DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Parts 217, 218, 229, 240 and 242

[Docket No. FRA–2016–0036]

RIN 2130–AC51

Locomotive Image and Audio Recording Devices for Passenger Trains

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: FRA is proposing to require the installation of inward- and outward-facing locomotive image recording devices on all lead locomotives in passenger trains, and that these devices record while a lead locomotive is in motion and retain the data in a crashworthy memory module. FRA also proposes to treat locomotive-mounted recording devices on passenger locomotives as ''safety devices'' under existing Federal railroad safety regulations to prohibit tampering with or disabling them. Further, this NPRM would govern the use of passenger locomotive recordings to conduct operational tests to determine passenger railroad operating employees' compliance with applicable railroad rules and Federal regulations. FRA requests comment on the need for and effects of potential, additional safety requirements.

DATES: Written comments on this proposed rule must be received on or before September 23, 2019. Comments received after that date will be considered to the extent possible without incurring additional expense or delay.

FRA anticipates being able to resolve this rulemaking without a public hearing. However, if prior to August 23, 2019, FRA receives a specific request for a public hearing accompanied by a showing that the party is unable to adequately present his or her position by written statement, a hearing will be scheduled and FRA will publish a supplemental notice in the **Federal Register** to inform interested parties of the date, time, and location of any such hearing.

ADDRESSES: You may submit comments identified by the docket number FRA–2016–0036 by any one of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov* and follow the online instructions for submitting comments;
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590;
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays; or
- *Fax:* 1–202–493–2251.

Instructions: All submissions must include the agency name and docket number or Regulatory Identification Number (RIN) for this rulemaking (2130–AC51). Note that all comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided. Please see the Privacy Act heading in the **SUPPLEMENTARY INFORMATION** section of this document for Privacy Act information related to any submitted comments or materials.

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov* at any time or to U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Brian Roberts, Trial Attorney, Office of Chief Counsel, FRA, 1200 New Jersey Avenue SE, RCC–10, Mail Stop 10, Washington, DC 20590 (telephone (202) 493–6056 or 202–493–6052); Gary G. Fairbanks, Staff Director, Motive Power & Equipment Division, Office of Safety Assurance and Compliance, FRA, 1200 New Jersey Avenue SE, RRS–15, Mail Stop 25, Washington, DC 20590 (telephone (202) 493–6322); or Christian Holt, Operating Practices Specialist, Operating Practices Division, Office of Safety Assurance and Compliance, FRA, 1200 New Jersey Avenue SE, RRS–15, Mail Stop 25, Washington, DC 20590 (telephone (202) 366–0978).

SUPPLEMENTARY INFORMATION:

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I. Executive Summary

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, Public Law 114–94, 129 Stat. 1686 (Dec. 4, 2015) (FAST Act). Section 11411 of the FAST Act, codified in the Federal railroad safety laws at 49 U.S.C. 20168 (the Statute), requires FRA (as the Secretary of Transportation's delegate)

to promulgate regulations requiring each railroad carrier that provides regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward-facing image recording devices in all controlling locomotives of passenger trains. This NPRM proposes to implement the FAST Act requirements regarding such recording devices.

Before the FAST Act was enacted, FRA announced at a May 2015 meeting of the Railroad Safety Advisory Committee (RSAC) it intended to draft an NPRM that would propose the installation of locomotive recording devices in both freight and passenger train locomotives. In 2014, the RSAC had accepted a task from FRA to address National Transportation Safety Board (NTSB) Safety Recommendations R–10–01 & –02 on locomotive-mounted recording devices (RSAC Task No. 14–01). The RSAC established the Recording Devices Working Group (Working Group) to recommend specific actions regarding the installation and use of locomotive-mounted recording devices, such as inward- and outward-facing video and audio recorders.[1] The RSAC did not vote, or reach consensus, on any recommendations to FRA regarding the adoption of regulatory text addressing locomotive-mounted video and audio recording devices.

In light of the FAST Act mandate, relevant NTSB recommendations, the RSAC Working Group's discussions, and recent accidents and other railroad safety violations that FRA has investigated and is investigating, this NPRM proposes to require the installation and use of inward- and outward-facing recording devices in all lead locomotives in passenger trains to improve railroad safety. The NPRM does not propose to require such recording devices in freight locomotives.

FRA is not proposing to require inward- and outward-facing recording devices in freight locomotives for several reasons. Foremost, the FAST Act requires FRA to promulgate regulations requiring only commuter and intercity passenger railroads to install inward- and outward-facing image recording devices in all of their controlling (or ''lead'') locomotives; there is no corresponding statutory mandate for freight railroads to install such devices in their locomotives. In addition, the cost to freight railroads of implementing such a requirement outweighs its potential safety benefits.[2] Furthermore, many freight railroads, including all Class I railroads, are already in the process of voluntarily installing recording devices on their locomotives without a Federal requirement. Finally, recordings from these voluntarily installed systems are already subject to the current requirements for the preservation of accident data found in 49 CFR 229.135(e).

Regardless, FRA will continue to monitor freight railroads' installation efforts of inward- and outward-facing locomotive recording devices and is inviting public comment on whether FRA should require freight railroads to install these devices in some or in all their locomotives now or in the future. In addition, FRA welcomes public comment on the extent to which FRA should apply the proposed requirements in this NPRM to recording devices freight railroads have already installed in their locomotives or will voluntarily install in the future.

FRA proposes that within four years of the date of publication of a final rule, intercity passenger and commuter railroads must install compliant image recording systems on the lead locomotives of all their passenger trains. FRA proposes that beginning one year after publication of a final rule, any recording systems installed on new, remanufactured,[3] or existing passenger train lead locomotives would have to meet the specified requirements. As required by statute, this NPRM proposes that the last twelve hours of data recorded by such devices on passenger train lead locomotives must be stored in a memory module that meets the existing crashworthiness requirements in FRA's locomotive event recorder regulation at 49 CFR part 229. In addition, this NPRM proposes to treat locomotive-mounted recording devices in passenger locomotives as ''safety devices'' under 49 CFR part 218, subpart D, thereby making it a violation of applicable Federal regulations to tamper with or disable those locomotive-mounted recording devices.

FRA notes that the proposed image recording device requirements for passenger train locomotives would supplement FRA's existing locomotive event recorder regulation at 49 CFR part 229. Locomotive event recorders are required on the lead locomotives of trains traveling over 30 mph and already record numerous operational parameters that assist in accident/incident investigation and prevention.

FRA used a cost benefit analysis to evaluate the impact of the proposed rule on passenger locomotive image recording devices. FRA estimated the costs of this proposed rule over a 10-year period using discount rates of 3 and 7 percent. For the 10-year period analyzed, the estimated quantified net costs to the industry total $31,837,918 (present value (PV), 7 percent), or $34,664,317 (PV, 3 percent). The annualized costs for the 10-year period are $4,533,003 (PV, 7 percent) and $4,063,715 (PV, 3 percent). Some safety benefits of this proposed rule could accrue from the collection of accident causation information, which is critical to prevent future accidents. Other, probably larger, safety benefits could accrue from deterring unsafe behaviors that cause railroad accidents (*e.g.,* text messaging while operating a train). Other benefits accrue from beneficial changes in crew behavior not directly related to safety, such as the ability to: (1) Conduct low-cost operational tests that are currently impractical to perform without cameras (*e.g.,* for prohibited use of personal electronic devices), (2) research and improve crew safety and productivity practices, and (3) enhance investigations of potential trespassers and other unauthorized individuals.

In addition to reviewing the NTSB recommendations discussed in this NPRM and how other DOT modes address inward- and outward-facing cameras in vehicles, FRA also conducted a literature review for scholarly papers and other research on the benefits of inward- and outward-facing recording devices, with a primary focus on inward- and outward-facing locomotive cameras. Although FRA found few substantive academic or technical papers on the safety benefits of inward- and outward-facing cameras in locomotives, FRA did identify a relevant report prepared by the Transportation Safety Board of Canada (TSB).[4] According to TSB's report, the benefits of locomotive recording devices include: (1) Help in post-accident investigations; identification of operational and human factors that contribute to accidents; (2) use of camera footage to identify desirable and undesirable behaviors of railroad employees to determine what procedures or employee behaviors could benefit from additional training, system design or equipment changes; and (3) how the cameras could improve train crew and passenger safety by identifying

[1] *https://rsac.fra.dot.gov/tasks.php.*

[2] *See* Regulatory Impact Analysis pg. 17.

[3] *See* 49 CFR 229.5.

[4] *See* Transportation Safety Board of Canada, Railway Safety Issues Investigation Report: Expanding the use of locomotive voice and video recorders in Canada. Report no. R16H0002 (2016). The report has been placed in the docket for this rulemaking and is available at: *http://www.bst-tsb.gc.ca/eng/rapports-reports/rail/etudes-studies/r16h0002/r16h0002.asp.*

potential security risks both inside and outside of the locomotive cab.

While the literature reviewed by FRA identified several qualitative benefits associated with locomotive recording devices, FRA was unable to find in its literature review any sources that specifically help quantify those benefits, and therefore invites comment and the submission of any data or studies that would help FRA quantify the benefits of inward- and outward-facing locomotive recording devices in this rulemaking.

II. Rulemaking Authority and FAST Act Requirements

FRA is publishing this proposed rule as mandated by section 11411 of the FAST Act, codified at 49 U.S.C. 20168 (the Statute), and under the agency's general railroad safety rulemaking authority at 49 U.S.C. 20103. The former Federal Railroad Safety Act of 1970, as codified at 49 U.S.C. 20103, provides that ''[t]he Secretary of Transportation, as necessary, shall prescribe regulations and issue orders for every area of railroad safety supplementing laws and regulations in effect on October 16, 1970.'' The Secretary's responsibility under these statutory provisions, and the balance of the railroad safety laws, is delegated to the Federal Railroad Administrator. 49 CFR 1.89.

The Statute requires FRA (as the Secretary's delegate) to promulgate this proposed regulation for passenger train locomotives. FRA's proposal implementing each statutory requirement is explained in more detail in the section-by-section analysis. However, in general, the Statute requires that by December 4, 2017, FRA must promulgate a regulation requiring each railroad carrier that provides regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward- facing image recording devices in all controlling (or ''lead'') locomotive cabs and car operating compartments in passenger trains. For purposes of this NPRM, FRA intends that railroad carriers providing ''intercity rail passenger transportation'' and ''commuter rail passenger transportation'' subject to this rule to be the same as those covered by 49 U.S.C. 24102 (passenger railroads required to install positive train control (PTC) systems under 49 U.S.C. 20157(a)).

Paragraph (b) of the Statute specifies that each required passenger locomotive image recording device shall have: (1) A minimum 12-hour continuous recording capability; (2) crash and fire protections for any in-cab image recordings stored only within a controlling locomotive cab or cab car operating compartment; and (3) recordings accessible for review during an accident or incident investigation. The rule text proposed in § 229.136, below, would establish the criteria for the image recording devices to meet these three specified standards.

Paragraph (c) of the Statute requires FRA to establish a review and approval process to ensure that the three standards described in paragraph (b) are met for image recording devices on passenger train lead locomotives. Proposed § 229.136(g), below, would require passenger railroads to submit information to FRA regarding whether the recording device system installed on a particular locomotive(s) subject to the final rule meets the established criteria. FRA plans to publish a list of any previously approved systems on its internet website for railroads' convenience.

Paragraph (d) establishes what the passenger railroad carriers subject to the Statute may use image recordings for, and permits FRA to establish other appropriate purposes. The rule text FRA presented to the RSAC addressed the items listed in paragraph (d) (verifying that crew actions are in accordance with applicable safety laws and railroad operating rules, assisting accident investigations, and documenting violations of law). FRA has proposed an amended version of the language it presented to the RSAC in proposed § 229.136(f)(3), below, to address this FAST Act provision and specifically include the use of recordings to detect the presence of unauthorized persons in locomotive cabs. FRA is also requesting comment on whether other appropriate safety-related uses exist for locomotive recordings.

Paragraph (e)(1) of the Statute gives FRA discretion to similarly require audio-recording devices be installed on passenger train lead locomotives and to establish corresponding technical details for such devices. FRA has not proposed specific rule text that would require audio recording devices, but in the preamble below requests comment on whether to require audio recording devices on passenger and freight locomotives in a final rule.

Paragraph (e)(2) of the Statute gives FRA discretion to provide an exemption from the inward- and outward-facing image recording device requirements based on alternative technologies or practices that provide for an equivalent or greater safety benefit or that are better suited to the risks of the operation.

Paragraph (f) of the Statute permits passenger railroads to take appropriate action against employees who tamper with audio or image recording devices installed on their locomotives. FRA has proposed in part 218 that such recording devices on passenger trains be treated as ''safety devices'' under the applicable Federal regulation. FRA proposed this during the RSAC process, stating it was changing its position from that conveyed in a May 2010 FRA letter to the Southern California Regional Rail Authority (Metrolink) through the notice and comment process in this rulemaking.[5] In the 2010 letter, FRA indicated that inward-facing cameras were not considered ''safety devices'' under 49 CFR part 218. For the reasons explained in the section-by-section analysis below, FRA has changed its position on this issue based on the Statute and other recent developments. FRA notes that the letter, which FRA has placed in the public docket for this NPRM, is consistent with paragraph (f) of the Statute because it stated railroad disciplinary action might be appropriate at a railroad's discretion if an employee were found to tamper with a locomotive recording device.

Paragraph (g) of the Statute requires each passenger carrier subject to the FAST Act's recording device requirements preserve recordings for one year after the occurrence of a reportable accident or incident. This preservation requirement for passenger locomotive image and audio recordings is being included in § 229.136 for organizational clarity with other requirements for locomotive image and audio recording devices. Specifically, in its 2010 letter to Metrolink, discussed above, FRA explained that locomotive image recordings, like other locomotive event recordings, must already be preserved for one year following an accident under existing § 229.135(e). While this existing requirement includes recordings from freight locomotive recording devices, the proposed preservation requirement in § 229.136, below, would apply only to passenger locomotive recording devices.

Paragraph (h) of the Statute addresses a significant issue discussed during the RSAC process involving the public availability, including disclosure under the Freedom of Information Act (5 U.S.C. 552) (FOIA), of recordings that FRA takes possession of after a railroad accident. Paragraph (h) is similar to the prohibition on public disclosure of locomotive recordings NTSB takes possession of under 49 U.S.C. 1114(d). Paragraph (h) prohibits FRA from disclosing publicly locomotive audio and image recordings or transcripts of oral communications by or among train

[5] *See* NPRM docket; Mark H. Tessler letter to Metrolink, *Locomotive video cameras,* (May 18, 2010).

employees or other operating employees, or between such operating employees and communication center employees, related to an accident or incident FRA is investigating. FRA may make public a transcript or a written depiction of visual information it deems relevant to the accident at the time other factual reports on the accident are released to the public. This statutory provision is discussed in more detail in the preamble sections addressing privacy and locomotive recording-handling below.

Paragraph (i) of the Statute prohibits a railroad subject to this provision from using an in-cab audio or image recording to retaliate against an employee. FRA believes this provision to be a restatement of existing prohibitions in Federal, State, and local laws that prohibit retaliation against railroad employees, and merely establishes that recordings may not be used as a tool to conduct such illegal retaliation. FRA does not believe Congress intended this provision to apply to railroad rules' violations discovered via railroad review of audio and video recordings under a railroad's established procedures. The purpose of this section and the relevant NTSB recommendations addressing this topic are to identify and address safety violations, such as the prohibited use of personal electronic devices while performing safety-critical duties that endanger public safety. Railroads take disciplinary actions for such rules' violations now (in the absence of locomotive recordings) under the existing legal framework and collective bargaining agreements governing railroad employment. Accordingly, FRA understands this section to address illegal retaliation implicated by existing statutes such as the railroad employee whistleblower law at 49 U.S.C. 20109, and which are addressed via grievance process remedies for wrongful discharge under the Railway Labor Act, 45 U.S.C. 151 *et seq.* Paragraph (i) is silent about freight locomotive recordings because by its terms section 11411 only applies to passenger railroads. However, for passenger railroads, FRA has addressed Congress' intent regarding retaliation in the rule text proposed below. The rule would limit the permitted uses of locomotive recordings and proposes to require that operational tests involving review of in-cab locomotive recordings be randomly conducted within limited time frames under an established written railroad procedure that is subject to FRA review.

Finally, paragraph (j) makes clear the Statute does not restrict a train from continuing in operation upon the occurrence of a locomotive recording device failure. Nonetheless, the Statute requires the railroad to repair or replace the recording device as soon as practicable. FRA's proposal in § 229.136, below, is consistent with this provision, and defines ''as soon as practicable'' to mean that the locomotive must be replaced as the lead locomotive no later than after the next calendar day's inspection if the recording device system has not been repaired or replaced.

III. Background

A. Railroad Accidents & NTSB Locomotive Recorder Recommendations

In developing this proposed rule, FRA reviewed relevant railroad accidents as well as related Safety Recommendations NTSB issued to FRA involving audio and image recordings. Based on FRA's analysis of these accidents and related NTSB Recommendations (discussed immediately below), FRA determined that the requirements of this proposed rule would achieve safety benefits in two primary ways. First, the proposed requirements of this NPRM, if adopted, would provide critical post-accident data, which would help FRA (as well as other Federal and state agencies, railroads, labor groups, and other stakeholders) ascertain the cause of accidents for purposes of preventing future accidents. Second, FRA believes requiring inward-facing recording devices on all lead locomotives in passenger trains would be a deterrent against illegal and unsafe practices that can cause accidents.

1. NTSB Safety Recommendation R–97–009

On February 16, 1996, a Maryland Rail Commuter (MARC) passenger train collided with a National Railroad Passenger Corporation (Amtrak) passenger train near Silver Spring, Maryland. Eleven people were killed and 26 people were injured as a result of the accident. The accident occurred when MARC train 286 was delayed in block for a station stop while operating on an ''approach'' signal indication requiring the train to approach the next signal prepared to stop. However, MARC train 286 proceeded after making the station stop as if operating on a ''clear'' signal indication, could not stop for the subsequent ''stop'' signal, and collided with Amtrak train 3 at Georgetown Junction. The NTSB, which is the independent Federal agency charged by Congress with investigating significant transportation accidents, to include railroad accidents, found that the probable cause of the accident was, in part, ''the apparent failure of the [MARC] engineer and the traincrew because of multiple distractions to operate MARC train 286 according to signal indications . . . .'' [6]

As a result of this accident, the NTSB made recommendation R–97–009 to FRA, recommending that FRA amend 49 CFR part 229 to ''require the recording of train crewmembers' voice communications for exclusive use in accident investigations and with appropriate limitations on the public release of such recordings.'' [7] In making the recommendation, NTSB stated that during its investigation, it could not document crew communications regarding signal indications as the train approached the location where the accident occurred and that locomotive event recorders cannot answer questions about a train crew's knowledge or actions during accident investigations. All three operating crew members aboard MARC train 286 were killed in the accident. NTSB pointed to the long history of cockpit voice recorders (CVR) in the aviation industry, as mandated by the FAA in certain commercial aviation operations since 1964.[8] The NTSB explained that the use of CVRs had been useful during aviation accident investigations and were ''an almost necessary tool in documenting the operational decisions or mistakes of the crew that lead up to an accident.'' [9]

NTSB reiterated its recommendation after a January 1999 collision near Bryan, Ohio, involving three Consolidated Rail Corporation (Conrail) freight trains. The accident occurred when westbound Conrail train Mail-9 was traveling 56 mph and struck the rear of a slower moving freight train ahead of it that was also traveling westbound. Both trains derailed, with derailed equipment then striking and derailing a third freight train that was traveling the opposite (eastbound) direction on an adjacent main track.

The NTSB found that the probable cause of that accident was ''the failure of the crew of train Mail-9 [striking train] to comply with restrictive signal indications while operating at or near maximum authorized speed in dense

[6] National Transportation Safety Board, *Collision and Derailment of Maryland Rail Commuter MARC Train 286 and National Railroad Passenger Corporation Amtrak Train 29 Near Silver Spring, Maryland on February 16, 1996.* Railroad Accident Report NTSB/RAR–97/02 (July 3, 1997); available online at *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR9702.pdf.*

[7] National Transportation Safety Board, *Safety Recommendation R–97–009* (Aug. 28, 1997); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R97_9_21.pdf.*

[8] *Supra,* n. 6 at 51.

[9] *Supra,* n. 6 at 52.

fog.'' [10] Both crew members of the striking train in that incident were killed and NTSB concluded that recorded crew communications might have provided valuable clues in reconstructing the accident, which could have ''possibly enabled the carrier, the railroad unions, and the Federal Railroad Administration to make systemic changes to prevent similar accidents from occurring.'' [11] The NTSB report also cited new statutory authority, codified at 49 U.S.C. 1114(d), that included provisions for the NTSB to protect such recordings from public disclosure during accident investigations.

FRA declined to implement NTSB Recommendation R–97–009, which only recommended the installation of audio recorders, but not image recording devices. At that time, FRA agreed that crew audio recordings could be beneficial for some investigations, but conveyed its concerns to NTSB regarding implementation of the recommendation, which included the significant costs of such a requirement, the existing availability of locomotive event recorder data, competing regulatory priorities, and concern regarding the privacy and comfort of train crews.[12] FRA stated the recommendation might warrant re-examination in the future, but requested it be placed in the status of ''Closed—Reconsidered.'' NTSB ultimately classified the recommendation as ''Closed—Unacceptable Action'' in 2004.[13]

2. NTSB Safety Recommendation R–07–003

Several years later, on July 10, 2005, two Canadian National Railway Company (CN) freight trains collided near Anding, Mississippi. The accident occurred in single-main track territory after the crew of a northbound CN train passed a stop signal without stopping and collided head-on with a southbound CN train. The crews of both trains were killed in the accident. The NTSB's probable cause finding stated the northbound train crew's ''attention to the signals was most likely reduced by fatigue; however, due to the lack of a locomotive cab voice recorder or the availability of other supporting evidence, other factors cannot be ruled out.'' [14] The NTSB concluded that if a locomotive voice recorder had been installed on the controlling locomotive of the northbound train and survived the collision and resulting fire, the recordings would ''yield a better understanding of the cause of the accident and of the ways it might have been prevented.'' [15] As a result, NTSB issued Safety Recommendation R–07–003, recommending FRA require railroads to install on locomotives a crash and fire protected voice recorder, or combined voice and video recorder, with the recordings only to be used for accident investigations.[16] The NTSB referenced several other accidents [17] in making this recommendation in which it believed locomotive video recordings would have been useful in investigating the accidents.

FRA responded to this NTSB recommendation, stating FRA had broached the subject of the NTSB's recommendation regarding voice recorders on two occasions with the RSAC in 2007 without resolution, and planned to discuss the recommendation again at a future RSAC meeting.[18] FRA's response also noted technical concerns with implementing the NTSB recommendation, and discussed its previously-raised privacy and cost-related concerns.[19] A later NTSB response noted FRA had indeed discussed the recommendation at a November 2007 RSAC Locomotive Working Group meeting, and classified FRA's response to the recommendation as ''Open—Acceptable Response.'' However, Recommendation R–07–003 was ultimately classified by NTSB as ''Closed—Unacceptable Action/Superseded,'' on February 23, 2010, after adoption of the report addressing the September 12, 2008, Metrolink accident in Chatsworth, California, discussed directly below.[20]

3. NTSB Safety Recommendations R–10–01 & –02

i. 2008 Metrolink Accident at Chatsworth, California

On September 12, 2008, in Chatsworth, California, a collision occurred between a Metrolink passenger train and a Union Pacific Railroad Company (UP) freight train,[21] after the locomotive engineer operating the Metrolink passenger train failed to stop his train for a stop signal. As a result of the accident, 25 persons on the Metrolink train were killed and 102 injured passengers were transported to the hospital. Property damage was estimated to be more than $12 million. The NTSB found the probable cause of the accident was the Metrolink locomotive engineer's distraction due to the use of a personal cell phone to send text messages resulting in a failure to comply with the signal indication.[22]

Shortly after the Metrolink accident, the Rail Safety Improvement Act of 2008 [23] (RSIA) was enacted and mandated, among other items, that railroads install PTC systems. Also after the accident, FRA issued its Emergency Order No. 26 (E.O. 26). 73 FR 58702 (Oct. 7, 2008). E.O. 26 prohibited railroad operating employees (typically train crew members such as locomotive engineers and conductors) performing safety-related duties from using or turning on electronic devices such as personal cell phones. The requirements in E.O. 26 were codified in amended form at 49 CFR part 220, subpart C, in an FRA final rule published on September 27, 2010, which took effect on March 28, 2011. 75 FR 59580. Among other requirements in the final rule, railroad operating employees are required to receive training on the

[10] National Transportation Safety Board, *Collision Involving Three Consolidated Rail Corporation Freight Trains Operating in Fog on a Double Main Track Near Bryan, Ohio January 17, 1999.* Railroad Accident Report NTSB/RAR–01/01 (May 9, 2001); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR0101.pdf.*

[11] *Id.* at 47.

