

SUPPORTING JUSTIFICATION
RAILROAD LOCOMOTIVE SAFETY STANDARDS
LOCOMOTIVE EVENT RECORDERS

OMB No. 2130-0004

Summary

- This submission is a request for an extension without change of a currently approved information collection. FRA is in the process of promulgating a final rule sometime in 2012 titled Locomotive Safety Standards that would update, consolidate, and clarify existing regulations. This submission is not associated with that final rule.
- FRA published its Locomotive Safety Standards Notice of Proposed Rulemaking in the **Federal Register** on **January 12, 2011**. See 76 FR 2200. FRA is reviewing and evaluating comments received in response to the NPRM so that it can complete and publish the Locomotive Safety Standards: Final Rule in 2012.
- The total number of burden hours requested for this submission is **863,951 hours**.
- The total number of responses requested is **5,779,206**.
- The total number of burden hours approved for the last submission, which was granted by OMB on August 29, 2008, and which expires August 31, 2011, is **863,951 hours**. Thus, there are no **program changes** or **adjustments** at this time.

1. Circumstances that make collection of the information necessary.

Background

The Rail Safety Improvement Act of 1988 (P.L. 100-342) amended Section 202 of the Federal Railroad Safety Act of 1970 by adding a new subsection requiring that trains be equipped with event recorders. Event recorders are devices that record train speed, hot box detection, throttle position, brake application, brake operations, and any other function that FRA considers necessary to record to assist in monitoring the safety of train operations, such as time and signal indication. Sections 10 and 21 of the Rail Safety Improvement Act of 1988 (RSIA), Public Law 100-342, 102 Stat. 624 (June 22, 1988), provide as follows:

SEC. 10. EVENT RECORDERS.

Section 202 of the Federal Railroad Safety Act of 1970 is amended by adding at the end the following new subsection: "(m)(1)(A) The Secretary shall, within 18 months after the

date of the enactment of the Rail Safety Improvement Act of 1988, issue such rules, regulations, standards, and orders as may be necessary to enhance safety by requiring that trains be equipped with event recorders within one (1) year after such rules, regulations, orders, and standards are issued. (B) If the Secretary finds that it is impracticable to equip trains as required under subparagraph (A) within the time limit under such subparagraph, the Secretary may extend the deadline for compliance with such requirement, but in no event shall such deadline be extended past 18 months after such rules, regulations, orders, and standards are issued. (2) For the purpose of this subsection, the term ‘event recorders’ means devices that – (A) record train speed, hot box detection, throttle position, brake application, brake operations, and any other function the Secretary considers necessary to record to assist in monitoring the safety of train operation, such as time and signal indication; and (B) are designed to resist tampering."

SEC. 21. TAMPERING WITH SAFETY DEVICES.

“Section 202 of the Federal Railroad Safety Act of 1970 is amended by adding at the end the following new subsection: "(o)(1) The Secretary shall . . . issue such rules, regulations, orders, and standards as may be necessary to prohibit the willful tampering with, or disabling of, specified railroad safety or operational monitoring devices.” (Codified at 49 U.S.C. 20137-20138, superseding 45 U.S.C. 431(m) and (o)).

On November 23, 1988, FRA published an ANPRM (Advance Notice of Proposed Rulemaking) in Docket No. LI-7, soliciting comments on how to implement these statutory mandates concerning event recorders. See 53 FR 47557. On June 18, 1991, FRA published a Notice of Proposed Rulemaking (NPRM) in that same docket, setting forth proposed regulations on event recorders, the elements they were to record, and the preservation of data from the event recorder in the event of an accident. See 56 FR 27931. Two public hearings were held in order to facilitate public participation; the written comments submitted in response to the NPRM were extensive, detailed, and helpful.

FRA prescribed final event recorder rules, effective May 5, 1995 (58 FR 36605, July 8, 1993) and in response to petitions for reconsideration (60 FR 27900, May 26, 1995); they were codified principally at 49 CFR 229.135. In issuing the final rules, FRA noted the need to provide more refined technical standards. The National Transportation Safety Board (NTSB) had previously noted the loss of data from event recorders in several accidents due to fire, water, and mechanical damage. NTSB proposed performance standards and agreed to serve as co-chair for a joint industry/government working group that would refine technical standards for next-generation event recorders. FRA conducted a meeting of an informal working group comprised of railroad labor and management representatives and co-chaired by NTSB on December 7, 1995, to consider development of technical standards. At the July 24-25, 1996, meeting of FRA’s Railroad Safety Advisory Committee (RSAC), the Association of American Railroads (AAR)

agreed to continue the inquiry and on November 1, 1996, reported the status of work on proposed industry standards to the RSAC.

On March 5, 1997, the NTSB issued recommendations regarding testing and maintenance of event recorders as a result of its findings in the investigation of an accident on February 1, 1996, at Cajon Pass, California. As the Board noted in its recommendation to FRA, the train that derailed in Cajon Pass “had an event recorder that was not fully operational. The self-diagnostic light on the unit was insufficient to fully examine the unit and ensure that it was recording the data.” The Board recommended that inspection and testing of event recorders “include, at a minimum, a review of the data recorded during actual operations of the locomotive to verify parameter functionality” See NTSB Recommendation R-96-70.

On March 24, 1997, the RSAC indicated its desire to receive a task to consider the NTSB recommendations with regard to crash survivability, testing, and maintenance. A task was presented to the RSAC on June 24, 1997, and readily accepted. The Working Group on Event Recorders was formed and a Task Force established. The Working Group and Task Force conducted meetings and discussed each of the matters proposed in this final rule.

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

The information garnered from crashworthy event recorders is used by railroads to monitor railroad operations. Event recorders must capture data on train speed, direction of motion, time, distance, throttle position, brake applications and operations and, if so equipped, cab signal aspects over the last 48 hours of train operation. This information is used by the railroad’s operating employees – locomotive engineers, train crews, dispatchers – to improve train handling, and promote the safe and efficient operation of trains throughout the country, based on a surer knowledge of the consequences of different control inputs.

Crashworthy event recorders provide FRA with verifiable factual information about how trains are maintained and operated. The information obtained from these requirements is used by FRA and State inspectors in their enforcement of the Locomotive Safety Standards. Specifically, the information is used to ensure that locomotives are properly maintained, and receive the required daily, periodic, and other inspections and tests. The information collected provides carriers a written record to indicate what repairs are needed, who made the repairs, and what repairs were made, and provides the engineer with the knowledge that the locomotive has been inspected, tested, and is safe to be put into service. Moreover, any waivers affecting the operation of the locomotive are identified on Form FRA-F-6180.49A so that train crews are fully informed when they take over operation of that particular train.

Most importantly, information secured from crashworthy event recorders is now used by FRA to examine the circumstances of train accidents/incidents where previously such data might not have survived the accident/incident (e.g., in cases involving fire, impact shock, crush, fluid immersion and hydrostatic pressure), or might not have been intelligible. Event recorder data provides an invaluable resource for post-accident investigations, and have been used to direct the attention of FRA, state, and railroad accident investigators to useful areas in analyzing possible causes of accidents/incidents which were not at first considered or suspected. Such information has then been used by FRA and railroads to establish measures/procedures to prevent (reduce the likelihood of) similar accidents from recurring in the future.

3. Extent of automated information collection.

Over the years, FRA has highly encouraged and strongly endorsed the use of advanced information technology, wherever possible, to reduce burden. In keeping with the requirements of the Government Paperwork Elimination Act (GPEA), all records required by this rule may be kept electronically, with the exception of the “maintenance instructions of the manufacturer, supplier or owner of the event recorder” (see § 229.25(e)) and any notations this rule requires on the “blue card” (Form FRA F 6180.49A). The maintenance instructions for the event recorder must be in hard copy so they can be used at the point of testing and repair. The cab card is an existing requirement not amended by this rulemaking, and establishes the locomotive as “equipped” or not in the field without requiring reference to a database somewhere else.

It should be noted that the National Transportation Safety Board (NTSB) has strongly advised that maintenance of locomotive event recorders verify that the entire event recorder system—including the recorder, the memory module, the cabling, and the sensors—accurately records what the locomotive has actually done. Although the regulatory text does not specify how records of successful tests are to be maintained, FRA has no objections to keeping the records electronically, as long as the electronic “record” is the full and complete “data verification result” required by this section. Moreover, since event recorders themselves are electronic recordkeeping devices, they readily lend themselves to cost (labor) and burden hour savings by functioning properly.

