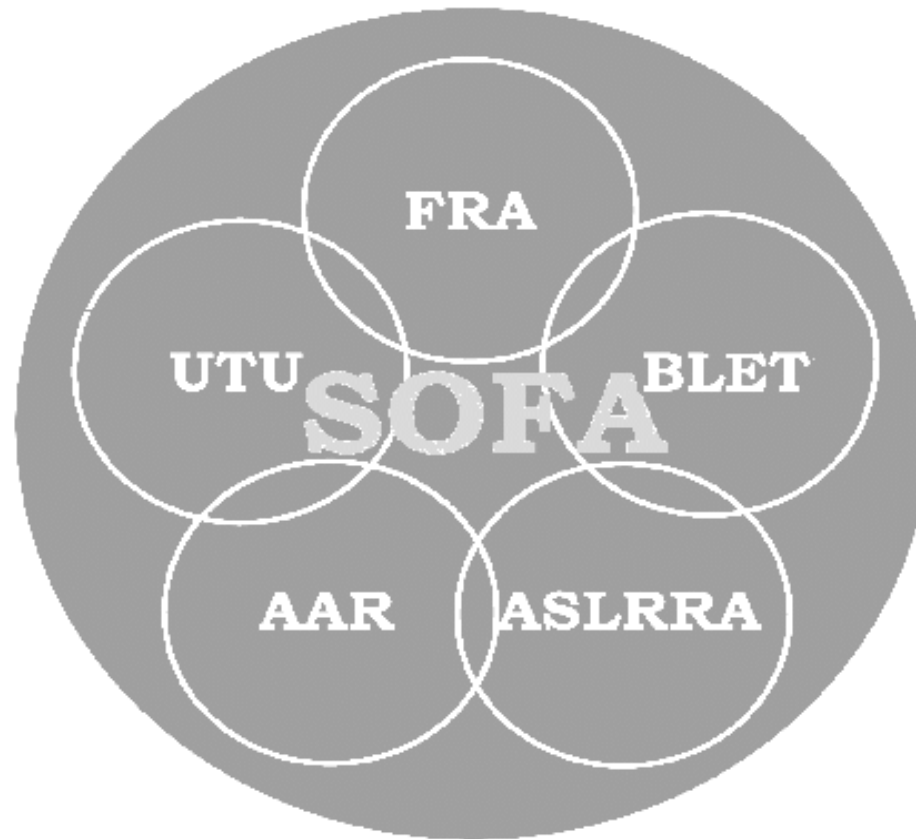


## **Please Post Immediately**



**January ~ sixteen switching fatalities since 1992**

**Ten of the employees ~ 63 percent ~ had 20 or more years of service**

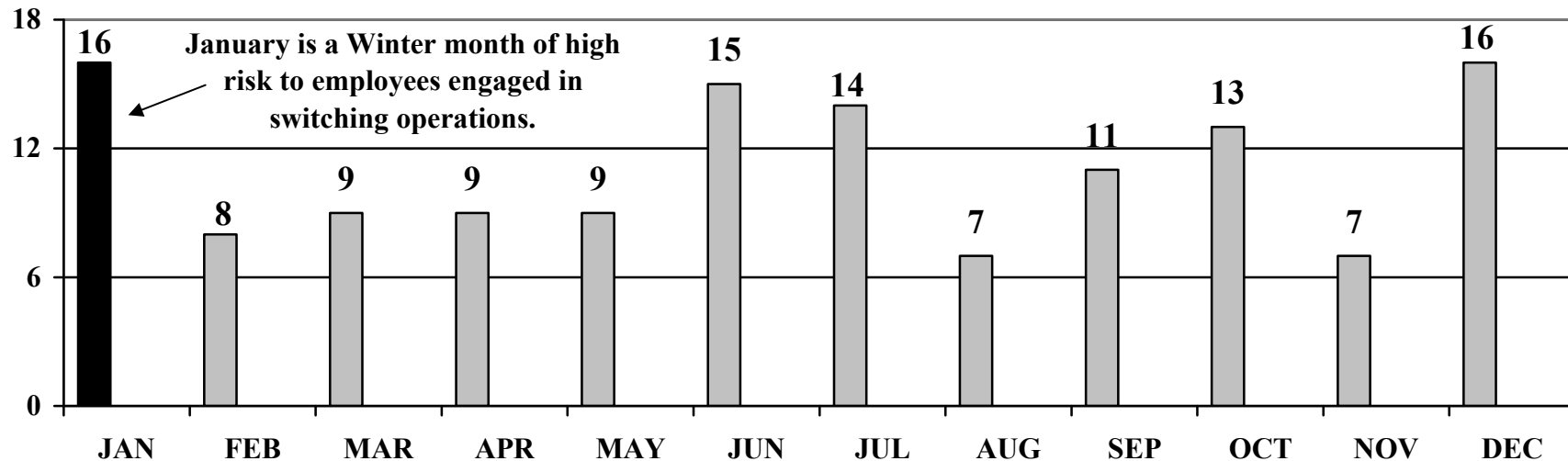
**Three employees had 1 year or less of service**

