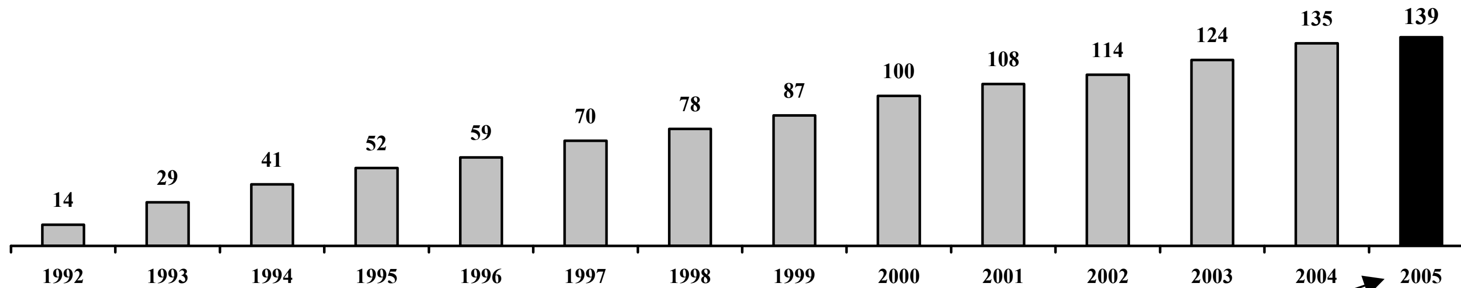
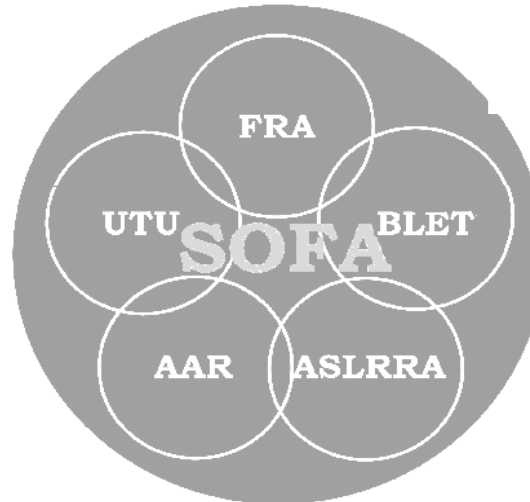
Please Post Immediately

139 Switching Fatalities since 1992. Each year on average there are 10.4 Fatalities.



The fourth switching fatality of 2005 occurred on April 11 at Ogden, UT.



