

**INFORMATION COLLECTION
SUPPORTING JUSTIFICATION
FRA Safety Advisory 2015-04
OMB No. 2130-0614**

Summary of Submission

- This submission is a **request** for an extension without change under **Regular** Processing procedures for the collection of information associated with the FRA Safety Advisory 2015-04 titled Ballast Defects and Conditions – Importance of Identification and Repair in Preventing Development of Unsafe Conditions of Track Conditions which was previously approved under OMB **Emergency** Processing procedures for 180 days on **September 9, 2015**, and which currently expires on **March 31, 2016**. FRA will most likely issue a rulemaking at some time in the near future to codify the recommendations made in this Safety Advisory. Until then, Safety Advisory 2015-04 will remain in full force and effect. Naturally, FRA will continue to seek OMB approval of the associated collection of information until the Safety Advisory is rescinded.
- FRA published the required 60-day Notice in the **Federal Register** on October 19, 2015. See 80 FR 63272. FRA received no comments in response to this Notice.
- The total number of burden hours **requested** for this collection of information is **10,200 hours**.
- The total number of burden hours **previously approved** for this collection of information is **10,200 hours**.
- Total number of **responses requested** for this information collection is **10,200**.
- Total number of **responses requested** for this information collection is **10,200**.
- ****The answer to question number 12 itemizes the hourly burden associated with each requirement of this rule (See pp. 8-9)**

1. Circumstances that make collection of the information necessary.

Background

Ballast may consist of crushed stone, crushed slag, screened gravel, and other materials; ballast is an integral part of the track structure. Ballast, regardless of the material, must

satisfy all four of the requirements in FRA's track safety standards in 49 CFR part 213. See §§ 213.103 and 213.334.^a

The sole appearance of fouled ballast (*i.e.*, ballast contaminated with broken-down particles, mud, coal dust, or other foreign material) may not warrant immediate corrective action if the ballast is properly transmitting and distributing the load, restraining the track, providing adequate drainage, and maintaining proper geometry. However, when ballast cannot adequately drain free-standing water, wheel loads are likely to be concentrated, rather than distributed. The concentrated wheel loads can cause rapid deterioration of track components and track instability, which can increase the risk of derailment. In addition, as noted below in the discussion regarding an accident that occurred at a fouled ballast location, track instability can not only result from an individual track defect, but from a combination of track conditions. FRA reminds track owners and railroads of their responsibility under § 213.7 to ensure all persons they designate as qualified to either supervise certain renewals of track or inspect track for defects know and understand the requirements of part 213, are able to detect deviations, and can prescribe appropriate remedial action.

Ballast defects are often readily apparent through indications of poor geometry and structure degradation. FRA believes that a location with a combination of a ballast defect with a marginal geometry condition^b warrants additional monitoring, more restrictive remedial action, or both, to correct or safely compensate for the combined defect and condition.

Railroad track inspectors should exercise their technical knowledge and professional experience to identify and record ballast defect or condition locations, and should take into account the severity of any geometry conditions along with the following factors to determine appropriate remedial action:

- Operating practice: train speed, loading environment, route type and density, proximity to population centers;
- Track structure: rail, crossties, and fastener deterioration (mechanical wear from impact force), condition causing excessive rail cant (particularly abraded concrete crossties), concentrated support under ties, and localized excessive loading of ties;
- Roadbed and right-of-way condition: sufficiently maintained to allow free-draining shoulder and crib ballast, unrestricted cross and lateral drainage;
- Special track work and transition points:^c turnouts, bridges, rail crossings, and highway/rail crossings.

^a All references to sections or part in this safety advisory are to a section or part of Title 49 of the CFR.

^b A geometry condition means a track surface, gage, or alinement irregularity that does not exceed the allowable threshold for the designated track class in the track safety standards.

Ballast defects are not associated with a track classification under §§ 213.9 and 213.307 requirements. Normally, ballast degradation is a gradual process. However, environmental conditions can accelerate the degradation rate and pose a safety threat to train operations. The safe passage of trains is reliant on the track inspector to recognize and assess the safety risk through training and experience.

Ballast conditions that produce a derailment risk must be corrected by repair or by applying appropriate restrictions upon discovery. The railroad's designated track inspector is responsible for conducting a proper inspection and applying appropriate corrective action.