**January & Winter ~ a time of increased risk to employees engaged in switching operations**

## High Risk in January

There is always risk to employees engaged in switching operations. Since 1992, 134 switching fatalities have occurred through December 15, 2004. Some months had more fatalities ~ but no month was fatality free. On average 10.3 fatalities occur each year. January and December had 16 switching fatalities.

**134 Switching Fatalities by Month, 1992 to 2004**  
(as of December 15, 2004)



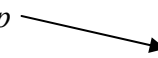
### Make January Switching Fatality Free

- ❑ Secure equipment before action is taken.
- ❑ Protect employees against moving equipment.
- ❑ Discuss safety at the beginning of a job or when a project changes.
- ❑ Communicate before action is taken.
- ❑ Mentor less experienced employees to perform service safely.

## Sixteen January Switching Fatalities, 1992 through 2004

- ❑ The average age of the employees was 48.6 years; average length of service, 20.1.
- ❑ Ten of the employees – 63 percent – had 20 or more years of service.
- ❑ Three employees had one year or less of service. SOFA Recommendation 5 stresses the importance of mentoring less experienced employees to perform service safety.
- ❑ Shoving was the direction of movement in 8 fatalities. Shoving is a Special Switching Hazard requiring extreme caution. Fifty-three (53) percent of all switching fatalities involve shoving.

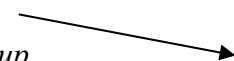
Read more about these fatalities and how such events might be prevented in  
*Findings and Recommendations of the SOFA: August 2004 Update Working Group*



#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	Movement Direction	SOFA Recommendation	Special Switching Hazard
1	01/28/92	BN	Willmar, NM	57	22	yard brakeman	walking	on track	struck by on-track equipment	shoved & free-running	Recommen. 4	shoving
2	01/30/92	AGC	Polk County, FL	32	0.5	yard brakeman	getting on	on locomotive	missed handhold, grabiron, step, etc.	pulled	Recommen. 5	none
3	01/04/94	BN	Hastings, NE	46	20	yard conductor	walking	between cars/loco	sudden unexpected movement of on-track equipment	pulled & free-running	none	unsecured cars
4	01/14/94	BN	Amarillo, TX	57	36	yard conductor	standing	between tracks	derailment	pulled	none	equipment
5	01/18/94	CSXT	Bainbridge, GA	45	25	road conductor	riding	on end of car	sudden unexpected movement of on-track equipment	shoved	none	shoving/ 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	free running	Recommen. 2	none

## Sixteen January Switching Fatalities, 1992 through 2004 (continued)

Read more about these fatalities and how such events might be prevented in  
*Findings and Recommendations of the SOFA: August 2004 Update Working Group*