June 2005 UPDATE

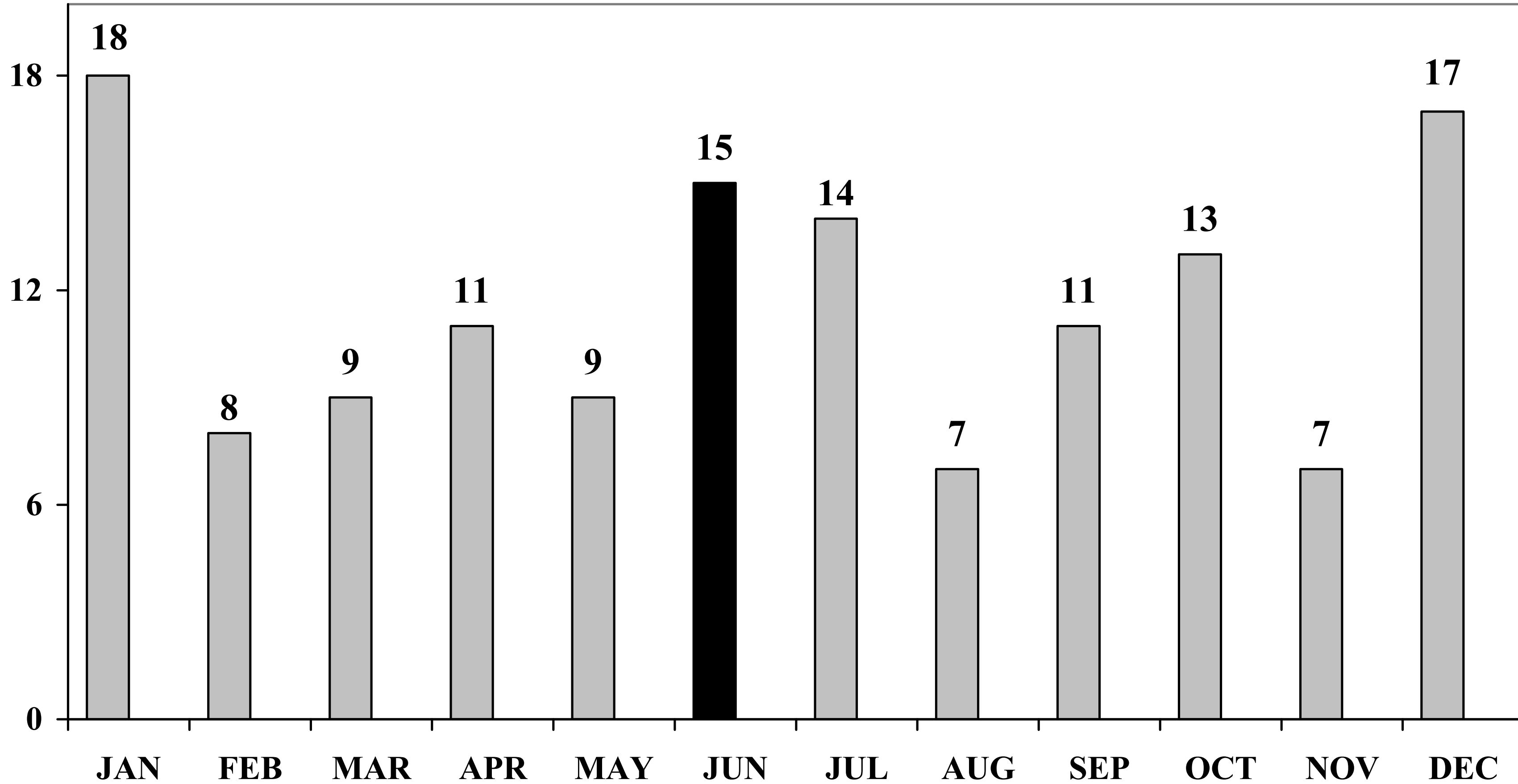
Since 1992, June with 15 is the third highest month for Switching Fatalities

Only December with 17 and January with 18 are higher

June 2005 Overview

15 of 139 Switching Fatalities since 1992 Occurred in June

(Current through May 08, 2005)

