  | 30               |
| 8  | 01/12/97 | Sunday      | S. Fontana, CA    | 60  | 35               |
| 9  | 01/29/97 | Wednesday   | Mason City, IA    | 48  | 28               |
| 10 | 01/24/98 | Saturday    | Omaha, NE         | 47  | 26               |
| 11 | 01/12/99 | Tuesday     | Port Newark, NJ   | 54  | 5.5              |
| 12 | 01/22/99 | Friday      | Alexandria, NY    | 45  | 1                |
| 13 | 01/02/00 | Sunday      | Cedar Springs, GA | 49  | 21               |
| 14 | 01/10/01 | Wednesday   | Chicago, IL       | 42  | 1                |
| 15 | 01/11/01 | Thursday    | South Fork, PA    | 52  | 34               |
| 16 | 01/14/04 | Wednesday   | Kankakee, IL      | --  | --               |
| 17 | 01/10/05 | Monday      | Buena Vista, AR   | 53  | --               |
| 18 | 01/26/05 | Wednesday   | Los Angeles, CA   | 52  | --               |

The average age for employees, whose ages have been verified, is 49.1 years for January. The average age for the other 11 months is 44.9 years.

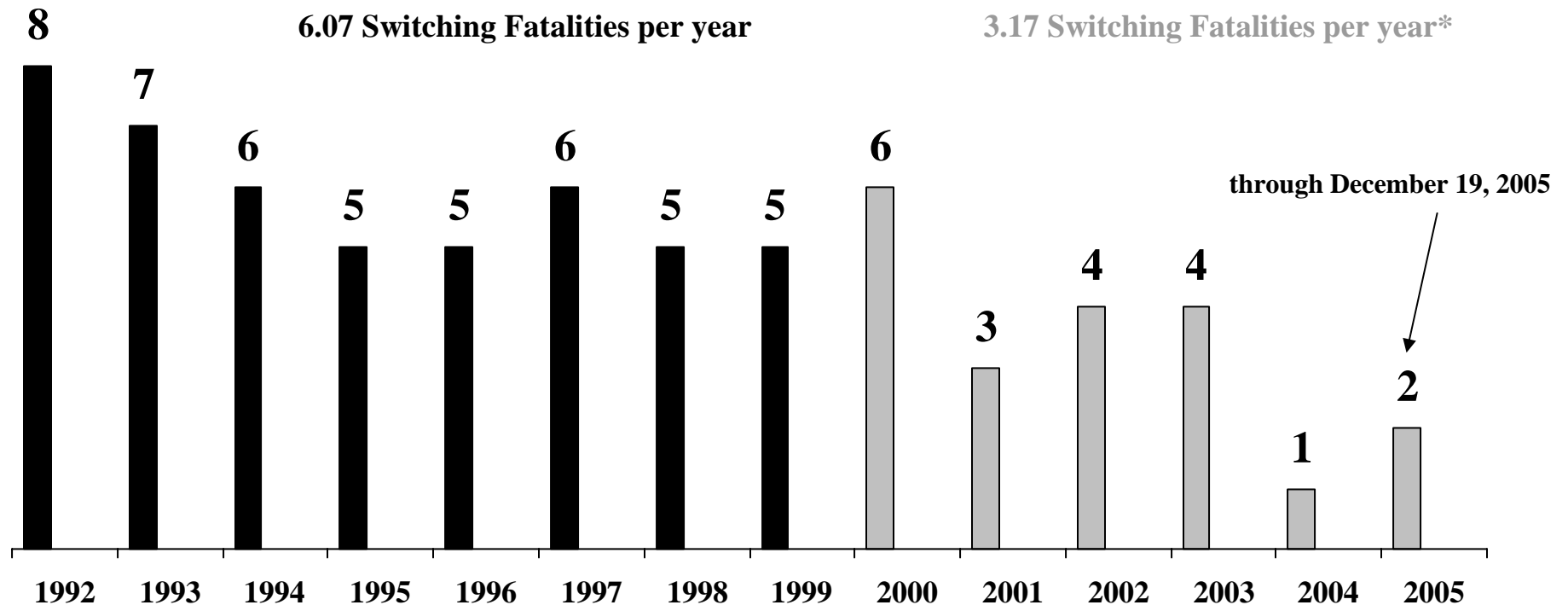
The average years of service for employees, whose years of service have been verified, is 20.1 years for January. The average for the other 11 months is 18.4 years.

## Applying SOFA Operating Recommendations is Having an Effect

There were 47 Switching Fatalities related to the Five Operating Recommendations in the pre-SOFA Report period, January 1992 through September 1999 – 7.75 years. The original SOFA Report<sup>1</sup> was released in October 1999. Expressed as a rate, there were 6.07 Switching Fatalities per year related to operating Recommendations.

**There were 20 Switching Fatalities related to the Five Operating Recommendations in the post-SOFA Report period, October 1, 1999 through December 4, 2005 – 6.30 years. Expressed as a rate, there were 3.17 Switching Fatalities per year\* related to Operating Recommendations.**

*Applying SOFA Operating Recommendations is having an effect.*



\* 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 3.17 to 3.33.

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

## ***Recognizing Special Switching Hazards Needs Emphasis***

Now the majority of Switching Fatalities involve Special Switching Hazards. The SOFA Working Group (SWG) believes the industry's emphasis on the Five Operating Recommendations has had a positive effect – as will continued emphasis. But to Achieve the Zero Switching Fatality Goal, additional emphasis is needed in *Recognizing Special Switching Hazards*.

“In addition to the Five Operating Recommendations, the SWG 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.