[12] National Transportation Safety Board, *Safety Recommendation History for Safety Recommendation R–97–009:* Available online at: *http://www.ntsb.gov/investigations/data/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=R-97-009.*

[13] *Id.*

[14] National Transportation Safety Board, *Collision of Two CN Freight Trains Anding, Mississippi July 10, 2005,* Railroad Accident Report NTSB/RAR–07/01 (Mar. 20, 2007); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR0701.pdf.*

[15] *Id.*

[16] National Transportation Safety Board, *Safety Recommendation R–07–003* (Apr. 25, 2007); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R07_1_3.pdf.*

[17] *See, e.g.,* National Transportation Safety Board, *Collision Between Two BNSF Railway Company Freight Trains Near Gunter, Texas, May 19, 2004,* Railroad Accident Report NTSB/RAR–06/02 (June 13, 2006); National Transportation Safety Board, *Collision of Union Pacific Railroad Train MHOTU–23 With BNSF Railway Company Train MEAP–TUL–126–D With Subsequent Derailment and Hazardous Materials Release, Macdona, Texas, June 28, 2004,* Railroad Accident Report NTSB/RAR–06/03 (July 7, 2006); National Transportation Safety Board, *Collision of Two Union Pacific Railroad Freight Trains, Texarkana, Arkansas, October 15, 2005,* Railroad Accident Brief NTSB/RAB–06/04 (Oct. 17, 2006).

[18] National Transportation Safety Board, *Safety Recommendation History for Safety Recommendation R–07–003:* Available online at: *http://www.ntsb.gov/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=R-07-003.*

[19] *Id.*

[20] *Id.*

[21] *See* National Transportation Safety Board, *Collision of Metrolink Train 111 With Union Pacific Train LOF65–12 Chatsworth, California September 12, 2008,* Accident Report NTSB/RAR–10/01 (Jan. 21, 2010); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1001.pdf.*

[22] *Id.* at 66.

[23] Public Law 110–432, Division A, 122 Stat. 4848 (Oct. 16, 2008).

regulation's requirements governing the use of electronic devices while on duty and are also required to be tested by railroad supervisors to determine the employees' compliance with such requirements. 49 CFR 220.313–220.315.

The NTSB's report on the Chatsworth accident resulted in two Safety Recommendations, R–10–01 and R–10–02.[24] Safety Recommendation R–10–01 superseded Safety Recommendation R–07–003, and recommended that FRA:

> Require the installation, in all controlling locomotive cabs and cab car operating compartments, of crash- and fire-protected inward- and outward-facing audio and image recorders capable of providing recordings to verify that train crew actions are in accordance with rules and procedures that are essential to safety as well as train operating conditions. The devices should have a minimum 12-hour continuous recording capability with recordings that are easily accessible for review, with appropriate limitations on public release, for the investigation of accidents or for use by management in carrying out efficiency testing and systemwide performance monitoring programs.

In addition, Safety Recommendation R–10–02 recommended that FRA:

> Require that railroads regularly review and use in-cab audio and image recordings (with appropriate limitations on public release), in conjunction with other performance data, to verify that train crew actions are in accordance with rules and procedures that are essential to safety.

The NTSB's recommendations in response to the Chatsworth accident differed from its previous recommendations regarding locomotive recording devices. FRA believes the prior recommendations were primarily made intending that locomotive recordings would be used as a post-accident investigation tool with the goal of gaining insight into accident causes to appropriately direct safety recommendations to prevent similar accidents from occurring. Recommendations R–10–01 and R–10–02 shared those same goals, but also recommended FRA require regular railroad review of recordings be part of a railroad's operational (efficiency) testing program as a proactive accident prevention tool to gauge employee compliance with applicable rules. Under existing 49 CFR 217.9, railroads are required to have an operational testing program to gauge employee compliance with relevant operating rules, timetables, and special instructions. Under the NTSB's recommendations, FRA would also require railroads to review locomotive image and audio recordings to conduct such operational tests.

In issuing these recommendations, the NTSB's report on the Chatsworth accident explained that the engineer on the Metrolink train who caused the accident knowingly violated railroad rules regarding the use of personal electronic devices while operating his train.[25] The NTSB explained that in the relative privacy of the locomotive cab, the locomotive engineer of the Metrolink train (as is the case with most train operations in this country) could use his personal cell phone without any possibility of being caught, except when a railroad manager might physically be in or near the cab of the locomotive.[26] However, NTSB posited that if the engineer had known he was being recorded, and railroad supervisors would regularly review the recordings, such rules' violations would have been deterred.[27]

ii. 2015 Amtrak Accident at Philadelphia, Pennsylvania

On Tuesday, May 12, 2015, Amtrak passenger train 188 (Train 188) was traveling from Washington, DC, to New York City. Aboard the train were five crew members and approximately 238 passengers. Shortly after 9:20 p.m., the train derailed while traveling through a curve in the track at Frankford Junction in Philadelphia, Pennsylvania. As a result of the accident, eight persons were killed and a significant number of persons were seriously injured. The accident was investigated by NTSB, which took the lead role conducting the investigation of this accident under its legal authority. 49 U.S.C. 1101 *et seq.;* 49 CFR 831.2(b). As is customary, FRA participated in the NTSB's investigation and also investigated the accident under its own statutory authority.

Both NTSB's [28] and FRA's [29] accident investigations concluded that excessive train speed was the cause of the accident. As Train 188 approached the curve from the west, it traveled over a straightaway with a maximum authorized passenger train speed of 80 mph. The maximum authorized passenger train speed for the curve was 50 mph. NTSB determined the train was traveling approximately 106 mph within the curve's 50-mph speed restriction, exceeding the maximum authorized speed on the straightaway by 26 mph and on the curve by 56 mph.[30] NTSB has also indicated the locomotive engineer operating the train made an emergency application of Train 188's air brake system, and the train slowed to approximately 102 mph before derailing in the curve.

On July 8, 2015, NTSB sent a letter to FRA reiterating NTSB recommendations R–10–01 & –02.[31] NTSB's letter explained the engineer of Amtrak 188 stated he could not recall the events leading up to the derailment, and that investigators have been unable to determine information about the engineer's behavior in the moments leading up to the accident.[32] The letter indicated NTSB believes inward-facing locomotive recorders could have provided valuable information to help determine the cause of the accident. In sum, given that information on the actions of the engineer before the accident was lacking, there are potentially critical pieces of information missing about the cause of this accident that resulted in the deaths of eight people. After this accident occurred, Amtrak equipped its ACS–64 locomotives on the Northeast Corridor with inward-facing cameras.

iii. Other Railroad Accidents

The NTSB reiterated Safety Recommendations R–10–01 & –02 in response to other railroad accidents at Red Oak, Iowa; [33] Two Harbors,

[24] National Transportation Safety Board, *Safety Recommendations R–10–01 and R–10–02* (Feb. 23, 2010); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R-10-001-002.pdf.*

[25] *Supra,* n. 21 at 55.

[26] *Id.* at 57.

[27] *Id.* at 58.

[28] National Transportation Safety Board, *Derailment of Amtrak Passenger Train 188, Philadelphia, Pennsylvania, May 12, 2015.* NTSB Accident Report NTSB/RAR–16/02 (May 17, 2016); available online at: *https://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1602.pdf.*

[29] Federal Railroad Administration, *Accident Investigation Report HQ–2015–1052, Amtrak (ATK), Philadelphia, PA, May 12, 2015;* available online at: *https://www.fra.dot.gov/eLib/details/L18424#p1_z50_gD_lAC.*

[30] FRA regulations provide, in part, that it is unlawful to ''[o]perate a train or locomotive at a speed which exceeds the maximum authorized limit by at least 10 miles per hour.'' 49 CFR 240.305(a)(2).

[31] National Transportation Safety Board, *Safety Recommendation History for Safety Recommendation R–10–001:* Available online at: *http://www.ntsb.gov/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=R-10-001.* NTSB also sent a letter regarding locomotive recorder recommendations to Amtrak.

[32] However, the NTSB's analysis of the engineer's phone records does not indicate that any calls, texts, or data usage occurred during the time the engineer was operating the train. National Transportation Safety Board, *Second Update on its Investigation into the Amtrak Derailment in Philadelphia* (June 10, 2015); available online at: *http://www.ntsb.gov/news/press-releases/Pages/PR20150610.aspx.*

[33] National Transportation Safety Board, *Collision of BNSF Coal Train With the Rear End of Standing BNSF Maintenance-of-Way Equipment Train, Red Oak, Iowa April 17, 2011,* NTSB Accident Report NTSB/RAR–12/02 (Apr. 24, 2012); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1202.pdf.*

Minnesota; [34] Chafee, Missouri; [35] and Goodwell, Oklahoma,[36] respectively. The NTSB has also made similar recommendations to railroads regarding the installation and use of locomotive image and audio recording devices (*see, e.g.,* NTSB Safety Recommendations R–14–08 & –09 [37] to the Metro-North Railroad after the December 2013 accident near Spuyten Duyvil Station in Bronx, New York, in which four Metro-North passengers were killed). These accidents all appear to involve human factor causes, but absent locomotive recordings there is a lack of information regarding the crew actions leading up the accidents.

For example, in the 2011 Red Oak, Iowa, accident, a BNSF Railway Company (BNSF) freight train crew failed to operate their train at restricted speed as required by signal indication, and collided with the rear end of a standing train. Both crew members of the striking train were killed. The NTSB's probable cause determination indicated the cause of the accident was fatigue-related.[38] However, the NTSB noted that without visual evidence of the crewmembers' actions while operating the striking train, valuable information about their performance was not available to accident investigators (a forward-facing video recording from the striking train did not survive the collision and subsequent fire).[39] The NTSB's report stated that a video recording's value in preventing future accidents ''cannot be overstated,'' as installation of such cameras could assist in monitoring compliance with railroads' rules and identifying fatigued locomotive engineers, such that intervention might happen before an accident occurs.[40]

The NTSB similarly discussed inward-facing cameras in its report on the 2012 Goodwell, Oklahoma accident, which occurred when a UP crew failed to comply with wayside signal indications and were killed in a subsequent collision with another freight train.[41] The NTSB indicated that causal factors included the locomotive engineer's apparent vision problems and the conductor's disengagement from his duties.[42] However, NTSB stated that an inward-facing locomotive video recording could have ''shed light on the activities of the [crew] leading up to the collision and why the crew did not respond to wayside signals.'' [43]

FRA has similarly identified the value of inward-facing image recordings for other recent accidents not listed above that might provide the only means of conclusively determining what caused or contributed to an accident, and, more importantly, to develop necessary corrective actions to prevent similar train accidents from occurring. For example, a 2013 accident near Amarillo, Texas,[44] and a 2011 accident near Mineral Springs, North Carolina,[45] both occurred after train crews qualified on the physical characteristics of the territory operated their trains significant distances past dark signals without taking any action to slow or stop their trains. In fact, the striking train in the Mineral Springs accident increased train speed from 31 mph to 48 mph after passing the dark signal. The crewmembers in the Mineral Springs accident were killed in the collision, and the crewmembers in the Amarillo accident were, in FRA's view, unable to definitively articulate reasons why they did not operate their train in compliance with applicable railroad rules. The NTSB found the probable cause of both accidents involved the crews' failure to comply with applicable rules governing train speeds upon encountering dark signals. Inward-facing image recordings would have provided visual information about crew actions and performance leading up to these accidents, enabling railroads and investigators to accurately determine the root cause of the accidents. Without such recordings, regulatory and industry efforts to learn about and ultimately prevent such incidents are inhibited.

The NTSB's reiteration of Safety Recommendations R–10–01 & –02 in response to the 2010 Two Harbors, Minnesota, accident was related to the prohibited use of personal electronic devices by train crew members. In that accident, a CN train crew failed to properly comply with an after-arrival mandatory directive and struck another freight train traveling the opposite direction on single main track. The NTSB's investigation indicated that four of the five crewmembers on the two trains involved in the accident had used their personal cell phones while on duty on the date of the accident contrary to applicable railroad rules and FRA's E.O. 26 discussed above.[46] The NTSB concluded the use of cell phones by crewmembers on both trains involved in the accident was a distraction to the safe operation of the trains,[47] and cited a list of past rail transportation accidents it had investigated where personal electronic device use by train crews was a causal factor.

Those accidents include the May 2004 accident near Gunter, Texas (cited above) where there was significant personal cell phone usage by crew members of both trains involved in the accident while the trains were being operated (accident resulting in the death of one train crewmember).[48] They also include a May 2002 accident involving two BNSF freight trains near Clarendon, Texas,[49] resulting in critical injuries to the crew of a coal train where the probable cause of the accident involved the locomotive engineer's use of a personal cell phone during a safety-critical time period. Finally, the report cited a May 2009 accident involving two Massachusetts Bay Transportation Authority light rail passenger trains (not subject to FRA's jurisdiction) in Boston, Massachusetts, stemming from the train operator's use of a phone to send text messages resulting in injuries to 68 persons.[50]

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[34] National Transportation Safety Board, *Collision of Two Canadian National Railway Freight Trains near Two Harbors, Minnesota, September 30, 2010.* NTSB Accident Report NTSB/RAR–13/01/SUM (Feb. 12, 2013); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1301.pdf.*

[35] National Transportation Safety Board, *Collision of Union Pacific Railroad Freight Train with BNSF Railway Freight Train Near Chaffee, Missouri, May 25, 2013.* NTSB Accident Report NTSB/RAR–14/02 (Nov. 17, 2014); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1402.pdf.*

[36] National Transportation Safety Board, *Head-On Collision of Two Union Pacific Railroad Freight Trains Near Goodwell, Oklahoma, June 24, 2012.* NTSB Accident Report NTSB/RAR–13/02 (June 18, 2013); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1302.pdf.*

[37] National Transportation Safety Board, *Safety Recommendations R–14–07 & R–14–08* (Feb. 18, 2014); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R-14-007-009.pdf.*

[38] *Supra,* n. 33 at 72.

[39] *Id.* at 67.

[40] *Id.* at 66.

[41] *Supra,* n. 36 at pp. 34–37.

[42] *Id.* at 44–45.

[43] *Id.* at. 35.

[44] National Transportation Safety Board, *Collision Involving Three BNSF Railway Freight Trains near Amarillo, Texas, September 25, 2013.* NTSB Accident Report NTSB/RAR–15/02 (June 25, 2015); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1502.pdf.*

[45] National Transportation Safety Board, *Railroad Accident Brief NTSB/RAB-13-01* (Jan. 29, 2013); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAB1301.pdf.*

[46] *Supra,* n. 34 at 20.

[47] *Id.*

[48] *Supra,* n. 17 at p. 39.

[49] National Transportation Safety Board, *Collision of Two Burlington Northern Santa Fe Freight Trains Near Clarendon,Texas May 28, 2002,* Railroad Accident Report NTSB/RAR–03/01 (June 3, 2003); available online at: *http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR0301.pdf.*

[50] National Transportation Safety Board, *Collision of Two Massachusetts Bay Transportation Authority Light Rail Passenger Trains, Boston, Massachusetts, May 8, 2009,* Railroad Accident Brief NTSB/RAB–11/06 (Apr. 13, 2011); available online at: *http://www.ntsb.gov/investigations/AccidentReports/*

The NTSB's discussion in the Two Harbors report about the train crews' prohibited personal cell phone use was in the context of the value of locomotive recording devices and other technologies as a tool to deter the unsafe act of the use of personal electronic devices by train crews.[51] The NTSB indicated that additional measures were necessary (such as recording devices and cell phone detectors) to combat what it described as a ''pervasive safety hazard in the rail industry; that is, the unauthorized use of [personal electronic devices (PEDs)] by on-duty crewmembers is too difficult to prevent by rules, policies, and punitive consequences.'' [52]

In addition to the train accidents described above that involved the unauthorized use of personal electronic devices, FRA has investigated several other railroad accidents or violations of Federal railroad safety regulations related to the unauthorized use of personal electronic devices by on-duty railroad employees. These incidents primarily involve the use of personal cell phones.

Despite Federal prohibitions on the use of personal electronic devices that have been in place for many years and required training and testing for all railroad operating employees under §§ 220.313–220.315, railroad incidents involving the prohibited use of personal electronic devices that endanger the lives of the public and railroad employees continue to occur. Recently, FRA investigated a troubling incident where a passenger railroad showed FRA a video recording of one of its locomotive engineers who appeared to be using his personal cell phone while operating a passenger train occupied by over 400 passengers. The results of an investigatory subpoena indicate the engineer appeared to routinely use his personal cell phone in violation of the prohibitions in 49 CFR part 220 while operating passenger trains.

FRA is currently investigating other incidents where personal electronic device use and train crew distraction may be at issue. FRA will take enforcement action, if appropriate, to address violations of Federal regulations governing the use of personal electronic devices during safety-critical periods of time. However, FRA believes the proactive use of locomotive recordings to perform operational tests (*i.e.,* to monitor compliance with Federal regulations and railroad rules prohibiting the use of personal electronic devices) and investigate incidents or complaints of noncompliance of which railroads become aware, will discourage the occurrence of these safety violations. Railroad operating employees often perform a significant portion of their duties in the confines of locomotives and/or rail cars or in remote locations. As noted by NTSB, these locations are often not in the physical vicinity of, or in locations easily observed by, railroad supervisors. As such, compliance with Federal regulations and railroad rules governing the use of electronic devices is difficult to determine and is often based on an honor system. Inward-facing video recordings provide railroad supervisors and safety investigators evidence to determine operating employee compliance with FRA and railroad prohibitions on the use of distracting personal electronic devices while operating trains and performing other safety-sensitive duties. FRA is aware that railroads that have installed in-cab cameras have detected instances of prohibited use of personal electronic device use by operating crew members.

B. FRA Responses to NTSB Recommendations R–10–01 & –02 & Current Position

As discussed above, after the NTSB's initial locomotive crewmembers' voice recorder recommendation in response to the 1996 Silver Spring, Maryland accident, FRA declined to require such devices, noting the significant costs of such a requirement, the existing availability of locomotive event recorder data, competing regulatory priorities, and concern regarding the privacy and comfort of train crews. Nonetheless, FRA's initial responses to the most recent NTSB Safety Recommendations R–10–01 & -02 on voice and image recorders generally supported the safety rationale behind the recommendations.[53] In its responses, FRA agreed with the NTSB that these locomotive recording devices could aid in accident investigations and play a constructive role in risk reduction efforts supported by both employee representatives and rail carrier management. However, FRA expressed concern to the NTSB that the use of voice and image recordings for disciplinary purposes could ''erode morale and offer manifold opportunities for selective enforcement and possible retaliation against employees for reasons having nothing to do with safety.'' [54] FRA also wished to avoid the potential for unwarranted publication of private conversations on the locomotive (that might take place during times when the crew is not actively performing safety-critical duties), and to guard against further erosion of rail labor and management relationships.

Rather than implementing the locomotive recorder recommendations at that time, which FRA believed could have a negative influence on such relationships, FRA instead sought to affirm the NTSB's accident investigation and safety recommendations through other means. Among numerous on-going railroad safety improvement efforts, FRA formed an RSAC Electronic Device Distraction Working Group to develop strategies aimed at curbing the distracting use of electronic devices by railroad employees and conducted industry outreach in support of that effort.[55] The Electronic Device Distraction Working Group included railroad industry, labor, and Federal government representatives. FRA also engaged in active efforts to understand critical safety errors through its Confidential Close Call Reporting System (C3RS) by undertaking pilot projects with several railroads. The C3RS program is meant to bring safety problems to the attention of railroads and FRA before accidents occur.

However, in recent years, FRA has become increasingly concerned by human-factor caused railroad accidents, like those described above, where there is a lack of information to conclusively determine what caused or contributed to an accident that could help FRA determine necessary corrective actions before similar train accidents occur. FRA also has increasing concern because, even after Federal and industry efforts to prohibit on-duty operating employees' use of distracting electronic devices following the Chatsworth accident (where a locomotive engineer who was text messaging caused the deaths of 24 railroad passengers and himself), railroad accidents and safety violations involving such devices continue to occur. In addition, the NTSB has stated the use of such devices in the railroad industry seems to be pervasive.[56]

FRA has concluded the use of inward-facing cameras to combat these safety violations that endanger public safety is warranted, and the need to address this

Reports/RAB1106.pdf. Though not subject to FRA's jurisdiction, this accident was notable in that it was caused by a train operator's failure to respond to signal indication because he was text messaging on a personal electronic device.

[51] *Supra,* n. 34 at 23–24.

[52] *Id.* at 24.

[53] National Transportation Safety Board, *Safety Recommendation History for Safety Recommendation R–10–001:* available online at: *http://www.ntsb.gov/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=R-10-001.*

[54] *Id.*

[55] *https://www.fra.dot.gov/Page/P0565.*

[56] *Supra,* n. 34 at 24.

continuing safety risk outweighs any crew concerns regarding personal privacy while they operate trains or perform other safety-critical functions in the cab of a railroad's locomotive. FRA believes the proactive use of locomotive recordings will be the most valuable tool available to railroads to deter and detect the prohibited use of personal electronic devices, which can lead to reportable accidents. The detection of such safety violations is difficult due to the nature of train operations, as discussed above. Inward-facing image recordings will also more easily provide exculpatory evidence for train crewmembers in post-accident investigations regarding whether the distracting use of an electronic device or other rules violations were a causal factor. Therefore, consistent with the FAST Act, FRA is proposing in this NPRM that inward- and outward-facing recording devices be installed in the lead locomotives of all intercity passenger and commuter trains.

In December 2013, FRA indicated publicly that it would engage the RSAC in 2014 to initiate a rulemaking on the subject of locomotive voice and image recording devices, as discussed below, and announced in May 2015 that it would publish an NPRM addressing the topic. FRA has informed NTSB of its progress in addressing recommendations R–10–01 & –02, the referral to the RSAC for consideration, and this rulemaking proceeding. As of 2015, NTSB classified the recommendations as ''Open-Acceptable Response'' pending the timely outcome of this rulemaking.

C. Current Use of Recording Devices To Improve Safety & Security in Rail and Other Modes of Transportation

Aviation

The use of recording devices to record operator actions in the transportation industry is not new. Most notably, in 1964, the then Federal Aviation Agency (now the DOT's FAA) published a final rule requiring CVRs be installed on aircraft involved in certain commercial aviation operations.[57] These recorders are still required by FAA regulation and are required to record at least the last two hours of voice communication made by the flight crew, including both the internal cockpit discussions and any radio or intercom communications. *See, e.g.,* 14 CFR 25.1457 and 121.359. The CVR (and also the flight data recorder, which is similar to a locomotive's event recorder in that it records a voluminous number of operational parameters of the aircraft) must also be crash, fire, and water resistant per the requirements in FAA's Technical Standard Order No. 123c.[58] During the RSAC Working Group meetings discussed further below, representatives of both the FAA and a pilot's labor organization gave presentations regarding the history and use of CVRs in the aviation industry.

The NTSB, which has primary legal responsibility to investigate all civil aviation accidents in this country, and FAA have both indicated that the use of CVRs in accident investigations is an indispensable tool to determine the cause of aviation accidents and prevent future similar accidents from occurring. Transcripts of cockpit voice recordings are typically included in NTSB's aviation accident reports, and shed light on operational discussions and decisions of the flight crew before an aviation accident.