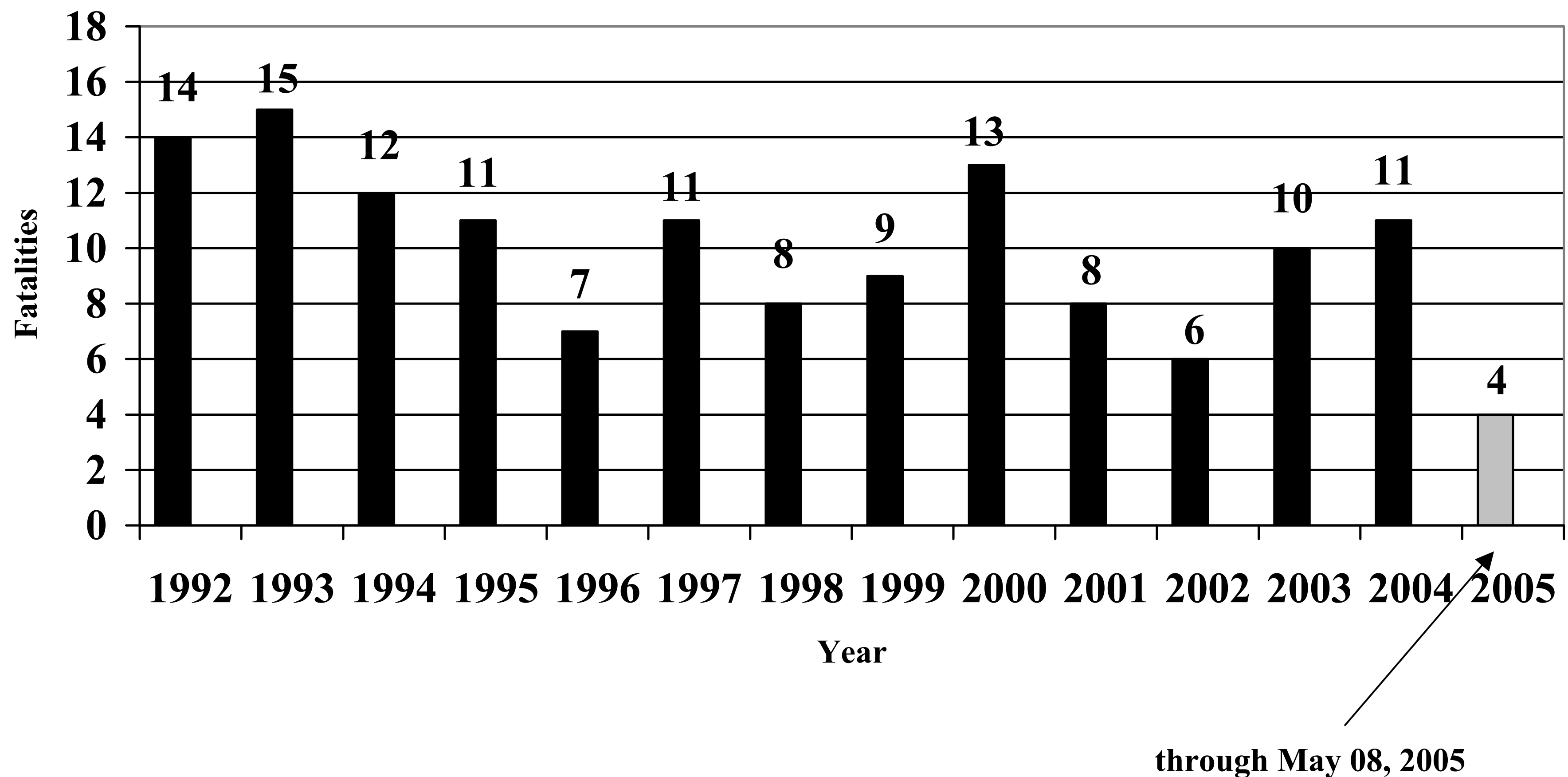


10.4 switching fatalities occur each year on average

139 Switching Fatalities Since 1992 (through May 08, 2005)

The Switching Operations Fatality Analysis (SOFA) Group reviews each switching fatality after the Federal Railroad Administration completes its investigation. There have been 139 fatalities since 1992. There were 11 fatalities in 2004. Four fatalities have occurred in 2005 through May 08.

On average, 10.4 switching fatalities occur each year.