### ***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

\* 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>

# 18 January Switching Fatalities

| #  | Date     | RR   | Location          | Age | Service (yrs) | Employee's Job                       | Employee Act    | Employee Location                 | Fatal Event  | SOFA Recommendations | Special Switching Hazard |
|----|----------|------|-------------------|-----|---------------|--------------------------------------|-----------------|-----------------------------------|--|----------------------|--------------------------|
| 1  | 01/28/92 | BN   | Willmar, MN       | 57  | 22            | yard brakeman                        | walking         | on track                          | struck by on-track equipment                                     | 4                    |                          |
| 2  | 01/30/92 | AGC  | Polk County, FL   | 32  | 0.5           | yard brakeman                        | getting on      | other location on locomotive      | missed handhold, grabiron, step, etc.                            | 5                    |                          |
| 3  | 01/04/94 | BN   | Hastings, NE      | 46  | 20            | yard conductor                       | walking         | between cars/loc                  | sudden/unexpected movement of on-track equipment                 |                      | Unsecured Cars           |
| 4  | 01/14/94 | BN   | Amarillo, TX      | 57  | 36            | yard conductor                       | standing        | between tracks                    | derailments  |                      | Equipment                |
| 5  | 01/18/94 | CSXT | Bainbridge, GA    | 45  | 25            | road conductor                       | riding          | on end of car                     | sudden/unexpected movement of on-track equipment                 |                      | Miscellaneous            |
| 6  | 01/20/94 | UP   | Fall City, NE     | 44  | 16            | road conductor                       | riding          | on side of car                    | rolled between moving rolling stock and stationary rolling stock | 2                    |                          |
| 7  | 01/11/95 | CR   | Indianapolis, IN  | 51  | 30            | yard conductor                       | riding          | on side of car                    | struck by on-track equipment                                     |                      | Equipment                |
| 8  | 01/12/97 | UP   | S. Fontana, CA    | 60  | 35            | road conductor                       | riding          | on side of car                    | slack action, draft, compressive buff/coupling                   |                      | Employee Falling         |
| 9  | 01/29/97 | UP   | Mason City, IA    | 48  | 28            | road conductor                       | walking         | on track                          | struck by on-track equipment                                     | 4                    |                          |
| 10 | 01/24/98 | BNSF | Omaha, NE         | 47  | 26            | yard conductor                       | lining switches | beside track                      | struck by object   |                      | Drugs and Alcohol        |
| 11 | 01/12/99 | CR   | Port Newark, NJ   | 54  | 5.5           | yard conductor                       | walking         | on track                          | struck by on-track equipment                                     | 3, 4                 |                          |
| 12 | 01/22/99 | CR   | Alexandria, NY    | 45  | 1             | road conductor                       | riding          | on side of car                    | derailments  |                      | Environment              |
| 13 | 01/02/00 | CIRR | Cedar Springs, GA | 49  | 21            | yard conductor                       | riding          | on side of car                    | collision between on-track equipment                             |                      | Environment              |
| 14 | 01/10/01 | CSX  | Chicago, IL       | 42  | 1             | road conductor                       | walking         | near on-track equipment/on ground | struck by on-track equipment                                     | 5                    |                          |
| 15 | 01/11/01 | NS   | South Fork, PA    | 52  | 34            | road engineer                        | inspecting      | between tracks                    | struck by on-track equipment                                     | 3                    |                          |
| 16 | 01/14/04 | NS   | Kankakee, IL      | n/a | n/a           | Being reviewed by SOFA Working Group |                 |                                   |  |                      |                          |
| 17 | 01/10/05 | UP   | Buena Vista, AR   | 53  | n/a           | Being reviewed by SOFA Working Group |                 |                                   |  |                      |                          |
| 18 | 01/26/05 | PHL  | Los Angeles, CA   | 52  | n/a           | Being reviewed by SOFA Working Group |                 |                                   |  |                      |                          |

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

# January 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 18: January 28, 1992 – BN - Willmar, NM

A four-person crew (engineer, switch foreman, 2 switchman) had just shove cars into track 11 and held onto one for track 9. The switch foreman got the switch for 9, noticed his front switchman standing near cars on track 11, and rode the locomotive onto the lead. After the 11th switch was lined for the lead, the switch foreman kicked the single car into track 9. The front switchman was struck and killed by the free rolling car.

### SOFA Operating Recommendation(s):

4

Possible Contributing Factor:

Employee on or fouling track

Possible Contributing Factor:

Employee involved with two movements of separate crews

External Circumstances:

Heavy clothing, hood(s)

Day of Week:

Tuesday

Time of Fatal Event:

5:30 PM

Time on Duty (hours: minutes):

2:00

Direction of Movement:

shoved/free-running

Crew's Next Move:

engine to track #2

Death Result of Train Movement?

yes

Other Movements Nearby?

yes

Track Type:

yard/flat/classification

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

Emergency Response Procedures Followed?

yes

# January 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 18: 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.

|  |  |
|--|--|
| <b>SOFA Operating Recommendation(s):</b> | <b>5</b>   |
| Possible Contributing Factor:            | Poor intra-crew communication about work in progress |
| External Circumstances:                  | Board/dis-board wrong side                           |
| Day of Week:                             | Thursday   |
| Time of Fatal Event:                     | 3:00 PM  |
| Time on Duty (hours: minutes):           | 0:10   |
| Temperature (Fahrenheit):                | 75   |
| Direction of Movement:                   | pulled   |
| Crew's Next Move:                        | wye engine   |
| Death Result of Train Movement?          | yes  |
| Other Movements Nearby?                  | no   |
| Track Type:                              | yard/flat/lead/industrial                            |
| 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  |

# January 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 18: January 04, 1994 – BN – Hastings, NE

A three-person crew was in the process of pulling a cut of cars out of a track and leaving two additional cuts sitting separately in the track. The helper was riding the cut out of the track and the foreman was last seen walking between the two remaining cuts of cars. Evidence suggests that the foreman attempted to cross over the tracks between the cars being pulled out and the first of two remaining cuts of cars when he was crushed between the cars being pulled out and the second cut of cars after they were impacted by the third, unsecured cut.