When a domestic accident occurs, the NTSB secures the CVR and later organizes a group to review the audio recordings.[59] That group typically includes representative of the FAA, the pilot's labor organization, and at least one pilot typed or current in the accident aircraft model.[60] The group may also typically include other individuals familiar with the individual crew member's voices, those familiar with the airline's procedures, and a representative of the aircraft manufacturer and owner/operator.[61] Federal law prohibits NTSB from releasing cockpit voice recordings it obtains during aviation accident investigations. 49 U.S.C. 1114(c). However, the Board may make public written transcripts of the recordings, and often does so in its aviation accident reports. Federal law in 49 U.S.C. 1154 also contains restrictions on the use of discovery in judicial proceedings to obtain cockpit voice recordings the NTSB has not yet made public.

FAA significantly updated its cockpit voice recorder regulations in a 2008 final rule.[62] The 2008 rulemaking increased the duration of time CVRs are required to record a crew's voice communications from 30 minutes to the current two hours, and amended certain technical requirements governing cockpit voice (and flight data) recorders to improve the quality of recordings and ensure CVRs and flight data recorders retain power. The FAA indicated such changes in accordance with NTSB recommendations were necessary because the limited duration of cockpit voice recordings and loss of power to both CVRs and flight recorders had arisen in the investigation of certain high profile commercial aviation accidents in the last 20 years that are discussed in that rulemaking's NPRM (70 FR 9752–9754, Feb. 28, 2005) (*e.g.,* the CVR for Alaska Airlines flight 261 that crashed and killed 88 persons on January 31, 2000, recorded only 31 minutes of flight crew member conversations, at the beginning of which the crew had already begun discussing an existing mechanical problem with the aircraft).[63]

While the FAA has long required CVRs and flight data recorders, NTSB has also recommended that FAA require the installation of image recording devices in the cockpit of certain commercial aviation aircraft. The most recent NTSB Safety Recommendations on that topic are recommendations A–15–7 & –8 to FAA,[64] recommending that aircraft operated under 14 CFR parts 121 or 135 that are required to be equipped with a cockpit voice recorder and a flight data recorder also be retro-fitted or equipped with a crash-protected cockpit image recording system. The NTSB's rationale for such recommendation is similar to that in its recommendations R–10–01 & –02 to FRA discussed above—that image recordings would provide critical information about crew actions and cockpit environment (and potentially including aircraft instrument panel indications and switch positions) before accidents, enhancing the accident investigation process and the identification of safety issues. The FAA has issued a Technical Standard Order (TSO–C176(a), effective Dec. 19, 2013)) governing the minimum performance standards for cockpit image recorder equipment that is manufactured; however, the FAA does not require image recorders in airplane cockpits.[65]

Commercial Motor Vehicle/Bus/Transit

As with the increasing use of cameras in society in general, the use of

[57] 29 FR 8401 (July 3, 1964).

[58] FAA TSC–C123c, *Cockpit Voice Recorder Equipment* (Dec. 19, 2013); available online at: *http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/c464478183dcbdc686257c450067e591/$FILE/TSO-123c.pdf.*

[59] *http://www.ntsb.gov/investigations/process/Documents/CVR_Handbook.pdf.*

[60] National Transportation Safety Board, *Cockpit Voice Recorder Handbook for Aviation Accident Investigations* (2014); available online at: *http://www.ntsb.gov/investigations/process/Documents/CVR_Handbook.pdf.*

[61] *Id.*

[62] 73 FR 12542 (Mar. 7, 2008).

[63] *Id.*

[64] National Transportation Safety Board, *Safety Recommendations A–15–7 & 15–8* (Jan. 22, 2015); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/a-15-001-008.pdf.*

[65] *http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/cb1b17b6950894bf86257c45006dcaea/$FILE/TSO-C176a.pdf.*

recording devices in the cabs of truck-tractors, motor coaches, and school and transit buses is increasing. In-cab cameras (both forward- and driver-facing) are being used by motor carriers throughout the trucking and motor coach industries.[66] For example, Swift Transportation Company, one of the largest motor carriers in the United States, announced in April 2015 that it would be equipping over 6,000 of its trucks with Lytx DriveCam systems, which include forward- and driver-facing cameras.[67] In addition, the FMCSA has issued exemptions from its regulations to motor carriers to allow carriers to install in-cab cameras on a truck's windshield. *See, e.g.,* 80 FR 14231–32, (Mar. 18, 2015); 80 FR 17818 (Apr. 2, 2015). In issuing these exemptions, FMCSA has stated it ''believes the use of video event recorders by fleets to deter unsafe driving behavior is likely to improve the overall level of safety to the motoring public.'' 80 FR at 142332. FMCSA has stated that motor carriers subject to the exemptions may use the video event recorders to increase safety through: ''(1) identification and remediation of risky driving behaviors such as distracted driving and drowsiness; (2) enhanced monitoring of passenger behavior for CMVs in passenger service; and (3) enhanced collision review and analysis.'' *Id.*

FMCSA also granted exemptions to motor carriers to support research on behalf of FMCSA to evaluate camera systems and to allow for data collection. 77 FR 71028 (Nov. 28, 2012). During RSAC's October 2014 meeting, the Association of American Railroads (AAR) presented copies of an FMCSA report published in June 2010 to the Working Group regarding a study conducted by the Virginia Tech Transportation Institute (VTTI) to evaluate the use of a driving behavior management system (including driver- and forward-facing image recorders and accelerometers) to improve commercial motor vehicle safety.[68] The report stated the study showed a significant reduction in ''safety-related events'' such as collisions, near-collisions, risky driving behaviors, and cell phone use, when trucks were equipped with monitoring systems and accompanied by supervisor review of events and a driver feedback program. A more recent VTTI study modeled the potential reduction in fatal and injury crashes involving large trucks and buses in this country if a particular event-based video system and driver behavior modification system were used.[69] The report stated an on-board monitoring system involving cameras was used and suggested the use of this system to improve safe driving behavior could prevent 727 fatal commercial motor vehicle crashes (or 20.5% of the total fatal crashes estimated in the report) per year.[70]

In March 2015, the NTSB also issued a report on the use of video systems onboard commercial motor vehicles.[71] The report stated the NTSB had investigated many highway accidents where video systems recorded information critical to the accident investigation process, and contained an in-depth discussion of the use and benefits of onboard video systems during two recent NTSB investigations into accidents involving buses. The report indicated that on-board video recording systems, along with a driver feedback program, may provide for long-term safety benefits. Such systems provide information for evaluating the circumstances leading up to a crash, as well as data regarding vehicle dynamics and occupant kinematics during crashes for assessing crash survivability. The NTSB highlighted how video systems could be improved, such as by increasing camera coverage of all passenger seating positions and improving low-light recording capabilities. The report concluded the use of data collected from video systems on school buses can serve as the ''foundation for a multidisciplinary approach to improving transportation safety.'' [72]

The NTSB report on the use of video systems onboard commercial motor vehicles also made various safety-related recommendations to camera system manufacturers, commercial motor vehicle, school bus, transit, and motor coach industry members, and to the DOT's National Highway Traffic Safety Administration (NHTSA). NTSB recommended industry members utilize onboard video systems that provide visibility forward of the vehicle, of the vehicle driver, and of each occupant seating location (with optimized frame rates and capability for low-light recording).[73] NTSB recommended that NHTSA incorporate standardized procedures into its crash database system for collecting and using pertinent video recordings, injury information and crash data from video-equipped buses.[74]

Finally, in that report the NTSB also referenced its Safety Recommendation H–10–010,[75] which recommends that FMCSA:

> [r]equire all heavy commercial vehicles to be equipped with video event recorders that capture data in connection with the driver and the outside environment and roadway in the event of a crash or sudden deceleration event. The device should create recordings that are easily accessible for review when conducting efficiency testing and systemwide performance-monitoring programs.[76]

This recommendation, along with a corresponding recommendation that FMCSA should require carrier review of video recordings in conjunction with other performance data to verify safe driver actions,[77] was made after a June 2009 accident near Miami, Oklahoma that involved a fatigued commercial motor vehicle (truck-tractor with semitrailer) operator which resulted in the deaths of 10 people. FRA notes the

[66] *See e.g.,* Rip Watson, *Truckload Carriers Broaden Efforts to Recruit, Retain Quality Drivers,* Transport Topics, Mar. 16, 2015; available online at: *http://www.lytx.com/uploads/Transport_Topics_Truckload_Carriers_0515.pdf.* Cliff Abbott, *In-Cab Dash Cams Included in Newest Wave of Trucking Technology, The Trucker,* Nov. 18, 2014; available online at: *https://www.thetrucker.com/News/Stories/2014/11/18/In-cabdashcams includedinnewestwaveoftruckingtechnology.aspx.* David Z. Morris, *There's Pressure in the Industry to Monitor Truck Drivers-and Drivers Aren't Happy,* Fortune, May 26, 2015; available online at: *http://fortune.com/2015/05/26/driver-facing-truck-cameras/.*

[67] James Jaillet, *Swift, Nation's Third-Largest Fleet, Implementing Driver-Facing, Forward-Facing Cameras In All Trucks,* Overdrive Magazine, Apr. 24, 2015; available online at: *http://www.overdriveonline.com/swift-nations-third-largest-fleet-implementing-driver-facing-forward-facing-cameras-in-all-trucks/.*

[68] Federal Motor Carrier Safety Administration, *Evaluating the Safety Benefits of a Low-Cost Driving Behavior Management System in Commercial Motor Vehicle Operations,* Report No. FMCSA–RRR–10–033 (June 2010).

[69] Soccolich, S., and J.S. Hickman. 2014. *Potential Reduction in Large Truck and Bus Traffic Fatalities and Injuries Using LYTX's DriveCam Program,* May 2014. Blacksburg, Virginia: Virginia Tech Transportation Institute; available online at: *http://info.drivecam.com/rs/lytx/images/Lytx-VirginiaTech-Study-LivesSaved-0514.pdf.*

[70] *Id.*

[71] National Transportation Safety Board, *Commercial Vehicle Onboard Video Systems,* NTSB Safety Report NTSB/SR–15/01 (Mar. 3, 2015); available online at: *http://www.ntsb.gov/safety/safety-studies/Documents/SR1501.pdf.*

[72] *Id.*

[73] National Transportation Safety Board, *Safety Recommendation H–15–002* (Apr. 29, 3015); available online at: *http://ntsb.gov/safety/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-15-002.*

[74] National Transportation Safety Board, *Safety Recommendation H–15–001* (Apr. 29, 2015); available online at: *http://www.ntsb.gov/safety/safety-recs/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-15-001.*

[75] National Transportation Safety Board, *Safety Recommendation H–10–010* (Oct. 21, 2010); available online at: *http://www.ntsb.gov/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-10-010.*

[76] *Id.*

[77] National Transportation Safety Board, *Safety Recommendation H–10–011* (Oct. 21, 2010); available online at: *http://www.ntsb.gov/safety/safety-recs/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=H-10-011.*

rationale for these recommendations is similar to that made to FRA in Safety Recommendations R–10–01 & –02 discussed above, which is to aid accident investigations and to allow an employer to conduct efficiency testing via review of recordings to identify potentially unsafe behaviors or actions and to take corrective action to prevent future accidents.

Cameras are also widely used on transit buses in this country, both for security (if the drivers or passengers are the victims of criminal acts), and to record motor vehicle accidents. The American Public Transportation Association's (APTA) ''2016 Public Transportation Fact Book'' [78] indicates that as of January 2015, approximately 73 percent of public transportation buses in this country were equipped with closed-circuit television cameras, up from approximately only 13% in 2001. The transit administrations in virtually every major city in the United States have installed recording devices on transit buses on some scale.[79] During RSAC discussions, APTA representatives indicated that recordings sometimes provide exculpatory evidence for the vehicle operator, whether about driver actions operating the vehicle or interactions with bus riders. In sum, the use of onboard recording equipment on commercial motor vehicles and buses in this country is substantial and has rapidly increased in recent years, leading to safety gains as evidenced by the June 2010 FMCSA report on the VTTI study.

Rail

The railroad industry has used locomotive-mounted image recording devices for at least the last two decades. Railroads began installing outward-facing cameras on a large scale in the 1990s. FRA understands that railroads have often used forward-facing recordings to defend themselves in litigation, particularly litigation involving highway-rail grade crossing and trespasser accidents. FRA does not intend for this rulemaking to affect that use of locomotive recordings. Locomotive video recordings have also been used to document track and roadway conditions, such as washouts, that may lead to, or have led to, accidents. FRA's Locomotive Engineer Review Board (LERB)/Operating Crew Review Board (OCRB), which review railroad locomotive engineer and conductor de-certification decisions upon an engineer's or conductor's appeal to FRA under 49 CFR parts 240 and 242, have received forward-facing video recordings (and still-shots of such recordings) as evidence intended to document events leading up to an event, including wayside signal indication or the position of a switch. AAR stated during RSAC Working Group discussions (discussed further in section IV of the preamble below) that as of March 2014, over 20,000 outward-facing cameras had been installed on freight and passenger locomotives.

AAR also told the RSAC Working Group that after the 2008 Chatsworth accident some railroads began installing inward-facing cameras as recommended by NTSB. Metrolink installed inward-facing video cameras on locomotives to implement NTSB's recommendations, for the stated purpose of enhancing safety and security for the general public and for its employees and contractors. A Metrolink presentation informed the Working Group that as of June 2014, it had equipped 57 locomotives and 55 cab cars with ''head end video record'' capabilities, and that the railroad reviewed the video recordings randomly to test for employee compliance with rules governing the use of unauthorized electronic devices, sleeping, and unauthorized persons in the cab of the locomotive. AAR indicated during Working Group discussions in June 2014, that approximately six railroads had equipped 288 locomotives or cab cars with inward-facing cameras since 2009.

Moreover, as mentioned above, after the May 2015 Amtrak accident in Philadelphia in which eight persons were killed, Amtrak announced that it would install inward-facing cameras on all of its ACS–64 locomotives in service on the Northeast Corridor by the end of 2015 (and on subsequently delivered locomotives).[80] Further, since the Working Group discussions concluded in 2015, several passenger and freight railroads have installed inward- and/or outward-facing recording devices without a Federal regulation requiring such action. For example, FRA is aware that the four largest Class I freight railroads in this country (UP,[81] BNSF, CSX Transportation, Inc. (CSX), and Norfolk Southern Railway (NS)) have all either announced they would begin installing inward-facing cameras, or have already started such installation. In fact, UP has begun installation on a large-scale equipping over 2,000 locomotives. In addition, Metro-North and the Long Island Rail Road, the two busiest commuter railroads (by weekday ridership) in this country,[82] have also announced they would begin installing inward- and outward-facing cameras on their locomotive fleets.[83] Long Island Rail Road has even begun the process of installing cameras on their locomotives. Thus, the number of inward-facing cameras installed on locomotives has substantially increased since the Working Group discussions.

At the time of the Working Group discussions, a Class I freight railroad, The Kansas City Southern Railway Company (KCS), gave a presentation regarding its installation of inward-facing cameras. KCS was an early adopter of inward-facing image recorder technology in the freight rail industry. KCS stated its recording devices are active anytime a locomotive is powered, and that such a policy is advantageous for: (1) Security purposes (to document trespass, theft, and other criminal incidents that may not involve railroad employees); and (2) crew safety, specifically to monitor crew performance to provide information about crew actions before accidents, to investigate crew injuries, and to validate a crew cell phone use detection alert. KCS indicated that the forward-facing cameras on its locomotives are equipped with microphones, but those audio-recording devices are not used (the cabling has been removed).

Clearly, the railroad industry's use of locomotive-mounted recording devices

[78] American Public Transportation Association, *2016 Public Transportation Fact Book, 67th Ed.,* (Feb. 2017); available online at: *https://www.apta.com/resources/statistics/Documents/FactBook/2016-APTA-Fact-Book.pdf.*

[79] *See e.g.,* Washington DC (*http://wmata.com/about_metro/news/PressReleaseDetail.cfm?ReleaseID=4618*); Chicago (*http://www.transitchicago.com/safety/cameras.aspx#about*); New York City (*http://www.mta.info/news/2012/03/27/safety-first-mta-adding-more-onboard-bus-video-surveillance-cameras*); Boston (*http://www.mbta.com/about_the_mbta/news_events/?id=18423*); Los Angeles (*http://thesource.metro.net/2014/06/26/metro-debuts-new-security-video-monitors-on-buses/*); Kansas City (*http://www.kcata.org/about_kcata/entries/transit_watch*); Dallas (*https://www.dart.org/news/DARTCNGNABIFactSheet.pdf*); and Minneapolis (*http://www.metrotransit.org/transit-police*).

[80] Lori Atani and Michael Laris, *Amtrak Will Install Inward-facing Cameras on Trains,* Wash. Post, May 26, 2015; available online at: *https://www.washingtonpost.com/local/trafficandcommuting/amtrak-will-install-inward-facing-cameras-on-trains/2015/05/26/a6d210fa-03b9-11e5-a428-c984eb077d4e_story.html.*

[81] *https://www.up.com/aboutup/community/safety/technology/index.htm.*

[82] Press Release, Metropolitan Transportation Authority, Long Island Rail Road and Metro-North Railroad Stay Busiest in Nation (Apr. 27, 2015); available online at: *http://www.mta.info/news-long-island-rail-road-metro-north-railroad-lirr-ridership/2015/04/27/long-island-rail-road-and.*

[83] Press Release, Metropolitan Transportation Authority, Metro-North and LIRR To Acquire Video Cameras for Trains (Nov. 17, 2014); available online at: *http://www.mta.info/press-release/metro-north/metro-north-and-lirr-acquire-video-cameras-trains.*

to improve security and railroad safety has rapidly increased. Even though this NPRM does not require freight railroads to install inward- and outward-facing recording devices, FRA supports and will continue to monitor the installation efforts of freight railroads which use this technology to improve the safety of their operations.

IV. Railroad Safety Advisory Committee Proceedings

As discussed above, in March 2014, the RSAC formed the Recording Device Working Group [84] to consider specific actions regarding the installation and use of locomotive-mounted audio and image recording devices. The RSAC voted to adopt Task 14–01, to develop regulatory recommendations addressing the installation and use of the recording devices in controlling locomotive cabs. The task statement stated that any recommendations should address installation requirements and timelines, technical controls, recording retention periods, retrieval of recordings, controlled custody of recordings, crashworthiness standards, use of recordings for accident investigation and railroad safety study purposes, and use of recordings to conduct operational tests.

FRA developed Task 14–01 in response to NTSB Safety Recommendations R–10–01 & –02 and recent railroad accidents. FRA believed it appropriate to evaluate the adoption of regulations addressing inward- and outward-facing locomotive recording devices to advance railroad safety. FRA's intent was to use recordings to: (1) Assist in post-accident/incident investigations (railroad, highway-rail grade crossing, and trespasser); (2) assist in evaluating railroad employee fatigue and distraction, and crew interactions; and (3) add as a training tool for railroad employees and for conducting operational tests of railroad employees. The Working Group was to report recommendations to the full RSAC (or Committee) by April 1, 2015.

The Working Group held five meetings, three of which were multi-day meetings. The Working Group did not reach consensus on any aspect of the task, as FRA reported to the full Committee on May 28, 2015. During the Working Group discussions, FRA announced it intended to require inward-facing cameras and requested the Working Group's assistance to formulate the appropriate details and scope of a potential rulemaking. FRA presented rule text proposals for the Working Group's consideration. For various reasons conveyed during Working Group discussions, labor and industry representatives expressed general disagreement with FRA's position regarding regulatory requirements for inward-facing cameras and other locomotive recording devices. The labor organizations generally opposed any Federal inward-facing camera installation requirements for crew privacy reasons, and argued that FRA's efforts to improve railroad safety were better directed toward other regulatory matters (*e.g.,* fatigue, PTC implementation). Railroads generally expressed opposition based on lack of perceived need for FRA to regulate in the area of locomotive recording devices, expressing concern regarding potential costs and hindrance to the advancement of recording device technology and uses. Rather than attempting to fully summarize the respective positions and arguments during the Working Group process here, FRA defers to labor and industry representatives to convey their respective positions on this NPRM's specific proposals via the notice and comment process.

During the RSAC process, labor and industry representatives on separate occasions asked FRA to independently pursue a voluntary pilot program in lieu of any FRA rulemaking proceeding. This pilot program would have been in addition to existing inward-facing camera usage across the railroad industry (*e.g.,* Metrolink and KCS, which have installed inward-facing cameras on a larger scale than other railroads to date). The purpose of the pilot program would have been to evaluate the impacts of additional locomotive recording device usage and for purposes of gathering additional data. The January 2015 Working Group meetings were canceled so that labor and industry representatives could meet privately to discuss pilot project details. However, labor and industry representatives reported to FRA that they were unable to reach consensus agreement on a voluntary pilot project. At the May 28, 2015 full Committee meeting, FRA informed the Committee that, in the absence of a Committee recommendation, FRA would initiate a rulemaking proceeding to require locomotive recording devices based on the need to implement the safety initiatives.

V. Privacy Concerns

As discussed above, FRA initially expressed to NTSB it had concerns about privacy regarding NTSB's recommendations to install locomotive-mounted audio and image recording devices. The labor organizations also expressed reservations regarding the installation of locomotive-mounted recording devices based on privacy concerns during the Working Group meetings. FRA is addressing the issue of privacy in relation to locomotive-mounted recording devices in this NPRM. Although this discussion focuses on privacy considerations for railroad employees, FRA recognizes that the locomotive recordings might incidentally capture images of members of the public through the outward-facing camera or, depending on the configuration of the cab and the passenger car, the inward-facing camera.

First, there are no legal impediments preventing the agency from requiring recording devices to be installed in the locomotive cab when a train is being operated on the general railroad system of transportation. As discussed above, the FAST Act mandated FRA promulgate regulations requiring the installation of inward- and outward-facing recording devices on lead passenger train locomotives. Under the proposal rule, passenger railroad employees would be on notice of the presence of recording devices in a locomotive's cab. For the reasons described in this preamble, and consistent with relevant laws (including the FAST Act's mandate), court decisions, and FRA's statutory authority to regulate all areas of railroad safety, there is no legal requirement preventing FRA in this rulemaking from requiring locomotive recording devices on passenger locomotives to adhere to certain requirements.

Second, the purpose of image and audio recordings is to deter conduct that may lead to railroad accidents, to aid in railroad accident investigations, and to identify action(s) necessary to prevent accidents in the future. The railroad industry is a highly regulated industry. Train accidents can have catastrophic consequences for the safety of the public, railroad passengers, railroad employees and contractors, and the environment. As such, a large number of Federal statutes and regulations already govern railroad employees' performance of safety-related duties when they occupy the cab of a lead locomotive.

For example, employees who operate trains in this country are subject to warrantless drug and alcohol testing (both random and for cause) (49 CFR part 219), operational testing (*see* 49 CFR parts 217, 218, 220, 240, 242), hours of service laws (*see* 49 U.S.C. ch. 211, 49 CFR part 228), and regulations

[84] The Working Group was comprised of members from the following organizations: AASHTO; Amtrak; ASRSM; APTA; ASLRRA; AAR; BLET; BMWED; BRS; FAA; FRA; IAMAW; NCFO; NTSB; SMART; and Transport Canada.

governing the use of personal electronic devices (49 CFR part 220), among many other requirements. Railroad managers and FRA inspectors can currently occupy the cabs of locomotives at any time to observe railroad train crew members and other employees performing their duties, and listen to crew communications that occur in the cab. In fact, under existing 49 CFR parts 217, 219, 220, 240, and 242, railroads are required to make various observations of on-duty train crewmembers performing their duties. The Supreme Court recognized that ''the expectations of privacy of covered employees [here, train crewmembers] are diminished by reason of their participation in an industry that is regulated pervasively to ensure safety . . . .'' *Skinner* v. *Railway Labor Executives Association,* 489 U.S. 602, 627 (Mar. 21, 1989).