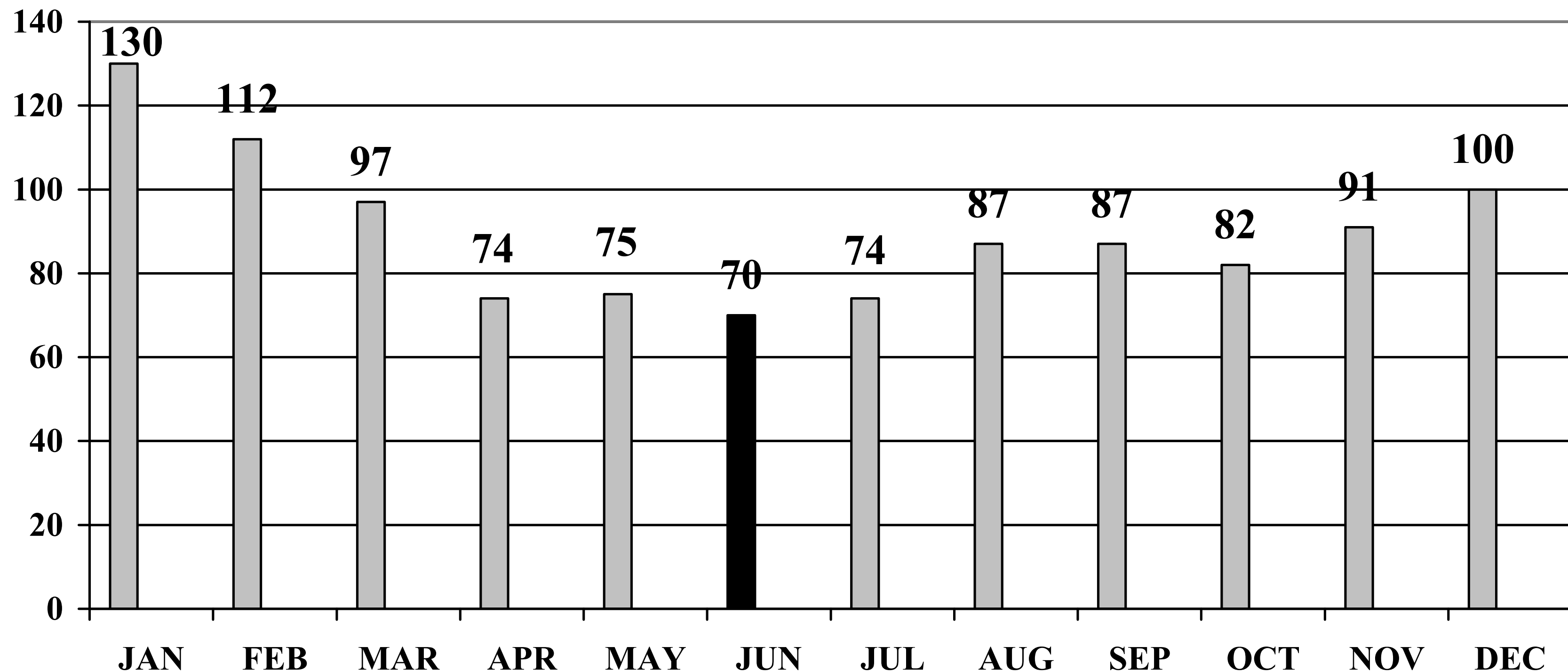


70 SOFA-defined Severe Injuries (including amputations)* in June

(January 1997 to February 2005)

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 in on the FRA's website.

(January and February represent 9 years of Severe Injuries. All other months are 8 years.)



1050 Severe Injuries occurred from January 1997 through February 2005**

** Latest month available from the Federal Railroad Administration's electronic files

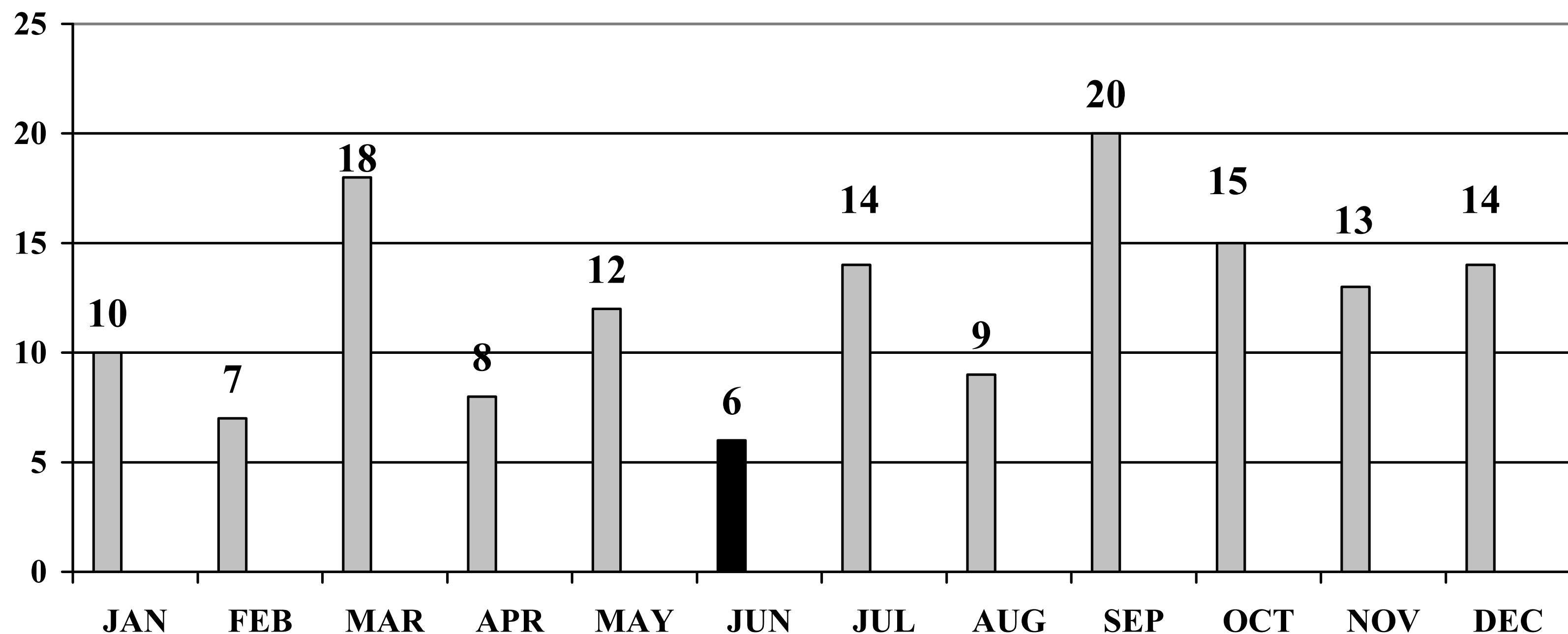
131.3 Severe Injuries occur each year on average