It should also be noted that FRA has been working steadily with the major railroads, particularly Union Pacific (UP), Burlington Northern Santa Fe (BNSF), and Norfolk Southern (NS) to establish approved electronic recordkeeping systems to convert the required daily inspection records under § 229.21 from a paper to an electronic format. Substantial progress has been achieved in this effort. With the addition of the NS records, FRA now estimates that a total of 3,822,000 daily inspection records are now being kept electronically. Thus, 68% of all these required records are currently being kept electronically. This program change has substantially reduced the burden hours for this requirement (**34,233 hours** from the previously approved submission). The revised burden estimate is reflected in the itemized accounting for question 12 of this

Justification. Overall, **66%** of all responses are now being kept electronically.

Note: To further aid railroads and other users, FRA has installed all its safety forms, including Form FRA F 6180.49A, on its Website so that they can easily be downloaded. FRA is also in the process of making all its forms available in a PDF fillable format for the convenience of users and to further reduce burden.

4. Efforts to identify duplication.

This information to our knowledge is not duplicated anywhere.

Similar data are not available from any other source.

5. Efforts to minimize the burden on small businesses.

About 690 of the approximately 750 railroads in the United States are considered small businesses by FRA. This rule applies to all railroads that operate passenger or freight trains at speeds greater than 30 mph. Therefore, this rule likely affects as many as 660 small entities. However, many of the smaller railroads conduct operations on track that is suitable for top speeds of 25 mph or less (track maintained up through Class II standards). Also, virtually all small railroads own older locomotives (buy older or rebuilt equipment from the larger Class I railroads/other sources), and thus are not affected by the new equipment requirements of this rule.

Additionally, FRA is very aware of cost burdens on railroads and the importance of easing them, where possible. AAR, APTA, and their member railroads suggested a date of January 1, 2010, as the date after which any replacement event recorder must be equipped with a crashworthy memory module pursuant to Appendix D of this final rule. These parties claim that a provision drafted in such a manner would allow railroads to continue to acquire solid state event recorders for the immediate future, and would allow railroads to deplete their in-stock event recorders without imposing any significant financial burden. FRA has incorporated this recommendation into this rule. Moreover, FRA has eased the burden of specific “annual test dates” by acknowledging that any time an event recorder is downloaded, reviewed for the relevant elements as required in § 229.135(b), and successfully passes that review, a new 368-day interval begins. The added flexibility provided by this section could mean that locomotives equipped with microprocessor-based event recorders need never visit a shop just to check the event recorder.

Finally, FRA has concluded that this rule will not have a significant economic impact on a sizable number of small entities, and has certified to that effect in its previous regulatory impact analysis. It should also be noted that representatives of small railroads participated in the RSAC discussions that provided the basis for this rule.

6. Impact of less frequent collection of information.

If this collection of information were not conducted or conducted less frequently, railroad safety in the U.S. would be seriously hampered. Specifically, without the collection of information provided by event recorders, FRA and railroads would be unable to monitor daily operations of locomotives so as to ensure safe train movements of passengers and goods all across the United States. Without periodic inspections of event recorders and without event recorder data verification readout records, there would be no way of ensuring that the locomotive event recorders are working properly and are truly capturing required data which are representative of the locomotive's actual operations. The lack of this essential and highly useful information could have an extremely adverse impact on train handling and rail safety since railroads and train crews would be unaware of those critical areas where management and labor need to focus their efforts in order to eliminate problems or potential problems. This, in turn, could lead to increased numbers of accident/incidents, resulting in greater and more severe casualties and higher property damage and, in cases involving the transport of hazardous materials, greater harm to the environment and surrounding communities.

Additionally, without this collection of information, FRA, railroads, and other investigators would be unable to extract and analyze vital data needed to determine the cause(s) of an accident/incident that would provide valuable insight into preventing similar accidents/incidents from occurring in the future. By supplying investigators with information on speed, throttle position, and braking, as well as a record of all the significant actions taken before the accident, event recorder data often become the foundation of the accident investigation. Without event recorder data, other data or testimony may be misinterpreted; accident causation identification may be either incomplete, or erroneous; and improper or insufficient remedial actions may be put in place.

In this rule, FRA has incorporated requirements for the capture of additional data parameters and for crash-hardening the event recorder memory module. Without certification that event recorders have crashworthy memory modules, critical data might be lost because the event recorder did not survive an accident/incident due to fire, impact shock, crush, fluid immersion, or hydrostatic pressure. Without the vital information that crash-hardened event recorder memory modules provide in such an accident/incident investigations, FRA and the railroads would be seriously hindered in developing essential measures and procedures that would forestall similar accidents/incidents from occurring in the future.

Without the required daily safety inspections and the corresponding required reports, the discovery and correction of minor defects would not occur in time to prevent them from becoming major defects. Non-complying or defective locomotives might then be put into service. This could lead to an increased number of accidents/incidents, including derailments and collisions, where there are serious injuries and deaths to train crews and

passengers, as well as significant property damage.

In sum, this collection of information aids FRA in fulfilling its primary mission of promoting and enhancing rail safety throughout the United States and contributes as well to DOT's Primary Strategic Goal of transportation safety.

7. **Special circumstances.**

All information collection requirements are in compliance with this section.

8. **Compliance with 5 CFR 1320.8.**

In accordance with the Paperwork Reduction Act of 1995, Public Law No.104-13, § 2, 109 Stat. 163 (1995) (codified as revised at 44 U.S.C. §§ 3501-3520), and its implementing regulations, 5 C.F.R. Part 1320, FRA published a notice in the Federal Register on January 13, 2011. See 76 FR 34287.

FRA received no comments in response to this notice.

Background

The final rule was published on June 30, 2005, in the Federal Register (*see* 70 FR 37920). On June 30, 2004, FRA published a Notice of Proposed Rulemaking (NPRM) in the Federal Register (*see* 69 FR 39774) soliciting public comment about the rule itself and the information collection requirements associated with it. In response, FRA received comments from twenty-two interested parties. FRA received no comments specifically relating to its burden hour and burden cost estimates.

Many of the comments concerned event recorder technical issues. However, there were a couple of comments related to the paperwork requirements themselves. One comment from the NTSB pertained to required records. The NTSB sought clarification as to whether the proposed rule would require event recorder maintenance to be recorded on the locomotive "blue card" (form FRA F 6180.49A) maintained in the cab of the locomotive. While the "blue card" does not contain a specific line item related to event recorders, the regulation does require that the date, place, and signature of the person performing the required periodic inspections under §§ 229.25 and 229.27 be entered on the form. Thus, in order to properly sign the "blue card", the required inspection, testing, and maintenance must be performed on the event recorder and any dates on the form would be equally applicable to the event recorder as to any other component required to be addressed during a periodic inspection. Also, there was a comment/question regarding the proposed provisions for maintaining records related to periodic inspections and maintenance instructions. The final rule retains the proposed provisions for maintaining these records, and does not specify how records of successful test are to be maintained. Thus, these records can be kept electronically, provided the electronic record is the full

and complete “data verification result” required by this section, the record is secure, the record is accessible to FRA for review and monitoring, and the record is made available upon request to FRA representatives or any other governmental agent with the authority to request them.

FRA is highly attuned to cost burdens imposed on respondents as a result of rulemaking. In its comments to the NPRM, the NTSB recommended that the maintenance of locomotive event recorders should verify that the entire event recorder system – including the recorder, the memory module, the cabling, the transducers, and the sensors – is accurately recording what the locomotive has actually done. Rather than impose a significant periodic inspection cost by specifically requiring the inspection of such components, FRA believes that the provisions related to the annual inspection will ensure the accuracy of the devices. To ensure that the recorder is indeed capturing data representative of the locomotive’s actual operations, the final rule retains the proposed requirement that, sometime within 30 days of each annual periodic inspection, the railroad download and review the data required by § 229.135(b), as captured by the event recorder’s crashworthy memory module. This download might be part of any other download a railroad might choose to perform, whether as a part of locomotive maintenance, employee monitoring, service planning, or whatever. The downloaded data must then be compared to the known operations of the locomotive over the past 48 hours and, if all required channels are recording and the required elements are representative of actual operations, the recorder—assuming always that the fault light is not on—will require no further maintenance or checking. FRA has also eased the burden of specific “annual test dates” by acknowledging that any time an event recorder is downloaded, reviewed for the relevant elements as required in § 229.135(b), and successfully passes that review, a new 368-day interval begins. The added flexibility provided by this section could mean that locomotives equipped with microprocessor-based event recorders need never visit a shop just to check the event recorder. Such flexibility is aimed at reducing unnecessary costs, where possible.