#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	Movement Direction	SOFA Recommendation	Special Switching Hazard	
7	01/11/95	CR	Indianapolis, IN	51	30	yard conductor	riding	on side of car	struck by on-track equipment	shoved	none	shoving/equipment	
8	01/12/97	UP	S Fontana, CA	60	35	road conductor	riding	on side of car	slack action, draft, compressive buff/coupling	shoved	none	shoving/employee tripping	
9	01/29/97	UP	Mason City, IA	48	28	road conductor	walking	on track	struck by on-track equipment	shoved	Recommen. 4	shoving	
10	01/24/98	BNSF	Omaha, NE	47	26	yard conductor	lining switches	beside track	struck by object	pulled	none	drugs and alcohol	
11	01/12/99	CR	Port Newark, NJ	54	5.5	yard conductor	walking	on track	struck by on-track equipment	shoved & free-running	Recommen.3,4	shoving	
12	01/22/99	CR	Alexander, NY	45	1	road conductor	riding	on side of car	derailment	shoved	none	shoving/environment	
13	01/02/00	CIRR	Cedar Springs, GA	49	21	yard conductor	riding	on side of car	collision between on-track equipment	shoved	none	shoving/environment	
14	01/10/01	CSX	Chicago, IL	42	1	road conductor	walking	on ground alongside equip	struck by on-track equipment	pulled	Recommen. 5	none	
15	01/11/01	NS	South Fork, PA	52	34	road engineers	inspecting	between tracks	struck by on-track equipment	pulled	Recommen. 3	none	
16	01/14/04	NS	Kankakee, IL			<b>review not completed</b>							

# Narratives of Sixteen January Switching Fatalities

## SOFA Recommendation and/or Special Switching Hazard

### **1 January 28, 1992 – BN - Willmar, NM**

### **Recommendation 4, Shoving**

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.

### **2 January 30, 1992 – AGC – Polk County, FL**

### **Recommendation 5**

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.

*Note: 'FE' is an employee fatality.*

### **3 January 04, 1994 – BN – Hastings, NE**

### **Unsecured Cars**

A three-person crew were 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.

### **4 January 14, 1994 – BN – Amarillo, TX**

### **Equipment**

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.

### **5 January 18, 1994 – CSX – Bainbridge, GA**

### **Miscellaneous, Shoving**

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.

# Narratives of Sixteen January Switching Fatalities (continued)

## SOFA Recommendation and/or Special Switching Hazard

### 6 January 20, 1994 – UP – Fall City, NE

#### Recommendation 2

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.

### 7 January 11, 1995 – CR – Indianapolis, IN

#### Equipment, Shoving

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.

### 8 January 12, 1997 – UP – S. Fontana, CA

#### Employee Tripping, Slipping, Falling; Shoving

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.

### 9 January 29, 1997 – UP – Mason City, IA

#### Recommendation 4, Shoving

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.

### 10 January 24, 1998 – BNSF – Omaha, NE

#### Drugs and Alcohol

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.

# Narratives of Sixteen January Switching Fatalities (continued)

## SOFA Recommendation and/or Special Switching Hazard

### 11 January 12, 1999 – CR – Port Newark, NJ

### Recommendations 3 and 4; shoving

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.

### 12 January 22, 1999 – CR – Alexander, NY

### Environment, Shoving

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.

### 13 January 02, 2000 – CIRR – Cedar Springs, GA

### Environment, Shoving

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.