6 Amputations (a type of Severe Injury) in June

(January 1997 to February 2005)

- **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 potential for permanent occupational limitation.**

(January and February represent 9 years of Severe Injuries. All other months are 8 years.)



146 Amputations occurred from January 1997 through February 2005*

* Latest month available from the Federal Railroad Administration's electronic files

18.1 Amputations occur each year on average

15 June Switching Fatalities, January 1992 through December 2004

#	Date	RR	Location	Age	Service (yrs)	Employee's Job	Employee Act	Employee Location	Fatal Event	SOFA Recommendation	Special Switching Hazard
1	06/01/92	ATSF	Escondido, CA	58	29	road conductor	climbing over/on	between cars/loc	sudden/unexpected movement of on-track equipment	**4**	
2	06/01/92	BN	Seattle, WA	42	22	yard brakeman	riding	on end of car	collision between on-track equipment		**Employee Tripping and Unsecured Cars**
3	06/02/92	IHRC	Henderson, KY	52	23	road conductor	running	on track	struck by on-track equipment	**5**	
4	06/20/92	CNW	Northlake, IL	42	15	yard conductor	adjusting coupler	on track	defective/malfunctioning equipment	**1**	
5	06/04/93	SEPTA	Devon, PA	29	6	road pass engineer	standing	in/on loc	lost balance		**Miscellaneous**
6	06/07/93	IC	Fulton, KY	49	20	yard brakeman	standing	on track	sudden/unexpected movement of on-track equipment	**3**	
7	06/15/96	CSX	Charlotte, NC	36	1	yard brakeman	standing	near on-track equip-on ground	pushed/shoved into/against	**5**	
8	06/06/97	CMRC	Bay City, MI	50	7	road conductor	riding	on end of car	collision between on-track equipment	**4**	
9	06/24/97	NS	Rowesville, SC	21	2.5	road conductor	walking	on track	struck by on-track equipment		**Unexp. Movement of Railcars**
10	06/24/97	UP	Portland, OR	53	28	yard conductor	walking	near on-track equip-on ground	struck by on-track equipment		**Employee Tripping**
11	06/01/98	BNSF	Lubbock, TX	24	0.83	yard conductor	riding	other location on loc	collision between on-track equipment	**2,5**	
12	06/05/98	NS	Hapeville, GA	48	27	yard conductor	adjusting coupler	between tracks	collision between on-track equipment	**1**	
13	06/23/99	UP	Redding, CA	57	35	road conductor	standing	on track	struck by on-track equipment	**1,4**	
14	06/16/02	BNSF	Memphis, TN	20	1.5	yard conductor	handbrakes, applying	between cars/loc	struck by on-track equipment	**1,3,5**	
15	06/06/03	CSXT	Kingsport, TN	35	3	road brakemen	riding	on side of car	collision/impact-auto, truck, bus, van, etc.		**Struck by Motor Vehicle**

Two fatalities on the same day.

The average age of the employees was 44.7 years; average length of service was 13.6 years.

One employee had 35 years of service. He was struck by moving equipment at Redding, CA.

Narratives of the 15 June Switching Fatalities

SOFA Recommendation and/or Special Switching Hazard

1 June 01, 1992 – ATSF – Escondido, CA **Recommendation 4**

Brakeman had control of the move and told the engineer, by radio, to back up six cars to a coupling. The brakeman assumed that the conductor would "pick-up" the move when it came into his (the conductor's) view. The movement continued until it struck sitting cars on the track which, when moved, killed the conductor who was in between them.