In March 1996, FRA established the RSAC, which provides a forum for developing consensus recommendations on rulemakings and other safety program issues. The Committee includes representation from all of the agency's major customer groups, including railroads, labor organizations, suppliers and manufacturers, and other interested parties. A list of member groups follows:

American Association of Private Railroad Car Owners (AARPCO)
American Association of State Highway & Transportation Officials (AASHTO)
American Public Transportation Association (APTA)
American Short Line and Regional Railroad Association (ASLRRA)
American Train Dispatchers Department/Brotherhood of Locomotive Engineers (ATDD/BLE)
National Passenger Railroad Corporation (Amtrak)
Association of American Railroads (AAR)

Association of Railway Museums (ARM)
 Association of State Rail Safety Managers (ASRSM)
 Brotherhood of Locomotive Engineers (BLET)
 Brotherhood of Maintenance of Way Employees (BMWE)
 Brotherhood of Railroad Signalmen (BRS)
 Federal Transit Administration (FTA)*
 High Speed Ground Transportation Association
 Hotel Employees & Restaurant Employees International Union
 International Association of Machinists and Aerospace Workers
 International Brotherhood of Boilermakers and Blacksmiths
 International Brotherhood of Electrical Workers (IBEW)
 Labor Council for Latin American Advancement (LCLAA)*
 League of Railway Industry Women*
 National Association of Railroad Passengers (NARP)
 National Association of Railway Business Women*
 National Conference of Firemen & Oilers
 National Railroad Construction and Maintenance Association
 National Transportation Safety Board (NTSB)*
 Railway Progress Institute (RPI)
 Safe Travel America
 Secretaria de Comunicaciones y Transporte*
 Sheet Metal Workers International Association
 Tourist Railway Association Inc.
 Transport Canada*
 Transport Workers Union of America (TWUA)
 Transportation Communications International Union/BRC (TCIU/BRC)
 United Transportation Union (UTU)
 *Indicates associate membership.

When appropriate, FRA assigns a task to RSAC, and after consideration and debate, RSAC may accept or reject the task. If accepted, RSAC establishes a working group that possesses the appropriate expertise and representation of interests to develop recommendations to FRA for action on the task. These recommendations are developed by consensus. A working group may establish one or more task forces to develop facts options on a particular aspect of a given task. The task force then provides that information to the working group for consideration. If a working group comes to unanimous consensus on recommendations for action, the package is presented to the RSAC for a vote. If the proposal is accepted by a simple majority of the RSAC, the proposal is formally recommended to FRA. FRA then determines what action to take on the recommendation. Because FRA staff has played an active role at the working group level in discussing the issues and options and in drafting the language of the consensus proposal, FRA is often favorably inclined toward the RSAC recommendation. However, FRA is in no way bound to follow the recommendation and the agency exercises its independent judgment on whether the recommended rule achieves the agency's

regulatory goal, is soundly supported, and is in accordance with policy and legal requirements. Often, FRA varies in some respects from the RSAC recommendation in developing the actual regulatory proposal. If the working group or RSAC is unable to reach consensus on recommendations for action, FRA moves ahead to resolve the issue through traditional rulemaking proceedings.

On March 24, 1997, the RSAC indicated its desire to receive a task to consider the National Transportation Safety Board (NTSB) recommendations with regard to crash survivability, testing, and maintenance. A task was presented to the RSAC and accepted by it on June 24, 1997. The Working Group on Event Recorders was formed and a Task Force established. The Working Group on Event Recorders was formed and a Task Force established. Members of the Working Group, in addition to FRA, included representatives from the following organizations:

American Public Transportation Association (APTA)
Amtrak
Association of American Railroads (AAR)
Bach-Simpson
Brotherhood of Locomotive Engineers (BLET)
Brotherhood of Railway Carmen (BRC)/Transportation Communications International Union (TCIU)
Burlington Northern and Santa Fe Railway Company (BNSF)
Canadian National Railway Company (CN)
Canadian Pacific Railway Company (CP)
Consolidated Rail Corporation (Conrail)
CSX Transportation, Inc. (CSX)
EDI, General Motors Corporation/Electro-Motive Division (EMD)
Florida East Coast Railway Company (FEC)
Illinois Central Railroad Company (IC)
International Brotherhood of Electrical Workers (IBEW)
Norfolk Southern Corporation (NS)
Pulse/Wabco
Q-Tron
Southeastern Pennsylvania Transportation Authority (SEPTA)
Union Pacific Railroad Company (UP)
United Transportation Union (UTU)

The NTSB met with the Working Group and provided staff advisors. In addition, GE-Harris, STV Incorporated, and Peerless Institute attended many of the meetings and contributed to the technical discussions.

The Working Group and related Task Force conducted a number of meetings and discussed each of the matters proposed in the NPRM issued in this matter. The Working Group reached full consensus on a recommended proposal on October 20, 2003, and

transmitted the document as its recommendation to the full RSAC for its concurrence via mail ballot on October 23, 2003. By November 12, 2003, the deadline set for casting a ballot in this matter, thirty-five of the forty-eight voting members of the full RSAC had returned their ballots on the regulatory recommendation submitted by the Working Group. All thirty-five of the voting members concurred with and accepted the Working Group's recommendation. Thus, the Working Group's recommendation became the full RSAC's recommendation to FRA. After reviewing the full RSAC's recommendation, FRA adopted the recommendation with minor changes for purposes of clarity, and responsiveness to certain comments made by Working Group and RSAC members when submitting their concurrences.

On June 30, 2004, FRA published an NPRM containing the recommendations of the Working Group and the full RSAC. See 69 FR 39774. The NPRM provided for a 60-day comment period and provided interested parties the opportunity to request a public hearing. Based on the comments received, FRA issued a notice on September 2, 2004, scheduling a public hearing for September 30, 2004, and extending the comment period an additional 41 days to October 11, 2004. See 69 FR 54255 (September 8, 2004).

9. Payments or gifts to respondents.

There are no monetary payments or gifts made to respondents associated with the information collection requirements contained in this final regulation.

10. Assurance of confidentiality.

Information collected is not of a confidential nature, and the Federal Railroad Administration (FRA) pledges no confidentiality.

11. Justification for any questions of a sensitive nature.

There are no questions of a sensitive or private nature involving this final regulation and its associated information collection requirements.

12. Estimate of burden hours for information collected.

Note: The burden hour estimates for the information collection requirements listed below remain unchanged from the last approved submission.

Movement of Non-Complying Locomotive (229.9)

Except as provided in paragraphs (b), (c) (of this section) and § 229.125(h), a locomotive

with one or more conditions not in compliance with this Part may be moved only as a lite locomotive or a dead locomotive after the carrier has complied with the following: (1) A qualified person must determine that (i) it is safe to move the locomotive; and (ii) The maximum speed and other restrictions necessary for safely conducting the movement. (2) (i) The engineer in charge of the movement of the locomotive must be notified in writing and inform all other crew members in the cab of the presence of the non-complying locomotive and the maximum speed and other restrictions determined under paragraph (a)(1)(ii) of this section; (ii) A copy of the tag described in paragraph (a)(3) of this section may be used to provide the notification required by paragraph (a)(2)(i) of this section. (3) A tag bearing the words “non-complying locomotive” and containing the following information must be securely attached to the control stand on each MU or control cab locomotive and to the isolation switch or near the engine start switch on every other type of locomotive: (i) The locomotive number; (ii) The name of the inspecting carrier; (iii) The inspection location and date; (iv) The nature of each defect; (v) Movement restrictions, if any; (vi) The destination; and (vii) The signature of the person making the determinations required by this paragraph.

FRA estimates that approximately 21,000 tags a year will be complete under this requirement. It is estimated that the average tag takes approximately one (1) minute to complete. Total annual burden for this requirement is 350 hours.

Respondent Universe:

44
railroads

Burden time per response:

1
minute

Frequency of Response:

On
Occasion

Annual number of Responses: 21,000 tags

Annual Burden: 350 hours

Calculation: 21,000 tags. x 1 min. = 350 hours

Accident Reports (229.17)

In the case of an accident due to a failure from any cause of a locomotive or any part or appurtenance of a locomotive, or a person coming in contact with an electrically energized part or appurtenance that results in serious injury or death of one or more persons, the carrier operating the locomotive must immediately report the accident by toll-free telephone, Area Code 800-424-0201. The locomotive or the part or parts affected by the accident must be preserved intact by the carrier until after the FRA inspection.