### 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?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

### Unsecured Cars

Employee on or fouling track  
Failure to couple

Tuesday  
7:00 PM  
2:00  
31  
pulled/free-running  
stop to uncouple  
yes  
no  
yard/flat/classification  
yes  
6  
yes  
3  
no  
no  
yes

# January 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 18: January 14, 1994 – BN – Amarillo, TX

A three-person crew reported for duty and later was in the process of shoving cars down a track with the switch foreman riding the point. At the same time, another yard switching job was pulling cars in the opposite direction on an adjacent track and derailed. The foreman immediately told the other crew that they were on the ground and then told his engineer to stop the shove he was riding. The foreman was found crushed between the car he was riding and the car that derailed on the adjacent track.

### Special Switching Hazard(s):

### Equipment

|                                 |                          |
|---------------------------------|--------------------------|
| Day of Week:                    | Friday                   |
| Time of Fatal Event:            | 11:15 AM                 |
| Time on Duty (hours: minutes):  | 4:16                     |
| Temperature (Fahrenheit):       | 48                       |
| Direction of Movement:          | pulled                   |
| Crew's Next Move:               | cut engine off           |
| Death Result of Train Movement? | yes                      |
| Other Movements Nearby?         | yes                      |
| Track Type:                     | yard/flat/classification |
| Hit by Own Equipment?           | no                       |
| Striking Train Within Rules?    | yes                      |
| Speed of Equipment (mph):       | 6                        |
| Crew Size:                      | 3                        |
| Drugs Present?                  | no                       |
| Drugs a Factor?                 | no                       |

# January 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 18: January 18, 1994 – CSX – Bainbridge, GA

A three-person switching crew was in the process of shoving cars down an industrial lead. The conductor and brakeman were riding the end platform of a tank car and, as the move approached a highway/rail grade crossing, the brakeman gave the engineer a car count in which to stop. As a result, there was some "slack action" and the conductor fell from the end platform onto the rail and was pronounced dead at the hospital over five hours later.

### 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):  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

### Miscellaneous

Employee falling from moving equipment  
Slack action

Tuesday  
6:10 PM  
1:10  
38  
shoved  
spot  
yes  
no  
industrial/spot/(load-unload/outside  
yes  
yes  
6  
3  
no  
no  
yes

# January 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 18: January 20, 1994 – UP – Fall City, NE

Conductor riding side of two cars to be kicked, he moves to the opposite side of car to work hand brake and is immediately struck by locomotives standing on adjacent track creating a no-clearance condition. Conductor was not aware that the locomotives had arrived at that location since he had last been there.

|  |                          |
|--|--------------------------|
| <b>SOFA Operating Recommendation(s):</b> | <b>2</b>                 |
| Possible Contributing Factor:            | Close or no clearance    |
| Possible Contributing Factor:            | Poor crew utilization    |
| Day of Week:                             | Thursday                 |
| Time of Fatal Event:                     | 8:00 PM                  |
| Time on Duty (hours: minutes):           | 0:30                     |
| Temperature (Fahrenheit):                | 16                       |
| Direction of Movement:                   | free-running             |
| Crew's Next Move:                        | stop car                 |
| Death Result of Train Movement?          | yes                      |
| Other Movements Nearby?                  | no                       |
| Track Type:                              | yard/flat/classification |
| Hit by Own Equipment?                    | no                       |
| Speed of Equipment (mph):                | 6                        |
| Deceased Regular Job?                    | yes                      |
| Crew Size:                               | 3                        |
| Emergency Response Procedures Followed?  | yes                      |

# January 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 18: January 11, 1995 – CR – Indianapolis, IN

A three-person crew was in the process of switching a plant. The conductor was riding the leading end of the lead car during an eight-car shove. He had notified the engineer that he had mounted the moving car and told him by radio to continue shoving. When the engineer did not hear any more from the conductor, he stopped and the brakeman walked back to find the conductor had been run over by five of the eight cars being shoved. An exception was taken by the FRA for the absence of the “BR” end handhold that could have been used to assist the conductor in moving from the side of the car to the end of the car.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:

Day of Week:  
Time of Fatal Event:  
Time on Duty (hours: minutes):  
Direction of Movement:  
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?

### Equipment

Employee falling from moving equipment  
Defective BR end hand hold

Wednesday  
11:30 PM  
8:31  
shoved  
yes  
no  
industrial/spot/load-unload/inside/stub track  
yes  
yes  
3  
3  
no  
no  
yes

## January 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 18: January 12, 1997 – UP – S. Fontana, CA

A three-person road crew arrived at a siding, pulled into the siding and stopped their train. They then cut off their locomotive consist, ran around the 50 loaded cars in their train, and tied onto the opposite end. The conductor and brakeman then positioned themselves on the leading end of the shove move and directed the engineer by radio to begin the shove into the plant. As the move entered a descending grade into the plant, the slack ran out, the conductor lost his hold on the leading car, fell in front of the car he was riding, was run over and died.

#### 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?  
Had Deceased Worked There Before?  
Crew Size:  
Drugs Present?  
Drugs a Factor?