2 June 01, 1992 – BN – Seattle, WA **Employee Tripping, Slipping, Falling and Unsecured Railcars**

A four-person crew (engineer, switch foreman, 2 switchman) had 3 cars with them when they coupled onto 56 cars standing on a yard track. They were told to pull the head 16 cars and leave the remaining 40 there. They were also told that the 16 had been separated from the remaining 40. The crew pulled the 19 cars out of the track and per radio instructions from the switchman, began a shove into another track. As the movement entered the track it was struck by the 40 car cut that had been left on the first track. The switchman died falling from the cars while getting on and off the free rolling cut to set hand brakes in an attempt to stop them.

3 June 02, 1992 – IHRC – Henderson, KY **Recommendation 5**

A two-person crew was switching an industry. The conductor had 11 months service with the railroad and, as the last move of the night, was to pull one car and set another in its place. As he set out the car and separated it from the car to go into the spot location, it began to roll away. He chased after it, tried to mount the end of the car with the handbrake and was killed when he slipped and fell under the car.

4 June 20, 1992 – CNW - Northlake, IL **Recommendation 1**

Crew was in the process of coupling cars together in a class track. Standing equipment was not properly secured before conductor fouled the track to adjust couplers and the equipment rolled back in and coupled him up.

5 June 04, 1993 – SEPTA – Devon, PA **Miscellaneous**

A commuter train locomotive engineer fell from the operating compartment of the train he was operating while it was moving. Two minutes before he fell speed had been reduced from 61 to 51 MPH.

6 June 07, 1993 – IC – Fulton, KY **Recommendation 3**

Crew performing switching duties in class yard failed to have a clear understanding of movements being made. Results were that the rear brakeman was run over by moving equipment. There were no witnesses, but a hand brake was applied. It was thought that the brakeman had gone between the equipment on the ground to release the low hand brake.

Narratives of 15 June Switching Fatalities (continued)

SOFA Recommendation and/or Special Switching Hazards

7 June 15, 1996 – CSX – Charlotte, NC **Recommendation 5**

Yard crew, engineer, conductor and switchman, switching at an industry. While crew was shoving two cars to a spot inside an industry building, FE (switchman) was rolled between lead box car and unloading platform. Platform or building was not marked with any type of ‘no-clearance’ or ‘close clearance’ signage. FE was last seen by the conductor on the ground next to movement in a ‘cut-out’ space in the unloading platform. The conductor reported that there is enough room for a man to clear the movement in this ‘cut-out’. After hearing a strange noise the conductor instructed engineer to stop the movement. FE was rolled for 21 feet between boxcar and platform. FE had one year of experience.

8 June 06, 1997 – CMRC – Bay City, MI **Recommendation 4**

Conductor began a move using radio communication to shove a cut of cars approximately twenty-five car lengths to a coupling. After the move had begun the engineer didn’t hear another radio transmission from his conductor. The shove move eventually collided with the cars that were to be coupled to. The conductor was crushed in the collision and it was later determined that the portable radio being used by the conductor may have lost enough of its charge to effect the transmission.

9 June 24, 1997 – NS – Rowesville, SC **Unexpected Movement of Railcars**

The engineer and conductor of a local road switcher were reassembling their train at a siding halfway through their work assignment. After running around the inbound cars, making a couple of switches to line up their train for the return trip, the conductor tied the EOT device onto the rear car, came back to the switch, and told the engineer to back up five cars. The engineer did not get any other radio instructions after three cars and stopped. The conductor was found dead having been run over by the leading car and not having reversed the siding switch as he had intended to do.

10 June 24, 1997 – UP – Portland, OR **Employee Tripping, Slipping, Falling**

A three-person yard switching crew was in the process of pulling a five car articulated cut of cars from out of one track with the intent of moving them to another. The yard foreman was killed when he was run over by the leading wheels of the trailing car. It appears that the foreman tried to release a hand brake at the trailing end of the second to the last car and while attempting to do so, stumbled, fell and was run over by the trailing car.

Narratives of 15 June Switching Fatalities (continued)

11 June 01, 1998 – BNSF – Lubbock, TX Recommendation 2,5

Two yard engines working on adjacent tracks. One left a car fouling a clear track being used by the other engine. The foreman directing the shove move of the lite locomotives was crushed when his engine consist cornered the car fouling the adjacent track.

12 June 05, 1998 – NS – Hapeville, GA Recommendation 1

A three-person crew was performing industrial switching using a runaround track, the yard foreman was attempting to couple up two super-cushion boxcars in a curve with power attached in a shove movement. Drawbars bypassed and yard foreman was crushed between the ends of the two cars.