Written confirmation of the oral report required by paragraph (a) of this section must be immediately mailed to the Federal Railroad Administration (FRA), RRS-25, Washington, D.C. 20590, and must contain a detailed description of the accident, including to the extent known, the causes and the number of persons killed and injured. The written report required by this paragraph is in addition to the reporting requirements of 49 CFR Part 225.

Accidents caused by locomotives occur very infrequently. FRA estimates that there will be approximately one (1) locomotive-related accident per year. It is estimated that it will take approximately 15 minutes to report the accident and complete the written confirmation. Total annual burden for this requirement is .25 hour.

Respondent Universe:

44
railroads

Burden time per response:

15
minutes

Frequency of Response:

On
Occasion

Annual number of Responses:

1 report

Annual Burden:

.25 hour

Calculation: 1 report x .25 hour = .25 hour

Daily Inspection (229.21)

Except for MU locomotives, each locomotive in use must be inspected at least once during each calendar day. A written report of the inspection must be made. This report must contain the name of the carrier; the initials and the number of the locomotive; the place, date, and time of the inspection; a description of the non-complying conditions disclosed by the inspection; and the signature of the employee making the inspection.

Except as provided in §§ 229.9, 229.137, and 229.139, any conditions that constitute non-compliance with any requirement of this Part must be repaired before the locomotive is used. Except with respect to conditions that do not comply with § 229.137 or § 229.139, a notation must be made on the report indicating the nature of the repairs that have been made. Repairs made for conditions that do not comply with § 229.137 or § 229.139 may be noted on the report, or in electronic form. The person making the repairs must sign the report. The report must be filed and retained for at least 92 days in the office of the carrier at the terminal at which the locomotive is cared for. A record must also be maintained on each locomotive showing the place, date, and time of the previous inspection. Thus, this record is displayed in the locomotives' cab for each succeeding crew until the next inspection.

Sometimes railroads leave locomotives at outlying points for periods of up to 92 days and different crews are subject to its use. Without a method of notification, defective locomotives could be placed in service and employees, as well as the public, would be subjected to hazards they have no control over. The daily inspection is basically a walk around visual observation for any defective or non-complying condition obvious to the railroad inspector, or en route problems that might occur while the engineer is operating the locomotive. This type of inspection should find – before they become critical – defective brakes, wheels, broken or inoperative devices, and oil or fuel leakages that could cause slipping or fire hazards. To validate the inspection, the inspector must complete a written report indicating any defects which are found.

FRA estimates that approximately 21,750 locomotives will require a daily inspection. On an annual basis, a total of 5,655,000 daily inspections will be conducted (based on a five day week) for these locomotives. Further, three major railroads – the Union Pacific (UP), the Burlington Northern Santa Fe (BNSF), and Norfolk Southern (NS) – have applied for and been granted waivers by FRA so that they can keep the required record electronically. This approval affects approximately 14,700 of the 21,750 locomotives mentioned above, or a total of 3,822,000 records. FRA estimates that all UP's 1,430,000 daily inspection records, all of BNSF's approximately 1,430,000 daily inspection records, and all of NS's 962,000 are now kept electronically by the railroads. Thus, an estimated total of 3,822,000 records (68 % of all the required records) are now kept electronically by the two railroads. The rest of the daily inspection records (1,833,000) will be kept by

paper. It is estimated that each daily inspection paper record will take approximately three (3) minutes to complete, and that each daily inspection electronic record will take approximately one (1) minute to complete. Total annual burden for this requirement is approximately 155,350 hours.

Respondent Universe:

744
railroads

Burden time per response:

1
minute
or 3
minutes

Frequency of Response:

Daily

Annual number of Responses: 5,655,000 inspection reports/records
Annual Burden: 155,350 hours

Calculation: 1,833,000 paper insp. records x 3 min. + 3,822,000 electronic insp. records x 1 min. = 155,350 hours

(b) Each MU locomotive in use shall be inspected at least once during each calendar day and a written report of the inspection shall be made. This report may be part of a single master report covering an entire group of MU's. If any non-complying conditions are found, a separate, individual report shall be made containing the name of the carrier; the initials and number of the locomotive; the place, date, and time of the inspection; the non-complying conditions found; and the signature of the inspector. Except as provided in §§ 229.9, 229.137, and 229.139, any conditions that constitute non-compliance with any requirement of this part shall be repaired before the locomotive is used. Except with respect to conditions that do not comply with § 229.137 or § 229.139, a notation shall be made on the report indicating the nature of the repairs that have been made. Repairs made for conditions that do not comply with § 229.137 or § 229.139 may be noted on the report, or in electronic form. A notation shall be made on the report indicating the nature of the repairs that have been made. The person making the repairs shall sign the report. The report shall be filed in the office of the carrier at the place where the inspection is

made or at one central location and retained for at least 92 days.

FRA estimates that approximately 250 written reports will be completed under the above requirement. It is estimated that it will take approximately three (3) minutes to complete each inspection and the accompanying report. Total annual burden for this requirement is 13 hours.

Respondent Universe:

744
railroads

Burden time per response:

3
minutes

Frequency of Response:

On
Occasion

Annual number of Responses: 250 written reports
Annual Burden: 13 hours

Calculation: 250 written reports x 3 min. = 13 hours

Total annual burden for this requirement is 155,363 hours (155,350 + 13).

Steam Generator Warning Notice (229.113)

Whenever any steam generator has been shut down because of defects, a distinctive warning notice giving reasons for the shut-down must be conspicuously attached near the steam generator starting controls until the necessary repairs have been made. The locomotive in which the steam generator displaying a warning notice is located may continue in service until the next periodic inspection.

Currently, there are no steam generators in service today. Since this is the case,

obviously no steam generators have been shut down because of defects, and no warning notices have been composed. Consequently, there is no burden associated with this requirement.

Locomotive Inspection and Repair Record (Form FRA-F- 6180.49A)

Items 1 through 10 and 12 detail the identity, characteristics, owner and operator of each locomotive operating under the Locomotive Inspection Act. Without full identification, there is a good chance that the locomotive maintenance history will become erroneously identified or misrepresented. Positive identification is essential to the railroad safety plan.

As mentioned earlier, FRA estimates that there are approximately 21,750 locomotives in use presently. For approximately 17,750 locomotives, the necessary information is computer generated. For the rest, one form is required per locomotive or a total of approximately 4,000 forms per year. It is estimated that it takes approximately two (2) minutes to transfer this data onto a new form each year. Total annual burden for this requirement is 133 hours.

Respondent Universe:

744
railroads

Burden time per response:

2
minutes

Frequency of Response:	Annually
Annual number of Responses:	4,000 forms
Annual Burden:	133 hours

Calculation: 4,000 forms x 2 minutes = 133 hours

Below is a breakdown of the various inspections or tests required to be performed and recorded on this form along with the burden hours associated with each.

(1) Locomotive Noise Emission Test (210.31)

The following data determined by any locomotive noise emission test conducted after December 31, 1976, must be recorded in the "Remarks" section on the reverse side of Form FRA F 6180.49: (1) Location of the test; (2) Type of test; (3) Date of test; and (4) The A-weighted sound level reading in decibels obtained during the pass by test, or the readings obtained at idle throttle setting and maximum throttle setting during a load cell test.

Approximately 744 railroads perform locomotive noise emission tests. The data for most of these tests are computer-generated and thus incur no paperwork burden. However, FRA estimates that the data for approximately 100 locomotives a year will require remarks on the paper form. The estimated average time to perform this test and record the data on the back of the form (Form FRA-F-6180.49A) is approximately 15 minutes. Total annual burden for this requirement is 25 hours.

Respondent Universe:

744
railroads

Burden time per response:

15
minutes

Frequency of Response:

On
Occasion

Annual number of Responses: 100 tests/remarks

Annual Burden: 25 hours

Calculation: 100 tests/remarks x .25 hr. = 25 hours

(2) (a) Periodic Inspection (49 CFR 229.23)

Each locomotive and steam generator must be inspected at each periodic inspection to determine whether it complies with this Part. Except as provided in § 229.9, all non-complying conditions must be repaired before the locomotive or the steam generator is used. Except as provided in § 229.33, the interval between any two periodic inspections may not exceed 92 days. Periodic inspections must only be made where adequate facilities are available. At each periodic inspection, a locomotive must be positioned so that a person may safely inspect the entire underneath portion of the locomotive.