The cab of a locomotive is also not a location for a railroad employee's exclusive use. During a tour of duty other railroad employees, railroad supervisors, FRA inspectors, and other authorized persons may access the cab of the locomotive while it is occupied by a train crew and observe the employee's actions and communications. A train crew member, particularly a member of a road freight crew, might never occupy the cab of a particular locomotive again after the completion of a tour of duty. A train crew boards a locomotive to operate a train during an on-duty period and then alights from the locomotive. Further, even the general public is able to view train crew members occupying the locomotive and certain of their actions through the windows of the locomotive when located near a railroad right-of-way or a highway-rail grade crossing, or in certain cab control car configurations in passenger train service. Railroad radio conversations sent and received from a locomotive cab that may involve train crewmembers, dispatchers, operators, and railroad managers are already often recorded by railroads. Further, employee actions in operating trains that would be affected by this proposed regulation are also already recorded by locomotive event recorders required by existing part 229 as discussed below. Therefore, this NPRM proposes that passenger railroad employees occupying the cabs of locomotives that would be affected by this proposal have express notice (by way of required signage) that the locomotives are equipped with recording devices. FRA also recommends that freight railroads provide similar express notice (via signage or other methods) to their employees working on locomotives with recording devices, although the agency is not proposing to impose such a requirement in this rulemaking.

Also, as discussed above, the goal of the FAA CVR regulations, in effect for over 50 years, is the same as FRA's aim here, which is to investigate and prevent transportation accidents that endanger the lives of traveling passengers, carrier employees, and the public. 29 FR 8401. Like commercial passenger aviation operations governed by FAA CVR regulations, FRA's proposed regulation would apply to passenger trains that transport hundreds of people, often at high speeds.

In addition, other FRA rulemakings that have raised privacy considerations have been upheld because of the government's interest in ensuring public safety. For instance, as touched on above, FRA's initial regulation requiring warrantless drug and alcohol testing of railroad employees [85] was promulgated under FRA's general rail safety rulemaking authority, challenged in Federal Court, and ultimately upheld by the Supreme Court in *Skinner.* FRA promulgated its initial drug and alcohol testing requirements (49 CFR part 219) based on the finding that drug and alcohol abuse by covered railroad employees poses a serious threat to public safety, as evidenced by past accident investigations. 50 FR at 31516. The majority's decision in *Skinner* stated there are ''few activities in our society more personal or private than the passing of urine,'' and also discussed the extensive privacy-related concerns on the subject of the contents of one's blood. 489 U.S. at 617. Nevertheless, the Court held that the drug and alcohol testing FRA's regulations required was ''reasonable'' within the meaning of the Fourth Amendment of the Constitution. 489 U.S. at 634. The Court explained that due to:

> The surpassing safety interests served by toxological tests in this context, and the diminished expectation of privacy that attaches to information pertaining to the fitness of the covered employees, we believe that it is reasonable to conduct such tests in the absence of a warrant or reasonable suspicion that any particular employee may be impaired.

Id. FRA believes the safety risks this NPRM seeks to address by recording an employee's actions while operating a train in the cab of a locomotive are similar to those discussed in *Skinner.* However, recording an employee's actions while operating a locomotive does not present privacy interests comparable to those relating to the contents of one's own blood or urine that the Court in *Skinner* weighed. Locomotive audio and image recordings merely record the actions of train crews and environmental and other factors while a train is operated on behalf of a railroad, which can be observed by the naked eye by a railroad manager [86] or FRA inspector aboard a locomotive and can be recorded by a locomotive's event recorder. In addition, Congress expressly mandated FRA promulgate regulations requiring the installation of recording devices for passenger trains under the FAST Act.

As previously stated, even in the absence of the current Congressional action to require locomotive-mounted recording devices and similar Federal regulatory action, the railroad industry has installed locomotive-mounted recording devices on its locomotives for years. FRA is not aware of any successful legal challenges to such installation. As mentioned above, Metrolink installed in-cab audio and video recording devices after the 2008 accident in Chatsworth, California, that prompted NTSB Safety Recommendations R–10–01 & –02. The BLET challenged Metrolink's installation and use of such cameras in California State and Federal courts on the basis of privacy, substantive due process, procedural due process, and preemption violation claims. Neither court found the installation of such devices unlawful. In an opinion granting Metrolink's motion for summary judgement on the pleadings and dismissing all BLET claims, the United States District Court for the Central District of California stated that Metrolink's installation of locomotive audio and video recording devices had several legitimate purposes: (1) As an accident investigation tool; (2) to improve public safety; and (3) to test locomotive engineers' compliance with Metrolink's operating rules.[87] The Los Angeles County California Superior Court similarly granted Metrolink's motion for summary judgment and entered a declaratory judgement in

[85] 50 FR 31508 (Aug. 2, 1985).

[86] *See Vega-Rodriguez* v. *Puerto Rico Telephone Co.,* 110 F.3d 174, 181 (1st Cir. 1997) (upholding employer's installation of surveillance cameras when the employer notified employees of the location and field of vision of the cameras: ''[t]he bottom line is that since PRTC could [lawfully] assign humans to monitor the work station continuously . . . it could instead carry out that lawful task by means of unconcealed cameras . . . which record only what the human eye could observe'').

[87] *Bhd. of Locom. Eng. and Trainmen, et al.* v. *S. Cal. Reg'l Rail Auth.,* No. CV 09–8286 PA (JEMx), 2010 WL 2923286 (C.D. Cal. June 20, 2010).

Metrolink's favor to resolve the BLET-filed lawsuit.[88]

KCS also voluntarily began installing inward-facing cameras for safety- and security-related purposes ahead of most other freight railroads in this country. KCS filed an accompanying action after the installation of the cameras requesting a declaratory judgment that any disputes over the installation of the cameras were ''minor'' disputes under the Railway Labor Act. The United States District Court for the Western District of Louisiana ruled in KCS' favor, granting KCS' motion for summary judgment and finding that installation of the cameras represented a ''minor'' collective bargaining dispute.[89]

FRA has also long required locomotive event recorders record the operational parameters of the controlling locomotive of a train traveling over 30 mph. 49 CFR 229.135. The purpose of this requirement is for accident/incident investigation and prevention and is required by statute. 49 U.S.C. 20137. FRA explained in its 2005 final rule updating the locomotive event recorder requirements that event recorders:

> [m]ay indirectly prevent future accidents by allowing for in-depth accident causation analysis to take place using complete information, thereby allowing accurate causation determinations, and the development of appropriate and effective countermeasures. Because event recorders also allow the railroad to monitor train handling performance and rules compliance in a widespread and economical way, FRA believes that event recorders might have the potential of increasing skillful train handling and encouraging rules compliance.

70 FR 37930, 37935 (June 30, 2005). FRA's rationale in proposing to require locomotive-mounted image recording devices on lead passenger train locomotives (and potentially audio recording devices) here is the same. An image recording of the train crew in the locomotive supplements the event recorder requirement by providing railroads and Federal and State accident investigators information regarding an engineer's actual manipulation of locomotive controls, and about other crew actions and environmental and other factors prior to an accident. Importantly, such recordings, when regularly reviewed by railroads, may also provide a deterrent to train crews' distracting use of personal electronic devices, which the NTSB has cited as a cause of several railroad accidents, including the catastrophic 2008 Metrolink passenger train accident discussed above. The recordings would provide necessary evidence to railroad management and FRA to take appropriate corrective or enforcement actions for these serious violations of FRA regulations and railroad rules that cause railroad accidents.

As previously stated, FRA is declining to propose requiring the installation of inward- and outward-facing recording devices in freight locomotives. The FAST Act requires FRA to develop regulations that require inward- and outward-facing image recording devices in all passenger train lead locomotives; however, there is no corresponding statutory mandate for freight locomotives. In addition, the cost of implementing such a requirement for freight locomotives could outweigh its positive safety benefits. Furthermore, many freight railroads, including all Class I railroads, are already in the process of voluntarily installing recording devices in their locomotives without a Federal requirement. Therefore, FRA is declining to impose a requirement to install recording devices on freight locomotives at this time.

Even though FRA does not believe there are any legal impediments preventing FRA from promulgating a regulation requiring locomotive audio and image recording devices, FRA still recognizes the privacy concerns FRA conveyed to NTSB in FRA's initial responses to Safety Recommendations R–10–01 & –02, and that railroad uses of recordings, beyond those enumerated in this NPRM, could violate the law. This concern is particularly relevant regarding audio recordings of conversations in the cab of a locomotive. Examples of uses of such recordings that could violate the law are to retaliate against an employee based on the contents of in-cab audio recordings in violation of 49 U.S.C. 20109 (railroad employee whistleblower law) or to interfere with protected labor activities. The FAST Act, at 49 U.S.C. 20168(i), establishes that a passenger railroad carrier is prohibited from using in-cab audio or image recordings to retaliate against an employee. While enforcement of such prohibited retaliation against employees does not lie with FRA, but rather with other Federal and State agencies or the courts in private causes of action, FRA believes passenger railroads should adopt and adhere to policies that strictly prohibit such potential non-safety related abuses of locomotive recordings in violation of the FAST Act's prohibition. FRA's proposals discussed in the section-by-section analysis below were formulated to fulfill this FAST Act requirement.

FRA also believes valid privacy concerns exist on the appropriate protection and dissemination of locomotive recordings that are made, particularly where an accident has occurred and the recordings may be graphic and violent. As raised during Working Group discussions, it is not desirable for railroad employees or their families to have such images released publicly. For example, Congress provided statutory protections for a train's audio and image recordings that NTSB takes possession of during the course of its accident investigations at 49 U.S.C. 1114(d) and 1154(a). When NTSB takes possession of such locomotive recordings, it is prohibited from releasing the contents of such recordings (except that transcripts may be released as part of its accident investigation proceedings).

During Working Group discussions, participants noted FRA did not have similar statutory protections for recordings it takes possession of during investigations, as any records FRA takes possession of during an investigation may be required to be disclosed under FOIA. However, 49 U.S.C. 20168(h) prohibits FRA from publicly disclosing recordings that FRA takes possession of after a railroad accident has occurred. Paragraph (h) is similar to the FOIA exemption for locomotive recordings given to the NTSB at 49 U.S.C. 1411(d), and prohibits FRA from disclosing publicly locomotive audio and image recordings, or transcripts of communications by and among train employees or other operating employees, or between such operating employees and communication center employees related to an accident FRA is investigating. FRA may make public a transcript or a written depiction of visual information that FRA deems relevant to the accident at the time other factual reports on the accident are released to the public.

As explained during Working Group meetings, FRA believes it would rarely take possession of recordings. For the most-serious accidents, FRA anticipates the NTSB would take possession of such recordings as they currently do, but that FRA would have the opportunity to view or listen to the recordings as a party to the investigation and to conduct its own parallel investigation. For less serious accidents or incidents that only FRA investigates, FRA would sometimes proceed as it does now, by having FRA inspectors view the recordings in the railroad's possession. In instances where FRA had a legal or evidentiary need to take physical

[88] *Bhd. of Locom. Engineers* v. *S. Cal. Reg'l Rail Auth.,* No. BC424287 (Super. Ct. L.A. County Cal. June 1, 2011).

[89] *Kan. City S. Railway Co.* v. *Bhd. of Locom. Eng. and Trainmen,* No. 5:13–cv–00838–EEF–MLH (W.D. La. *Jul. 24, 2013*).

possession of a locomotive recording from a railroad after an accident, the FAST Act now protects those recordings from public release.

Concerns regarding a railroad's unauthorized release of locomotive recordings and the privacy implications of such were also raised during the Working Group meetings. Currently, in the absence of an accident where NTSB or FRA has taken possession of a locomotive's recording devices, a railroad's internal policies govern the handling of locomotive audio and video recordings. Certain railroad draft policies were shared with the Working Group during its meetings on the railroads' procedures governing the chain-of-custody for recordings, access to the recordings, and release of the recordings. If adhered to, FRA believed these policies would address concerns regarding the proper control and handling of locomotive recordings.

Recognizing the need to ensure railroads appropriately protect recordings that might implicate privacy-related concerns, FRA has proposed rule text in § 229.136(f) that requires passenger railroads to adopt, and comply with, a chain-of-custody procedure governing the handling and the release of locomotive recordings. The chain-of-custody procedure must specifically address the preservation and handling requirements for post-accident/incident recordings that are provided to the NTSB or FRA during the agencies' accident investigations. A passenger railroad's failure to comply with its procedures would be a violation of the Federal railroad safety regulations if § 229.136(f) is adopted in a final rule in this rulemaking.

FRA decided against proposing specific rule text governing chain-of-custody, handling, and release procedures industry-wide. The industry has much experience in this area given the significant number of locomotives that are already equipped with forward-facing cameras (estimated by AAR at over 20,000) and length of time such locomotives have been equipped, and, also, now with inward-facing recording devices. The industry also has much experience in this area with locomotive event recorders that have long been subject to preservation and handling requirements after the occurrence of an accident under existing § 229.135(e). It is therefore more practical and cost-effective to give railroads the discretion to continue to tailor their individual procedures appropriately. Given the various types of locomotive recording equipment that different railroads may choose to utilize, the various State court evidentiary and chain-of-custody laws and rules that railroads must comply with when the recordings are used in litigation for the railroads' own purposes (*e.g.,* highway-rail grade crossing and trespasser accidents), and the potential cost of requiring railroads to amend their existing procedures that might already be appropriate and provide instruction on such new procedures, FRA does not believe it appropriate to impose specific chain-of-custody and release procedures in the regulation. Further, FRA's safety interest in regulating in this area most strongly lies in ensuring recordings are handled properly post-accident when turned over to NTSB or FRA upon request, and the proposed regulation's text would expressly require the railroads' procedures to address that point. However, FRA acknowledges that some parties have expressed concerns regarding the public release of image or audio recordings that do not involve a reportable accident. Thus, FRA seeks comment from interested parties regarding whether the final rule should include a specific prohibition on the public disclosure by a railroad or individual of any video or audio recording.

VI. Additional Items for Comment

FRA is requesting comment on the below significant requirements or amendments for which it is not proposing specific regulatory text in this NPRM, but which FRA would consider adopting in a final rule in this proceeding.

A. Mandatory Installment of Inward- and Outward-Facing Recording Devices on Freight Locomotives

As previously stated, FRA is declining to propose a requirement in this NPRM that freight railroads install and use inward- and outward-facing recording devices in their locomotives. The FAST Act does not require that such recording devices be installed in freight locomotives. Further, the cost to implement such a requirement could outweigh its safety benefits. FRA estimates that if freight locomotives were required to have image recording devices, the 10-year cost would be $154,990,084 (PV, 7 percent), or $168,970,287 (PV, 3 percent).[90] Finally, many freight railroad, including all Class I railroads, have already installed or are in the process of installing recording devices in their locomotives. Therefore, FRA is declining to propose a requirement to install recording devices on freight locomotives at this time.

FRA will continue to monitor freight railroads and their efforts to voluntarily install inward- and outward-facing recording devices, and also the overall safety records of the freight railroad industry, as it considers whether a future regulatory requirement is necessary. In the meantime, FRA welcomes public comment on whether FRA should implement a requirement that some or all freight railroads equip their locomotives with inward- and outward-facing recording devices. In addition, FRA invites comment on the extent to which FRA should apply the proposed requirements in this NPRM to recording devices that have already been installed by freight railroads in their locomotives. FRA also seeks comment on whether FRA should include a specific provision that prohibits the public release of an image or audio recording by any railroad or person.

B. Audio Recording Devices

The FAST Act, at 49 U.S.C. 20168(e)(1), gives FRA discretion to require audio-recording devices be installed on lead passenger train locomotives, and to establish corresponding technical details for such devices. Further, the relevant NTSB recommendations that FRA is addressing in this NPRM state that in addition to locomotive image recordings, FRA should also require locomotives be equipped with audio recording devices. Indeed, the NTSB sent FRA correspondence emphasizing that to satisfy Recommendations R–10–01 & –02, FRA would need to include both audio and image recording provisions in this rulemaking.[91]

FRA is not proposing to require the installation of locomotive audio recording devices, but is requesting comment on whether to require such devices in a final rule. Accordingly, FRA makes clear that nothing proposed in this NPRM would preclude a railroad from voluntarily installing audio recording devices in its locomotives. As conveyed to the NTSB in FRA's initial responses to the NTSB recommendations regarding audio recording devices, FRA agrees that in certain accidents, audio recording devices could be useful for conducting post-accident investigations. However, as mentioned above, FRA still has

[90] *See* Regulatory Impact Analysis pg. 17.

[91] National Transportation Safety Board, Safety Recommendation History for Safety Recommendation R–10–01; available online at: *http://www.ntsb.gov/safety/safetyrecs/_layouts/ntsb.recsearch/Recommendation.aspx?Rec=R-10-001.*

concerns about audio recordings aboard locomotives made during periods when no safety-related duties are actively being performed (*e.g.,* sitting at a stop signal in a siding). Recordings during such time periods would likely include personal conversations between employees and might have much more potential for abuse than do inward-facing image recordings. Further, FRA is unsure of the added utility of audio recordings in addition to video recordings when weighed against the cost, the potential for abuse, and the loss of personal privacy.

In addition, FRA believes inward-facing image recorders alone may deter the prohibited use of personal electronic devices more effectively than audio recorders. In most circumstances, an inward-facing image recording of appropriate quality will enable railroad supervisors to observe the physical actions of a train crew as they operate the train and perform other safety-related duties, including whether personal electronic devices are being manipulated or handled. FRA is unsure that audio recorders would significantly improve railroad efforts to detect such safety violations that are, in part, the impetus for requiring railroads to regularly review a locomotive's in-cab image recordings.

FRA also believes that train operations are different from flight operations regarding the utility of in-cab audio recordings during a post-accident investigation. For example, in both the 2008 Chatsworth Metrolink accident and the 2015 Philadelphia Amtrak accident, the locomotive engineers operating the trains were the sole occupants of the locomotive cab. The other train crew members were in the passenger consist. Thus, for passenger operations, other than radio communications with other train crewmembers or the train dispatcher which are often already recorded, there may not be any voice communications inside the cab to audio record. This is unlike a typical commercial aviation operation in which multiple crew members occupy the cockpit of an aircraft during flight and undertake numerous required crew communications. Similarly, audio recordings inside freight locomotive cabs, which are typically occupied by multiple crewmembers, might provide relevant post-accident information more often than for accidents involving passenger locomotives. However, FRA is not certain what the utility of such an audio recording requirement might be when weighed against the potential for abuse of such recordings in other contexts and the overall costs of such a requirement, and considering the availability of image recordings, locomotive event recorder data, and radio recordings.

In addition, as discussed above, crew radio communications are often already recorded by railroads as part of their dispatching systems, and are often reviewed by FRA and NTSB as part of railroad accident investigations. FRA believes that such recordings are generally more common (and often include yard operations on Class I and passenger railroads) and recorded in a higher quality (digital) than in 1996, when NSTB investigated the Silver Spring, Maryland MARC train accident discussed above and made its initial recommendation to FRA regarding equipping locomotives with audio recorders.

As noted, FRA also has concerns about the cost of requiring audio recording devices on upwards of 4,500 passenger locomotives and potentially 20,000 freight locomotives. There may be only a small number of accidents where audio recordings might be beneficial. Further, the cost to store data in addition to image recordings in a memory module (with a crashworthy module for passenger locomotives) might increase the costs of compliance with a final rule. FRA understands from Working Group discussions and its own research that the audio recording devices and microphones contained within a locomotive's image recorders are not costly, but railroads indicate a crash-hardened memory module for audio recordings might increase costs of compliance. FRA is also concerned about the background noise levels inside the cabs of certain locomotives and has conveyed that concern to NTSB in the past. Because of the noise, additional equipment such as crew headsets and intercoms with microphones might be needed to record crew voice communications so the recordings can accurately be deciphered by railroad managers and accident investigators. This might also add to the cost of installing such equipment.

In sum, FRA reiterates that it agrees with NTSB that in some post-accident investigations audio recordings might be beneficial to help determine causal factors. However, in light of the concerns discussed above, FRA is continuing to evaluate whether to require audio recording devices in this rulemaking. FRA wishes to continue to evaluate the issue with the benefit of information from public comments submitted in response to this NPRM. Accordingly, FRA requests comment on the following specific questions:

- Would the utility that audio recordings might provide in certain accident investigations, on top of the benefits accruing from image recordings, outweigh concerns regarding: (1) The cost of installation of these additional devices; (2) the cost of crashworthy memory for audio recordings on passenger locomotives; (3) the potential loss of personal privacy for occupants of a locomotive's cab; and (4) the potential for abuse of audio recordings reviewed by railroad supervisors that could occur? Please provide specific information on the costs (for example, the cost of installation in dollars) in your comments.
- If in-cab audio recordings are required in a final rule, should FRA adopt a strict rule that requires such recorders to stop recording once a train has stopped moving?
- In addition to in-cab recordings, should exterior recording devices capable of recording sounds such as the locomotive horn/bell, audible grade crossing warning devices, engine noises, braking noises, and other sounds that may be relevant during post-accident investigations also be required? If so, what is the utility of such recordings when weighed against the potential costs? Please provide specific information on the costs of installation in dollars in your comments.

FRA also requests public comment addressing the appropriate technical specifications for audio recording equipment if the installation of audio recording devices is required in a final rule. Further, if FRA requires locomotive audio recording devices in the final rule, should FRA restrict the usage of those recordings or provide additional protections from public release? FRA believes requiring such devices to be capable of recording voice conversations conducted at typical audible levels (approximately 60–70 decibels) in the cab would be appropriate as a general performance standard. However, FRA requests comment addressing whether headsets with integrated audio microphones, background noise filters, or other specialized audio recording equipment would be necessary to reliably capture such voice conversations based on background noise levels in a locomotive cab. Such comments should also address appropriate technical specifications for any such equipment and the cost.

C. Recording Device Run-Time/Shutoff When Trains Stop Moving

During the RSAC Working Group's discussions, FRA presented proposed rule text that would have required

locomotive image and audio recording devices to record for one hour after a locomotive equipped with such devices had stopped moving. FRA introduced this proposal intending to recognize the potential safety value in recording crew actions in the moments immediately after a train had stopped, for post-accident investigations and other incident investigations. This proposal also attempted to consider crew privacy concerns expressed during Working Group discussions over recording devices continuing to record during long periods of time where no safety-related duties might be actively performed by a train crew (*e.g.,* sitting stationary at a stop signal in a siding). As discussed above, in previously responding to NTSB recommendations on the topic of recording devices, FRA indicated to NTSB that FRA wished to avoid the potential for unwarranted publication of private conversations on the locomotive taking place during non-safety-critical down times that inevitably occur in railroad operations, and to guard against erosion of rail labor and management relationships.

Additionally, during discussions on this topic, representatives of APTA indicated that certain of its member passenger railroads use locomotive-mounted and other surveillance cameras aboard rail passenger equipment for purposes beyond the scope FRA contemplates in this NPRM. For example, APTA explained that an in-cab or other camera on a passenger car could be used for purposes of protecting a train operator or other crewmember by documenting any incidents involving passengers aboard the train, such as disputes between passengers, assaults on train crewmembers, fare disputes, and the unauthorized entry into the cab compartment by a passenger, among other examples. APTA stated these cameras could help police identify perpetrators of crimes and provide exculpatory evidence for train crews regarding events that might occur on a passenger train. These types of events, some of which involve State criminal law matters, go beyond FRA's safety rationale for this proposed rule on recording crew actions to prevent railroad accidents. As such, during RSAC discussions, APTA stated if FRA placed any limits in a rulemaking proceeding on the operation of recording devices after a train had stopped, passenger railroads should be exempted. APTA indicated during Working Group discussions that its passenger railroad members that would be subject to the requirements of this proposed rule may prefer to have locomotive-mounted recording devices in operation any time a train is occupied, regardless of whether a train is moving or not. While not a passenger railroad, KCS indicated to the Working Group that its policy is that a locomotive's image recording system is in operation anytime a locomotive is running.

The proposed rule text in § 229.136 below is silent on the issue of a specific recording device run-time after a locomotive has stopped moving, and is also silent on any shut-off requirements after a locomotive has stopped moving. Under this proposal, passenger railroads would have discretion to decide whether locomotive recording devices would continue to record when a locomotive is not in motion (as long as the railroad retained the last 12 hours of operation of the locomotive on a memory module as proposed in § 229.136). FRA is requesting comment on the appropriate approach to this issue in a final rule. FRA specifically requests comment regarding the safety benefits of recordings made when a locomotive is occupied but not moving, and whether a specific run-time or shutoff requirement in a final rule would present any technical hurdles for railroads (and, if so, their cost in dollars). FRA also requests comment addressing the privacy implications regarding recordings being made during down times where no safety-related duties might be actively performed by a train crew. Further, FRA desires comment addressing the potential risks of overwriting valuable recorded data if an accident occurs in a remote location and the recording devices continue to record after a train is stopped. Finally, FRA requests comment on whether passenger railroads should be exempt from any requirement to stop locomotive-mounted recording devices from recording when a train is stopped.