### 14 January 10, 2001 – CSX – Chicago, IL

### Recommendation 5

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

### 15 January 11, 2001 – NS – South Fork, PA

### Recommendation 3

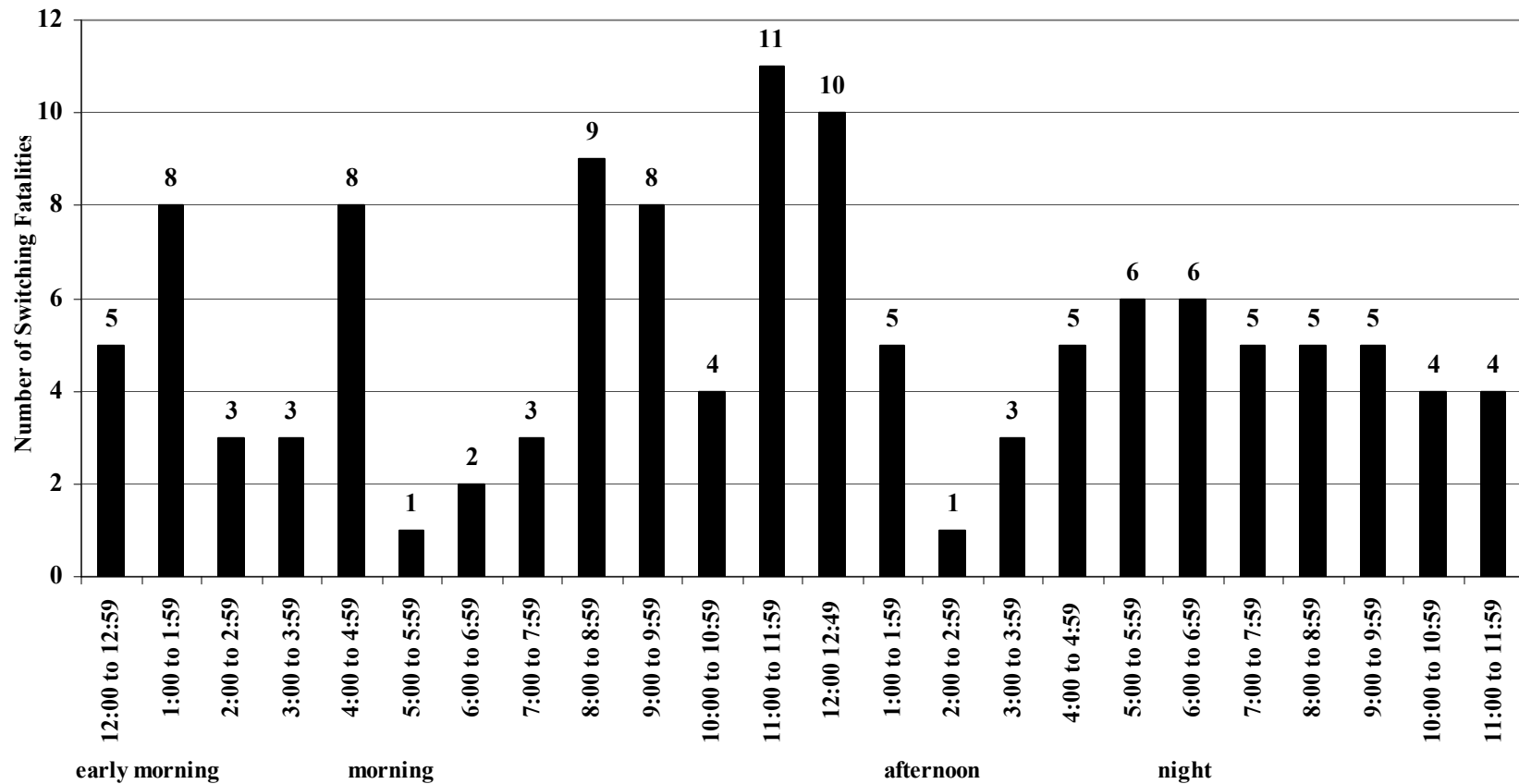
The engineer and conductor of a road train were told to stop and check their locomotives for flat spots. Once stopped, and without a job briefing the locomotive engineer left the lead unit and shortly thereafter, was struck and killed by a passing mainline train.