After April 30, 1980, each new locomotive must receive an initial periodic inspection before it is used. Except as provided in § 229.33, each locomotive in use or before April 30, 1980, must receive an initial periodic inspection within 92 days of the last 30-day inspection performed under the prior rules (49 CFR 230.331 and 230.451). At the initial periodic inspection, the date and place of the last tests performed that are the equivalent of the tests required by §§ 229.27, 229.29, and 229.31 must be entered on Form FRA F 6180.49A. These dates shall determine when the tests first become due under §§ 229.27, 229.29, and 229.31. Out of use credit may be carried over from Form FRA 6180.49A and entered on Form FRA 6180.49A. Each periodic inspection must be recorded on Form FRA 6180.49A. The form must be signed by the person conducting the inspection and certified by that person's supervisor that the work was done. The form must be displayed under a transparent cover in a conspicuous place in the cab of the locomotive.

At the first periodic inspection in each calendar year, the carrier must remove from each locomotive Form FRA 6180.49A covering the previous calendar year. If a locomotive does not receive its first periodic inspection in a calendar year before April 2 because it is out of use, the form must be promptly replaced. The Form FRA 6180.49A covering the preceding year for each locomotive, in or out of use, must be signed by the railroad official responsible for the locomotive and filed as required under § 229.23(f). The date and place of the last periodic inspection and the date and place of the last test performed under §§ 229.27, 229.29, and 229.31 must be transferred to the replacement Form FRA 6180.49A.

The mechanical officer of each railroad who is in charge of a locomotive must maintain in his office a secondary record of the information reported on Form FRA 6180.49A under this Part. The secondary record must be retained until Form FRA 6180.49A has been removed from the locomotive and filed in the railroad office of the mechanical officer in charge of the locomotive. If the Form FRA 6180.49A removed from the locomotive is not clearly legible, the secondary record must be retained until the Form FRA 6180.49A for the succeeding year is filed. The Form FRA 6180.49A removed from a locomotive must be retained

until the Form FRA 6180.49A for the succeeding year is filed.

The periodic inspection is a more thorough inspection than the daily inspection, and is performed at least once every 92 days. It consists of positioning the locomotive so that a person may safely inspect the entire underneath portion of the locomotive. During the periodic inspection, numerous tests, inspections and replacement of components are made to electrical equipment, event recorders, protection devices, braking system, internal combustion engine filtering, fuel, waste and lubricating systems, and wheels and running gear are measured and examined for critical defects. The information from these various inspections or tests is recorded under Items 13 through 17 on form FRA-F-6180.49A. The absence of these elements on the form will void the history and continuity of the maintenance record. As noted above, the form must be signed by the person conducting the inspection and certified by that person's supervisor that the work was done. The form must be displayed under a transparent cover in a conspicuous place in the cab of each locomotive. Without the record, again, there is no coordinated maintenance program. The railroads would have no idea what maintenance inspections have been accomplished or when others are scheduled.

(b) Annual and Biennial Tests (49 CFR 229.27 and 29)

While the locomotive is tied up for a periodic inspection, at the 92 day interval, various air brake components are cleaned, repaired, tested, or replaced once every 368 or 736 days. The load meter is also tested. Moreover, all valves, valve portions, MU locomotive brake cylinders and electric-pneumatic master controllers in the air brake system (including related dirt collectors and filters) must be cleaned, repaired, and tested (except for the valves and valve portions on non-MU locomotives that are cleaned, repaired, and tested as prescribed in §229.27(a)). The date and place of the cleaning, repairing, and testing is recorded under Items 18 through 24 on form FRA-F-6180.49A. When the Locomotive Safety Standards were being developed, a request was made to permit fragmentation of air brake work if the cleaning dates were kept on the record currently in use. The regulation was changed to permit any railroad to use whichever procedure best suited their operations. The date and place of the test must be recorded on Form FRA F 6180.49A, and the person conducting the test and that person's supervisor must sign the form. A record of the parts of the air brake system that are cleaned, repaired, and tested shall be kept in the carrier's files or in the cab of the locomotive.

(c) Main Reservoir Tests (49 CFR 229.31)

The drilling of telltale holes in welded main air reservoirs is generally performed at the time the reservoirs are originally constructed. It is a one-time procedure,

and those locomotives with welded reservoirs are already done.

This type of construction requires the reservoirs to receive a hydrostatic hammer test every 736 days. However, there are no locomotives which have riveted air reservoirs. This test then does not have to be done. It should be noted that the nation's railroads include numerous routine work on locomotives not required by FRA regulations at this inspection. FRA is unable to separate specific items as each railroad does its own thing.

FRA estimates that the approximately 21,750 locomotives in use will undergo periodic inspections four times a year. It is estimated then that approximately 87,000 periodic inspections will take place annually. It is further estimated that it takes approximately eight (8) hours to perform the above inspections; make repairs and adjustments; and enter the data on the Locomotive and Inspection and Repair Report (FRA-F-6180.49A). Total annual burden for this requirement is 696,000 hours.

Respondent Universe:

744
railroads

Burden time per response:

8 hours

Frequency of Response:

Annually

Annual number of Responses: 87,000 tests/forms
Annual Burden: 696,000 hours

Calculation: 87,000 tests/forms x 8 hrs. = 696,000 hours

(3) Out-of-Use Credit (49 CFR 229.33)

When a locomotive is out of use for 30 or more consecutive days or is out of use when it is due for any test or inspection required by §§ 229.23, 229.25, 229.27, 229.29, or 229.31, an out-of-use notation showing the number of out-of-use days must be made on an inspection line on Form FRA F 6180.49A. A supervisory employee of the carrier who is responsible for the locomotive must attest to the notation. If the locomotive is out of use for one or more periods of at least 30 consecutive days each, the interval prescribed for any test or inspection under this Part may be extended by the number of days in each period the locomotive is out of use since the last test or inspection in question. A movement made in accordance with § 229.9 is not a use for purposes of determining the period of the out-of-use credit.

FRA estimates that approximately 8,000 locomotives have been stored for several years and, if returned to service, will be overdue for most tests, depending upon length of out-of-service time. We do not know if the railroads will want to take advantage of this procedure when subject locomotives are returned to service. Some will, and some will not.

In addition, approximately 1,000 of the locomotives that are in operation are held out-of-service at various times for periods exceeding 30 consecutive days, which permits them to acquire out-of-use credits.

So that the railroad industry can take full advantage of periods of non-use and so that railroads, Federal and State inspectors can account for these periods, the out-of-service procedure was designed.

FRA estimates that there will be approximately 500 out-of-use credits, or 500 out-of-use notations per year. It is estimated that each notation takes approximately five (5) minutes to record the required data on the form (under Item 11 on Form FRA-F-6180.49A). Total annual burden for this requirement is 42 hours.

Respondent Universe:	744 railroads
Burden time per response:	5 minute s
Frequency of Response:	On Occasion

Annual number of Responses: 500 out-of-use notations (credits)
 Annual Burden: 42 hours

Calculation: 500 notations x 5 minutes = 42 hours

NOTE: Total annual burden hours associated with the Locomotive and Inspection Repair Report (FRA-F-6180.49A) is as follows:

	Transferring of data
	- 133
	Locomotive Noise Emission
	Test - 25
Periodic, Annual, Biennial and Main Reservoir Tests and Inspections	- 696,000
Out-of-Use Credit	- <u>42</u>
	Total Hours
	696,200

RECORDKEEPING REQUIREMENTS FOR EVENT RECORDERS

Tests: Every Periodic Inspection (229.25)

Event Recorder. A microprocessor-based self-monitoring event recorder, if installed, is exempt from periodic inspection under paragraphs (e)(1) through (e)(5) of this section and must be inspected annually as required by § 229.27(d). Other types of event recorders, if installed, must be inspected, maintained, and tested in accordance with instructions of the manufacturer, supplier, or owner thereof and in accordance with the following criteria: (1) A written or electronic copy of the instructions in use must be kept at the point where the work is performed, and a hard-copy version, written in the English language, must be made available upon request of a governmental agent empowered to request it. (2) The event recorder must be tested before any maintenance work is performed on it. At a minimum, the event recorder test must include cycling, as practicable, all required recording elements and determining the full range of each element by reading out recorded data. (3) If the pre-maintenance test does not reveal that the device is recording all the specified data and that all recordings are within the designed recording elements, this fact must be noted, and maintenance and testing must be performed as necessary until a subsequent test is successful. (4) When a successful test is accomplished, a copy of the data-verification results must be maintained in any

medium with the maintenance records for the locomotive until the next one is filed. (5) A railroad's event recorder shall be considered effective if 90 percent of the recorders on the locomotives inbound for periodic inspection in any given calendar month are still fully functional; maintenance practices and test intervals shall be adjusted as necessary to yield effective periodic maintenance.