#### Employee Falling

Buffing or slack action excessive, train handling  
Unfamiliar with territory

Sunday  
10:15 PM  
4:15  
42  
shoved  
stop  
yes  
no  
siding/lead  
yes  
no  
8  
no  
no  
3  
no  
no

## January 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 18: January 29, 1997 – UP – Mason City, IA

Conductor and engineer were moving toward engine house area with lite engines and using hand signals. The conductor stopped the movement to line a switch. The engineer while waiting heard and acted upon an unidentified radio transmission “come ahead 21.” The engineer initiated the shove movement and eventually, the conductor was struck from behind and killed.

|  |                               |
|--|-------------------------------|
| <b>SOFA Operating Recommendation(s):</b> | <b>4</b>                      |
| Possible Contributing Factor:            | Radio communication, improper |
| Possible Contributing Factor:            | Employee on or fouling track  |
| Day of Week:                             | Wednesday                     |
| Time of Fatal Event:                     | 12:55 PM                      |
| Time on Duty (hours: minutes):           | 4:55                          |
| Temperature (Fahrenheit):                | 0                             |
| Direction of Movement:                   | shoved                        |
| Crew's Next Move:                        | switch off power              |
| Death Result of Train Movement?          | yes                           |
| Other Movements Nearby?                  | no                            |
| Track Type:                              | yard/flat/lead                |
| Hit by Own Equipment?                    | yes                           |
| Striking Train Within Rules?             | no                            |
| Speed of Equipment (mph):                | 1                             |
| Crew Size:                               | 2                             |
| Drugs Present?                           | no                            |
| Drugs a Factor?                          | no                            |

# January 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 18: January 24, 1998 – BNSF – Omaha, NE

A three-person switching crew was working in close proximity to another switching crew and, after some discussion, but no absolute understanding of the move just made by the other crew, began to pull down the switching lead. As they approached a mis-aligned switch, the foreman jumped off the moving locomotive, ran to the switch and was in the process of “flopping it over” when the leading wheels of the locomotive entered the switch, popped the handle up, striking the foreman in the face and killing him. Post accident testing indicated that drug impairment may have contributed to the fatality.

### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
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?  
Track Type:  
Hit by Own Equipment?  
Speed of Equipment (mph):  
Had Deceased Worked There Before?  
Crew Size:  
Drugs Present?  
Emergency Response Procedures Followed?

### Drugs and Alcohol

Failure to comply with restricted speed  
Poor inter-crew communications  
Switch improperly lined  
Impairment of efficiency or judgment because of drugs or alcohol

Saturday  
10:15 AM  
2:45  
20  
pulled  
go to industry  
yes  
yard/flat/lead  
no  
9  
yes  
3  
yes  
yes

# January 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. 11 of 18: January 12, 1999 – CR – Port Newark, NJ

A three-person industry switching crew was in the process of switching cars back and forth over a private crossing equipped with an in-ground hand throw switch. The brakeman was at the switch and the conductor was going back and forth from one set of cars to another. The conductor shouted to the brakeman that he wanted the next move down one track but the cars started down the other. The brakeman tried to warn the conductor who had his back to the move and then stopped the move but too late to save the conductor who was hit and run over by the leading car of the shove.

|  |  |
|--|--|
| <b>SOFA Operating Recommendation(s):</b> | <b>3, 4</b>  |
| Possible Contributing Factor:            | Employee on or fouling track   |
| Possible Contributing Factor:            | Poor intra-crew communication about work in progress                       |
| Possible Contributing Factor:            | Radio communication, improper  |
| Possible Contributing Factor:            | Shoving movement, man on or at leading end of movement, failure to control |
| Possible Contributing Factor:            | Switch improperly lined  |
| Day of Week:                             | Tuesday  |
| Time of Fatal Event:                     | 1:03 AM  |
| Time on Duty (hours: minutes):           | 9:04   |
| Direction of Movement:                   | shoved/free-running  |
| Crew's Next Move:                        | couple track   |
| Death Result of Train Movement?          | yes  |
| Other Movements Nearby?                  | no   |
| Track Type:                              | flat/lead/industrial   |
| Hit by Own Equipment?                    | yes  |
| Striking Train Within Rules?             | no   |
| Speed of Equipment (mph):                | 6  |
| Deceased Regular Job?                    | no   |
| Crew Size:                               | 3  |
| Drugs Present?                           | no   |
| Drugs a Factor?                          | no   |
| Emergency Response Procedures Followed?  | yes  |

## January 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. 12 of 18: January 22, 1999 – CR – Alexander, NY

A three-person local switching crew was shoving a loaded covered hopper down an industrial lead. The conductor was riding on one side of the car and the brakeman was riding the other. As the car was shoved over a private crossing, the accumulation of ice and snow lifted the car off the rails and it tipped over and onto the conductor who was killed as a result of the derailment.

#### Special Switching Hazard(s):

Possible Contributing Factor:  
Possible Contributing Factor:  
External Circumstances:

Day of Week:  
Time of Fatal Event:  
Time on Duty (hours: minutes):  
Temperature (Fahrenheit):  
Direction of Movement:  
Crew's Next Move:  
Death Result of Train Movement?  
Other Movements Nearby?  
Track Type:  
Hit by Own Equipment?  
Striking Train Within Rules?  
Speed of Equipment (mph):  
Deceased Regular Job?  
Crew Size:  
Drugs Present?  
Drugs a Factor?  
Emergency Response Procedures Followed?

#### Environment

Employee falling from moving equipment  
Snow, ice, mud, gravel, coal etc. on the track  
Build up frozen material in flange way

Friday  
6:19 PM  
6:49  
35  
shoved  
stop at switch  
yes  
no  
main/industrial  
yes  
no  
7  
no  
3  
no  
no  
yes

# January 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. 13 of 18: January 02, 2000 – CIRRR – Cedar Springs, GA

A two-person switching crew was in the process of switching cars in a storage yard and the conductor was riding the leading end of a cut of cars being shoved down a track. The move was taking place in dense fog and in darkness when the car he was riding collided with other cars on an adjacent track that were fouling the track he was on. The conductor was killed as a result of the collision.