On July 18, 2013, at approximately 8:29 p.m., northbound CSX Transportation Train Q70419 derailed at Milepost 9.99 while traversing the No. 2 Main Track on the Metro-North Commuter Railroad Company's Hudson Line. FRA and the National Transportation Safety Board (NTSB) investigated the accident.

The accident was caused by the rail canting outward under increased dynamic wheel-rail loads due to the combination of gage and profile deviations and center-bound concrete crossties resulting in damage sufficient to reduce their ability to hold gage. These conditions developed from the ballast failing to properly support the track structure, which itself was the result of inadequate drainage. A track inspector performing proficient track inspections should have recognized the degrading ballast and geometry conditions, and the likelihood for center-bound crossties, and taken responsible corrective action. To prevent the development of such unsafe combinations of track conditions, FRA believes it is important that track owners and railroads assess current internal engineering instructions and update them to provide specific guidance to track inspectors on how to identify ballast defects and other track conditions. It is also important that track owners and railroads provide clear guidance on how to determine and apply appropriate remedial action, particularly in locations where the combination of track geometry and structure conditions produces an increased risk of derailment.

FRA further believes that alerting track owners or railroads to the issue of unsafe combinations of track conditions and highlighting a derailment resulting from a combination of marginally-compliant conditions at a fouled ballast location provides a sufficient basis for these entities to review engineering standards and to consider requiring additional attention and action in areas with multiple track conditions. This is particularly true when geometry and structural deviations are produced by poorly-performing ballast.

^c Transition points occur at locations where there is an abrupt change in the vertical stiffness (support) of the track, such as the approach to a bridge. Transition points increase the dynamic loading of the track, causing more rapid deterioration of track components (e.g., ballast, crossties, rail fasteners, and rail).

The NTSB's safety recommendations resulting from its investigation of the derailment discussed above are on its Web site at www.nts.gov. The NTSB recommended that FRA define specific allowable limits for combinations of track conditions, none of which individually amount to a deviation from FRA regulations that require remedial action.

In sum, FRA is issuing this Safety Advisory to emphasize the importance of timely repairing ballast defects and conditions. FRA notes that ballast defects and ballast conditions that are not repaired in a timely manner can lead to future defects. FRA believes it is important for track inspectors to be aware that ballast defects and conditions can cause track components to deteriorate rapidly and compromise the stability of the track structure, and that inspectors are trained to identify and repair ballast defects and conditions. This Safety Advisory recommends that track owners and railroads: (1) assess current engineering instructions on ballast safety and update them to provide specific guidance to track inspectors (designated personnel that are qualified to inspect and repair track) on how to identify and repair ballast defects and conditions, as well as on the appropriate corrective action to implement, particularly in areas with one or more additional track conditions; (2) train track inspectors on the updated engineering instructions and this safety advisory to ensure they understand how to identify and repair ballast defects and conditions in a timely manner, and understand the importance of such repair in preventing the development of unsafe combinations of track conditions; and (3) ensure that supervisors provide adequate oversight of track inspectors to achieve identification and repair of ballast defects and other track conditions.

2. How, by whom, and for what purpose the information is to be used.

As noted in the summary above, this is a request for an extension without change under **Regular** Processing procedures of the information collection previously approved by OMB under **Emergency** Processing procedures. The collection of information is used and will continue to be used by FRA to encourage track owners and railroads to voluntarily assess and update their current internal engineering instructions so that specific guidance is provided to their track inspectors on how to identify and repair ballast defects and other ballast conditions, as well as on the appropriate corrective action to implement, particularly in areas with one or more track conditions. Such assessments, updates, and advisory reviews provide railroad track inspectors with current technical knowledge on the most effective ways to maintain stable ballast, inform them of this safety advisory's main safety points, and reduce the likelihood of accidents/incidents, particularly derailments.

The collection of information is also used and will continue to be used by FRA to encourage track owners and railroads to voluntarily train their designated personnel/track inspectors on the updated engineering instructions and the contents of this Safety Advisory. This training is used and will continue to be used by railroads to ensure that their designated personnel/track inspectors understand how to identify and repair ballast defects and conditions in a timely fashion. Further, the training is used and will continue

to be used to ensure that these employees understand the importance of such repair in preventing the development of unsafe combinations of track conditions (such as gage widening, alinement and track surface deviations or structural conditions such as center-bound crossties, loose or missing fasteners, rail cant, etc. with ballast defects/conditions) that increase the risk of accidents/incidents. When ballast cannot adequately drain free-standing water, wheel loads are likely to be concentrated rather than distributed. The concentrated wheel loads can cause rapid deterioration of track components and track instability, which can raise the risk of derailment.