13 June 23, 1999 – UP - Redding, CA Recommendation 1, 4

A three-person switching crew was shoving a cut of cars down a track with the intent of coupling to another cut that was sitting in the track. It was hard to shove the cars and the conductor told the brakeman to look for closed angle cocks. The brakeman found a closed angle cock when the shove move was within two car lengths of a coupling and opened it. The conductor was crushed and killed between the leading car of the shove and the head car to be coupled to when the shove move unintentionally accelerated just prior to coupling.

14 June 16, 2002 – BNSF - Memphis, TN Recommendation 1, 3, 5

A yard foreman, with 18-months of service, along with his helper, engineer, and a utility employee had just finished making up a train in the yard. However, the crossover from the track on which the train had been made had to be cut. This last minute instruction led to an increased level of conversation among the crew, yard foreman, utility employee and the yardmaster. The yard foreman jumped on a ATV, rode it to the cut point, separated the train; and, when the cut not attached to the locomotive rolled, he was caught between the two sections of the train and killed.

15 June 06, 2003 – CSX – Kingsport, TN Struck by Motor Vehicle…

A three-person industrial switching crew was shoving one car on a track that ran down the middle of a two-lane road and that was located in an industrial area. The conductor was riding on one side of the car and the brakeman was riding on the other. As the move approached a standing eighteen-wheel truck awaiting permission to back into the same area that the railroad was servicing, the driver began to back up, jack-knifed the trailer, and struck the brakeman crushing him between the truck box and the car he was riding.

4 Switching Fatalities in 2005. Most recent April 11.

(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**…A 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.

2005 Switching Fatality Calendar

SF = Day a **S**witching **F**atality occurred.

January

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	**SF**	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	**SF**	27	28	29
30	31					

Feburary

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

March

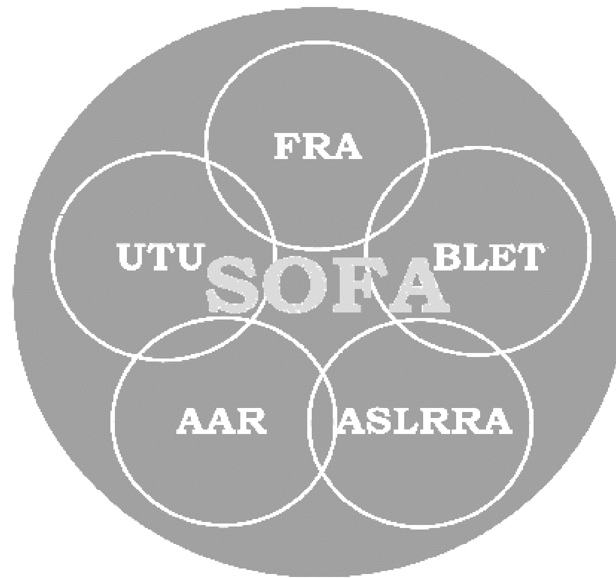
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April

S	M	T	W	T	F	S
					1	2
3	4	5	**SF**	7	8	9
10	**SF**	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Prevention

June Switching Fatalities Involved SOFA Recommendation 1

Northlake, IL **Hapeville, GA** **Redding, GA** **Memphis, TN**

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.

Lifesaver 1

Secure equipment before action is taken.

Discussion 1

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

June Switching Fatalities Involved SOFA Recommendation 2

Lubbock, TX

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.

Lifesaver 2
Protect employees against moving equipment.

Discussion 2
FE-06-94 and FE-31-94 both involved standing equipment left by another crew. In both cases, it can be argued that there was no possibility of either piece of equipment being moved. However, the fact that both pieces of equipment contributed to the fatalities and in both cases the respective crews had no knowledge that the equipment had been moved into the work area and that the physical layout expected by each fatality had changed contributed to the incident. Compliance with and an understanding of this recommendation would have prevented the other seven fatalities.

June Switching Fatalities Involved SOFA Recommendation 3

Fulton, KY **Memphis, TN**

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.

June Switching Fatalities Involved SOFA Recommendation 4

Bay City, MI **Redding, CA**

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.

Lifesaver 4

Communicate before action is taken.