VII. Section-by-Section Analysis

Proposed Amendments to 49 CFR Part 217 (Part 217)

Section 217.9 Program of Operational Tests and Inspections; Recordkeeping

FRA proposes to amend part 217 to address the use of locomotive recordings to conduct operational (efficiency) tests in passenger trains. Part 217 has long required railroads to conduct operational tests to determine the extent of employee compliance with railroad operating rules, timetables, and timetable special instructions. Section 217.9 requires railroads to specify a minimum number of operational tests per year covering the requirements of subpart F of part 218, FRA's regulation addressing the most frequently occurring human-factor caused accidents involving equipment in the foul, shoving movements, and the handling of switches and derails. Section 217.9 also requires railroads' operational testing programs place particular emphasis on other operating rules' violations that are likely to cause accidents. FRA's regulation governing the use of distracting electronic devices by on-duty railroad operating employees also addresses operational testing. Section 220.315 requires railroads' operational testing programs under part 217 include operational tests addressing the restrictions on electronic device use in subpart C of part 220. The overall intent of part 217's operational testing requirement is to raise awareness of, and ensure compliance with, relevant railroad operating rules to prevent the occurrence of accidents.

In that vein, after the 2008 Chatsworth accident where the locomotive engineer was found to have used a personal electronic device while operating passenger trains in contravention of Metrolink operating rules, NTSB Safety Recommendations R–10–01 & –02 recommended using inward-facing cameras to conduct operational tests to ensure compliance with rules prohibiting the use of distracting electronic devices. Due to the nature of railroad operations where train crews typically lack direct managerial supervision while traveling in the cab of a locomotive, the NTSB explained a locomotive image recording may be the only practical method of determining employee compliance with prohibitions on the use of distracting electronic devices while operating a train. The NTSB recommended FRA require railroads to regularly review locomotive recordings to carry out efficiency tests and system-wide performance monitoring programs, and verify that train crew actions comply with applicable rules and procedures essential to safety. In making these recommendations, the NTSB explained that recordings could help railroad management prevent accidents by identifying safety issues before they lead to injuries and loss of life.[92]

FRA agrees with NTSB that the use of in-cab recordings to conduct operational tests is a valuable tool to improve safety, particularly tests conducted to determine compliance with part 220's restrictions on the use of personal electronic devices. FRA believes

[92] National Transportation Safety Board, *Reiteration of Safety Recommendations R–10–01 & R–10–02* (July 8, 2015); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R-10-001-002.pdf.*

passenger railroads subject to the recording device requirements promulgated in a final rule will utilize inward-facing image and audio recordings as a method to conduct operational tests. However, FRA has not proposed requiring passenger railroads to utilize in-cab recordings to conduct operational tests in this NPRM. This is consistent with existing part 217, which generally does not mandate the methods railroads must use to conduct operational tests. Part 217 requires railroads to adopt a written program of operational tests, and to conduct operational tests according to that written program. FRA requests comment on whether in a final rule the agency should require passenger railroads to utilize the devices' recordings as a method of performing operational tests.

FRA is proposing to amend part 217 by establishing minimum requirements that passenger railroads must comply with if they choose to utilize locomotive recordings to conduct operational tests. FRA proposes to amend existing § 217.9(b) by adding a new paragraph (b)(3), stating that passenger railroads utilizing inward-facing locomotive image or audio recordings to conduct operational tests and inspections shall adopt and comply with procedures in their written program for how such tests are to be conducted. Proposed paragraph (b)(3) also requires railroads perform such operational tests randomly.

As discussed during the RSAC process, FRA's intent in proposing this requirement is to prevent in-cab image or audio recordings from being used to target employees and to implement Congress' express requirement in the FAST Act that passenger railroads subject to the Statute cannot use such recordings to retaliate against employees. 49 U.S.C. 20168(i). The proposed text of paragraph (b)(3) of this section would require passenger railroads to establish objective, neutral criteria for how employees subject to an operational test using in-cab recordings are selected for such a test within a specified time frame, so that no employee may be selected for a test simply at the railroad's discretion. FRA understands train crew members and other employees that might operate locomotives or perform work in locomotive cabs comprise the group of passenger railroad employees that might be selected to be operationally tested. This proposal to limit these railroads' ''exercise of discretion'' does not mean a railroad's criteria cannot limit applicability of operational tests conducted via locomotive recordings to the specific group of employees operating trains or who otherwise perform work in locomotive cabs. The language in this proposal mimics language in FRA's random drug and alcohol testing regulation at 49 CFR part 219. Overall, FRA believes the procedures for random selection of employees for drug and alcohol testing procedures under part 219 have worked well, and passenger railroads could use those procedures for the random selection of train crewmembers for operational testing using in-cab recordings.

Proposed paragraph (b)(3) also requires that any operational test using passenger in-cab image or audio recordings be performed within 72 hours of the completion of the employee's tour of duty that is the subject of the test. For example, if a passenger train crewmember who is the subject of the operational test using in-cab recordings has a tour of duty that ends at 7:00 p.m. on a Monday, a railroad manager must perform the operational test (review of the recordings from the tour of duty that ended at 7:00 p.m. on Monday) no later than 7:00 p.m. on Thursday. This would mean that any procedures required to be followed to perform an operational test (*e.g.,* a required debriefing with the employee who was the subject of the test under a railroad's program) must be completed within the 72-hour period.

This proposal is intended to maximize the safety benefit of operational testing and, again, to implement Congress' mandate that recordings not be used as a retaliatory tool. Concerns were raised during the Working Group's discussions that an operational test performed at a much later date would have limited safety utility because the employee may not recall the scenario in question, and, in instances where rules non-compliance was alleged, may not be able to appropriately respond to and defend against such an allegation. Ideally, an operational test and the resultant employee feedback would occur in near real time as many railroads' written programs require currently. FRA's 72-hour proposal here recognizes it may take time for a passenger railroad conducting such testing to download and review relevant recordings, while ensuring any necessary discussions with the employee being tested occur without undue delay, preferably as soon as possible. FRA requests comment on this proposed 72-hour time-period limitation. FRA also wishes to make clear this proposed 72-hour limitation applies only to conducting operational tests and would not apply to investigations of railroad accidents/incidents or to violations of Federal railroad safety laws, regulations, and orders, or any criminal laws. FRA emphasizes it believes the best utility for the use of in-cab recordings to conduct operational tests would largely be to determine operating employees' compliance with railroad operating rules and practices addressing restrictions on using personal electronic devices while performing safety-related duties and to deter noncompliance.

Proposed paragraph (b)(4) provides FRA may review a passenger railroad's procedures for conducting such operational tests using in-cab recordings under paragraph (b)(3), and FRA may disapprove such procedures for cause stated under existing § 217.9(h). For example, FRA would utilize such procedures if a passenger railroad's written program did not have appropriate randomness protocols required by proposed paragraph (b)(3). Under existing § 217.9(h), a passenger railroad would then have 35 days to either amend and re-submit its written program, or to provide a written response in support of its program, after which FRA would inform the railroad of FRA's final decision in writing.

Proposed Amendments to 49 CFR Part 218 (Part 218)

Section 218.53 Scope and Definitions

FRA is proposing to amend existing part 218 to deem any locomotive-mounted image or audio recording device or equipment installed in a passenger train as a ''safety device.'' Existing part 218, subpart D prohibits individuals from tampering with a ''safety device,'' and defines that term to mean ''any locomotive-mounted equipment that is used either to assure that the locomotive operator is alert, not physically incapacitated, aware of and complying with the indications of a signal system or other operational control system or to record data concerning the operation of that locomotive or the train it is powering.'' 49 CFR 218.53(c). FRA announced it intended to treat recording devices as ''safety devices'' during Working Group discussions.

FRA also proposes to amend existing § 218.53(c) by correcting the reference to appendix B in the existing definition of ''safety device'' because FRA's statement of agency policy regarding safety devices is actually located in appendix C to part 218. This proposal would merely correct this existing reference. Tampering with safety devices, or knowingly operating (or permitting to be operated) a passenger train with a disabled safety device

constitutes an event for which a passenger locomotive engineer's or conductor's certification must be revoked under existing parts 240 and 242. Thus, under this proposal, a locomotive engineer or conductor of a commuter or intercity passenger train found to have tampered with an in-cab image or audio recording device under §§ 218.55 or 218.57 shall have his or her certification revoked.

FRA is also proposing to add a new paragraph (d) to § 218.53 that makes clear the requirements in §§ 218.59 through 218.61 do not apply to such recording devices voluntarily installed on freight locomotives. Because these devices are voluntarily installed by the freight railroad, the railroad can operate a lead locomotive without such functioning recording devices.

As discussed during Working Group meetings, in 2010 FRA responded to a letter from Metrolink regarding whether FRA considered an inward-facing camera on a Metrolink locomotive to be a ''safety device'' under part 218. In its May 18, 2010, response, which FRA has added to the public docket for this rulemaking, FRA explained to Metrolink that it did not consider such cameras to be safety devices under part 218.[93] At that time, railroads were not utilizing inward-facing image recording devices on a large scale, FRA did not believe it necessary to require installation of such devices, and FRA had not contemplated using cameras as ''safety devices'' when formulating the tampering restrictions in existing part 218. However, through this rulemaking's notice and comment process, FRA is proposing to amend its position on the treatment of in-cab audio and image recording devices on passenger locomotives as safety devices. First, installation of such devices would now be required by Federal regulation, as mandated by Congress in the FAST Act. In addition, the use of such recording devices as a post-accident investigation and safety tool has evolved rapidly in the industry since 2010, even without Federal regulatory action.

Passenger locomotive image and audio recording devices are like locomotive event recorders, which are required by § 229.135 in the lead locomotives of trains traveling more than 30 mph, and which have also long been considered safety devices by existing part 218. Locomotive event recorders record specified parameters regarding operation of a locomotive's controls, allowing for in-depth post-accident causation analysis and determinations, as well as allowing railroads to monitor locomotive engineers' train handling performance and rules compliance. However, as NTSB conveyed, locomotive event recorders cannot answer questions about a train crew's knowledge or actions during accident investigations where such information is lacking, such as for the Amtrak locomotive engineer's actions before the May 2015 accident at Frankford Junction in Philadelphia discussed above.

The discussion in existing appendix C explains that part 218's language is expansive enough to cover safety devices that may appear in the future. Appendix C also explains that FRA may add certain safety devices not previously considered within the scope of part 218's tampering restrictions, should instances of tampering with such devices be discovered. FRA has recently investigated incidents where it appears that the locomotive engineer has willfully tampered with a locomotive's inward-facing camera system. The engineer was operating a freight train with a foreign railroad's locomotive in the lead. The engineer was recorded covering inward-facing cameras on the locomotive, but was apparently unaware of another camera mounted on the ceiling of the engine near the back wall of the cab. That camera recorded him appearing to play a video game on a personal electronic device while operating the moving freight train. The railroad that owns the locomotive discovered this apparent violation of 49 CFR part 220 during a random review of the recording system's footage and provided that recording to FRA.

FRA believes image recording systems and an accompanying prohibition on tampering with such systems in passenger locomotives (and the accompanying consequences for tampering violations) will act as a deterrent to prevent instances of tampering and unsafe behaviors that the cameras would otherwise record. In the example above, the locomotive engineer clearly modified his behavior to avoid being detected by the locomotive's image recording system. Under the proposal here, even covering the locomotive's camera would be a violation that would result in loss of the locomotive engineer's certification. FRA believes the proposed amendments to part 218 would deter a locomotive engineer from covering the locomotive's cameras, and from subsequently using a personal electronic device while operating a moving train. Such a deterrent would directly improve passenger train safety.

In-cab image and audio recording devices will supplement the information recorded by a locomotive event recorder, and in certain accident investigations, may answer questions regarding operator actions (or lack of action) before a railroad accident. FRA believes passenger locomotive in-cab recording devices are valuable railroad safety and operational monitoring devices that should be treated as safety devices prohibited from being willfully tampered with by 49 U.S.C. 20138 and that statute's implementing regulation at part 218, subpart D. In sum, a recording device that is tampered with loses its utility as a safety tool, and as a post-accident investigation tool that might record information that could be used to prevent future railroad accidents. Therefore, FRA believes it is reasonable to treat image and audio recording systems on passenger trains as ''safety devices.''

Section 218.61 Authority To Deactivate Safety Devices

FRA is proposing to revise § 218.61(c) to clarify that locomotive image recording devices on passenger locomotives can only be deactivated under the proposed requirements of 49 CFR 229.136. FRA is also proposing to add language to paragraph (c) to clarify that freight railroads that install inward- and outward facing image recording devices do not have to follow the requirements of 49 CFR 229.136 to deactivate their safety devices.

Appendix C to Part 218 Statement of Agency Enforcement Policy on Tampering

For the reasons discussed directly above, FRA is proposing to amend existing part 218, appendix C by adding ''passenger locomotive-mounted image and audio recording equipment'' to the list of safety devices described in the fourth paragraph of that appendix. Such equipment would include recording devices, any memory modules used to store recording data, or any of these devices' electronic connections or other appurtenances on railroad carriers that provide regularly scheduled intercity or commuter rail passenger transportation. FRA proposes to expressly include these recording devices in the list of safety devices prohibited from being tampered with under part 218, subpart D. This proposed amendment to part 218 would apply to all passenger locomotive image and audio recording systems, regardless of whether a final rule requires installation of such a system on a particular passenger locomotive. Thus, even if a railroad voluntarily chooses to install an image or audio recording

[93] *See* NPRM docket; Mark H. Tessler letter to Metrolink, *Locomotive video cameras,* (May 18, 2010).

system on a passenger locomotive, part 218 would still prohibit tampering with such a system.

Proposed Amendments to 49 CFR Part 229 (Part 229)

Section 229.5 Definitions

FRA is proposing to amend the existing definition in this section of the term ''event recorder memory module'' to include the portion of an event recorder memory module (or a separate memory module) used to record any data from a locomotive's in-cab image or audio recording devices. This proposed FRA regulation implements the FAST Act requirement that inward- and outward-facing image recording devices on lead passenger locomotives have crash and fire protections for any recordings stored only within a controlling locomotive cab or cab car operating compartment. 49 U.S.C. 20168(b). As explained in the analysis for § 229.136 below, FRA is proposing that the existing crashworthiness requirements for locomotive event recorder memory modules in part 229, appendix D apply to passenger locomotive in-cab image or audio recording devices. Thus, FRA would add recordings made by passenger locomotive in-cab image or audio recording devices to the existing definition of ''event recorder memory module'' in this section. The crashworthiness requirements for such recordings would apply to recordings made on lead passenger locomotives, and could also be used by freight railroads in their locomotives but are not required by this NPRM.

FRA is also proposing to amend this section to add a definition for the new term ''image recording system.'' This new term would encompass all equipment that is part of the system for making and retaining the image recordings proposed in § 229.136. This term would include cameras or other electronic devices that capture images and any equipment that converts those images into usable electronic data (capable of being viewed as a video) transmitted to, and stored on, the recording system's memory module. A memory module on which image recording data is stored is considered to be part of the image recording system.

FRA is also proposing to amend this section to add a definition for the new term ''NTSB.'' This new term is the acronym for the National Transportation Safety Board, which is an independent U.S. government investigative agency responsible for civil transportation accident investigation. FRA is defining the proposed term as a shorter form of its longer name: The National Transportation Safety Board. FRA is inserting this term, so FRA can use the shorter form of ''NTSB'' in the regulation.

Finally, FRA is proposing to amend this section to add a definition for the new term ''recording device.'' This new term would generically describe inward- and outward-facing image recording devices and any in-cab audio recording devices on a passenger locomotive. Any in-cab audio recording devices that are installed on a passenger locomotive, irrespective of whether such devices are required by a final rule, would be subject to the preservation requirements proposed in § 229.136.

Section 229.136 Locomotive Image and Audio Recording Devices

FRA proposes to amend part 229 by adding a new § 229.136. This new section would establish installation and technical requirements for inward- and outward-facing recording devices on lead passenger locomotives. This proposed section also would explain the preservation and handling requirements for any recordings such devices make, and the permitted uses of such recordings. As mentioned in the preamble above, FRA proposes to apply the requirements in this section to lead locomotives in trains operated in intercity passenger or commuter service only. The terms ''lead locomotive,'' ''locomotive,'' ''control cab locomotive,'' ''DMU locomotive,'' and ''MU locomotive'' would remain as defined in existing § 229.5.

The FAST Act mandated installation of recording devices only on lead passenger locomotives. FRA is not proposing to require inward- and outward-facing recording devices to be installed in freight locomotives at this time for a variety of reasons that FRA has previously stated in this NPRM. Foremost, the FAST Act requires FRA to promulgate regulations that require all commuter and intercity passenger railroads to install inward- and outward-facing image recording devices in all of their lead locomotives; however, there is no corresponding statutory mandate for freight railroads or their locomotives. In addition, the cost to freight railroads of such a requirement could outweigh its positive safety benefits, which are presented earlier in this NPRM. Finally, many freight railroads, including virtually all Class I railroads, have already begun the process of installing locomotive recording devices in their locomotives. Therefore, FRA is declining to propose requiring recording devices on freight locomotives at this time.

Proposed paragraph (a) of this section would require image recordings be made ahead of the ''F'' end of the lead locomotive (outward-facing) and inside the cab of the lead locomotive (inward-facing) on any train in commuter or intercity passenger service within four years after the date a final rule is published. The rule would require inward-facing recordings to be made on such a passenger train's controlling locomotive if the lead locomotive is not the controlling locomotive. The proposed rule text for this section would also require that if any passenger locomotive is equipped with the required image recording system, the system must be operating and recording when the train is in motion, regardless of the train's speed. For example, a lead passenger locomotive equipped with image-recording devices under this proposed paragraph must have any image recording devices turned on and recording the entire time the train is in motion. This proposal is intended to maximize the safety benefit for lead passenger locomotives equipped with image recording devices, and ensure such devices are always operative at any point. Freight railroad that have voluntarily installed locomotive recording devices do not need to adhere to this requirement. However, FRA believes such a practice may be beneficial to freight railroads that have such devices installed on their lead locomotives. FRA is requesting comment above on whether a final rule should also address recording requirements when trains are stopped.

FRA has used the terminology ''commuter or intercity passenger service'' in proposed paragraph (a) and uses similar language throughout this section to mean the same thing as the terms ''intercity rail passenger or commuter rail passenger transportation'' in the Statute. This language is consistent with existing regulatory language in part 229, specifically § 229.125(h), to describe this service.

FRA clarifies here that the proposals in this NPRM do not apply to any image recorders or any other recording devices that are not mounted in a locomotive (or control compartment of a control cab locomotive) for purposes of recording train crew actions or events occurring ahead of a train's movement (outward-facing camera). Thus, the NPRM proposals would not apply to (or require installation of) any recording devices within the body of a passenger car, mounted on poles in railroad yards, or located on or near roadway facilities, stations, or any other railroad property.

Proposed paragraph (a)(2) contains the phase-in requirements for the

installation of image recording systems. An affected lead passenger locomotive must be equipped with an image recording device system no later than four years after the date a final rule is published. However, FRA proposes to require any image recording systems installed on a lead passenger locomotive more than one year after the date of publication of a final rule comply with the requirements of this section. FRA believes this proposal would help achieve prompt implementation of a final rule's image recording system requirements, while providing a reasonable timeframe to allow passenger railroads to develop, obtain, and install appropriate image recording systems (within four years of the date of publication of a final rule). As discussed above, many passenger railroads have already installed recording systems at their own discretion. However, some of those systems may not fully comply with the requirements of this proposed section. To avoid imposing unnecessary costs on industry and to avoid penalizing early adopters of camera technology being used for safety purposes, FRA included the proposed four-year deadline. FRA considered the potential economic and technical burdens involved with researching, acquiring, and installing image recording systems (and developing and implementing relevant image recording system procedures), when formulating this proposed installation timeline. FRA requests comment regarding the appropriateness of the implementation dates proposed in this section.

FRA proposes in paragraph (a)(3) of this section that passenger railroads must provide notice to crewmembers that they are in a locomotive equipped with recorders via a notation on the Form FRA F6180–49A. This proposal is intended to alert crewmembers that there is no expectation of privacy in the cab of the locomotives while performing duties for the railroad. FRA notes that this proposal would also require notice if a passenger locomotive is equipped with any audio recording devices, even if audio recording devices are not required in a final rule but a railroad has chosen to equip a locomotive with such devices. This proposed regulation would not apply to freight railroads that have voluntarily installed visual or audio recording devices in their locomotives. However, FRA encourages freight railroads to provide notice to their crewmember that recording devices are present.

Paragraph (a)(4) proposes that the image recording system shall record at least the most recent 12 hours of operation of a lead locomotive in commuter or intercity service. This proposal would also apply to any audio recordings if a passenger railroad installs audio recording devices on a lead locomotive. The FAST Act requires a lead passenger train locomotive's image recording systems to have a minimum 12-hour continuous recording capability. This 12-hour minimum recording proposal is also consistent with NTSB Safety Recommendation R–10–01 discussed above. A 12-hour recording period would, in many instances, capture a train crew's entire tour during the time they perform duties under the hours of service laws. NTSB has indicated that crew ''actions or inactions at any time during that period could set the stage for an accident.'' [94]

Paragraph (a)(5) proposes that locomotive recording device data (including audio recorder data if installed) on lead locomotives in commuter or intercity passenger service be recorded on a memory module meeting the requirements for a certified crashworthy event recorder memory module described in part 229, appendix D. Appendix D establishes the general requirements for memory modules certified by their manufacturers as crashworthy, and contains performance criteria for survivability from fire, impact shock, crush, fluid immersion, and hydrostatic pressure. The FAST Act requires passenger locomotive image recording devices have crash and fire protections for any in-cab image recordings stored only within a controlling locomotive cab or cab car operating compartment. Further, NTSB Safety Recommendation R–10–01 also recommended FRA require railroads to install crash- and fire-protected inward- and outward-facing audio and image recorders. FRA is not proposing to require passenger railroads to use a locomotive's existing crashworthy memory module to also store image and audio recordings, although that is an option under this proposal. Railroads may use a memory module to store image and audio recordings separate from that storing event recorder data meeting the requirements of appendix D.

The railroad industry has much experience with the standards in appendix D, and collaboratively created these standards via RSAC recommendations. 70 FR 37920 (June 30, 2005). In sum, FRA believes its proposed paragraph (a)(5) with respect to passenger railroads would fulfill the FAST Act's recording and crash and fire protection requirements and the NTSB's technical recommendations on image recording devices in Safety Recommendation R–10–01.

FRA is not proposing memory module requirements for freight railroads that have or are planning to voluntarily install inward- and outward-facing recording devices on their locomotives. However, FRA recommends that if the railroad choses to use a memory module, it should mount the module in such a way as to provide the module with maximum protection.

In addition, eventually locomotive recording device data may primarily be recorded on standard crashworthy memory module equipment associated with required PTC systems, and the future costs of equipping passenger locomotives with crashworthy memory modules might be overstated by this NPRM's Regulatory Impact Analysis (RIA). The lead locomotive of a train equipped and operating with a PTC system under 49 CFR part 236 must have a locomotive event recorder that records train control data, including specific PTC system data. 49 CFR 236.1005(d). The PTC event recorders for locomotives manufactured after October 1, 2009, must be crashworthy. Such PTC event recorders may also eventually include the functionality to record image and audio recording device data. FRA is aware of crashworthy PTC event recorder products already under development that include image recording memory functions.[95] A single crashworthy event recorder memory module that fulfills the existing locomotive safety requirements of part 229, the PTC requirements of part 236, and any future image recording device requirements adopted in this rulemaking, may make economic and logistical sense for railroads to acquire and install on affected locomotives. In the future, railroads may voluntarily install such a new, single, crashworthy PTC memory module that fulfills multiple railroad safety regulatory requirements on locomotives.