### Special Switching Hazard(s):

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

Possible Contributing Factor:

External Circumstances:

Day of Week:

Time of Fatal Event:

Time on Duty (hours: minutes):

Temperature (Fahrenheit):

Direction of Movement:

Crew's Next Move:

Death Result of Train Movement?

Other Movements Nearby?

Track Type:

Hit by Own Equipment?

Striking Train Within Rules?

Speed of Equipment (mph):

Deceased Regular Job?

Crew Size:

Drugs Present?

Drugs a Factor?

Emergency Response Procedures Followed?

### Environment

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

Failure to comply with restricted speed

Impairment of efficiency or judgment because of drugs or alcohol

Car(s) shoved out and left out of clear

Did not have a lantern & no lighting at site

Sunday

4:20 AM

0:50

40

shoved

spot cars

yes

no

yard/flat/classification

yes

no

9

yes

2

yes

no

yes

## January 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. 14 of 18: January 10, 2001 – CSX – Chicago, IL

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

#### SOFA Operating Recommendation(s):

5

|   |  |
|---|--|
| Possible Contributing Factor:           | Employee on or fouling track                         |
| Possible Contributing Factor:           | Other extreme environmental condition                |
| Possible Contributing Factor:           | Other miscellaneous causes                           |
| Possible Contributing Factor:           | Poor intra-crew communication about work in progress |
| External Circumstances:                 | 10" snow on the ground                               |
| Day of Week:                            | Wednesday  |
| Time of Fatal Event:                    | 1:05 AM  |
| Time on Duty (hours: minutes):          | 0:50   |
| Temperature (Fahrenheit):               | 33   |
| Direction of Movement:                  | pulled   |
| Crew's Next Move:                       | depart   |
| Death Result of Train Movement?         | yes  |
| Other Movements Nearby?                 | yes  |
| Track Type:                             | main/siding  |
| Hit by Own Equipment?                   | no   |
| Striking Train Within Rules?            | no   |
| Speed of Equipment (mph):               | 27   |
| Deceased Regular Job?                   | no   |
| Crew Size:                              | 3  |
| Drugs Present?                          | no   |
| Drugs a Factor?                         | no   |
| Emergency Response Procedures Followed? | yes  |

# January 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. 15 of 18: January 11, 2001 – NS – South Fork, PA

The engineer and conductor of a road train were told to stop and check their locomotives for flat spots. Once stopped, and without a job briefing the locomotive engineer left the lead unit and shortly thereafter, was struck and killed by a passing mainline train.

|  |  |
|--|--|
| <b>SOFA Operating Recommendation(s):</b> | <b>3</b>   |
| Possible Contributing Factor:            | Employee on or fouling track                         |
| Possible Contributing Factor:            | Poor intra-crew communication about work in progress |
| Possible Contributing Factor:            | Failure to communicate unsafe condition              |
| Possible Contributing Factor:            | Damaged flange or tread                              |
| Day of Week:                             | Thursday   |
| Time of Fatal Event:                     | 2:37 AM  |
| Time on Duty (hours: minutes):           | 3:17   |
| Temperature (Fahrenheit):                | 20   |
| Direction of Movement:                   | pulled   |
| Crew's Next Move:                        | inspect flat spots on engine                         |
| 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):                | 36   |
| Deceased Regular Job?                    | yes  |
| Crew Size:                               | 3  |
| Drugs Present?                           | no   |
| Drugs a Factor?                          | no   |
| Emergency Response Procedures Followed?  | yes  |

# January Switching Fatalities

## **No. 16 of 18: January 14, 2004 – NS – Kankakee, IL**

*(Information preliminary pending review by SOFA Working Group.)*

A conductor, with 4-years service, killed when struck by a train he was switching in Kankakee Yard.

## **No. 17 of 18: January 10, 2005 – UP – Buena Vista, AR**

*(Information preliminary pending review by SOFA Working Group.)*

A 53-year-old conductor was struck and killed by lite engines that were running down the main track to the head-end of his train, which was standing on the siding, to deliver a locomotive unit.