### 16 January 14, 2004 – NS – Kankakee, IL

### Review not completed.

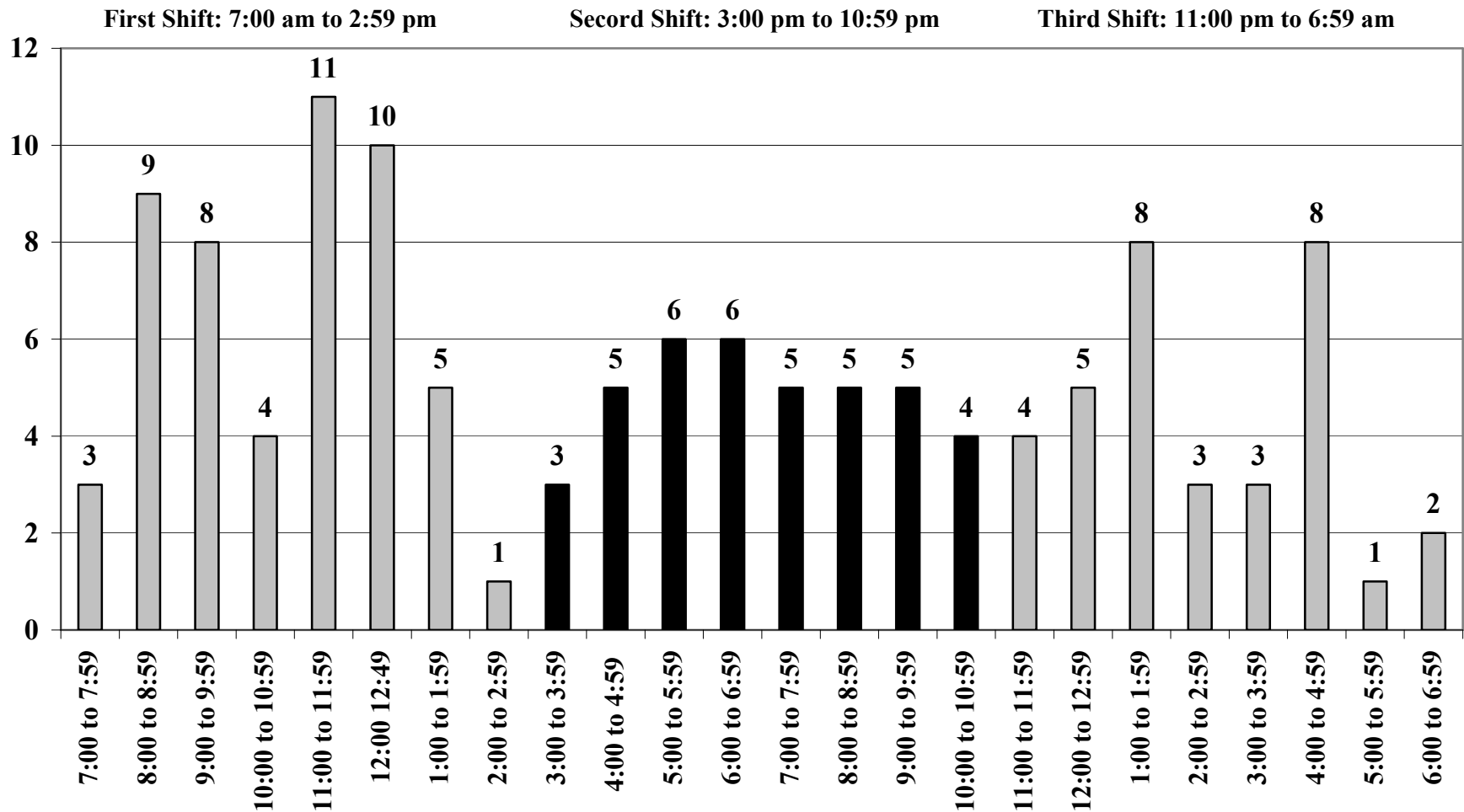
## 124 Switching Fatalities by Time-of-Day, 1992 to 2003

Switching fatalities are not equally distributed by time of day. Of the 124 fatalities that occurred from 1992 to 2003, one (1) occurred between 5:00 and 5:59 a.m.; and eleven (11), between 11:00 and 11:59 a.m. There are contrasts between other times of day as well. The reasons for differences are not fully understood. Likely, the level of activity plays a role. However, SOFA Recommendations for safe switching always apply — regardless of the level of activity.



# 124 Switching Fatalities by First, Second, and Third 'Shift', 1992 to 2003

Switching fatalities are not equally distributed across eight-hour periods of the day that for some employees represent work shifts. More fatalities occur toward the middle of these shifts.