FRA seeks comments on the proposed crashworthy memory retention requirements for passenger locomotive recording devices discussed above. FRA is specifically interested in making the final rule appropriately performance-based and cost-effective. FRA believes it has proposed a cost-effective method of meeting the FAST Act's crashworthiness mandate for passenger train locomotive recording devices while attempting to minimize potential regulatory costs, but is interested in comments addressing potential

[94] National Transportation Safety Board, *Reiteration of Safety Recommendations R–10–01 & R–10–02* (July 8, 2015); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R-10-001-002.pdf.*

alternatives to meet an appropriate crashworthiness level to protect stored locomotive image recording system data.

Next, proposed paragraph (b) of this section would establish the requirements for the outward-facing image recording functional capabilities on passenger trains. FRA's proposal would explain what must be captured by outward-facing image recording devices that are installed on passenger trains, but leaves it to a railroad's discretion to decide what equipment it will use to fulfill the proposed requirements (with one exception discussed below). FRA has proposed general functional requirements instead of equipment specifications to accommodate the development of future technologies capable of fulfilling the outward-facing image recorder requirements. The proposed requirements of paragraph (b) apply only to outward-facing image recorders installed on lead passenger train locomotives. Freight railroads may choose to follow these proposed requirements for outward-facing recording devices if they chose to install such devices on their locomotives. However, the proposal would not require they do so.

The proposed outward-facing image recording device requirements for lead passenger train locomotives are intended to fulfill the safety-related investigation purposes of recording: (1) Events leading up to a train collision; (2) highway-rail grade crossing or trespasser accidents, including motor vehicle operator actions leading up to such accidents and the functioning of any visible active grade crossing warning devices; (3) wayside signal indications; (4) visible condition of structures and track (*e.g.,* position of switch points, broken rails where visible, bridge conditions, washouts, *etc.*) that an equipped locomotive approaches and travels over; and (5) any other events relevant to a collision or derailment. FRA developed the proposed text of paragraph (b) with the goal of requiring outward-facing image recording devices on passenger trains to capture images to provide more information to help the safety-related investigations of the above-listed events.

First, proposed paragraph (b) requires the recording system on passenger trains to include an image recording device aligned to point parallel to the centerline of tangent track on which the lead locomotive is traveling. FRA has specified that the recordings made would have to be able to distinguish different wayside signal aspects. FRA believes this feature of outward-facing image recordings would be critical in post-accident investigations, as most of the accidents described above for which the NTSB made image recording device recommendations involved whether signal systems were properly functioning, properly displayed, and complied with by train crews.

Second, proposed paragraph (b) would require outward-facing image recording devices on lead passenger train locomotives to be able to function in both day and lowlight/nighttime conditions with illumination from the equipped locomotive's headlight. FRA also proposes that outward-facing image recording devices on such passenger locomotives record at a minimum recording rate of 15 frames per second (fps) (or its equivalent). FRA chose to propose this minimum recording rate threshold to allow for more memory module storage savings than costlier higher-speed or even continuous-action recording (generally considered to be about 23 fps). Industry raised concerns about the cost of obtaining crashworthy memory modules that could retain 12-hours of higher speed and/or higher resolution image recordings during the Working Group meetings. FRA believes a minimum 15 fps requirement will provide accident investigators and railroads a sufficient image recording to analyze the events leading up to a grade crossing collision or other collisions, while balancing the industry's stated cost concern. For example, in 1/15 of a second a car travelling at 45 miles per hour will move approximately 4.4 feet between frames. FRA believes recordings at 15 fps are adequate to fulfill the safety-related investigatory purposes for such recordings listed above, and notes this standard is the same frame rate speed used in certain widely available motor vehicle dashboard camera systems. In this section, to ensure accident investigators can coordinate various sources of information gathered during a railroad accident investigation, FRA also proposes to require an accurate time and date stamp be on outward-facing image recordings.

Next, the FAST Act establishes that a railroad is not required to cease or restrict operations upon a technical failure of an inward- or outward-facing image recording device, but that such device shall be repaired or replaced ''as soon as practicable.'' 49 U.S.C. 20168(j). In proposed paragraph (b), FRA has specified that ''as soon as practicable'' would mean that if a passenger train's lead locomotive's outward-facing image recording system fails, it could not be used as a passenger train's lead locomotive after the next calendar day's inspection of the locomotive required by § 229.21 unless a railroad has first replaced or repaired the recording system. FRA notes it would not consider the en route image recording device failure on a passenger train's lead locomotive to be a violation under existing part 218, subpart D (for operating a controlling locomotive of a train with a disabled safety device) if the locomotive was not used as a passenger train's lead locomotive after the next calendar day's inspection as proposed. This proposal mirrors FRA's treatment of event recorders that fail en route under § 229.135. FRA believes that an image recording device that fails en route on a passenger train's lead locomotive should be treated in the same manner as an event recorder; however, FRA is requesting comments on the burden to passenger railroads of requiring such a defective image recording device to be repaired or replaced at the next calendar day inspection.

Proposed paragraph (c) of this section would establish functional requirements for the inward-facing image recording device on passenger train lead locomotives. The requirements in this proposed paragraph do not apply to inward-facing image recorders installed on freight trains. Freight railroads may choose to follow these proposed requirements for inward-facing recording devices if they chose to install such devices on their locomotives. However, the proposal would not require they do so.

FRA's proposal does not specify the number of inward-facing recording devices that would be required in a passenger train's lead locomotive, but rather proposes that an installed device must provide complete coverage of all areas of the controlling locomotive cab where a crewmember typically may be positioned, including complete coverage of the instruments and controls required to operate the controlling locomotive in normal use. This would include image recording coverage of extra permanent seats in the cab and any jump seats. Although this NPRM does not require multiple inward-facing recording devices in a lead locomotive, FRA makes clear that nothing proposed in this NPRM would preclude a railroad from installing multiple image recording devices in each of its locomotive cabs; however, the NPRM's RIA assumes that only one inward-facing camera in the locomotive would be necessary to satisfy the proposed requirements of this section.

FRA proposes that a recording device be equipped with sufficient resolution to record train crew actions, including

whether a train crew member is physically incapacitated or is not complying with signal system or other operational control system indications. FRA's intent is not to have image recording devices focused on the faces of the individuals in the cab, but rather to require sufficient clarity so that, over a period of operation, the actions of the cab occupants can be monitored.

FRA's intends that an inward-facing image recording device on passenger train lead locomotives would have sufficient clarity and resolution to show whether occupants of the cab are using or manipulating small hand-held personal electronic devices such as cell phones. FRA is not proposing to require the image recording devices to be capable of showing what was displayed on the screen of such a hand-held device, but simply whether the device was turned on and whether a person was using the device. As discussed above, FRA believes one of the best proactive safety uses of an inward-facing camera system is to conduct operational tests to ensure operating employees' compliance with the restrictions on the use of personal electronic devices under part 220, subpart C.

Inward-facing image recorders would also likely be capable of allowing viewers to identify signs of obvious fatigue, such as motions of the head or body that may indicate obvious fatigue or whether a cab occupant appears to be asleep. For example, constant head nodding or dozing of a locomotive engineer, as well as the engineer slumped over asleep, would be signs of obvious fatigue.

As discussed at length during the RSAC Working Group Meetings, fatigue is an ongoing issue in the railroad industry and is often a relevant causal factor that is considered during post-accident investigations. While FRA has a number of efforts underway to address the problem of fatigue in the industry, the inward-facing image recording device requirement would assist accident investigators in making more accurate fatigue-related determinations, with the ultimate aim of taking actions to prevent future accidents caused by fatigue.

Although FRA understands that camera systems are under development that will permit evaluating a crewmember's alertness based on patterns of eye blinks, it is not FRA's intent to require installation of such a system for passenger locomotives. FRA believes the proposed requirements in this paragraph can be met by the inward-facing recording device recording images at a rate as few as 5 fps (or its equivalent), because motion in the cab occurs at a much lower rate than in front of the lead locomotive. For example, APTA's recommended practice for the selection of recording systems for use in transit-related closed circuit television recording systems [96] specifies that 5 fps is the minimum recommended frame rate for use in low-traffic areas or areas where only walking-pace motion is likely (such as passenger areas). FRA has also proposed in paragraph (c) that the inward-facing image recording system for passenger train lead locomotives be able to record the desired actions using the ambient light in the cab. And, if ambient light levels drop too low for normal operation, the image recorders(s) should automatically switch to infrared or another operating mode that gives the recording sufficient clarity to comply with this rule's requirements. FRA has specified using infrared technology to give sufficient image recordings in low-light or nighttime conditions in the proposed rule text. Feedback from the industry indicates that infrared systems work well to provide sufficient image recording clarity in low-light conditions and does not interfere with a crew's ability to see, especially out the locomotive's windows. KCS' presentation to the Working Group indicted that its infrared camera devices emit a barely distinguishable glow in the cab of the locomotive. Infrared image recording devices are also widely available and relatively inexpensive to purchase. FRA has also referenced ''another operating mode'' to capture using other sufficient low-light image recording capability technologies that exist or may arise. FRA seeks comments on whether any other technology exists or is under development that may accomplish the same purpose as infrared technology use with image recording devices in low-light situations. FRA reminds railroads that any infrared or other lighting operation in low light conditions should not interfere with a crew's vision (*see* 49 CFR 229.127(a)), and that the placement of the image recording devices should not obstruct a crew's view of the right-of-way from its normal positions in the cab (49 CFR 229.119(b)).

Similar to the discussion above for outward-facing image recording devices, FRA is also proposing in paragraph (c) that any inward-facing image recordings in passenger train lead locomotives have an accurate date and time stamp. FRA believes an accurate time and date stamp is essential to the usefulness of the recordings, especially for post-accident investigations. Also, similar to the proposal for outward-facing cameras above, FRA is proposing that when there is an en route failure of a passenger locomotive's inward-facing image recording device, the locomotive could not be used as a train's lead locomotive after the next calendar day's inspection of the locomotive as required by § 229.21 if the recording device is not first repaired or replaced.

Finally, FRA has also proposed under this paragraph (c) that no recordings be made of any activities within a passenger locomotive's sanitation compartment as defined by existing § 229.5. A locomotive's sanitation compartment is an enclosed compartment that contains a toilet facility for employee use. The Working Group discussed this topic, and FRA believes such recordings would be an unwarranted invasion of personal privacy and would likely be illegal. In light of those concerns, FRA is proposing to expressly prohibit recordings of any activities in a passenger locomotive's sanitation compartment or placing any image recording device where it would allow the device to record such activities. FRA strongly recommends that freight railroads likewise ensure that voluntarily installed recording devices do not infringe on the privacy of their locomotives' sanitation compartments.

Proposed paragraph (d) would require wired or wireless connections to be provided to ensure only authorized passenger railroad personnel can download image and audio recordings from the certified crashworthy memory module and any other standard memory module. Due to potential for misuse of recordings locomotive image and audio recording systems make, FRA proposes that passenger railroads use electronic security measures to ensure only authorized railroad personnel can download recordings. Such security measures could include password or passcode protection to access a memory module. Proposed paragraph (d) would give passenger railroads discretion whether to use wired or wireless download connections and which appropriate electronic security measures to adopt. This proposed discretion would accommodate improved electronic information security technologies that develop in the future. FRA seeks comments on whether

[96] American Public Transportation Association Standards Development Program Recommended Practice, *Selection of Cameras, Digital Recording Systems, Digital High-Speed Networks and Trainlines for Use in Transit-Related CCTV Systems,* APTA IT–CCTV–RP–001–11 (June 2011); available online at: *http://www.apta.com/resources/standards/Documents/APTA-IT-CCTV-RP-001-11.pdf.*

appropriate electronic download and security features, such as encryption functions, should be specified in a final rule, or whether such features are better addressed by individual passenger railroads or an industry-adopted standard. While FRA is not proposing to apply paragraph (d) to voluntarily installed inward- and outward-facing recording devices on freight locomotives, FRA suggests freight railroads take necessary steps to prevent the unauthorized downloading of locomotive image and audio recordings. FRA also seeks comments from interested parties as to whether the requirements proposed in this section should apply to any railroad that voluntarily installs image or audio recording devices.

Proposed paragraph (e) of this section would require specified inspection, testing, and maintenance of locomotive image and audio recording device systems on passenger train lead locomotives similar to those found in FRA's locomotive event recorder regulation. Paragraph (e) would first require such a passenger locomotive's image recording system (and any installed audio recording system) have self-monitoring features. This means the recording system can monitor its own operation and display an indication to a passenger train's crew when any data required to be stored is not stored, or when the stored data does not match the data received from the image recording devices. At a minimum, the self-monitoring features must indicate to the passenger locomotive's crew whether the system is turned on, and, in some fashion, that power is available to the system. This proposal leaves to the discretion of the passenger railroads which self-monitoring features to install to avoid inhibiting future changes in available technology that could be used for system self-monitoring. Other, more sophisticated self-monitoring features, if available, must also indicate to a passenger train's crew if a fault with the recording system has been detected. FRA acknowledges that some faults may go undetected under these requirements. However, FRA believes the additional requirement for download of sample recordings at the periodic inspection intervals under proposed paragraph (e) will serve as an appropriate back-up test, similar to the periodic and annual inspection requirements in existing § 229.135 for locomotive event recorders. FRA is declining to apply the requirements proposed in paragraph (e) to locomotive image and audio recording devices voluntarily installed by freight railroads.

FRA seeks comment on whether appropriate restrictions in a final rule should be placed on sample recording device downloads from passenger train lead locomotives made under proposed paragraph (e). FRA anticipates sample downloads for inspection or maintenance purposes might often be taken by non-managerial or operating employees, such as mechanical department employees in a locomotive repair facility. However, FRA believes these sample downloads, like all image or audio recording device downloads from passenger trains, should be subject to the security proposals in § 229.136(d) and (f) to avoid mishandling or misuse of locomotive recordings. Further, FRA believes it may be appropriate in a final rule to require limiting the periodic inspection download to, for instance, the last 30 seconds of operation before the most recent normal shutdown of the system. Further, a requirement that such a download for inspection or testing purposes must be deleted once proper functioning of an image recording system is confirmed might also be appropriate. FRA requests comment on whether these or similar requirements are necessary in a final rule.

Paragraph (f) of this section proposes preservation and handling requirements for image and audio recordings on passenger locomotives' image and audio recording systems. Paragraph (f) would implement the FAST Act's requirements to address the appropriate uses of passenger locomotive recordings and protect such recordings from unauthorized release.

Paragraph (f)(1) would require each passenger railroad subject to proposed § 229.136 to adopt, maintain, and comply with a chain-of-custody procedure governing the handling and release of any locomotive image or audio recordings accessed by railroad personnel. As discussed in Section VI. above, in absence of an accident or incident where FRA or another Federal agency has taken possession of a locomotive's recording devices, a railroad's internal policies govern the handling of locomotive audio and video recordings. The policies passenger railroads establish under proposed subsection (f)(1) would govern the chain-of-custody for recordings, access to the recordings, and release of the recordings. The chain-of-custody procedure would have to specifically address the preservation and handling requirements for post-accident/incident recordings provided to FRA or other Federal agencies. Under this proposal, a passenger railroad's failure to comply with its procedures would make the railroad subject to FRA enforcement action.

FRA has not proposed specific rule text governing the chain-of-custody, handling, and release procedures industry-wide. The industry has much experience in this area given the significant number of passenger locomotives already equipped with outward- and inward-facing image recording devices. The industry also has experience with preservation and handling requirements for locomotive event recorders after the occurrence of an accident under existing § 229.135(e). Given the various types of locomotive recording equipment that different railroads may choose to utilize, various State court evidentiary and chain-of-custody laws and rules with which railroads must comply if the railroads use the recordings in litigation (*e.g.,* highway-rail grade crossing and trespasser accidents), and the potential cost of requiring railroads to amend existing procedures and to provide instruction on such new procedures, FRA does not believe it appropriate to impose specific chain-of-custody and release procedures in regulation text. Rather, passenger railroads must ensure their custody and release procedures and policies meet the requirements for handling recordings under the proposed rule. FRA's safety interest most strongly lies in ensuring recordings are handled properly post-accident.

Proposed paragraph (f)(1) permits passenger railroads to extract and analyze recorded data if the original downloaded data file, or an unanalyzed exact copy of it, is retained in secure custody under the railroad's procedures adopted under paragraph (f)(1) and not utilized for analysis or any other purpose except by direction of FRA or another Federal agency. FRA notes the proposed post-accident/incident preservation requirement in paragraph (f)(2) would apply to any recordings made on a lead passenger locomotive equipped with image or audio recording devices, without regard to whether a final rule requires a particular locomotive to be equipped with such devices. For example, if a passenger railroad voluntarily chose to equip a locomotive with an audio recording system and that locomotive was involved in an accident, the railroad would be required to preserve the audio recording in accordance with proposed paragraph (f)(2), which is discussed below. As explained in FRA's May 18, 2010, letter to Metrolink referenced above, such audio recordings from passenger locomotives are already subject to preservation under existing § 229.135(e)'s locomotive-mounted

recording preservation requirement. Such recordings would continue to be required to be preserved under this proposed paragraph. Thus, FRA's proposal regarding the preservation of locomotive recordings does not represent any regulatory change; however, some passenger railroads that previously did not have inward- or outward-facing image recording devices in their lead locomotives will now have to install such devices and will have to store the associated data.

Paragraph (f)(2) specifies the post-accident preservation requirements for passenger locomotive image and audio recordings. If a locomotive being used in commuter or intercity passenger service is equipped with image or audio recorders and involved in a reportable accident or incident under part 225 of this chapter (Part 225 reportable accident), this paragraph proposes that the railroad using the locomotive at the time of the accident or incident must preserve the devices' data for analysis by FRA or other Federal agencies for up to one year after the accident. The purpose of this proposed provision is to ensure data from passenger locomotive-mounted recording devices is retained for use by FRA as well as other Federal agencies to effectively conduct post-accident/incident investigations and more accurately determine their causes. Additionally, this paragraph's one-year retention requirement would fulfill the FAST Act's mandate that each passenger railroad preserve recording device data for one year after the date of a Part 225 reportable accident.

To allow for analysis by FRA or other Federal agencies during investigations, paragraph (f)(2) proposes to require a railroad to either provide the image and/or audio data in a usable format, or make available any platform, software, media device, etc. that is required to play back the image and/or audio data. In the past, FRA has encountered challenges in investigating accidents/incidents where railroads have provided data to FRA but not the means to read, view, or use the data. This proposal is intended to prevent that issue.

While freight locomotive recording devices are not covered under this proposed paragraph, preservation requirements for recordings from freight locomotive recording devices can be found in existing § 229.135(e). Section 229.135(e) already applies to any locomotive image and audio recordings that exist on a passenger or freight locomotive involved in a Part 225 reportable accident. As FRA explained in its 2010 letter to Metrolink discussed above, existing § 229.135(e) applies by its plain text to ''any other locomotive-mounted recording device or devices designed to record information concerning the functioning of a locomotive or train.'' FRA considers in-cab locomotive cameras to be ''other locomotive-mounted recording devices'' within the meaning of that existing section.

Paragraph (f)(3) would establish permissible uses of a passenger locomotive's image or audio recordings and is similar to proposed text FRA presented during the Working Group meetings. While proposed paragraph (f)(3) only applies to image or audio recordings from passenger locomotives, FRA is asking for comments on whether proposed paragraph (f)(3) should also apply to image or audio recordings from freight locomotives with voluntarily installed recording devices. The FAST Act, at 49 U.S.C. 20168(d), establishes three express purposes for which passenger railroads may use image recordings and gives FRA discretion to designate other appropriate purposes. The three express purposes stated in the FAST Act are for:

> (1) Verifying that train crew actions are in accordance with applicable safety laws and the railroad carrier's operating rules and procedures, including a system-wide program for such verification; (2) assisting in an investigation into the causation of a reportable accident or incident; and (3) documenting a criminal act or monitoring unauthorized occupancy of the controlling locomotive cab or car operating compartment.

49 U.S.C. 20168(d). FRA has divided the first express purpose in the FAST Act into two items under paragraph (f)(3), to expressly state passenger railroads may use recordings to investigate a violation of a Federal railroad safety law, regulation, or order, or a railroad's operating rules and procedures and to conduct operational tests under § 217.9. A railroad's program of operational testing is the existing method of conducting such a system-wide verification of rules compliance. FRA's regulations are issued under the authority of the Federal railroad safety laws, and often require railroads to adopt rules governing safe railroad operations. FRA believes Congress intended the Federal railroad safety regulations issued under the safety laws to be included under the Statute's provision, and FRA also has discretion under paragraph (d)(4) of the Statute to include other purposes FRA deems appropriate.

FRA has also incorporated the FAST Act's permission to use passenger locomotive recordings to assist in conducting investigations into the cause of reportable accidents. As discussed above, the NTSB has long sought to use recordings to help conduct post-accident investigations to accurately determine accident causes with the goal of improving railroad safety. This use will also enable passenger railroads to continue to utilize image recordings in litigation involving grade crossing and trespasser accidents.

Next, FRA has also proposed to incorporate the FAST Act's permission to use recordings on passenger trains to document any criminal acts and unauthorized occupancy of the cab, as well as the investigation of a suspected or confirmed act of terrorism. It is not FRA's intent that any of the proposals in this NPRM would affect the ability of law enforcement personnel or a Federal agency's access or use of passenger locomotive image or audio recordings to conduct criminal investigations, as is expressly stated in proposed paragraph (h) below. No current FRA regulations specifically address unauthorized occupancy of locomotive cabs. However, the issue of unauthorized occupancy of the locomotive cab has arisen many times in the past in the context of railroad accidents and other FRA safety-related investigations, is quite relevant information in accident investigations, and may also arise in certain criminal investigations.

In the FAST Act, Congress permits FRA to deem other appropriate purposes for which passenger railroads could use locomotive image recordings. Therefore, FRA proposes in paragraph (f)(3)(vii) to allow passenger railroads to use recordings to perform inspection, testing, maintenance, or repair activities to ensure inward-facing image recorders are properly installed and functioning. Under proposed § 229.136(e) discussed above, FRA expects that at each periodic inspection § 229.23 requires, the passenger railroad conducting the inspection of the equipped locomotive would take sample download(s) to confirm operation of the system, and, if necessary, repair the system to full operation. However, FRA also intends to allow a passenger railroad to use recordings to ensure the proper functioning of a recording system at any time, especially if a recording system malfunctions and requires repair.

FRA requests comment on whether other appropriate safety-related uses exist for locomotive recordings which it should include in a final rule. Further, although the FAST Act applies only to recordings that image recording devices make on passenger locomotives subject to the Act's requirements, FRA is requesting comment on whether paragraph (f)(3) should apply to recordings made by locomotives in

freight service and any locomotive audio recordings.

Proposed paragraph (g) of this section would implement the FAST Act's recording device review and approval process for passenger railroads. 49 U.S.C. 20168(c). The Act requires FRA to establish a review and approval process to ensure the three standards described in 49 U.S.C. 20168(b) are met (12-hour continuous recording capability, crash and fire protections, and accessibility for accident investigation review). FRA proposes that only passenger railroads (not freight) would have to submit information to FRA regarding whether the recording device system installed on locomotives subject to the final rule meets the established criteria. FRA has not proposed that freight railroads would have to submit such information, because the FAST Act's recording device approval provision applies only to passenger railroads. FRA requests comment regarding whether in the final rule the proposed recording system review and approval requirements should also apply to freight railroads. FRA also requests comment on the potential implications of requiring passenger railroads to maintain a total of 24 hours of continuous recording capability. Specifically, FRA seeks comment on the potential costs and benefits of such a requirement.

A passenger railroad would have to submit the information to FRA for review and approval at least 90 days prior to installing the image recording system, or for existing systems, not more than 30 days after the effective date of a final rule. As a practical matter, FRA would encourage railroads to submit their information to FRA well in advance of the proposed 90-day requirement so that if FRA disapproves of any part of a railroad's submission, the railroad could timely make amendments. This would minimize any impact on the railroad's proposed installation timeline or the use of railroad resources.