## **No. 18 of 18: January 26, 2005 – PHL – Los Angeles, CA**

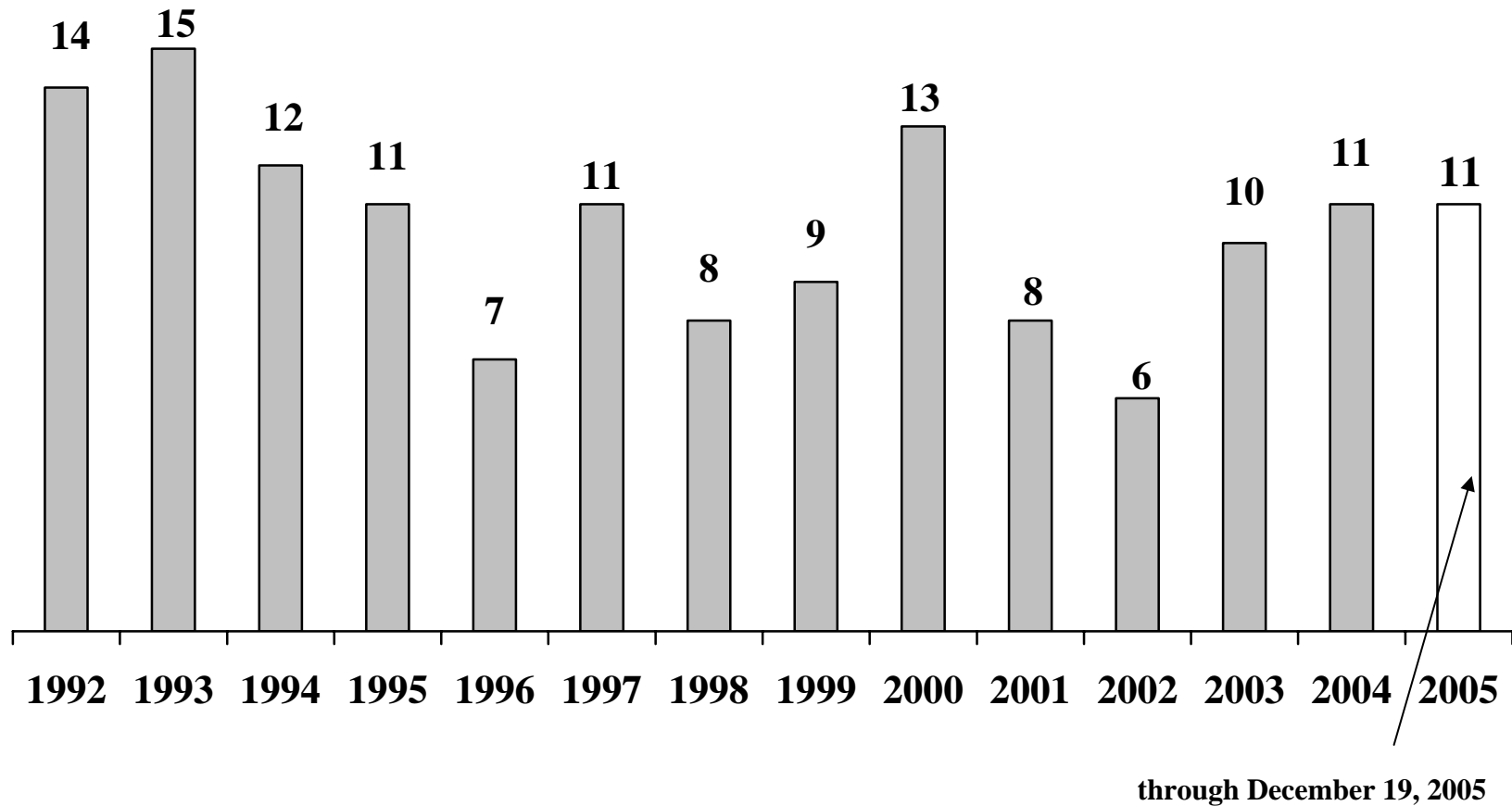
*(Information preliminary pending review by SOFA Working Group.)*

A 52-year-old conductor was struck and killed by his own cut of cars when he lined switches, thought the cars were going to one track, turned his back, and the cars came down the track he was fouling.

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

# 146 Switching Fatalities Since 1992

The Switching Operations Fatality Analysis (SOFA) Group reviews each Switching Fatality after the Federal Railroad Administration completes its investigation. There have been 146 Fatalities since 1992. There were 11 Fatalities in 2004. Eleven Fatalities have occurred in 2005 through December 19. The last Fatality, a brakeman, occurred on December 4, at Burlington, IA.



**10.5 Switching Fatalities occur each year on average**

# 11 Switching Fatalities in 2005. Most recent December 4.

Information on 2005 Switching Fatalities is preliminary pending formal investigation.

1. **JAN 10 at Buena Vista, AR...** A 53-year-old, Union Pacific (UP) conductor was struck and killed by lite engines that were running down the main track to the head end of his train, which was standing on the siding, to deliver a locomotive unit.
2. **JAN 26 at Los Angeles, CA ...** A 52-year-old, Pacific Harbor Lines (PHL) conductor was struck and killed by his own cut of cars when he lined switches, thought the cars were going to one track, turned his back, and the cars came down the track he was fouling.
3. **APR 06 at Selma, AL ...**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.
4. **APR 11 at Ogden, UT...**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.
5. **MAY 13 at Detroit, MI...** A 24-year-old, Delray Connecting Railroad (DCRR) conductor died of injuries sustained when the car he was riding derailed. He was crushed between the car and a cement abutment.
6. **JUL 5 at Emporia, KS...**A 26-year-old, Burlington Northern Santa Fe (BNSF) trainman, with six months experience, was crushed when the car he was riding during a shove move impacted a standing cut of cars.
7. **JUL 18 at Memphis, TN...**An Union Pacific (UP) conductor died when the car he was riding on the point of a shove move was struck at a private crossing by a semi-tractor trailer truck at an industrial location.
8. **JUL 22 at Ragland, AL...**An Alabama & Tennessee Railway Company conductor died when crushed against a wall when the car he was riding on the point of a shove move was derailed.
9. **AUG 15 at 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.
10. **NOV 16 at Lugoff, SC...**A 47-year-old, CSX Transportation (CSX) conductor was killed during an industrial switching operation. The brakeman, who was uncoupling cars, requested more slack from the engineer, while the conductor was getting the numbers of cars previously switched. Shortly thereafter, the conductor was found crushed between the knuckles of those cars.
11. **DEC 4 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.