## **SOFA Recommendation 3: Job Briefings**

(Text below taken from *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. pages 51-2.)

**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.*

“It was apparent to the SWG that many of the diverse events and occurrences that lead to the death of employees may have been mitigated through effective *job safety briefing*. You can never communicate too effectively. It became apparent to the SWG that providing a minimum suggested content for an initial job safety briefing should be made available. It was also evident to the SWG that the perception of “work changes” is very qualitative and should be addressed in specific language that is understandable and comprehensible to all crew members. Job Safety Briefing instructions for various carriers are available for review in Appendix F. [Contained in *Findings and Recommendations of the SOFA Working Group: August 2004 Update*. pages 91-103]

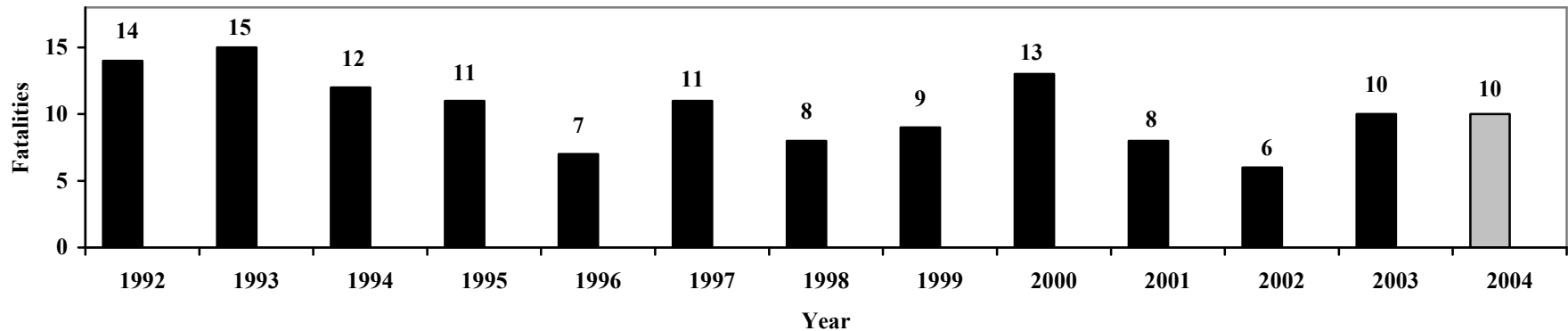
“All crew members should receive training in the art of job safety briefings. The initial job safety briefing should provide detailed and specific information on all relevant activities to be performed. The training should help necessitate sufficient conversation and review between every crew member to make everyone feel comfortable about the service to be performed. When practical, a supervisor or other knowledgeable employee should be present during the entire job safety briefing and take part in it when appropriate. Every concern should be addressed to the satisfaction of each crew member. Crew members should engage in active communications sufficient to establish their mutual understanding and safely perform the service required. Successful communication among all parties is essential.

“Any work changes or developments that may impact safety should be immediately addressed to everyone’s satisfaction. Any crew member observing a safety concern should safely stop all activity and thoroughly review the concern with every other crew member. Job safety briefings should offer a comfortable environment for fellow employees to discuss yard and industry switching issues where questions or concerns may exist. Crew members should be afforded the opportunity to resolve any yard and/or industry switching issues. They should seek the advice of knowledgeable and experienced crew members, or proper authority if necessary. No action should be taken until a solution is reached and then communicated to all concerned.”

## 134 Switching Fatalities Since 1992

The Switching Operations Fatality Analysis (SOFA) Group has reviewed each switching fatalities back to 1992. Since then, there have been 134 fatalities. On average, 10.3 fatalities occur each year. Through December 15th, there have been 10 fatalities in 2004.

January brings additional risks to employees engaged in switching operations.