(1) *Written Copy of Instructions.* The written copy of instructions has been accomplished by most railroads. FRA estimates that approximately 200 amendments will be made annually to the manufacturer's instructions. FRA estimates that it will take approximately 15 minutes per respondent to make copies of the manufacturer's amended instructions and distribute them to their repair shops. Total annual burden for this requirement is 50 hours.

Respondent Universe:

744
railroads

Burden time per response:

15
minutes

Frequency of Response:

On
Occasion

Annual number of Responses: 200 amendments
Annual Burden: 50 hours

Calculation: 200 amendments x .25 hours = 50 hours

(2) *Data Verification Readout Record.* Event recorders during routine maintenance must be run through the full range of each of the operational parameters they were recording and a verification of the correct functioning of the recorder – in the form of a read out tape – must be filed with other locomotive maintenance records until the next inspection and maintenance period.

FRA estimates that approximately 16,100 locomotives are equipped with event recorders. Verification tests will be required to be performed four (4) times a year on approximately 50% of the above total or 8,050 locomotives (a total of 32,200 verification tests per year)

because they have event recorders covered under the current rule. The other 50% of the above total (8,050 locomotives) will have microprocessor-based event recorders, and will be covered by the final rule, requiring a verification test only once a year (a total of 8,050 verification tests per year). A grand total then of 40,250 verification tests will be completed a year.

FRA believes that approximately 90% of the event recorders are passing this required test. When this happens, little or no analysis is required. However, approximately 10% will fail, requiring these event recorders to be run through the full range of each of the operational parameters they were recording and necessitating a data verification readout record demonstrating the correct functioning of the recorder. A total then of 4,025 verification test reports will be completed. It is estimated that it will take approximately 90 minutes for maintenance personnel to pick up the verification machine, hook it up to the event recorder, print out the verification data, analyze the data, and file the verification report with the locomotive's maintenance records. Total annual burden for this requirement is 6,038 hours.

Respondent Universe:

744
railroads

Burden time per response: 90 minutes
Frequency of Response:

Quarterly/Annually

Annual number of Responses: 4,025 readout records/reports
Annual Burden: 6,038 hours

Calculation: 4,025 read records/ reports x .5 hour = 6,038hours

(3) *Pre-Maintenance Tests - Failures.* FRA estimates that approximately 700 event recorders will fail the pre-maintenance test under the above requirement. It is estimated that it will take approximately 30 minutes to conduct the inspection and test, and make the required notation on the data verification result. Total annual burden for this requirement is 350 hours.

Respondent Universe:

744
railroads

Burden time per response:

30
minutes

Frequency of Response:

On
occasion

Annual number of Responses: 700 test failure notations

Annual Burden: 350 hours

Calculation: 700 test failure notations x 30 min. = 350 hours

(4.) When a successful test is accomplished, a copy of those data-verification results shall be maintained, in any media, with the maintenance records for the locomotive until the next one is filed.

The burden for this requirement is included under (2) above. Consequently, there is no additional burden associated with it.

Total annual burden for this entire requirement is 6,438 hours (50 + 6,038 + 350).

Event Recorders (229.135)

(A.) *Removal from service.* Notwithstanding the duty established in paragraph (a) of this section to equip certain locomotives with an in-service event recorder, a railroad may remove an event recorder from service and, if a railroad knows that an event recorder is not monitoring or recording required data, shall remove the event recorder from service. When a railroad removes an event recorder from service, a qualified person shall record the date that the device was removed from service on Form FRA F6180.49A, under the REMARKS section, unless the event recorder is designed to allow the locomotive to assume the lead position only if the recorder is properly functioning.

An event recorder may be removed from service by disconnecting its power source, by

physically removing it from the locomotive on which it is installed, or by removing its recording medium. The reasons for removing the device from service and the period within which the device will remain out of service must be recorded on a tag applied to the device or to the place from which the device was removed. A railroad may design its own tag to be used for this purpose or may record the required data on a "non-complying locomotive tag" as described in 49 CFR 229.9(a)(3).

FRA estimates that approximately 1,000 event recorders will be removed annually from locomotives for either repair or other purposes. It is estimated that it will take approximately one (1) minute to record the reason why the event recorder was removed. Total annual burden for this requirement is 17 hours.

Respondent Universe:

744
railroads

Burden time per response:

1
minute

Frequency of Response:

On
Occasion

Annual number of Responses: 1,000 removal tags
Annual Burden: 17 hours

Calculation: 1,000 removal tags x 1 min. = 17 hours

(B.) Preserving accident data. If any locomotive equipped with an event recorder, or any other locomotive-mounted recording device or devices designed to record information concerning the functioning of a locomotive or train, is involved in an accident/incident that is required to 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. This preservation requirement permits the railroad to

extract and analyze such data, *provided* the original downloaded data file, or an unanalyzed copy of it, shall be retained in secure custody and shall not be utilized for analysis or any other purpose except by direction of FRA or the National Transportation Safety Board. This preservation requirement shall expire one (1) year after the date of the accident unless FRA or the Board notifies the railroad in writing that the data are desired for analysis.

Based on past accident data, FRA estimates that there will be approximately 2,930 reportable events a year involving locomotives equipped with event recorders. Most of these are very minor accidents where a railroad will decide to preserve the data for its own use. It is estimated that it will take approximately 15 minutes to abstract the information from the device and file it with the appropriate office location. Total annual burden for this requirement is 733 hours.

Respondent Universe:

744
railroads

Burden time per response:

15
minutes

Frequency of Response:

On
Occasion

Annual number of Responses: 2,930 accident data reports
Annual Burden: 733 hours

Calculation: 2,930 accident data reports x .25 hr. = 733 hours

Total annual burden for this entire requirement is 750 hours (17 + 733).

OTHER REQUIREMENTS

Annual Tests (229.27)

A microprocessor-based event recorder, with a self-monitoring feature equipped to verify that all data elements required by this part are recorded, requires further maintenance only if either or both of the following conditions exist:

(1) The self-monitoring feature displays an indication of a failure. If a failure is displayed, further maintenance and testing must be performed until a subsequent test is successful. When a successful test is accomplished, a record, in any medium, must be made of that fact and of any maintenance work necessary to achieve the successful result. This record must be available at the location where the locomotive is maintained until a record of a subsequent successful test is filed.

FRA estimates that approximately 700 event recorders with a self-monitoring feature will have tests that display an indication of failure, and will then require further maintenance and testing. It is estimated that it will take approximately 90 minutes to perform the additional maintenance and testing, and make the required record. Total annual burden for this requirement is 1,050 hours.

Respondent Universe:

744
railroads

Burden time per response:

90
minutes

Frequency of Response:

On
occasion

Annual number of Responses: 700 test records

Annual Burden: 1,050 hours

Calculation: 700 test records x 90 min. = 1,050 hours

(2) A download of the event recorder, taken within the preceding 30 days and reviewed for the previous 48 hours of locomotive operation, reveals a failure to record a regularly

recurring data element or reveals that any required data element is not representative of the actual operations of the locomotive during this time period. If the review is not successful, further maintenance and testing must be performed until a subsequent test is successful. When a successful test is accomplished, a record, in any medium, must be made of that fact and of any maintenance work necessary to achieve the successful result. This record must be kept at the location where the locomotive is maintained until a record of a subsequent successful test is filed. The download must be taken from information stored in the certified crash hardened event recorder memory module if the locomotive is so equipped.

The burden for this requirement is included under the burden listed in (1) above. Consequently, there is no additional burden associated with it.

Total burden for this entire requirement is 1,050 hours.

Event Recorders (229.135)

(a) *Duty to equip and record.* Except as provided in paragraphs (c) and (d) of this section, a train operated faster than 30 miles per hour must have an in-service event recorder, of the type described in paragraph (b) of this section, in the lead locomotive. The presence of the event recorder must be noted on Form FRA F6180.49A (by writing the make and model of event recorder with which the locomotive is equipped) under the REMARKS section, except that an event recorder designed to allow the locomotive to assume the lead position only if the recorder is properly functioning is not required to have its presence noted on Form FRA F6180.49A. For the purpose of this section, "train" includes a locomotive or group of locomotives with or without cars. The duty to equip the lead locomotive may be met with an event recorder located elsewhere than the lead locomotive, provided that such event recorder monitors and records the required data as though it were located in the lead locomotive. The event recorder must record the most recent 48 hours of operation of the electrical system of the locomotive on which it is installed.

