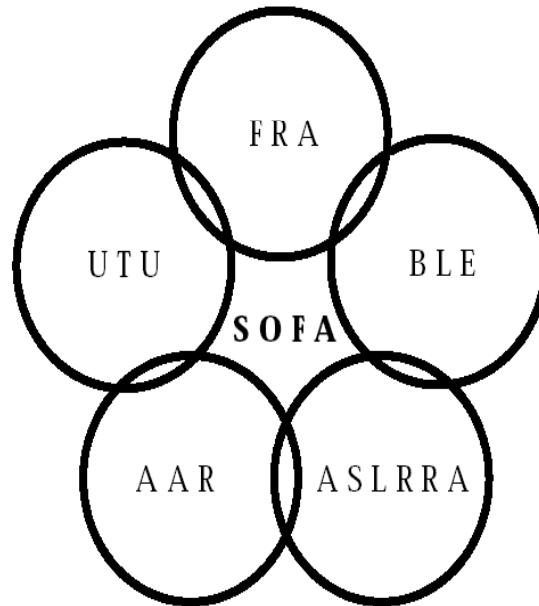




# SOFA

## Switching Operations Fatality Analysis



as of August 27, 2003



# *SOFA History*

- Formed in February 1998 at joint request of FRA and industry
- Causes of switching fatalities to train and engine-service employees were not well understood
- Charged to find causes and make recommendations