# SOFA-defined Severe Injuries <sup>1</sup>

January 1992 to September 2005

(September is latest month available)

|                     | Injuries   |            |            |            |            |            |            |            |           | Amputations <sup>2</sup> |           |           |           |           |           |           |           |           |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                     | 1997       | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | 2004       | 2005      | 1997                     | 1998      | 1999      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      |
| <b>JAN</b>          | 11         | 13         | 16         | 15         | 21         | 12         | 11         | 11         | 21        | 1                        | 0         | 2         | 1         | 0         | 0         | 2         | 2         | 2         |
| <b>FEB</b>          | 17         | 15         | 9          | 9          | 9          | 13         | 17         | 14         | 11        | 0                        | 1         | 0         | 1         | 0         | 2         | 1         | 2         | 0         |
| <b>MAR</b>          | 14         | 12         | 17         | 11         | 10         | 10         | 13         | 10         | 9         | 3                        | 4         | 3         | 2         | 1         | 1         | 3         | 1         | 2         |
| <b>APR</b>          | 8          | 10         | 6          | 10         | 12         | 6          | 9          | 13         | 10        | 1                        | 2         | 0         | 1         | 2         | 0         | 1         | 1         | 2         |
| <b>MAY</b>          | 6          | 12         | 8          | 8          | 12         | 14         | 9          | 6          | 6         | 1                        | 2         | 3         | 0         | 2         | 2         | 2         | 0         | 0         |
| <b>JUN</b>          | 9          | 10         | 8          | 11         | 8          | 5          | 10         | 9          | 7         | 2                        | 1         | 1         | 0         | 1         | 0         | 0         | 1         | 0         |
| <b>JUL</b>          | 9          | 14         | 10         | 8          | 10         | 7          | 6          | 10         | 5         | 1                        | 5         | 1         | 0         | 4         | 0         | 1         | 2         | 1         |
| <b>AUG</b>          | 13         | 10         | 11         | 14         | 8          | 10         | 7          | 14         | 9         | 1                        | 0         | 1         | 4         | 0         | 1         | 0         | 2         | 2         |
| <b>SEP</b>          | 10         | 11         | 15         | 10         | 20         | 12         | 5          | 4          | 9         | 2                        | 4         | 3         | 2         | 5         | 4         | 0         | 0         | 3         |
| <b>YEAR-TO-DATE</b> | <b>97</b>  | <b>107</b> | <b>100</b> | <b>96</b>  | <b>110</b> | <b>89</b>  | <b>87</b>  | <b>91</b>  | <b>87</b> | <b>12</b>                | <b>19</b> | <b>14</b> | <b>11</b> | <b>15</b> | <b>10</b> | <b>10</b> | <b>11</b> | <b>12</b> |
| <b>OCT</b>          | 12         | 12         | 16         | 10         | 5          | 11         | 9          | 7          |           | 2                        | 5         | 2         | 2         | 0         | 0         | 2         | 2         |           |
| <b>NOV</b>          | 12         | 9          | 12         | 11         | 13         | 14         | 10         | 10         |           | 2                        | 2         | 2         | 2         | 3         | 0         | 1         | 1         |           |
| <b>DEC</b>          | 18         | 9          | 7          | 22         | 12         | 9          | 8          | 15         |           | 4                        | 1         | 0         | 4         | 1         | 1         | 2         | 1         |           |
| <b>totals</b>       | <b>139</b> | <b>137</b> | <b>135</b> | <b>139</b> | <b>140</b> | <b>123</b> | <b>114</b> | <b>123</b> |           | <b>20</b>                | <b>27</b> | <b>18</b> | <b>19</b> | <b>19</b> | <b>11</b> | <b>15</b> | <b>15</b> |           |

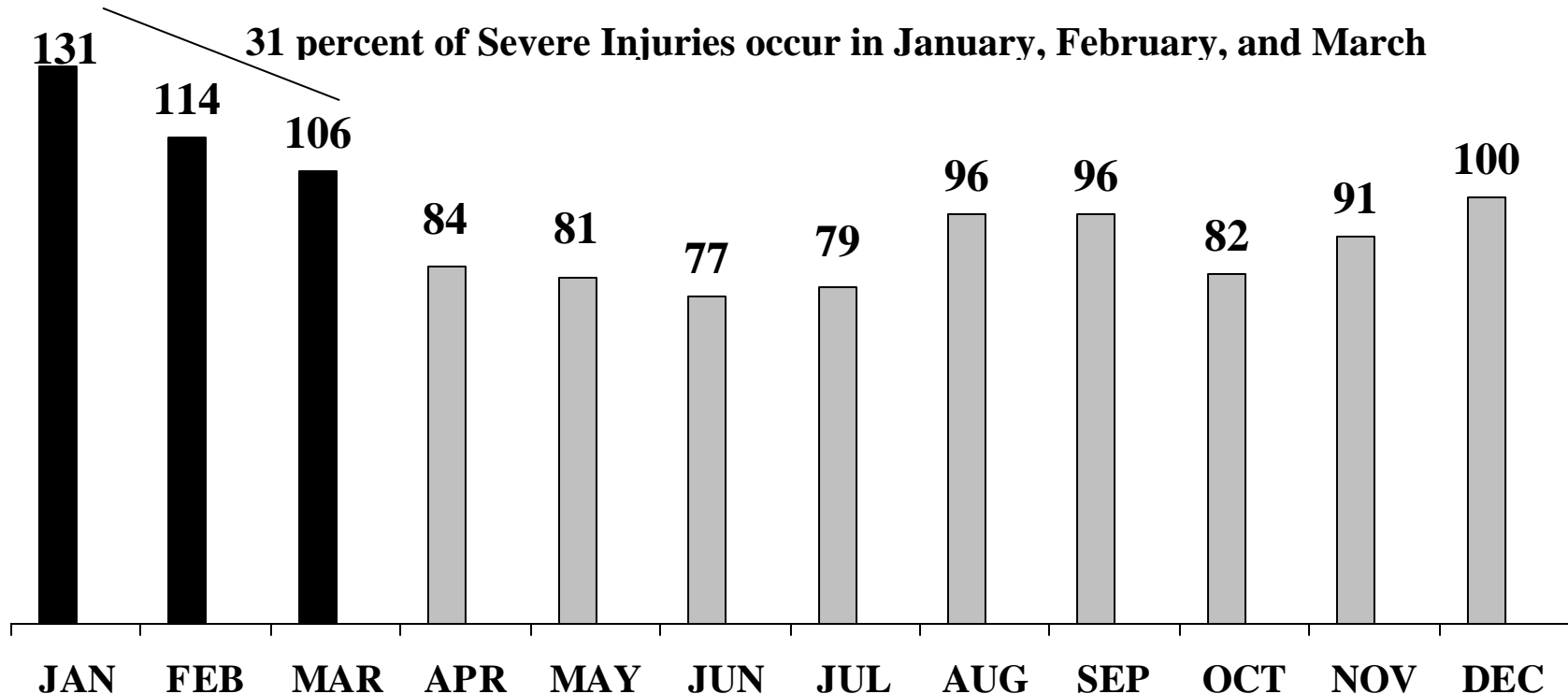
<sup>1</sup> *Severe Injuries* were defined by the SOFA Working Group as (1) potentially life threatening; (2) high likelihood of permanent loss of function, permanent occupational limitation, or other permanent disability; (3) likely to result in significant work restrictions; and (4) result from a 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. This report may be found on the FRA's website.