Railroads use and will continue to use the information collected to ensure that their track inspectors know the requirements and purpose of track subgrade and ballast and understand the circumstances that can lead to ballast failures and other ballast defects and conditions, such as inadequate drainage, saturate subgrade, and transition points such as highway-rail grade crossings and approaches to bridges.

In sum, this collection of information serves as another mechanism to help FRA further enhance rail safety and achieve the DOT's main mission of the reliable, safe, efficient movement of people and goods for a strong and prosperous America now and in the future.

3. Extent of automated information collection.

Over the years, FRA has consistently and strongly endorsed the use of the latest information technology, wherever feasible, to reduce burden on respondents and increase efficiency. FRA expects that track owners and railroads will complete updating their current internal engineering instructions electronically. FRA also expects that railroads to train their track inspectors on their updated engineering instructions/this Safety Advisory and keep the necessary records electronically. Therefore, FRA believes that approximately 90% of responses will be completed electronically.

4. Efforts to identify duplication.

The collection of information is unique and pertains to a critical FRA Safety Advisory that the agency issued to stress the importance of timely repair of ballast defects and conditions while also recommending that railroads update their internal engineering instructions and train their track inspectors on them and on this Safety Advisory. Therefore, the information collected is not currently available.

This information to our knowledge is not duplicated anywhere.

5. Efforts to minimize the burden on small businesses.

Based on the latest agency data, there are approximately 779 railroads that could be potentially impacted by this FRA Safety Advisory and associated collection of information. In actuality, this Safety Advisory is likely to affect approximately 100 larger railroads. Thus, these larger railroads are being asked to voluntarily assess and update their internal engineering instructions and provide their track inspectors with training in their updated internal engineering instructions and this Safety Advisory. The burden is fairly minimal involving a total of 10,200 burden hours and 10,200 burden responses. In light of the above, FRA firmly asserts that this collection of information will not have a significant economic impact on a substantial number of small entities.

6. Impact of less frequent collection of information.

If this information is not collected or collected less frequently, rail safety in this country will be considerably jeopardized. Specifically, without this collection of information, there will invariably be more train accidents/train derailments like the one that occurred on July 18, 2013, where northbound CSX Transportation Train Q70419 derailed at Milepost 9.99 while traversing the No. 2 Main Track on the Metro-North Commuter Railroad Company's Hudson Line. FRA and the National Transportation Safety Board (NTSB) investigated the accident. The accident was caused by the rail canting outward under increased dynamic wheel-rail loads due to the combination of gage and profile deviations and center-bound concrete crossties resulting in damage sufficient to reduce their ability to hold gage. These conditions developed from the ballast failing to properly support the track structure, which itself was the result of inadequate drainage.

Without this collection of information, it is highly unlikely that a substantial number of track owners and railroads would voluntarily assess and update their internal engineering instructions. Without the updated internal engineering instructions, track inspectors for these track owners and railroads would not have the essential and necessary specific guidance on how to identify and repair ballast defects and conditions and take the appropriate corrective action. Without such guidance, track inspectors might miss defective ballast conditions or combinations, which could cause increased numbers of derailments with corresponding injuries, fatalities, and property damage.

Without this collection of information, it is highly unlikely that a substantial number of track owners and railroads would voluntarily train their designated personnel/track inspectors on the updated engineering instructions and the contents of this Safety Advisory. Without this training, the designated personnel/track inspectors would not have necessary knowledge to understand how to identify and repair ballast defects and conditions in a timely fashion. Further, without this training, these employees might not understand the importance of such repair in preventing the development of unsafe combinations of track conditions (such as gage widening, alinement and track surface deviations or structural conditions such as center-bound crossties, loose or missing fasteners, rail cant, etc. with ballast defects/conditions) that increase the risk of accidents/incidents. When ballast cannot adequately drain free-standing water, wheel loads are likely to be concentrated rather than distributed. The concentrated wheel loads

can cause rapid deterioration of track components and track instability, which can raise the risk of derailment.