The burden for this requirement is included under that of Form FRA F 6180.49A above. Consequently, there is no additional burden associated with it.

(b) *Equipment requirements.* Event recorders must monitor and record data elements required by this paragraph with at least the accuracy required of the indicators displaying any of the required elements to the engineer. (1) A lead locomotive originally ordered before October 1, 2006, and placed in service before October 1, 2009, including a controlling remote distributed power locomotive, a lead manned helper locomotive, a DMU locomotive, and an MU locomotive, except as provided in paragraphs (c) and (d) of this section, must have an in-service event recorder that records the following data elements: (i) Train speed; (ii) Selected direction of motion; (iii) Time (of day); (iv) Distance; (v) Throttle position; (vi) Applications and operations of the train

automatic air brake; (vii) Applications and operations of the independent brake; (viii) Applications and operations of the dynamic brake, if so equipped; and (ix) Cab signal aspect(s), if so equipped and in use. (2) A locomotive originally manufactured before October 1, 2006, and equipped with an event recorder that uses magnetic tape as its recording medium must have the recorder removed from service on or before October 1, 2009, and replaced with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D of this part and that records at least the same number of data elements as the recorder it replaces.

According to information provided by contacts from the Original Equipment Manufacturers (OEMs) of crashworthy event recorders/crashworthy memory modules, the **design testing** necessary to meet the final rule's requirements for certification will take approximately 200 hours. This **design/destructive testing** will only have to be done once by the manufacturer. Moreover, based on the information provided by OEMs, a crashworthy solid-state event recorder that directly replaces a magnetic tape based event recorder will cost the railroads approximately \$1,500 each.

FRA estimates that approximately 200 locomotives (Class I + small railroads) purchased with an event recorder that uses magnetic tape as its recording medium will have the recorder removed from service and replaced with an event recorder with a certified crashworthy event memory module that meets the requirements of Appendix D to this Part. In addition to the 200 hours required for design testing, it is estimated that it will take approximately two (2) hours to test the functionality of each event memory module before certifying it as crashworthy. Total annual burden for this requirement is 600 hours.

Respondent Universe:

744
railroads

Burden time per response:

2 hours

Frequency of Response:

On
occasion

Annual number of Responses:

200 certified memory modules

Annual Burden: 400 hours + 200
hours (design test)

Calculation: 200 certified memory modules x 2 hrs. + 200 hrs. = 600
hours

(3) A lead locomotive, a lead manned helper locomotive, and a controlling remotely distributed power locomotive, other than a DMU or MU locomotive, originally ordered on or after October 1, 2006, or placed in service on or after October 1, 2009, must be equipped with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D of this part. The certified event recorder memory module must be mounted for its maximum protection. (Although other mounting standards may meet this standard, an event recorder memory module mounted behind and below the top collision posts and above the platform level is deemed to be mounted "for its maximum protection"). The event recorder must record, and the certified crashworthy event recorder memory module must retain, the following data elements: (i) Train speed; (ii) Selected direction of motion; (iii) Time (of day); (iv) Distance; (v) Throttle position; (vi) Applications and operations of the train automatic air brake, including emergency applications. The system must record, or provide a means of determining, that a brake application or release resulted from manipulation of brake controls at the position normally occupied by the locomotive engineer. In the case of a brake application or release that is responsive to a command originating from or executed by an on-board computer (e.g., electronic braking system controller, locomotive electronic control system, or train control computer), the system must record, or provide a means of determining, the involvement of any such computer; (vii) Applications and operations of the independent brake; (viii) Applications and operations of the dynamic brake, if so equipped; (ix) Cab signal aspect(s), if so equipped and in use; (x) End-of-train (EOT) device loss of communication front to rear and rear to front; (xi) Electronic controlled pneumatic braking (ECP) message (and loss of such message), if so equipped; (xii) EOT armed, emergency brake command, emergency brake application; (xiii) Indication of EOT valve failure; (xiv) EOT brake pipe pressure (EOT and ECP devices); (xv) EOT marker light on/off; (xvi) EOT "low battery" status; (xvii) Position of on/off switch for headlights on lead locomotive; (xviii) Position of on/off switch for auxiliary lights on lead locomotive; (xix) Horn control handle activation; (xx) Locomotive number; (xxi) Locomotive automatic brake valve cut in; (xxii) Locomotive position in consist (lead or trail); (xxiii) Tractive effort; (xxiv) Cruise control on/off, if so equipped and in use; and (xxv) Safety-critical train control data routed to the locomotive engineer's display with which the engineer is required to comply, specifically including text messages conveying mandatory directives, and maximum authorized speed. The format, content, and proposed duration for retention of such data shall be specified in the product safety plan submitted for the train control system under subpart H of part 236 of this chapter, subject to FRA approval under this paragraph. If it can be calibrated against other data required by this part, such train control data may, at the election of the railroad, be retained in a separate certified

crashworthy memory module.

Based on the information provided by OEMs, it will cost approximately \$1,500 (\$1,200 for the unit + \$300 for the additional data parameters to be incorporated into it) to equip a lead locomotive and a controlling remotely distributed power locomotive (ordered one year after this final rule's effective date) with a certified **crashworthy event recorder memory module** that meets the requirements of Appendix D of this rule.

FRA estimates that approximately 600 lead locomotives and controlling remote distributive power locomotives will be equipped with an event recorder with a certified crashworthy event memory module that meets the requirements of Appendix D to this part. It is estimated that it will take approximately two (2) hours to test the functionality of each event memory module before certifying it as crashworthy. Total annual burden for this requirement is 1,200 hours.

Respondent Universe:

744
railroads

Burden time per response:

2 hours

Frequency of Response:

On
occasion

Annual number of Responses: 600 certified memory modules

Annual Burden: 1,200 hours

Calculation: 600 certified memory modules_x 2 hrs. = 1,200 hours

(4) A DMU and an MU locomotive originally ordered on or after October 1, 2006, or placed in service on or after October 1, 2009, must be equipped with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D of this part. The certified event recorder memory module must be mounted for its maximum protection. (Although other mounting standards may meet this standard, an event recorder memory module mounted behind and below the top collision posts and above the platform level is deemed to be mounted "for its maximum

protection”). The event recorder must record, and the certified crashworthy event recorder memory module must retain, the following data elements: (i) Train speed; (ii) Selected direction of motion; (iii) Time (of day); (iv) Distance; (v) Throttle position; (vi) Applications and operations of the train automatic air brake, including emergency applications. The system must record, or provide a means of determining, that a brake application or release resulted from manipulation of brake controls at the position normally occupied by the locomotive engineer. In the case of a brake application or release that is responsive to a command originating from or executed by an on-board computer (e.g., electronic braking system controller, locomotive electronic control system, or train control computer), the system must record, or provide a means of determining, the involvement of such computer; (vii) Applications and operations of the independent brake, if so equipped; (viii) Applications and operations of the dynamic brake, if so equipped; (ix) Cab signal aspect(s), if so equipped and in use; (x) Emergency brake application(s); (xi) Wheel slip/slide activation (with a property-specific minimum duration); (xii) Lead locomotive headlight activation switch on/off; (xiii) Lead locomotive auxiliary lights activation switch on/off; (xiv) Horn control handle activation; (xv) Locomotive number; (xvi) Locomotive position in consist (lead or trail); (xvii) Tractive effort; (xviii) Brakes apply summary train line; (xix) Brakes released summary train line; (xx) Cruise control on/off, if so equipped and used; and (xxi) Safety-critical train control data routed to the locomotive engineer’s display with which the engineer is required to comply, specifically including text messages conveying mandatory directives, and maximum authorized speed. The format, content, and proposed duration for retention of such data must be specified in the product safety plan submitted for the train control system under subpart H of part 236 of this chapter, subject to FRA approval under this paragraph. If it can be calibrated against other data required by this part, such train control data may, at the election of the railroad, be retained in a separate certified crashworthy memory module.

The certification for all DMU locomotives has been completed. Consequently, there is no burden associated with this requirement.

(5) A locomotive equipped with an event recorder that is re-manufactured, as defined in this part, on or after October 1, 2007, must be equipped with an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D to this part and is capable of recording, at a minimum, the same data as the recorder that was on the locomotive before it was re-manufactured.

Based on the information provided by OEMs, it will cost approximately \$1,500 (\$1,200 for the unit + \$300 for the additional data parameters to be incorporated into it) to equip a locomotive that has an event recorder ordered re-manufactured (i.e., ordered one year after the final rule’s effective date) with a certified **crashworthy** event recorder that meets the requirements of Appendix D of this final rule.