<sup>2</sup> Amputations are a type of SOFA-defined Severe Injury and are counted in 'Injuries'. Amputations are broken out separately because of the extreme nature of trauma to employees engaged in switching operations, and the potential for permanent occupational limitation.

## 131 SOFA-defined Severe Injuries (including amputations) in January since 1997

*Severe Injuries* were 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. This report is on the FRA's website.

(January to September represent 9 years of Severe Injuries. All other months are 8 years.)

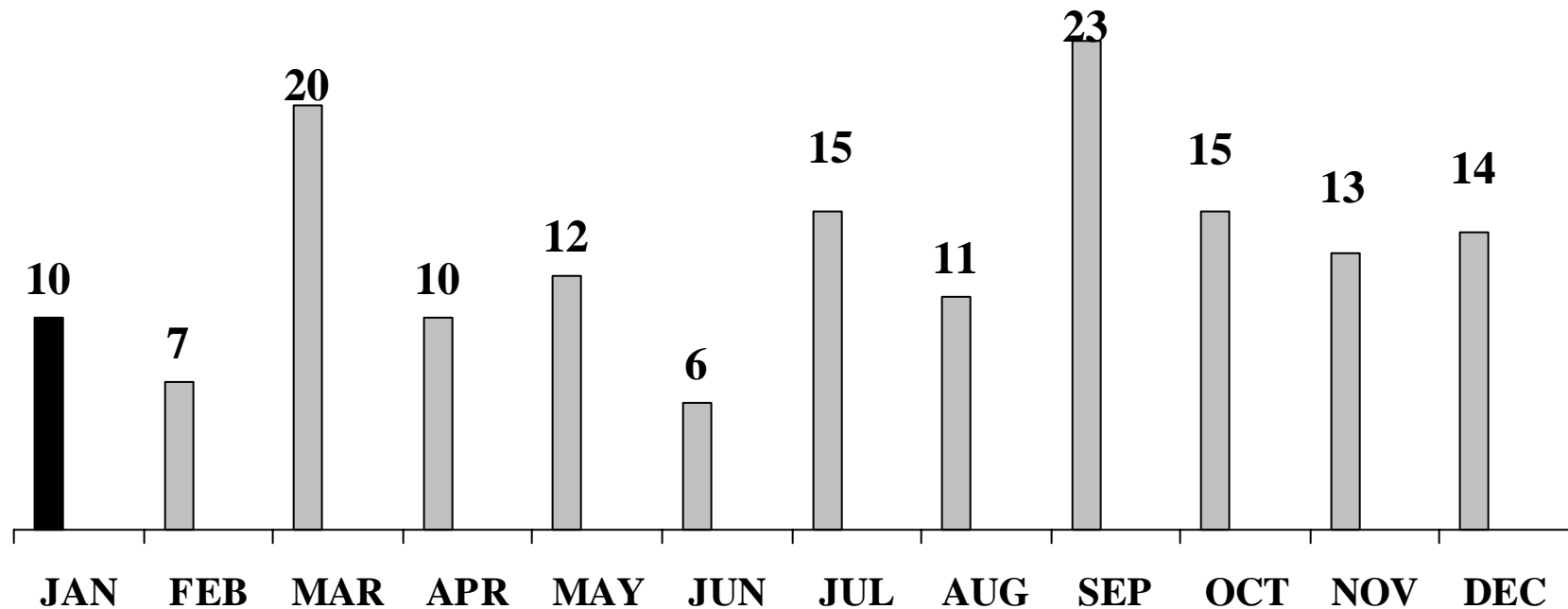


- 1,137 Severe Injuries occurred from January 1997 through September 2005.
- 138.0 SOFA-defined Severe Injuries occurred each year on average from 1997 through 2001.
- Since 2002, Severe Injuries have averaged 120.0 per year.

## 10 Amputations (a type of Severe Injury) in January since 1997

- Amputations are a type of SOFA-defined Severe Injury and are counted in Severe Injuries.
- Amputations are displayed separately because of the extreme nature of trauma to employees engaged in switching operations, and the likelihood of occupational limitations.

(January to September represent 9 years of Severe Injuries. All other months are 8 years.)



- 156 amputations occurred from January 1997 through September 2005.
- 20.6 amputations occurred each year on average from 1997 through 2001.
- Since 2002, amputations have averaged 13.7 per year.