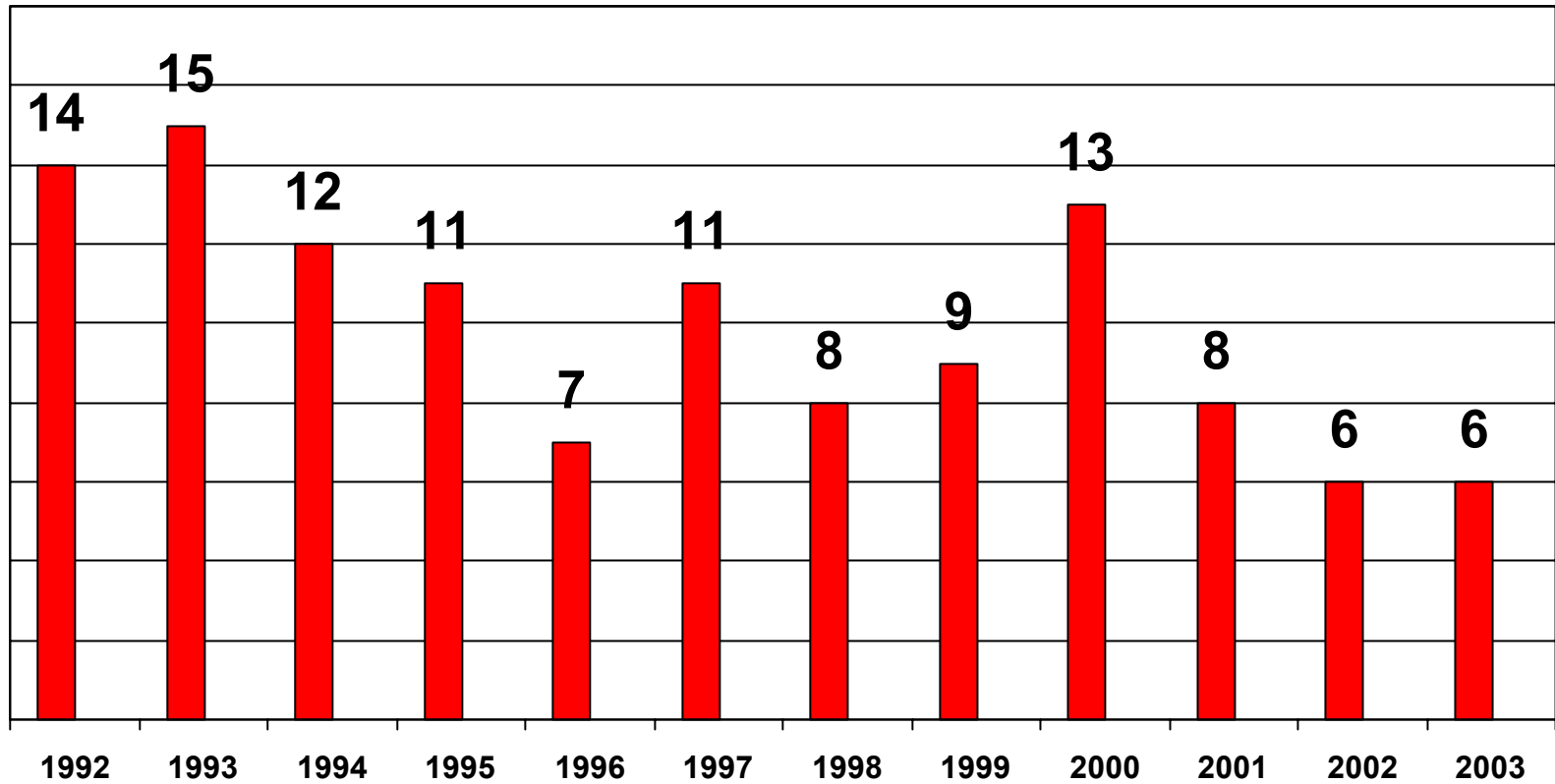
# *SOFA Members*

- Representatives from:
  - Federal Railroad Administration (FRA)
  - Association of American Railroads (AAR)
  - United Transportation Union (UTU)
  - Brotherhood of Locomotive Engineers (BLE)
  - American Short Line and Regional Railroad Association (ASLRRA)
  - Volpe National Transportation Systems Center (VNTSC)



# *Switching Fatalities*

*January 1, 1992 to August 27, 2003*





# *Making Recommendations*

- Looked for commonality among groups of switching fatalities
- Made five operating recommendations based on common sets of circumstances among first 76 fatalities analyzed
- Each operating recommendation was based on 8 to 12 switching fatalities



# *SOFA Recommendation 1*

## **Major Finding 1**

Eleven fatalities occurred while the employee was adjusting knuckles, adjusting drawbars, or installing an end-of-train.

## **Lifesaver Version of Recommendation 1**

Secure equipment before action is taken.



# *SOFA Recommendation 2*

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## **Major Finding 2**

Twenty fatalities were struck by equipment other than their own.

## **Lifesaver Version of Recommendation 2**

Protect employees against moving equipment.



# *SOFA Recommendation 3*

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## **Major Finding 3**

A lack of, or inadequate, job safety briefing contributed to at least eight fatalities.

## **Lifesaver Version of Recommendation 3**

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





# *SOFA Recommendation 4*

## **Major Finding 4**

Ten fatalities occurred because of a combination of radio/hand communication, or initial and/or ongoing movement of equipment without specific distances given.

## **Lifesaver Version of Recommendation 4**

Communicate before action is taken.



# *SOFA Recommendation 5*

## **Major Finding 5**

Eleven employees that were killed had experience of one year or less an/or deficiencies in training.

## **Lifesaver Version of Recommendation 5**

Mentor less experienced employees to perform service safety.



# *Non-Operating Recommendations*

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- Train crew resource management
- FRA's investigation should include a team concept
- Standardize information collected during FRA investigation
- Provide computer support to FRA investigation process
- Review severe injuries



# *Severe Injuries*

- Reviewed “Severe Injuries.” Issued report in June 2001
  - Potentially life threatening, high likelihood of loss of function, work restrictions, results from high-energy impact
  - Amputations, fractures other than fingers and toes, neck dislocations, loss of eye, electric shocks and burns to head
  - Average of 134.7 Severe Injuries a year. Severe Injuries declined 12 percent in 2002