Track inspectors need to know the requirements and purpose of track subgrade and ballast and understand the circumstances that can lead to ballast failures and other ballast defects and conditions, such as inadequate drainage, saturate subgrade, and transition points such as highway-rail grade crossings and approaches to bridges.

Without this collection of information, it is highly unlikely that track owners and railroads will ensure that supervisors provide oversight of track inspectors to achieve proper identification and repair of ballast defects and other track conditions.

In sum, this collection of information is essential and aids FRA and DOT in their critical primary missions of promoting transportation/rail safety and moving people and goods throughout the country in a safe, reliable, and environmentally sound manner.

7. Special circumstances.

All information collection requirements relating to this Safety Advisory are in compliance with this section.

8. Compliance with 5 CFR 1320.8.

In accordance with the Paperwork Reduction Act of 1995 and 5 CFR 1320 (§1320.13), FRA is publishing a notice in the **Federal Register** on **October 19, 2015**, (see 80 FR 63272), requesting public comment on the continuation of this collection of information. FRA received no comments in response to this notice.

9. Payments or gifts to respondents.

There are no monetary payments or gifts made to respondents regarding the proposed information collection requirements resulting from this emergency order.

10. Assurance of confidentiality.

No assurances of confidentiality are being made by the Federal Railroad Administration (FRA).

Information collected is not of a private nature.

11. Justification for any questions of a sensitive nature.

There are no questions of a sensitive or private nature involving the proposed collection of information associated with this FRA Safety Advisory.

12. Estimate of burden hours for information collected.

Note: FRA estimates that approximately 754 track owners/railroads and approximately 10,000 railroad employees/track inspectors will be affected by this Safety Advisory.

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In addition to complying with the requirements of Part 213, including §§ 213.7 and 213.103, FRA recommends that track owners and take the following actions:

1. Assess current internal engineering instructions in view of the concerns raised in this Safety Advisory 2015-04, and update them to ensure that the instructions provide specific guidance to track inspectors on how to identify and repair ballast defects and other ballast conditions, and on the appropriate corrective action to implement, particularly in areas with one or more additional track conditions.

FRA estimates that approximately 100 voluntary assessments of engineering instructions and approximately 100 voluntary updates of these engineering instructions will be completed under the above provision. It is estimated that it will take approximately 60 minutes to conduct each internal assessment and approximately 60 minutes to update each engineering instruction document. Total annual burden for this requirement is 200 hours.

Respondent Universe:	754 Track Owners/Railroads
Burden time per response:	60 minutes
Frequency of Response:	One-time
Annual number of Responses:	100 assessments + 100 engineering instructions updates
Annual Burden:	200 hours

Calculation: 100 assessments x 60 min. + 100 engineering instructions update x 60 min. = 200 hours

2. Train track inspectors on the updated engineering instructions and this safety advisory. Such training should ensure that each track inspector understands the following:

- a. Identification of Ballast Defects and Conditions. Know the requirements and purpose of track subgrade and ballast and understand the circumstances that can lead to ballast failure and other ballast defects and conditions, such as inadequate drainage, saturated

subgrade, and transition points (e.g., highway-rail grade crossings and approaches to bridges).

b. Repair of Ballast Defects and Conditions. Understand the importance of maintaining ballast and repairing any ballast defects or conditions in preventing the development of one or more additional track conditions (e.g., gage widening, alinement and track surface deviations) or track structure conditions (e.g., center-bound crossties, loose or missing fasteners, rail cant, etc.), especially around transition points or other areas susceptible to ballast degradation.

FRA estimates that approximately 10,000 railroad employees/track inspectors will be trained on the updated engineering instructions and this safety advisory under the above provision. It is estimated that it will take approximately 60 minutes to train each employee/track inspector. Total annual burden for this requirement is 10,000 hours.

Respondent Universe:	754 Track Owners/Railroads
Burden time per response:	60 minutes
Frequency of Response:	One-time
Annual number of Responses:	10,000 trained employees/track inspectors/records
Annual Burden:	10,000 hours

Calculation: 10,000 trained employees/track inspectors/records x 60 min. = 10,000 hours

Total annual burden for this entire information collection is 10,200 hours (200 + 10,000).