### Please Make January a Safe Switching Month

The SWG urges employees engaged in switching operations to be aware of The Five Lifesavers. The 'Lifesavers' are a shortened version of the Five Operating Recommendations, which can be obtained by downloading the *SOFA Report* from the FRA's Web site: <http://www.fra.dot.gov/us/content/102>

- **Secure equipment before action is taken.**
- **Protect employees against moving equipment.**
- **Discuss safety at the beginning of a job or when a project changes.**
- **Communicate before action is taken.**
- **Mentor less experienced employees to perform service safely.**

## Ten (10) Switching Fatalities in 2004

1. **JAN 14**.....Norfolk Southern (NS) conductor, with 4-years service, killed when struck by a train he was switching in Kankakee Yard, Kankakee, IL.
2. **MAR 10**...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.
3. **MAY 13**...38-year old Michigan Southern Railroad (MSO) conductor killed when he apparently slipped and fell from a car he was riding near Sturgis, MI.
4. **MAY 18**...35-year old Norfolk Southern (NS) brakeman, with 6-years of service, killed when the lead car he was riding was struck by a tractor-trailer in Elwood, IN.
5. **SEP 02**....28-year old Burlington Northern Santa Fe (BNSF) switchman killed when the tank car he was riding derailed during a shove move near Clovis, NM.
6. **SEP 20**....44-year old Ann Arbor Railroad (AA) brakeman killed in Saline, MI.
7. **OCT 04**...58-year old Norfolk Southern (NS) conductor was struck and killed by a shove move being performed by another crew when he stepped in front of the leading end of the move in Harrisburg, PA.
8. **OCT 07**...Union Pacific (UP) student trainman killed while walking along side a shove move in Springfield, IL. Several cars derailed, one landing on the trainman.
9. **OCT 07**...60-year old Burlington Northern Santa Fe (BNSF) trainman killed when cars he was between moved in Teague, TX.
10. **NOV 01**...47-year-old Burlington Northern Santa Fe (BNSF) conductor killed when struck by a passing train, he was positioning himself to observe, in Bowdoin, MT.

**(Note: Information on the ten switching fatalities is preliminary, pending investigation.)**

## 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.

### List of Special Switching Hazards Identified by SOFA Working Group...

- 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

**To achieve the Zero Switching Fatality Goal, Special Switching Hazards must be recognized.**

\* 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.

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

## Injuries

## Amputations <sup>2</sup>

January 1992 to September 2004

	1997	1998	1999	2000	2001	2002	2003	2004	1997	1998	1999	2000	2001	2002	2003	2004
JAN	11	13	16	15	21	12	11	11	1	0	2	1	0	0	2	2
FEB	17	15	9	9	9	13	17	14	0	1	0	1	0	2	1	2
MAR	14	12	17	11	10	10	13	10	3	4	3	2	1	1	3	1
APR	8	10	6	10	12	6	9	13	1	2	0	1	2	0	1	1
MAY	6	12	8	8	12	14	9	5	1	2	3	0	2	2	2	0
JUN	9	10	8	11	8	5	10	8	2	1	1	0	1	0	0	1
JUL	9	14	10	8	10	7	6	10	1	5	1	0	4	0	1	2
AUG	13	10	11	14	8	10	7	14	1	0	1	4	0	1	0	2
SEP	10	11	15	10	20	12	5	5	2	4	3	2	5	4	0	0
<b>YTD <sup>3</sup></b>	<b>97</b>	<b>107</b>	<b>100</b>	<b>96</b>	<b>110</b>	<b>89</b>	<b>87</b>	<b>90</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>
OCT	12	12	16	10	5	11	9		2	5	2	2	0	0	2	
NOV	12	9	12	11	13	14	10		2	2	2	2	3	0	1	
DEC	18	9	7	22	12	9	8		4	1	0	4	1	1	2	
<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>20</b>	<b>27</b>	<b>18</b>	<b>19</b>	<b>19</b>	<b>11</b>	<b>15</b>	

The previous seven years have averaged 98.0 Severe Injuries for the period January through September.

The previous seven years have averaged 13.0 amputations for the period January through September.

<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.

<sup>3</sup> September is the latest month of Severe Injuries available from the FRA's Web site as of December 8, 2004.