

Railroad Safety Advisory Committee Rail Failure Recommendation VOTE

From: Woolverton, Larry (FRA)
Sent: Thursday, April 17, 2014 6:23 AM
To: RSAC Committee
Subject: RE: Rail Failure Working Group Recommendation for RSAC VOTE
Importance: High

Railroad Safety Advisory Committee Members & Alternates, by a consensus vote the RSAC has approved the "Rail Failure Consensus Guidance Recommendations" as the Committees recommendation to the FRA Administrator. The guidance document will be published by FRA and distributed to the railroad industry as soon as possible.

Thank you.

LARRY W. WOOLVERTON

From: Woolverton, Larry (FRA)
Sent: Tuesday, April 08, 2014 8:29 AM
To: RSAC Committee
Subject: Rail Failure Working Group Recommendation for RSAC VOTE

Railroad Safety Advisory Committee Members & Alternates, as discussed during the October 31, 2013 RSAC Committee meeting, please find the consensus recommendations from the Rail Failure Working Group attached for your consideration and an electronic ballot to cast your vote.

(See pages 10-13 in the attached RSAC 50 meeting minutes)

The attached "Rail Failure Consensus Guidance Recommendations" document is a consensus document approved at the July 30-31, 2013 Rail Failure Working Group meeting and with your approval will be published by FRA and made available to the industry in a formal document.

Approval of this consensus document will also close RSAC Task 12-01; Rail Failure.

You are requested to complete the attached electronic ballot and return it to my attention electronically by no later than close of business on **Tuesday, April 15, 2014.**

Please contact me with any questions.

Regards,

LARRY W. WOOLVERTON

Recommendations to the FRA Administrator on Management of Rail

The following are recommended practices to be used to manage rail head wear, visible rolling contact fatigue damage, and defect development in rail in mainline:

- Class 2 track not within yard limits with annual tonnage of at least 25 MGT, or is a HAZMAT route;
- Class 3 track not within yard limits with annual tonnage of at least 25 MGT, is a HAZMAT route, or has regularly scheduled passenger service; and
- Class 4 and 5 track.

For purposes of these recommended practices, visible rolling contact fatigue (RCF) damage is a combination of crack formation and material flow on the running surface of the rail, leading to visual degradation of the rail surface (spalling, shelling and head checks), higher impact forces and reduced rail life.

These recommendations were developed through discussions held during meetings of the Rail Safety Advisory Committee (RSAC) Rail Failure Working Group, which was formed to make these recommendations as part of RSAC Task 12-01.

We believe that these recommended practices, when properly implemented, will have a positive impact in the reduction of broken rail derailments and improved railroad safety. We recommend that, when procedures to address this issue are not already in place, track owners will individually adopt, implement, or update their rail failure prevention procedures in accordance with these recommendations.

These recommended practices are intended as agency guidance. In developing these recommendations, the RSAC Rail Failure Working Group did not consider the Regulatory Flexibility Act, the Small Business Act, the Paperwork Reduction Act, the Unfunded Mandates Reform Act, the Privacy Act, the environmental impact, federalism implications, or the energy impact. Additionally, the Working Group did not conduct an economic evaluation or consider the cost impacts of these recommendations.

Rail Failure Prevention Program

We propose that track owners consider developing and maintaining a program for rail in mainline:

- Class 2 track not within yard limits with annual tonnage of at least 25 MGT, or is a HAZMAT route;
- Class 3 track not within yard limits with annual tonnage of at least 25 MGT, is a HAZMAT route, or has regularly scheduled passenger service; and

- Class 4 and 5 track

that contains the following:

1. Rail head wear guidelines;
2. Guidelines which address the identification and management of visible rolling contact fatigue damage and improve rail performance;
3. An inspection plan that includes rail head wear measurements for comparison with established guidelines and means for identification of visible rolling contact fatigue damage;
4. Corrective actions to be taken when rail head wear guidelines are exceeded or visible rolling contact fatigue damage is identified; and
5. Training for the application of the procedures listed above.

Rail Failure Prevention Program Content

We recommend that the Rail Failure Prevention Program contain the following elements:

A. Rail head wear guidelines which include:

1. Head wear guidelines that consider rail section, class of track, alignment and other criteria as determined by the track owner.
2. Specification of the measurement methods to be used and definition of reference points for these measurements.

B. An inspection plan to measure rail head wear that considers alignment, class of track, and other criteria as determined by the track owner.

C. Guidelines for the management of visible rolling contact fatigue damage and improved rail performance. Procedures may include lubrication, friction modification or grinding.

1. Lubrication or friction modification practices should consider train traffic, alignment, curvature length, and grade;

2. Rail grinding or other techniques that address maintenance of rail head profile to improve rail surface conditions and reduce visible rolling contact fatigue damage.

D. Guidelines which address the monitoring of visible rolling contact fatigue damage which include the following:

1. Inspection procedures to identify areas of visible rolling contact fatigue damage. The inspection procedures should include prioritization methods for assessing the severity of these conditions; and

2. Establishment of inspection frequencies to monitor development of visible rolling contact fatigue damage that consider alignment, track class, and other factors as determined by the track owner.

E. Guidelines for applying rail grinding or other techniques which improve rail head profile and visible rolling contact fatigue damage. The guidelines should identify:

1. The techniques utilized;

2. Application of these techniques taking into consideration alignment, tonnage, class of track, or other factors as determined by the track owner; and

3. Prioritize corrective action for areas of significant visible rolling contact fatigue damage to reduce defect development.

F. Recordkeeping procedures for each inspection performed under the Rail Failure Prevention Program. The record should include the following items:

1. The limits of the territory inspected

2. Head wear measurements

3. Areas identified to have significant visible rolling contact fatigue damage and type of rail surface degradation.

G. Guidelines for rail service life monitoring which consider class of track, tonnage, rail section, rail wear, visible rolling contact fatigue damage, defect development, rail failure history and other factors as determined by the track owner.

H. Recommended corrective action to be taken when rail head wear or visible rolling contact fatigue damage guidelines are exceeded.

I. A system or process that is designed for the recording and tracking of rail defects and rail failure incidents with the capability to identify locations with sudden or accelerated failure rates.

J. Training for employees involved in the application of the written Rail Failure Prevention Program, with provisions for periodic retraining for those individuals.

Additionally, the Working Group recommends that FRA should dedicate resources to the following research items:

- Develop and implement TTCI Rolling Load Machine (RCF on Rail and Wheels)
- Develop improved rail steel
- Improve the understanding of worn rail to better forecast rail life
- Improve rail inspection technologies
- Develop performance-based predictive modeling software to better control rail life through improved preventive maintenance processes
- Study the effects of rail grinding on defect development