13. Estimate of total annual costs to respondents.

There are **no** additional costs to respondents besides the burden hours listed in the answer to question number 12 above.

Railroads will send an electronic bulletin to their employees to inform them of their updated internal engineering instructions and this Safety Advisory. After that, any updates to their internal engineering instructions will be included in normal employee training.

14. Estimate of Cost to Federal Government.

There is no additional cost to the Federal Government to examine the required records because they must be supplied to FRA personnel in the course of their routine duties while conducting regulatory compliance audits.

15. Explanation of program changes and adjustments.

This is a request for an extension without change under **Regular** processing procedures for an information collection previously approved under Emergency processing procedures. Thus, there are **no program changes** or **adjustments** at this time.

The current OMB inventory for this collection of information exhibits a total burden of **10,200 hours** while the present submission shows a total burden of **10,200 hours**. Hence, there is **no change** in burden.

Additionally, as noted above, there are no additional costs to respondents besides the burden hours detailed in the answer to question number 12 above. Thus, there is **no change** in costs to respondents as well.

16. Publication of results of data collection.

FRA does not have any plans to publish the results of this collection of information.

17. Approval for not displaying the expiration date for OMB approval.

Once OMB approval is received, FRA will publish the approval number for these information collection requirements in the Federal Register, and will take necessary steps to obtain a regular OMB Clearance.

18. Exception to certification statement.

No exceptions are taken at this time.

Meting Department of Transportation (DOT) Strategic Goals

This information collection supports the top DOT strategic goal, namely transportation safety. Without this collection of information, rail safety in this country will be considerably jeopardized. Specifically, there will invariably be more train accidents/train derailments like the one that occurred on July 18, 2013, where northbound CSX Transportation Train Q70419 derailed at Milepost 9.99 while traversing the No. 2 Main Track on the Metro-North Commuter Railroad Company's Hudson Line. FRA and the National Transportation Safety Board (NTSB) investigated the accident. The accident was caused by the rail canting outward under increased dynamic wheel-rail loads due to the combination of gage and profile deviations and center-bound concrete crossties resulting in damage sufficient to reduce their ability to hold gage. These conditions developed from the ballast failing to properly support the track structure, which itself was the result of inadequate drainage.

Without the proposed collection of information, it is highly unlikely that a substantial number of track owners and railroads would voluntarily assess and update their internal engineering instructions. Without the updated internal engineering instructions, track inspectors for these track owners and railroads would not have the essential and necessary specific guidance on how to identify and repair ballast defects and conditions and take the appropriate corrective action. Without such guidance, track inspectors might miss defective ballast conditions or combinations, which could cause increased numbers of derailments with corresponding injuries, fatalities, and property damage.

Without the proposed collection of information, it is highly unlikely that a substantial number of track owners and railroads would voluntarily train their designated personnel/track inspectors on the updated engineering instructions and the contents of this Safety Advisory. Without this training, the designated personnel/track inspectors would not have necessary knowledge to understand how to identify and repair ballast defects and conditions in a timely fashion. Further, without this training, these employees might not understand the importance of such repair in preventing the development of unsafe combinations of track conditions (such as gage widening, alinement and track surface deviations or structural conditions such as center-bound crossties, loose or missing fasteners, rail cant, etc. with ballast defects/conditions) that increase the risk of accidents/incidents. When ballast cannot adequately drain free-standing water, wheel loads are likely to be concentrated rather than distributed. The concentrated wheel loads can cause rapid deterioration of track components and track instability, which can raise the risk of derailment.

Track inspectors need to know the requirements and purpose of track subgrade and ballast and understand the circumstances that can lead to ballast failures and other ballast defects and conditions, such as inadequate drainage, saturate subgrade, and transition points such as highway-rail grade crossings and approaches to bridges.

Without the proposed collection of information, it is highly unlikely that track owners and railroads will ensure that supervisors provide oversight of track inspectors to achieve proper identification and repair of ballast defects and other track conditions.

In sum, this proposed collection of information is essential and aids FRA and DOT in their critical primary missions of promoting transportation/rail safety and moving people and goods throughout the country in a safe, reliable, and environmentally sound manner.

In this information collection and indeed in all its other information collection activities, FRA seeks to do its utmost to fulfill DOT Strategic Goals and to be an integral part of One DOT.