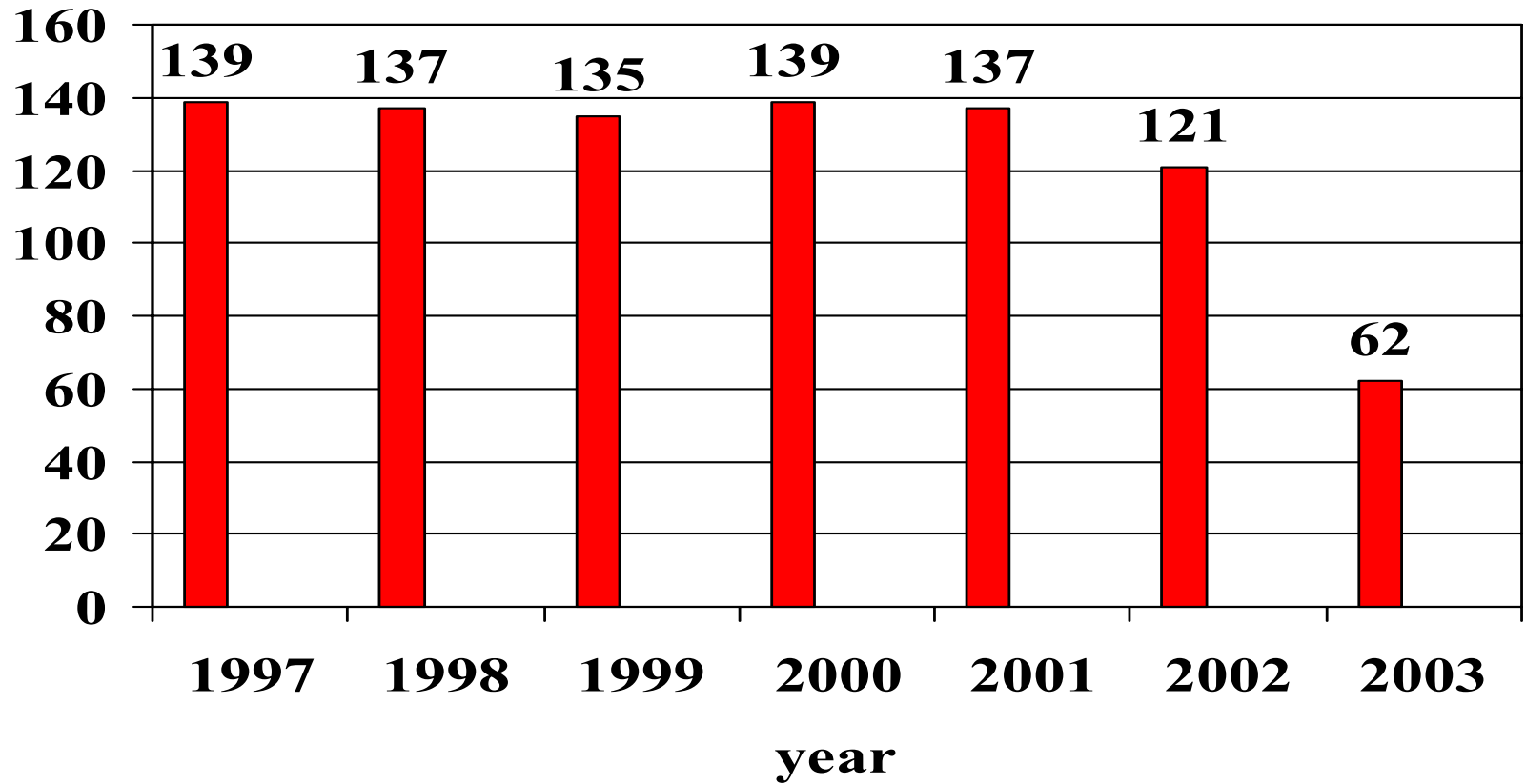
# *SOFA Update*

- 2002 switching fatalities were historically low...6 fatalities...however there have been 6 fatalities in 2003 through August 27.
- Severe Injuries were also historically low in 2002...but there have been 62 in 2003 through May 31...which is slightly about average
- SOFA Working Group continues to review each fatality and make recommendations if the facts warrant



