

NATIONAL TRANSPORTATION SAFETY BOARD
 WASHINGTON, D.C.

ISSUED: March 5, 1982

Forwarded to:

Mr. W. H. Dempsey
 President and Chief Executive Officer
 Association of American Railroads
 American Railroads Building
 1920 L Street, N.W.
 Washington, D.C. 20036

SAFETY RECOMMENDATION(S)

R-82-1

The National Transportation Safety Board has found in 20 derailments investigated since 1976 that the probable cause was a track turnout component malfunction or that such a malfunction was a contributing factor to the probable cause. Eleven of these 20 derailments occurred on 4 railroads, while the other 9 derailments were individual to 9 other railroads. (See attachment.) All of these accidents met or exceeded the criteria for investigation by the Safety Board. 1/ These accidents resulted in 2 deaths, 23 injuries, and individual property damage in excess of \$1 million. The potential for any of these derailments to have been catastrophic is underscored by the fact that six of the accidents involved passenger trains. The release of hazardous materials, with ensuing evacuations, is also a danger in a freight train derailment.

The Federal Railroad Administration documented a total of 808 accidents 2/ reported by all railroads in 1980, which were caused by defects in frogs, switches, and track appliances.

The recurrence of these accidents on certain railroads indicates that the quality of current inspection practices or maintenance procedures, or both, for track turnouts, track crossings, and special trackwork may not be adequate. All of the Safety Board accident investigations also revealed that the defective conditions existed for an extended time before the accidents, further indicating an inadequate type or quality of inspection.

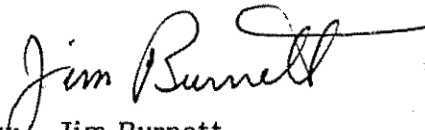
1/ Before 1978: derailments resulting in loss of life, freight train property damage exceeding \$500,000, and passenger train property damage exceeding \$10,000. After 1978: derailments resulting in loss of life, freight train property damage exceeding \$150,000, and all passenger train derailments.

2/ Any train accident exceeding \$2,900 in damage to railroad on-track equipment, signals, track, or track structures and roadbed.

Therefore, the National Transportation Safety Board recommends that the Association of American Railroads:

Advise its member railroads of the frequency in which malfunctions in track turnouts, track crossings, and special trackwork are causal factors in accidents and assist its member railroads in evaluating the quality of their existing inspection practices and maintenance procedures for track turnouts, track crossings, and special trackwork, and in revising those practices and procedures where necessary to prevent derailments.
(Class II, Priority Action) (R-82-1)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.


By: Jim Burnett
Acting Chairman

Accidents Investigated With Track Turnout Component Malfunctions

| <u>Date</u> | <u>Location</u> | <u>Railroad</u> | <u>Cause/Factor</u> |
|-------------|-------------------|-----------------|---|
| 3-17-76 | Knoxville, TN | Southern Ry. | Switch component failure; poor switch ties. |
| 10-28-76 | Thomasonville, CT | Amtrak | Spring frog failure due to deterioration. |
| 12-26-76 | Downington, PA | Amtrak | Material failure of switch ties. |
| 7-15-77 | Las Vegas, NM | A.T. & S.F. | Inadequate switch point maintenance. |
| 1-18-78 | Ravenden, AR | S.L. - S.F. | Damage to track frog from prior operations. |
| 1-19-78 | Holly, CO | A.T. & S.F. | Failure of spring switch due to inadequate maintenance. |
| 3-23-78 | Queens, NY | Conrail | Inadequate switch maintenance. |
| 7-2-78 | Pinole, CA | A.T. & S.F. | Switch not equipped with visible position indicator. |
| 7-13-78 | Paoli, PA | Amtrak | Improper switch stand securement. |
| 12-8-78 | Zurich, MT | B.N. | Failure of switch points due to deterioration. |
| 1-12-79 | Woodburn, IA | B.N. | Failure of switch points due to deterioration. |
| 2-19-79 | Covington, GA | Ga. RR | Damage to track frog from prior operations. |
| 3-21-79 | Alva, OK | A.T. & S.F. | Failure of switch points due to inadequate inspection and replacement policy. |
| 5-22-79 | Rock River, WY | U.P. | Improper installation of switch head blocks. |
| 10-5-79 | Chicago, IL | I.C.G. | Failure of track frog due to missing bolts. |

| <u>Date</u> | <u>Location</u> | <u>Railroad</u> | <u>Cause/Factor</u> |
|-------------|-----------------|-----------------|--|
| 12-14-79 | Benton, AR | Mo. Pac. | Failure of switch points due to deterioration. |
| 12-17-79 | Chicago, IL | I.C.G. | Failure of switch points; improper stock rail fit. |
| 1-14-81 | Estherwood, LA | So. Pac. | Switch rod failure due to deterioration. |
| 3-20-81 | Tyler, TX | S.L. - S.W. | Switch rod failure due to deterioration. |
| 8-7-81 | Bridgman, MI | C. & O. | Switch rod failure due to improper installation. |