A passenger railroad's submission under this proposal would have to address: (1) The image recording system's minimum 12-hour continuous recording attributes; (2) the specifications for the crashworthy memory module utilized to store the image recordings that complies with the performance criteria in existing part 229, appendix D; and (3) the recording system's technical attributes and procedures governing access by authorized personnel, addressing the accessibility of the recorded data in the event of a railroad accident under proposed paragraph (f).

Like several other FRA regulations, FRA has proposed it would review a railroad's submission within 90 days. FRA's Associate Administrator for Railroad Safety and Chief Safety Officer would then provide notice in writing if the railroad's submission has been disapproved. If a railroad's system is disapproved, FRA's written notice would specify the basis for such disapproval. If a railroad's system is disapproved, the railroad would then be prohibited from installing and utilizing the required image recording system until it received approval of an amended submission. In the absence of written disapproval from FRA, FRA would be considered to have approved the railroad's locomotive image recording system. For the convenience of both industry and FRA, FRA plans to publish a list of any previously approved systems on its internet website that railroads can use as a reference.

Proposed paragraph (h) of this section mimics existing § 229.135(f) in FRA's locomotive event recorder regulation. This provision explains that nothing in proposed § 229.136 is intended to alter the existing legal authority of law enforcement officials investigating violations of State criminal laws, the priority of NTSB investigations under 49 U.S.C. 1131 and 1134, or the authority of the Secretary of Transportation to investigate railroad accidents under the applicable Federal statutes.

Proposed paragraph (i) of this section addresses a passenger railroad removing a locomotive image recording device from service, and how it should handle its repair. This proposed paragraph would apply only to image recording devices on locomotives in commuter or intercity passenger service, not recording devices voluntarily installed on locomotives in freight service.

The proposed text would allow passenger railroads to remove a locomotive image recording device from service. In fact, if a railroad knows the device is not properly recording, the railroad would have to remove the device from service. When the passenger railroad removes the locomotive's image recording device from service, a qualified person under FRA's regulations would have to record the date the device was removed from service on Form FRA F6180.49A, under the REMARKS section. However, a locomotive with an out-of-service image recording device could still act as a lead locomotive in a passenger train until the locomotive's next calendar-day inspection under § 229.21. The fact that the locomotive's image recording device is inoperative would not deem the locomotive to be in an improper condition, unsafe to operate, or a non-complying locomotive under §§ 229.7 and 229.9. These proposed requirements for removing passenger locomotive recording devices from service mirror already established requirements for removing locomotive event recorders from service under § 229.135(c). However, if the railroad is unable to repair the image recording device before the locomotive's next calendar-day inspection, the locomotive would have to be placed out of service. Therefore, as previously stated, FRA requesting comments on the burden this would put on passenger railroads.

Proposed paragraph (j) of this section is similar to existing § 229.135(g) of FRA's regulation addressing locomotive event recorders and addresses tampering with a locomotive's image or audio recording system. As described above, FRA has proposed to include passenger locomotive recording systems as ''safety devices'' in part 218's tampering regulation. This proposed paragraph explains the potential ramifications for willfully disabling an event recorder or tampering with or altering the data such devices record. FRA would consider the following examples unlawful tampering with a locomotive's recording system when an employee: Disables or obscures an image recording device to prevent the device from recording the intended field of view, disables or interferes with a microphone or other component of an audio recording system, or attempts to disable or tamper with a memory module or other device that stores recorded data.

Finally, proposed paragraph (k) of this section would define the meaning of the term ''train'' for this section. The term train is proposed to mean a single locomotive, multiple locomotives coupled together, or one or more locomotives coupled together with one or more cars. This proposed definition clarifies that lite passenger locomotive consists or single passenger locomotives that are operated would have to be equipped with the image recording devices as prescribed in this section.

Appendix D to Part 229 Criteria for Certification of Crashworthy Event Recorder Memory Module

Finally, FRA proposes to amend existing part 229, appendix D to state the crashworthiness standards in that appendix also apply to a memory module used to store the data recorded by the image recording devices on lead passenger train locomotives required by proposed § 229.136, and any audio

recording devices a passenger railroad installs. FRA believes the existing crashworthy memory module requirements in appendix D intended to protect the microprocessor-based data recorded by a locomotive's event recorder are also the appropriate standards for microprocessor data a lead passenger locomotive's image and audio recording systems record. The railroad industry has extensive experience with the standards in appendix D, and collaboratively created these standards via RSAC recommendations to FRA in 2003 that were incorporated into Federal regulation in 2005. 70 FR 37920 (June 30, 2005).

Appendix D establishes the general requirements, testing sequence, and required marking for memory modules certified by their manufacturers as crashworthy. Appendix D also contains performance criteria for memory module survivability from fire, impact shock, crush, fluid immersion, and hydrostatic pressure. Any memory module used to store the last 12 hours of data from an image or audio recording device meeting the performance criteria in appendix D would comply with the crashworthiness proposal in this NPRM.

FRA understands the NTSB prefers stricter recorder survivability standards than those in appendix D. NTSB has recommended FRA require event recorder data to also be recorded in another location remote from the lead locomotive(s) to minimize the likelihood of data destruction in an accident, as has occurred in certain accidents. NTSB Safety Recommendation R–13–22.[97] However, the existing crashworthiness standards in appendix D require a memory module capable of surviving the majority of railroad accidents. FRA believes a new, more stringent standard that would prevent the destruction of data in every passenger railroad accident scenario is likely not cost beneficial, and is also likely unnecessary given the future implementation of PTC systems.

As discussed above, the railroad accidents in which the NTSB has discussed locomotive image and audio recording device recommendations were human-factor caused accidents. Nearly all those human-factor caused railroad accidents were PTC-preventable. Thus, upon the implementation of PTC systems (Amtrak has already implemented a PTC system on segments of track on the Northeast Corridor), the likelihood of similar accidents occurring should be eliminated or greatly reduced. In turn, the need should diminish for more stringent crashworthy memory module requirements to preserve image and audio recordings for use to investigate human-factor caused accidents on main track.

FRA proposes that a memory module meeting the specified performance criteria in either Table 1 or Table 2 of section C of appendix D would be acceptable. As FRA discussed in the rulemaking promulgating the crashworthy memory module standards, each set of criteria in Tables 1 and 2 is a performance standard and FRA has not included any specific test procedures to achieve the required level of performance. FRA did not believe it necessary to include specific testing criteria in the regulation as the industry and manufacturers are in the best position to determine the exact way they will test for the specified performance parameters. 69 FR 39785 (June 30, 2004). Not requiring specific test procedures also accommodates any future testing methods that develop.

Finally, under the FAST Act (49 U.S.C. 20168(e)(2)), FRA has discretion to exempt railroads from the inward- and outward-facing image recording device requirements based on alternative technologies or practices that provide for an equivalent or greater safety benefit or are better suited to the risks of the operation. FRA believes it may be appropriate to exercise this discretion under the Act to provide an exemption from the proposed crashworthiness requirements in this NPRM. FRA is contemplating an exemption from the crashworthiness requirements where lead passenger locomotive recordings are immediately transmitted and stored at a remote location off of the locomotives(s) when technology reliably allows for such a recording system. This proposal is also consistent with the FAST Act's requirement for crashworthy storage only when recordings are stored on a controlling locomotive's cab. 49 U.S.C. 20168(b)(2).

Based on Working Group discussions, FRA understands that current technology does not always permit such a wirelessly transmitted data recording system to work effectively in all locations (*e.g.,* at remote locations or locations where physical features such as tunnels or elevation result in no reliable wireless transmission of data). FRA requests comment on this topic, including whether this exemption might best be addressed on an individual railroad or operation via the waiver process at 49 CFR part 211. This exemption would be consistent with the intent of NTSB Recommendation R–13–22 discussed above, in that data regarding the operation of a locomotive that is stored remotely is not at risk of being lost in an accident involving that locomotive.

VIII. Regulatory Impact and Notices

A. Executive Order 12866, Executive Order 13563, Executive Order 13771, and DOT Regulatory Policies and Procedures

This proposed rule is a significant regulatory action within the meaning of Executive Order 12866 (E.O. 12866) and DOT policies and procedures. *See* 44 FR 11034 (Feb. 26, 1979). FRA made this determination by finding that, although the economic effects of this proposed regulatory action would not exceed the $100 million annual threshold defined by E.O. 12866, the proposed rule is significant because of the substantial public interest in transportation safety. The proposed rule attempts to follow the direction of Executive Order 13563, which emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. However, FRA was unable to determine how effective locomotive image recording devices would be at reducing accidents. Thus, instead of presenting the quantifiable benefits, FRA presented the benefits qualitatively, as discussed further below. Finally, this proposed rule is expected to be an E.O. 13771 regulatory action. Details on the estimated costs of this proposed rule can be found in the rule's economic analysis.

This NPRM directly responds to the Congressional mandate in section 11411 of the FAST Act that FRA, by delegation from the Secretary, require each railroad that provides intercity rail passenger or commuter rail passenger transportation to install image recording devices on the controlling locomotives of passenger trains. FRA believes the requirements of this proposed rule, as applied to passenger trains, are directly or implicitly required by the FAST Act and will promote railroad safety.

FRA has prepared and placed a RIA addressing the economic impact of this proposed rule in the Docket (Docket no. FRA–2016–0036). The RIA details estimates of the costs of this proposed rule that are likely to be incurred over a ten-year period. FRA estimated the costs of this proposed rule using discount rates of 3 and 7 percent. For the 10-year period analyzed, the estimated quantified costs for passenger

[97] National Transportation Safety Board, *Safety Recommendation R–13–22* (Aug. 14, 2013); available online at: *http://www.ntsb.gov/safety/safety-recs/recletters/R-13-018-023.pdf.*

railroads, which must comply with all proposed requirements in the NPRM, total a present value (PV) of $31,837,918 (PV, 7 percent), and $34,664,317 (PV, 3 percent). FRA is interested to learn from industry stakeholders about potential alternatives to meet a reasonable crashworthiness level for locomotive image recording systems for passenger locomotives. FRA believes it has proposed a cost-effective method of meeting the FAST Act's crashworthiness mandate for passenger locomotives while attempting to minimize potential regulatory costs. FRA is interested in comments addressing additional crashworthiness options, with the intent to make a final rule appropriately performance-based and cost-effective. Specifically, FRA seeks public input on the forces memory systems should ideally be able to withstand, and the fire resistance necessary for the data to survive. As discussed in the preamble above, FRA may consider passenger locomotive memory module crashworthiness protection requirements unnecessary (or met) in the future if recorded data is stored at a remote location off of a locomotive consist, safe from accident destruction. FRA did not propose to require this option because the agency does not believe current technology would reliably allow for such remote transmission and storage in all instances, and such a system would likely be much more costly to develop in order to transfer the recorded data to a centralized location. FRA requests comment regarding whether a remote storage option has any utility (or is feasible) at present or in the future.

In addition to complying with the FAST Act's statutory mandate for passenger locomotives, FRA's original reason for requiring image recording devices to be installed in the locomotives is the collection of causal information. For example, in the 2015 Amtrak accident in Philadelphia, Pennsylvania, image recording devices could have helped provide additional causal information during the post-accident investigation. Causal data is especially critical for the prevention of future accidents when no apparent accident cause can be determined through other means. Further, images can become key to identifying new safety concerns that otherwise would be difficult to research or identify, which could lead FRA and the railroad industry to better understand areas in which safety could be improved. Other, probably larger, safety benefits would also primarily accrue from the deterrence of unsafe behaviors that cause railroad accidents. For instance, the presence of locomotive image recording devices could have deterred the engineer from text messaging while operating the Metrolink train involved in the 2008 accident at Chatsworth, California. In the RIA, FRA discusses and provides examples of how the deterrent effect of locomotive image recording devices could reduce negative behavior because train crews know their actions are being recorded.[98]

Other benefits include: (1) Giving railroads the ability to perform operational efficiency tests that were impossible to perform in a practical manner without cameras *(e.g.,* for prohibited use of personal electronic devices) and at a lower cost; (2) providing information to research how crews perform (both to improve safety and to improve productivity); (3) providing better physical security of trains; and (4) increasing railroad productivity.

While FRA is declining to require locomotive recording devices in freight locomotives, many freight railroads have informed FRA the above reasons are why railroads are installing camera systems even without an FRA regulation. FRA's analysis shows there are many factors that are difficult to quantify that combine to warrant the proposed rule. FRA believes that given current railroad business and operational practices, this analysis demonstrates the quantifiable benefits for this proposed rule would not exceed the costs.

Tables: Costs of the proposed rule:

TABLE 1—10-YEAR COSTS AND COST SAVINGS

[Discounted, 7 and 3 percent]

Table 1. 10-year costs and cost savings (discounted, 7 and 3 percent)	Discounted at 7%	Discounted at 3%	Annualized at 7%	Annualized at 3%
Costs	$32,884,651	$35,915,229	$4,682,035	$4,210,360
Camera	27,441,173	29,956,299	3,907,006	3,511,792
Crashworthiness	5,443,479	5,958,929	775,029	698,568
Cost Savings:				
Operational Testing Benefits	1,046,734	1,250,912	149,031	146,645
Net Costs	31,837,918	34,664,317	4,533,003	4,063,715

B. Regulatory Flexibility Act and Executive Order 13272; Initial Regulatory Flexibility Assessment

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) and Executive Order 13272 (67 FR 53461, Aug. 16, 2002) require agency review of proposed and final rules to assess their impacts on small entities. An agency must prepare an Initial Regulatory Flexibility Analysis (IRFA) unless it determines and certifies that a rule, if promulgated, would not have a significant economic impact on a substantial number of small entities. As discussed below, FRA does not believe this proposed rule would have a significant economic impact on a substantial number of small entities. However, FRA is requesting comments on whether the proposed rule would impact small entities. Therefore, FRA is publishing this IRFA to aid the public in commenting on the potential small business impacts of the requirements in this NPRM. FRA invites all interested parties to submit data and information regarding the potential economic impact on small entities that would result from the adoption of the proposals in this NPRM. FRA will consider all information, including comments received in the public comment process, to determine whether the rule will have a significant the economic impact on small entities.

1. Reasons for Considering Agency Action

FRA is initiating this NPRM in response to a statutory mandate in

[98] *See* Benefits, Section 1.1, of the RIA for more information.

section 11411 of the FAST Act. Section 11411 requires the Secretary to promulgate regulations requiring each railroad carrier that provides regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward-facing image recording devices in all controlling locomotives of passenger trains.

2. A Succinct Statement of the Objectives of, and the Legal Basis for, the Proposed Rule

This NPRM proposes regulations that would require each railroad carrier that provides regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public to install inward- and outward-facing image recording devices in all controlling locomotives of passenger trains. If enacted, these proposed requirements would fulfill Section 11411 of the FAST Act, which mandates the installation of these devices in all controlling passenger train locomotives.

3. A Description of, and Where Feasible, an Estimate of the Number of Small Entities to Which the Proposed Rule Would Apply

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) requires a review of proposed and final rules to assess their impact on small entities, unless the Secretary certifies that the rule would not have a significant economic impact on a substantial number of small entities. ''Small entity'' is defined in 5 U.S.C. 601 as a small business concern that is independently owned and operated, and is not dominant in its field of operation. The U.S. Small Business Administration (SBA) has authority to regulate issues related to small businesses, and stipulates in its size standards that a ''small entity'' in the railroad industry is a for profit ''line-haul railroad'' that has fewer than 1,500 employees, a ''short line railroad'' with fewer than 500 employees, or a ''commuter rail system'' with annual receipts of less than seven million dollars. *See* ''Size Eligibility Provisions and Standards,'' 13 CFR part 121 subpart A.

This proposed rule would apply primarily to railroad carriers that provide regularly scheduled intercity rail passenger or commuter rail passenger transportation to the public. However, one passenger railroad is considered a small entity: The Hawkeye Express (operated by the Iowa Northern Railway Company (IANR)). All other passenger railroad operations in the United States are part of larger governmental entities whose service jurisdictions exceed 50,000 in population, and, based on the definition, are not considered small entities. Hawkeye Express is a short-haul passenger railroad that is not a commuter railroad or an intercity passenger railroad, and would not be affected by the NPRM proposals.

As the only small entity that could potentially be impacted by this regulation is not classified as a commuter railroad or an intercity passenger railroad, it would not be affected by the NPRM proposals; thus, FRA does not believe that the provisions of the NPRM would impact any small entities. However, FRA requests comments as to the impact that the proposed rule would have on any small passenger railroad and on passenger railroads in general.

4. A Description of the Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Rule, Including an Estimate of the Class of Small Entities That Will Be Subject to the Requirements and the Type of Professional Skill Necessary for Preparation of the Report or Record

In general, this NPRM would require the installation of inward- and outward-facing locomotive image recording devices on all lead locomotives in passenger trains and requires the railroads to maintain records from these devices for one year after a reportable accident. This NPRM would also govern the use of the recordings to conduct operational tests in order to determine if a railroad employee is in compliance with applicable railroad rules and Federal regulations. Additionally, passenger railroads would need to have a chain-of-custody procedure that specifically addresses the preservation and handling requirements for post-accident/incident recordings provided to FRA or the NTSB under part 229.136(f)(2) of this NPRM.

5. Identification, to the Extent Practicable, of All Relevant Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rule

FRA does not believe there are any relevant Federal rules that duplicate, overlap with, or conflict with the proposed regulations in this NPRM.

FRA invites all interested parties to submit comments, data, and information demonstrating the potential economic impact on any small entity that would result from the adoption of the proposed language in this NPRM. FRA particularly encourages any small entity that could potentially be impacted by the proposed amendments to participate in the public comment process. FRA will consider all comments received during the public comment period for this NPRM when making a final determination of the NPRM's economic impact on small entities.

C. Paperwork Reduction Act

The information collection requirements in this proposed rule are being submitted to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). The sections that contain the new information and current information collection requirements and the estimated time to fulfill each requirement are as follows:

CFR section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours	Total annual dollar equivalent cost
217.7—Operating Rules; Filing and Recordkeeping—Filing of code of operating rules, timetables, and special instructions with FRA.	2 new railroads	2 documents	1 hour	2 hours	150
—Amendments to code of operating rules, timetables, and special instructions by Class I, Class II, Amtrak, and commuter railroads.	55 railroads	165 revised documents.	20 minutes	55 hours	4,125
—Class III and other railroads: Copy of code of operating rules, timetables, and special instructions.	5 new railroads	5 submitted documents.	55 minutes	5 hours	375

CFR section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours	Total annual dollar equivalent cost
—Class III railroads: Amendments to code of operating rules, timetables, and special instructions.	704 railroads	2,112 amendments	15 minutes	528 hours	39,600
217.9—Program of Operational Tests: Written record of each railroad testing officer.	755 railroads	4,732 records	2 minutes	158 hours	11,534
—Development and adoption of procedure ensuring random selection of employees by railroads utilizing inward-facing locomotive and in-cab audio recordings to conduct operational tests and inspections (New Requirement).	45 railroads	40 adopted procedures.	24 hours	960 hours	72,000
—Written program of operational tests and inspections.	5 new railroads	5 programs	9.92 hours 1 minute.	50 hours	5,850
—Records of operational tests/inspections.	755 railroads	9,120,000 records	70 minutes	152,000 hrs	11,096,000
—Railroad copy of current program operational tests/inspections—amendments.	55 railroads	165 program revisions.	2 hours	193 hours	14,475
—Written quarterly review of operational tests/inspections by RR.	37 railroads	148 reviews	2 hrs/5 sec	296 hours	21,608
—6-month review of operational tests/inspections/naming of officer.	37 railroads	74 reviews + 37 names.		148 hours	10,804
—6-month review by passenger railroads designated officers of operational testing and inspection data.	Amtrak + 33 railroads.	68 reviews + 34 names.	2 hrs/5 sec	136 hours	9,928
—Records of periodic reviews	71 railroads	290 records	1 minute	5 hours	375
—Annual summary of operational tests and inspections.	71 railroads	71 summary records.	61 minutes	72 hours	5,400
—FRA disapproval of RR program of operational tests/inspections and RR written response in support of program.	755 railroads	5 support documents.	1 hour	5 hours	375
—RR amended program of operational tests/inspections.	755 railroads	5 revised programs.	30 minutes	3 hours	225
217.11—.					
—RR copy of program for periodic instruction of employees.	5 new railroads	5 program copies	8 hours	40 hours	3,000
—RR copy of amendment of program for periodic instruction of employees.	755 railroads	110 copies	30 minutes	55 hours	4,125
218.95—Instruction, training, examination—employee records.	755 railroads	98,000 records	1 minute	1,633 hours	122,475
—RR written response to FRA disapproval of program of instruction, testing, examination.	755 railroads	5 responses	1 hour	5 hours	375
—Amended RR program of instruction, testing, examination.	755 railroads	5 amended programs.	30 minutes	3 hours	225
218.97—RR copy of good faith challenge procedures.	755 railroads	4,732 copies	6 minutes	473 hours	35,475
—RR employee good faith challenge of RR directive.	98,000 workers	15 gd. faith challenges.	10 minutes	3 hours	219
—RR resolution of employee good faith challenge.	15 railroads	15 responses	5 minutes	1 hour	73
—RR officer immediate review of unresolved good faith challenge.	15 railroads	5 reviews	30 minutes	3 hours	219
—RR officer explanation to employee that Federal law may protect against employer retaliation for refusal to carry out work if employee refusal is a lawful, good faith act.	15 railroads	5 answers	1 minute	.08 hour	6
—Employee written/electronic protest of employer final decision.	10 railroads	10 protests	15 minutes	3 hours	219
—Employee copy of protest	10 railroads	10 copies	1 minute	.17 hour	12
—Employer further review of good faith challenge after employee written request.	10 railroads	3 requests + 3 reviews.	15 minutes	2 hours	146
—RR verification decision to employee in writing.	10 railroads	10 decisions	10 minutes	2 hours	146

CFR section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours	Total annual dollar equivalent cost
—Employer's copy of written required by this section.	755 railroads	755 copies	5 minutes	63 hours	4,725
—RR verification decision copies	20 railroads	20 copies	5 minutes	2 hours	150
218.99—Shoving or Pushing Movement: RR operating rule complying with section's requirements.	755 railroads	32 rule revisions	1 hour	32 hours	2,400
218.101—Leaving Equipment in the Clear: Operating Rule that Complies with this section.	755 railroads	32 amended rules	30 minutes	16 hours	1,200
218.103—Hand-Operated Switches: Operating Rule that Complies with this section.	755 railroads	32 revised op. rules.	60 minutes	32 hours	2,400
—Job briefings: Minimum requirements specified in operating rules.	755 railroads	5 modified op. rules.	30 minutes	3 hours	225
229.136—Locomotive mage Recording Systems (New Requirements)—Duty to equip and record: Noting the presence of any image and audio recording system on each lead locomotive in intercity and commuter rail passenger service in ''Remarks'' section of Form FRA F 6180.49A.	4,500 passenger locomotives.	4,120 notes	15 seconds	17 hours	1,241
—Image recording system capturing at least most recent 12 hours of operation of an intercity passenger or commuter rail passenger locomotive.	4,500 passenger locomotives.	4,120 recordings	12 hours	49,440 hrs	0
—Passenger railroads voluntary adoption and development of chain of custody (c of c) procedures.	27 railroads	20 c of c procedures.	48 hours	960 hours	72,000
—Passenger railroad preservation of accident/incident data of image recording system from locomotive using such system at time of accident/incident (includes voluntary freight railroads & restates previous requirement under section 229.135(e)).	31 railroads	163 saved recordings.	12 hours	1,956 hours	140,832
—Provision by passenger railroad of written description of technical aspects any locomotive image recording system to FRA for approval.	31 railroads	31 written descriptions/plans.	50 hours	1,550 hours	113,150
—Removal of locomotive recording device from service from locomotive in commuter or intercity passenger service and handling for repair: Notation on Form FRA 6180.49A in ''Remarks'' section of date the device was removed from service.	31 railroads	20 notations	15 minutes	5 hours	305
Total	N/A	9,240,241	N/A	210,915	11,470,639

All estimates include the time for reviewing instructions; searching existing data sources; gathering or maintaining the needed data; and reviewing the information. Pursuant to 44 U.S.C. 3506(c)(2)(B), FRA solicits comments concerning: Whether these information collection requirements are necessary for the proper performance of the functions of FRA, including whether the information has practical utility; the accuracy of FRA's estimates of the burden of the information collection requirements; the quality, utility, and clarity of the information to be collected; and whether the burden of collection of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology, may be minimized. For information or a copy of the paperwork package submitted to OMB, contact Mr. Robert Brogan, Information Clearance Officer, Federal Railroad Administration, at 202–493–6292, or Ms. Kimberly Toone, Records Management Officer, Federal Railroad Administration, at 202–493–6139.