FRA estimates that approximately 1,000 locomotives with an event recorder that is

ordered re-manufactured, as defined in this part, will be equipped with an event recorder with a certified crashworthy event memory module that meets the requirements of Appendix D to this part. It is estimated that it will take approximately two (2) hours to test the functionality of each event memory module before certifying it as crashworthy. Total annual burden for this requirement is 2,000 hours.

Respondent Universe:

744
railroads

Burden time per response: 2 hours

Frequency of Response: On occasion

Annual number of Responses: 1,000 certified memory modules
Annual Burden: 2,000 hours

Calculation: 1,000 certified memory modules x 2 hrs. = 2,000 hours

(6) An event recorder originally manufactured after January 1, 2010, that is installed on any locomotive identified in paragraph (b)(1) of this section shall be an event recorder with a certified crashworthy event recorder memory module that meets the requirements of Appendix D to this part and that is capable of recording, at a minimum, the same data as the event recorder that was previously on the locomotive.

The time frame specified in this requirement is outside the scope of the three-year approval sought under this submission. Consequently, there is no burden associated with this requirement.

Total burden for this requirement is 3,800 hours (600 + 1,200 + 2,000).

APPENDIX D TO PART 229 – CRITERIA FOR CERTIFICATION OF CRASHWORTHY EVENT RECORDER MEMORY MODULE

Section 229.135(b) requires that certain locomotives be equipped with an event recorder that includes a certified crashworthy event recorder memory module (ERMM). This

appendix prescribes the requirements for certifying an event recorder memory module as crashworthy, including the performance criteria and test sequence for establishing the crashworthiness of the ERMM as well as the marking of the event recorder containing the crashworthy ERMM.

A. General Requirements

(1) Each manufacturer that represents its ERMM as crashworthy must, by marking it as specified in Section B of this appendix, certify that the ERMM meets the performance criteria contained in this appendix and that test verification data are available to a railroad or to FRA upon request; (2) The test verification data must contain, at a minimum, all pertinent original data logs and documentation that the test sample preparation, test set up, test measuring devices and test procedures were performed by designated, qualified personnel using recognized and acceptable practices. Test verification data must be retained by the manufacturer or its successor for as long as the specific model of ERMM remains in service on any locomotive; (3) A crashworthy ERMM must be marked by its manufacturer as specified in Section B of this appendix.

The burden for this requirement is included under § 229.135(b) above. Consequently, there is no additional burden associated with it.

B. Marking Requirements

(1) The outer surface of the event recorder containing a certified crashworthy ERMM must be colored international orange. In addition, the outer surface must be inscribed, on the surface allowing the most visible area, in black letters on an international orange background, using the largest type size that can be accommodated, with the words **CERTIFIED DOT CRASHWORTHY**, followed by the ERMM model number (or other such designation), and the name of the person manufacturing the event recorder. The information may be displayed as shown in this section of Appendix D. Marking “CERTIFIED DOT CRASHWORTHY” on an event recorder designed for installation in a railroad locomotive is the certification that all performance criteria contained in this appendix have been met and all functions performed by, or on behalf of, the manufacturer whose name appears as part of the marking, conform to the requirements specified in this appendix; (2) Retro-reflective material must be applied to the edges of each visible external surface of an event recorder containing a certified crashworthy event recorder memory module (ERMM).

The burden for this requirement is included under § 229.135(b) above. Consequently, there is no additional burden associated with it.

C. Performance Requirements

An ERMM is crashworthy if it has been successfully tested for survival under conditions

of fire, impact shock, static crush, fluid immersion, and hydro-static pressure contained in one of the two tables shown in this section of Appendix D. (See Tables 1 and 2.) Each ERMM must meet the individual performance criteria in the sequence established in Section D of this appendix. A performance criterion is deemed to be met if, after undergoing a test established in this Appendix D for that criterion, the ERMM has preserved all of the data stored in it. The data set stored in the ERMM to be tested shall include all the recording elements required by § 229.135(b). The following tables describe alternative performance criteria that may be used when testing an ERMM's crashworthiness. A manufacturer may utilize either table during its testing but may not combine the criteria contained in the two tables listed in this section (Section C of Appendix D).

The burden for this requirement is included under § 229.135(b) above. Consequently, there is no additional burden associated with it.

D Testing Exception

If a new model ERMM represents an evolution or upgrade from an older model ERMM that was previously tested and certified as meeting the performance criteria contained in Section C of this appendix, the new model ERMM need only be tested for compliance with those performance criteria contained in Section C of this appendix that are potentially affected by the upgrade or modification. FRA will consider a performance criterion not to be potentially affected if a preliminary engineering analysis or other pertinent data establishes that the modification or upgrade will not change the performance of the older model ERMM against the performance criterion in question. The manufacturer shall retain and make available to FRA upon request any analysis or data relied upon to satisfy the requirements of this paragraph to sustain an exception from testing.

The burden for this requirement is included under § 229.135(b) above. Consequently, there is no additional burden associated with it.

The total annual burden for this entire information collection is 863,951 hours.

13. Estimate of total annual costs to respondents.

RESPONDENTS' COST

180,000* Personal Computers (60 @ \$3,000 each)

5,000 Miscellaneous Expense

185,000 Total

* Based on the types of event recorders available today, respondents will have to purchase personal computers for use in complying with the information collection requirement for event recorder data verification readout records. Most of these computers were purchased during the first 18 months the event recorder regulations were in effect. Constant replacement rate is approximately 60 computers per year. The computers in use today rarely need maintenance. When they do, they are often replaced. The 60 per year replacement rate should cover maintenance.

14. Estimate of Cost to Federal Government.

COST TO THE FEDERAL GOVERNMENT

There is no cost to the Federal Government connected to the recordkeeping requirements of this final rule. FRA does not normally download or read the data gathered by locomotive event recorders. These records are examined on a somewhat routine basis in connection with regular enforcement activities that monitor carrier compliance with inspection and testing requirements. The information on the record is not collected or compiled by any Federal agency.

Accident investigation reports are reviewed and evaluated by a Motive Power and Equipment (MP&E) Specialist in Washington, D.C. It is estimated to take about two (2) hours per accident for the one (1) locomotive-based accident which occurs per year. Based on \$71 per man-hour (includes 75 percent overhead), the total cost to review an accident investigation report attributed to locomotives is approximately \$142 per year.

Total annual cost to the Government is approximately \$142.

15. Explanation of program changes and adjustments.

This information request is for an extension without change of the last OMB approved submission. Consequently, there are no program changes or adjustments at this time.

Also, there is **no change** in estimated burden costs to respondents from the previously approved submission.

16. Publication of results of data collection.

There are no publications involving these information collection requirements.

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

Once OMB approval is received, FRA will publish the approval number for these

information collection requirements in the Federal Register.

18. Exception to certification statement.

No exceptions are taken at this time.

Meeting Department of Transportation (DOT) Strategic Goals

This information collection supports the top DOT strategic goal, namely transportation safety. Without this collection of information, rail safety in the U.S. would be seriously impeded. Specifically, the information collected provides railroads a written record to indicate what repairs are needed, who made the repairs, and what repairs were made. The information collected provides the engineer with the knowledge that the locomotive has been inspected and is in proper condition for service. Without this collection of information, the discovery and correction of minor defects would not occur in time to prevent them from becoming major defects. This could lead to an increased number of train accidents/incidents, such as derailments and collisions, where there are grave injuries and fatalities to train crews and the traveling public, as well as significant property damage. In the case of trains carrying hazardous materials, there could be significant harm to the environment and surrounding communities.

This collection of information promotes rail safety by mandating new requirements that new locomotives have event recorders which collect certain types of additional information and also that locomotives be equipped with crashworthy event recorder memory modules. In cases where previously data from event recorders did not survive the accident/incident or the information was unintelligible, accident investigators would now have available vital event recorder data needed to determine the cause of an accident/incident because of the crash hardened memory modules. Such data can be used by FRA, the National Transportation Safety Board (NTSB), and railroads to prevent similar accidents/incidents from occurring in the future. The information provided by the requirements of this collection is a valuable and constant resource that can be used by the railroads and FRA to implement appropriate and necessary safety measures which will serve to accomplish the following: (i) reduce the number of rail-related deaths; (ii) reduce the number and severity of injuries to railroad workers and the public; and (iii) reduce damage to property and the environment caused by accidents involving carriers of

hazardous materials. In sum, this collection of information helps FRA to fulfill its mission of promoting and enhancing rail safety throughout the United States.

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