Discussion 4

The SOFA group believes that the key to radio use when backing, shoving or pushing a train or cut of cars is the communication between the locomotive engineer and the train crew. The crew must develop the discipline to remain stopped until specific car counts are given by the ground person, rather than to begin moving and then expect to receive the count. If this is done, fatalities related to improper radio communication can be substantially reduced. Additionally, mixing radio and hand signals causes confusion, reduces the chance that other members of the crew would hear of a change in the switching operations, thereby greatly increasing misunderstandings, and, has directly led to fatalities studied by the SOFA Group.

June Switching Fatalities Involved SOFA Recommendation 5

Henderson, KY **Charlotte, NC** **Lubbock, TX** **Memphis, TN**

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.

Lifesaver 5

Mentor less experienced employees to perform service safely.

Discussion 5

While classroom training time has increased, in general, the SOFA group has focused on experience and on-the-job training. We have found that limited training and experience continues to factor into many switching operation fatalities. Additional on-the-job training and experience, while working with more experienced peers, may help reduce fatalities among crew members with limited service.

June Switching Fatalities Involving Special Switching Hazards

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

Seattle, WA: **Tripping, Slipping, or Falling Exposures and Unsecured Cars**

Devon, Pa: **Miscellaneous (Engineer fell from moving locomotive.)**

Rowesville, SC: **Unexpected Movement of Railcars**

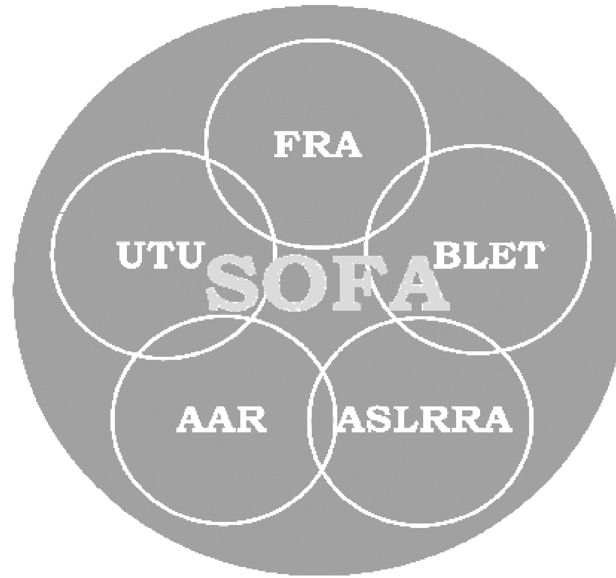
Portland, OR: **Tripping, Slipping, or Falling Exposures**

Kingsville, TN: **Struck by Motor Vehicle**

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

* 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

SOFA-defined Severe Injuries [1]

Injuries

	1997	1998	1999	2000	2001	2002	2003	2004	2005
JAN	11	13	16	15	21	12	11	11	20
FEB	17	15	9	9	9	13	17	14	9
MAR	14	12	17	11	10	10	13	10	
APR	8	10	6	10	12	6	9	13	
MAY	6	12	8	8	12	14	9	6	
JUN	9	10	8	11	8	5	10	9	
JUL	9	14	10	8	10	7	6	10	
AUG	13	10	11	14	8	10	7	14	
SEP	10	11	15	10	20	12	5	4	
OCT	12	12	16	10	5	11	9	7	
NOV	12	9	12	11	13	14	10	10	
DEC [3]	18	9	7	22	12	9	8	15	
totals	**139**	**137**	**135**	**139**	**140**	**123**	**114**	**123**	

Amputations [2]

January 1992 to February 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
JAN	1	0	2	1	0	0	2	2	2
FEB	0	1	0	1	0	2	1	2	0
MAR	3	4	3	2	1	1	3	1	
APR	1	2	0	1	2	0	1	1	
MAY	1	2	3	0	2	2	2	0	
JUN	2	1	1	0	1	0	0	1	
JUL	1	5	1	0	4	0	1	2	
AUG	1	0	1	4	0	1	0	2	
SEP	2	4	3	2	5	4	0	0	
OCT	2	5	2	2	0	0	2	2	
NOV	2	2	2	2	3	0	1	1	
DEC [3]	4	1	0	4	1	1	2	1	
totals	**20**	**27**	**18**	**19**	**19**	**11**	**15**	**15**	

There are 131.4 SOFA-defined Severe Injuries, and 18.1 Amputations each year on average.

1 *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.

2 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.

3 February 2005 is the latest month of Severe Injuries available from the Federal Railroad Administration's electronic files.