Organizations and individuals desiring to submit comments on the collection of information requirements should direct them to Mr. Robert Brogan or Ms. Kimberly Toone, Federal Railroad Administration, 1200 New Jersey Avenue SE, 3rd Floor, Washington, DC 20590. Comments may also be submitted via email to Mr.

Brogan at *Robert.Brogan@dot.gov,* or to Ms. Toone at *Kim.Toone@dot.gov*.

OMB is required to make a decision concerning the collection of information requirements contained in this proposed rule between 30 and 60 days after publication of this document in the **Federal Register**. Therefore, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

FRA is not authorized to impose a penalty on persons for violating information collection requirements which do not display a current OMB control number, if required. FRA intends to obtain current OMB control numbers for any new information collection requirements resulting from this rulemaking action prior to the effective date of the final rule. The OMB control number, when assigned, will be announced by separate notice in the **Federal Register**. FRA will be seeking approval for the information collection requirements associated with this rule under OMB No. 2130–0035.

D. Federalism Implications

Executive Order 13132, ''Federalism'' (64 FR 43255, Aug. 10, 1999), requires FRA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' are defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, the agency may not issue a regulation with federalism implications that imposes substantial direct compliance costs and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agency consults with State and local government officials early in the process of developing the regulation. Where a regulation has federalism implications and preempts State law, the agency seeks to consult with State and local officials in the process of developing the regulation.

FRA has analyzed this NPRM under the principles and criteria contained in Executive Order 13132. This NPRM could affect State and local governments to the extent that they sponsor, or exercise oversight of, passenger railroads. Because this proposed rule is required by Federal statute for passenger railroads under 49 U.S.C. 20168, the consultation and funding requirements of Executive Order 13132 do not apply. However, this proposed rule could have preemptive effect by operation of law under certain provisions of the Federal railroad safety statutes, specifically the former Federal Railroad Safety Act of 1970, repealed and recodified at 49 U.S.C. 20106. Section 20106 provides that States may not adopt or continue in effect any law, regulation, or order related to railroad safety or security that covers the subject matter of a regulation prescribed or order issued by the Secretary of Transportation (with respect to railroad safety matters) or the Secretary of Homeland Security (with respect to railroad security matters), except when the State law, regulation, or order qualifies under the ''essentially local safety or security hazard'' exception to section 20106.

In sum, FRA has analyzed this proposed rule under the principles and criteria in Executive Order 13132. As explained above, FRA has determined this proposed rule has no federalism implications, other than the possible preemption of State laws under Federal railroad safety statutes, specifically 49 U.S.C. 20106. Therefore, preparation of a federalism summary impact statement for this proposed rule is not required.

E. Environmental Impact

FRA has evaluated this proposed rule consistent with the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), other environmental statutes, related regulatory requirements, and its ''Procedures for Considering Environmental Impacts'' (FRA's Procedures) (64 FR 28545, May 26, 1999). FRA has determined that this proposed rule is categorically excluded from detailed environmental review pursuant to section 4(c)(20) of FRA's NEPA Procedures, ''Promulgation of railroad safety rules and policy statements that do not result in significantly increased emissions of air or water pollutants or noise or increased traffic congestion in any mode of transportation.'' *See* 64 FR 28547, May 26, 1999. Categorical exclusions (CEs) are actions identified in an agency's NEPA implementing procedures that do not normally have a significant impact on the environment and therefore do not require either an environmental assessment (EA) or environmental impact statement (EIS). *See* 40 CFR 1508.4.

In analyzing the applicability of a CE, the agency must also consider whether extraordinary circumstances are present that would warrant a more detailed environmental review through the preparation of an EA or EIS. *Id.* Under section 4(c) and (e) of FRA's Procedures, the agency has further concluded that no extraordinary circumstances exist with respect to this proposed regulation that might trigger the need for a more detailed environmental review. The purpose of this rulemaking is to propose that passenger railroads install recording devices on locomotives and use those devices to help investigate and prevent railroad accidents. FRA does not anticipate any environmental impacts from these proposed requirements and finds there are no extraordinary circumstances present in connection with this proposed rule.

F. Executive Order 12898 (Environmental Justice)

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and DOT Order 5610.2(a) (91 FR 27534 May 10, 2012) require DOT agencies to achieve environmental justice as part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, of their programs, policies, and activities on minority populations and low-income populations. The DOT Order instructs DOT agencies to address compliance with Executive Order 12898 and requirements within the DOT Order in rulemaking activities, as appropriate. FRA has evaluated this proposed rule under Executive Order 12898 and the DOT Order and has determined it would not cause disproportionately high and adverse human health and environmental effects on minority populations or low-income populations.

G. Executive Order 13175 (Tribal Consultation)

FRA has evaluated this proposed rule under the principles and criteria in Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, dated November 6, 2000. The proposed rule would not have a substantial direct effect on one or more Indian tribes, would not impose substantial direct compliance costs on Indian tribal governments, and would not preempt tribal laws. Therefore, the funding and consultation requirements of Executive Order 13175 do not apply, and a tribal summary impact statement is not required.

H. Unfunded Mandates Reform Act of 1995

Under Section 201 of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 2 U.S.C. 1531), each Federal agency ''shall, unless otherwise prohibited by law, assess the effects of Federal regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law).'' Section 202 of the Unfunded Mandates Reform Act (2 U.S.C. 1532) further requires that before promulgating any general notice of proposed rulemaking that is likely to result in the promulgation of any rule that includes any Federal mandate that may result in expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement detailing the effect on State, local, and tribal governments and the private sector. This proposed rule will not result in the expenditure, in the aggregate, of $100,000,000 or more (as adjusted annually for inflation) in any one year, and thus preparation of such a statement is not required.

I. Energy Impact

Executive Order 13211 requires Federal agencies to prepare a Statement of Energy Effects for any ''significant energy action.'' 66 FR 28355 (May 22, 2001). Under the Executive Order, a ''significant energy action'' is defined as any action by an agency (normally published in the **Federal Register**) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking: (1)(i) That is a significant regulatory action under Executive Order 12866 or any successor order, and (ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. FRA has evaluated this proposed rule in accordance with Executive Order 13211. FRA has determined that the proposals in this rule are not likely to have a significant adverse effect on the supply, distribution, or use of energy. Consequently, FRA has determined that this proposed rule is not a ''significant energy action'' within the meaning of Executive Order 13211.

Executive Order 13783, ''Promoting Energy Independence and Economic Growth,'' requires Federal agencies to review regulations to determine whether they potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources. 82 FR 16093 (March 31, 2017). Executive Order 13783 defines ''burden'' to mean unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmission, or delivery of energy resources. FRA determined this proposed rule will not potentially burden the development or use of domestically produced energy resources.

J. Trade Impact

The Trade Agreements Act of 1979 (Pub. L. 96–39, 19 U.S.C. 2501 *et seq.*) prohibits Federal agencies from engaging in any standards setting or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. FRA has assessed the potential effect of this proposed rule on foreign commerce and believes that its requirements are consistent with the Trade Agreements Act of 1979. The requirements proposed are safety standards, which, as noted, are not considered unnecessary obstacles to trade.

K. Privacy Act

In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its rulemaking process. DOT posts these comments, without edit, to *www.regulations.gov,* as described in the system of records notice, DOT/ALL–14 FDMS, accessible through *www.dot.gov/privacy*. In order to facilitate comment tracking and response, we encourage commenters to provide their name, or the name of their organization; however, submission of names is completely optional. Whether or not commenters identify themselves, all timely comments will be fully considered. If you wish to provide comments containing proprietary or confidential information, please contact the agency for alternate submission instructions.

List of Subjects

49 CFR Part 217

Occupational safety and health, Penalties, Railroad employees, Railroad safety, Reporting and recordkeeping requirements.

49 CFR Part 218

Occupational safety and health, Penalties, Railroad employees, Railroad safety, Locomotives, and Tampering.

49 CFR Part 229

Locomotives, Penalties, Railroad employees, Railroad safety, Reporting and recordkeeping requirements.

The Proposed Rule

For the reasons discussed in the preamble, FRA proposes to amend chapter II, subtitle B of title 49, Code of Federal Regulations, as follows:

PART 217—RAILROAD OPERATING RULES

■ 1. The authority citation for part 217 is revised to read as follows:

Authority: 49 U.S.C. 20103, 20107, 20168, 28 U.S.C. 2461, note; and 49 CFR 1.89.

■ Subpart A—General

■ 2. In § 217.9, add paragraphs (b)(3) and (4) to read as follows:

§ 217.9 Program of operational tests and inspections; recordkeeping.

* * * * *

(b) * * *

(3) A railroad that utilizes inward-facing locomotive image or in-cab audio recordings to conduct operational tests and inspections shall adopt and comply with a procedure in its operational tests and inspections program that ensures employees are randomly subject to such operational tests and inspections involving image or audio recordings. The procedure adopted by a railroad must:

(i) Establish objective, neutral criteria to ensure every employee subject to such operational tests and inspections is selected randomly for such operational tests and inspections within a specified time frame;

(ii) Not permit subjective factors to play a role in selection, *i.e.,* no employee may be selected based on the exercise of a railroad's discretion; and

(iii) Require that any operational test or inspection performed using locomotive image recordings be performed within 72 hours of the completion of the employee's tour of duty that is the subject of the operational test. Any operational test performed more than 72 hours after the completion of the tour of duty that is the

subject of the test is a violation of this section. The 72-hour limitation does not apply to investigations of railroad accidents/incidents or to violations of Federal railroad safety laws, regulations, and orders, or any criminal laws.

(4) FRA may review a railroad's procedure implementing paragraph (b)(3) of this section, and, for cause stated, may disapprove such procedure under paragraph (h) of this section.

* * * * *

PART 218—RAILROAD OPERATING PRACTICES

■ 3. The authority citation for part 218 is revised to read as follows:

Authority: 49 U.S.C. 20103, 20107, 20131, 20138, 20144, 20168, 28 U.S.C. 2461, note; and 49 CFR 1.89.

Subpart D—Prohibition Against Tampering With Safety Devices

■ 4. In § 218.53, revise paragraph (c) and add paragraph (d) to read as follows:

§ 218.53 Scope and definitions.

* * * * *

(c) *Safety Device* means any locomotive-mounted equipment used either to assure the locomotive engineer is alert, not physically incapacitated, and aware of and complying with the indications of a signal system or other operational control system, or a system used to record data concerning the operations of that locomotive or the train it is powering. See appendix C to this part for a statement of agency policy on this subject.

(d) The provisions in §§ 218.59 and 218.61 do not apply to locomotive-mounted image and audio recording equipment on freight locomotives.

■ 5. In § 218.61, revise paragraph (c) to read as follows:

§ 218.61 Authority to deactivate safety devices.

* * * * *

(c) If a locomotive in commuter or intercity passenger service is equipped with a device to record data concerning the operation of that locomotive or the train it is powering, that device may be deactivated only under the provisions of § 229.135 of this chapter. Inward- and outward-facing image recording devices on commuter or intercity passenger locomotives may be deactivated only under the provisions of § 229.136 of this chapter. This section does not apply to inward- and outward-facing image recording devices that are installed on freight locomotives.

■ 6. In appendix C to part 218, revise the fifth sentence of the fourth paragraph to read as follows:

Appendix C to Part 218—Statement of Agency Enforcement Policy on Tampering

* * * * *

Safety Devices Covered by This Rule

* * * This regulation applies to a variety of devices including equipment known as ''event recorders,'' ''alerters,'' ''deadman controls,'' ''automatic cab signal,'' ''cab signal whistles,'' ''automatic train stop equipment,'' ''automatic train control equipment,'' ''positive train control equipment,'' and ''passenger locomotive-mounted image and audio recording equipment.'' * * *

* * * * *

PART 229—RAILROAD LOCOMOTIVE SAFETY STANDARDS

■ 7. The authority citation for part 229 is revised to read as follows:

Authority: 49 U.S.C. 20103, 20107, 20133, 20137–38, 20143, 20168, 20701–03, 21301–02, 21304, 28 U.S.C. 2461, note; and 49 CFR 1.89.

Subpart A—General

■ 8. In § 229.5, revise the definition of ''event recorder memory module'' and add in alphabetical order definitions of ''image recording system,'' ''NTSB,'' and ''recording device'' to read as follows:

§ 229.5 Definitions.

* * * * *

Event recorder memory module means that portion of an event recorder used to retain the recorded data as described in §§ 229.135(b) and 229.136(a) through (c).

* * * * *

Image recording system means a system of cameras or other electronic devices that record images as described in § 229.136, and any components that convert those images into electronic data transmitted to, and stored on, a memory module.

* * * * *

NTSB means the National Transportation Safety Board.

* * * * *

Recording device means a device that records images or audible sounds, as described in § 229.136.

* * * * *

Subpart C—Safety Requirements

■ 9. Add § 229.136 to read as follows:

§ 229.136 Locomotive image and audio recording devices.

(a) *Duty to equip and record.* (1) Effective [DATE 4 YEARS AFTER DATE OF PUBLICATION OF FINAL RULE], each lead locomotive of a train used in commuter or intercity passenger service must be equipped with an image recording system to record images of activities ahead of the locomotive in the direction of travel (outward-facing image recording device), and of activities inside the cab of the locomotive (inward-facing image recording device).

(i) If the lead locomotive is equipped with an image recording system, the system must be turned on and recording whenever a train is in motion, at all train speeds.

(ii) If operating circumstances cause the controlling locomotive to be other than the lead locomotive, railroads must also record images of activities inside the cab of the controlling locomotive.

(iii) Both cabs of a dual-cab locomotive shall be equipped with inward- and outward-facing image recording systems. Image recordings for only a dual-cab locomotive's active cab and the leading end of the locomotive's movement are required to be made and retained.

(2) Image recording systems installed after [DATE 1 YEAR AFTER DATE OF PUBLICATION OF FINAL RULE] on new, remanufactured, or existing lead locomotives used in commuter or intercity passenger service shall meet the requirements of this section. Lead locomotives used in commuter or intercity passenger service must be equipped with an image recording system meeting the requirements of this section no later than [DATE 4 YEARS AFTER DATE OF PUBLICATION OF FINAL RULE].

(3) For lead locomotives in commuter or intercity passenger service, railroads must note the presence of any image and audio recording systems in the REMARKS section of the Form FRA F6180–49A in the locomotive cab.

(4) The image recording system shall record at least the most recent 12 hours of operation of a lead locomotive in commuter or intercity passenger service.

(5) Locomotive recording device data for each lead locomotive used in commuter or intercity passenger service shall be recorded on a memory module meeting the requirements for a certified crashworthy event recorder memory module described in appendix D to this part.

(b) *Outward-facing recording system requirements for locomotives in commuter or intercity passenger service.* (1) The outward-facing image recording system for lead locomotives in commuter or intercity passenger service shall:

(i) Include an image recording device aimed parallel to the centerline of tangent track within the gauge on the front end of the locomotive;

(ii) Be able to distinguish the signal aspects displayed by wayside signals;

(iii) Record at a frame rate of a minimum of 15 frames per second (or its equivalent) and have sufficient resolution to record the position of switch points 50 feet in front of the locomotive;

(iv) Be able to capture images in daylight or with normal nighttime illumination from the headlight of the locomotive; and

(v) Include an accurate time and date stamp on outward-facing image recordings.

(2) If a lead locomotive in commuter or intercity passenger service experiences a technical failure of its outward-facing image recording system, then the system shall be removed from service and handled in accordance with paragraph (i) of this section.

(c) *Inward-facing image recording system requirements for locomotives in commuter or intercity passenger service.* (1) The inward-facing image recording system on lead locomotives in commuter or intercity passenger service shall include image recording device positioned to provide complete coverage of all areas of the controlling locomotive cab where a crewmember typically may be positioned, including complete coverage of the instruments and controls required to operate the controlling locomotive in normal use, and:

(i) Have sufficient resolution to record crewmember actions, including whether a crewmember is physically incapacitated and whether a crewmember is complying with the indications of a signal system or other operational control system; and

(ii) Record at a frame rate of at least 5 frames per second and be capable of using ambient light in the cab, and when ambient light levels drop too low for normal operation, automatically switch to infrared or another operating mode that enables the recording sufficient clarity to comply with the requirements of this paragraph (c)(1).

(2) The inward-facing recording(s) on lead locomotives in commuter or intercity passenger service shall include an accurate time and date stamp.

(3) No inward-facing image recordings on locomotives in commuter or intercity passenger service may be made of any activities within a locomotive's sanitation compartment as defined in § 229.5, and no image recording device shall be installed in a location where the device can record activities within a sanitation compartment.

(4) If a lead locomotive in commuter or intercity passenger service experiences a technical failure of its inward-facing image recording system, then the system shall be removed from service and handled in accordance with paragraph (i) of this section.

(d) *Image and audio recording system download protection requirements for locomotives in commuter or intercity passenger service.* Railroads must provide convenient wire or wireless connections to allow authorized railroad personnel to download audio or image recordings from both any standard memory module and a certified crashworthy memory module in lead locomotives in commuter or intercity passenger service. The railroads also must use electronic security measure(s) to prevent unauthorized download of the recordings.

(e) *Inspection, testing, and maintenance for image recording systems on locomotives in commuter or intercity passenger service.* The image recording system on lead locomotives in commuter or intercity passenger service shall have self-monitoring features to assess whether the system is operating properly, including whether the system is powered on.

(1) If a fault with the image recording system is detected, the locomotive shall not be used in the lead position after its next daily inspection required under § 229.21.

(2) At each periodic inspection required under § 229.23, the railroad conducting the inspection shall take sample download(s) to confirm operation of the system, and, if necessary, repair the system to full operation.

(f) *Handling of recordings*—(1) *Chain-of-custody procedure.* Each railroad with locomotives in commuter or intercity passenger service subject to this section shall adopt, maintain, and comply with a chain-of-custody procedure governing the handling and the release of the locomotive image recordings described in paragraphs (a) through (c) of this section and any locomotive audio recordings. The chain-of-custody procedure must specifically address the preservation and handling requirements for post-accident/incident recordings provided to FRA or other Federal agencies under paragraph (f)(2) of this section.

(2) *Accident/incident preservation.* If any locomotive in commuter or intercity passenger service is equipped with an image or audio recording system and is involved in an accident/incident that must be reported to FRA under part 225 of this chapter, the railroad that was using the locomotive at the time of the accident shall, to the extent possible, and to the extent consistent with the safety of life and property, preserve the data recorded by each such device for analysis by FRA or other Federal agencies. A railroad must either provide the image and/or audio data in a format readable by FRA or other Federal agencies; or make available to FRA or other Federal agencies any platform, software, media device, etc. that is required to play back the image and/or audio data. This preservation requirement shall expire one (1) year after the date of the accident unless FRA or another Federal agency notifies the railroad in writing that it must preserve the recording longer. Railroads may extract and analyze such data for the purposes described in paragraph (f)(3) of this section, only if:

(i) The original downloaded data file, or an unanalyzed exact copy of it, is retained in secure custody under the railroad's procedure adopted under paragraph (f)(1) of this section; and

(ii) It is not utilized for analysis or any other purpose, except by direction of FRA or NTSB.

(3) *Recording uses.* A railroad may use the image and audio recordings from a locomotive in commuter or intercity passenger service subject to this section to:

(i) Investigate an accident/incident that is required to be reported to FRA under part 225 of this chapter;

(ii) Investigate a violation of a Federal railroad safety law, regulation, or order, or a railroad's operating rules and procedures;

(iii) Conduct an operational test under § 217.9 of this chapter;

(iv) Monitor for unauthorized occupancy of a locomotive's cab or a control cab locomotive's operating compartment;

(v) Investigate a violation of a criminal law;

(vi) Assist Federal agencies in the investigation of a suspected or confirmed act of terrorism; or

(vii) Perform inspection, testing, maintenance, or repair activities to ensure the proper installation and functioning of an inward-facing image recorder.

(g) *Locomotive image recording system approval process.* Each railroad with locomotives in commuter or intercity passenger service subject to this section must provide the Associate Administrator for Railroad Safety and Chief Safety Officer, Federal Railroad Administration, RRS–15, 1200 New Jersey Avenue SE, Washington, DC 20590, with a written description of the technical aspects of any locomotive image recording system installed to comply with this section.

(1) The written description must include information specifically

addressing the image recording system's:

(i) Minimum 12-hour continuous recording capability;

(ii) Crashworthiness; and

(iii) Post-accident accessibility of the system's recordings.

(2) The railroad must submit the written statement not less than 90 days before the installation of such image recording system, or, for existing systems, not less than 30 days after [EFFECTIVE DATE OF FINAL RULE].

(3) The FRA Associate Administrator for Railroad Safety and Chief Safety Officer will review a railroad's submission and may disapprove any recordings systems that do not meet the requirements of this section. FRA will notify the railroad of its disapproval in writing within 90 days of FRA's receipt of the railroad's written submission, and shall specify the basis for any disapproval decision.

(h) *Relationship to other laws.* Nothing in this section is intended to alter the legal authority of law enforcement officials investigating potential violation(s) of State criminal law(s), and nothing in this section is intended to alter in any way the priority of NTSB investigations under 49 U.S.C. 1131 and 1134, or the authority of the Secretary of Transportation to investigate railroad accidents under 49 U.S.C. 5121, 5122, 20107, 20111, 20112, 20505, 20702, 20703, and 20902.

(i) *Removal of device from service and handling for repair.* Notwithstanding the duty established in paragraph (a) of this section to equip certain locomotives with image recording devices, a railroad may remove from service an image recording device on a locomotive in commuter or intercity passenger service, and must remove the device from service if the railroad knows the device is not properly recording. When a railroad removes a locomotive image recording device from service, a qualified person shall record the date the device was removed from service on Form FRA F6180–49A, under the REMARKS section. A locomotive on which an image recording device has been taken out of service as provided in this paragraph may remain as the lead locomotive only until the next calendar-day inspection required under § 229.21. A locomotive with an inoperative image recording device is not deemed to be in an improper condition, unsafe to operate, or a non-complying locomotive under §§ 229.7 and 229.9.

(j) *Disabling or interfering with locomotive-mounted audio and video recording equipment.* Any individual who willfully disables or interferes with the intended functioning of locomotive-mounted image or audio recording system equipment on a passenger locomotive, or who tampers with or alters the data recorded by such equipment, is subject to a civil penalty and to disqualification from performing safety-sensitive functions on a railroad as provided in parts 209 and 218 of this chapter.

(k) As used in this section—*Train* means: (1) A single locomotive;

(2) Multiple locomotives coupled together; or

(3) One or more locomotives coupled with one or more cars.

■ 10. Revise the introductory text of appendix D to part 229 to read as follows:

Appendix D to Part 229—Criteria for Certification of Crashworthy Event Recorder Memory Module

Section 229.135(b) requires railroads to equip certain locomotives with an event recorder that includes a certified crashworthy memory module. Section 229.136(a)(1) requires passenger railroads to install locomotive-mounted image recording systems in every lead locomotive used in commuter or intercity passenger service. Section 229.136(a)(5) requires that data from these image recording systems be recorded on a certified crashworthy memory module. This appendix prescribes the requirements for certifying an event recorder memory module (ERMM) or a locomotive-mounted audio and/or image recording device memory module as crashworthy. For purposes of this appendix, a locomotive-mounted audio or image recording device memory module is also considered an ERMM. This appendix includes the performance criteria and test sequence for establishing the crashworthiness of the ERMM and marking the event recorder or locomotive-mounted image or audio recording system containing the crashworthy ERMM.

* * * * *

Issued in Washington, DC.

Ronald L. Batory,

Administrator, Federal Railroad Administration.

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