# *Severe Injuries*

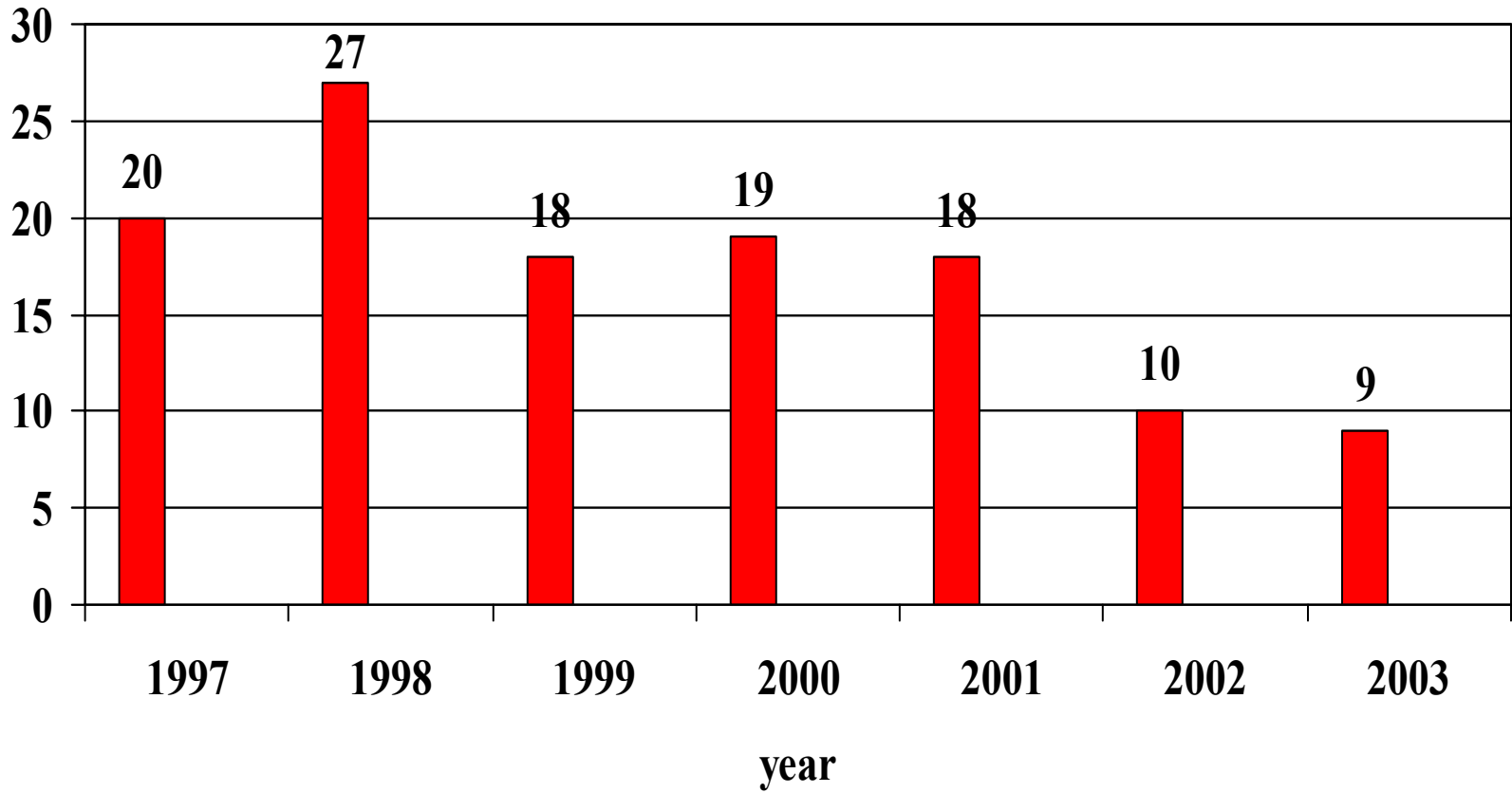
*January 1997 to May 2003*





# *Amputations*

*January 1997 to May 2003*





# *44 Recent Switching Fatalities*

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- 44 fatalities (through August 27, 2003) have occurred since the release of the SOFA Report on October 1999
- SOFA Working Group continues to review each new fatality and to look for commonality among fatalities
- SOFA Working Group keeps industry informed about the type, frequency, and trends of switching fatalities





## *Electronic Versions of SOFA Reports*

The SOFA Working Group has issued three reports on switching casualties. All three reports may be printed out from the following FRA web addresses:

*Findings and Recommendations of the SOFA Working Group, October 1999*

[http://www.fra.dot.gov/pdf/sofa\\_rep.pdf](http://www.fra.dot.gov/pdf/sofa_rep.pdf)

*Findings and Recommendations of the SOFA Working Group, Appendix – Volume II, August 2000* [http://www.fra.dot.gov/pdf/safety/sofa/sofa\\_vol2.pdf](http://www.fra.dot.gov/pdf/safety/sofa/sofa_vol2.pdf)

*Severe Injuries to Train and Engine Service Employees: Data Description and Injury Characteristics. July 2001.*

[http://www.fra.dot.gov/pdf/safety/sofa/SOFA\\_Injury.pdf](http://www.fra.dot.gov/pdf/safety/sofa/SOFA_Injury.pdf)