

**DEPARTMENT OF TRANSPORTATION**  
**National Highway Traffic Safety Administration**

**[Docket No. NHTSA-02-13546; Notice 1]**

**RIN 2127-AI72**

**Event Data Recorders**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

**ACTION:** Request for comments.

**SUMMARY:** Over the past several years, NHTSA has been actively involved with Event Data Recorders (EDRs) in motor vehicles. EDRs collect vehicle and occupant-based crash information. The agency's involvement has included sponsoring two working groups, using data from EDRs in crash investigations, and conducting research and development. Particularly since the two working groups have completed their work, we request comments on what future role the agency should take related to the continued development and installation of EDRs in motor vehicles.

**DATES:** You should submit your comments early enough to ensure that Docket Management receives them not later than [INSERT DATE 90 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may submit your comments in writing to: Docket Management, Room PL-401, 400 Seventh Street, SW, Washington, DC 20590. Alternatively, you may

submit your comments electronically by logging onto the Docket Management System (DMS) website at <http://dms.dot.gov>. Click on "Help & Information" or "Help/Info" to view instructions for filing your comments electronically. Regardless of how you submit your comments, you should mention the docket number of this document.

**FOR FURTHER INFORMATION CONTACT:** The following persons at the National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC, 20590:

For technical and policy issues:

Dr. William Fan, Office of Crashworthiness Standards, NPS-11, telephone (202) 366-4922, facsimile (202) 366-4329.

For legal issues:

J. Edward Glancy, Office of the Chief Counsel, NCC-20, telephone (202) 366-2992, facsimile (202) 366-3820.

**SUPPLEMENTARY INFORMATION:**

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## I. Introduction

Over the past several years, there has been considerable interest in the safety community regarding possible safety benefits from the use of Event Data Recorders (EDRs) in motor vehicles.

Types and uses of EDRs. EDRs collect vehicle and occupant-based crash information. They can be simple or complex in design, scope, and reach. Some systems collect only vehicle acceleration/deceleration data, while others collect these data plus a host of complementary data, such as driver inputs (e.g., braking and steering) and vehicle systems status.<sup>1</sup>

The information collected by EDRs aids investigations of the causes of crashes and injury mechanisms, and makes it possible to better define safety problems. The information can ultimately be used to improve motor vehicle safety.

EDRs have been installed as standard equipment in an increasingly large number of light motor vehicles in recent years. Moreover, these devices have become more advanced with respect to the amount and type of data recorded. We estimate that essentially all model year 2002 passenger cars and other light vehicles have some recording capability, and that more than half record such things as crash pulse data.

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<sup>1</sup> Since the term "EDR" can be used to cover many different types of devices, we believe it is important to define the term for purposes of this document. When we use the term "EDR" in this document, we are referring to a device that is installed in a motor vehicle to record technical vehicle and occupant-based information for a brief period of time (i.e., seconds, not minutes) before, during and after a crash. For instance, EDRs may record (1) pre-crash vehicle dynamics and system status, (2) driver inputs, (3) vehicle crash signature, (4) restraint usage/deployment status, and (5) certain post-crash data such as the activation of an automatic collision notification (ACN) system. We are not using the term to include any type of device that either makes an audio or video record, or logs data such as hours of service for truck operators.

Research and development. In 1997, the National Transportation Safety Board (NTSB) issued Safety Recommendation H-97-18 to NHTSA, recommending that we "pursue crash information gathering using EDRs." Also, in that year, the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL) recommended that NHTSA "study the feasibility of installing and obtaining crash data for safety analyses from crash recorders on vehicles." In 1999, NTSB issued a second set of recommendations to NHTSA related to EDRs, H-99-53 and 54, recommending that we require EDRs to be installed on school buses and motor coaches.

In early 1998, NHTSA's Office of Research and Development (R&D) formed a Working Group comprised of industry, academia, and other government organizations. The group's objective was to facilitate the collection and utilization of collision avoidance and crashworthiness data from on-board EDRs.

The NHTSA EDR Working Group held six meetings between October 1998 and December 2000. The Working Group explored both original equipment manufacturer (OEM) and aftermarket systems, and also looked into data collection and storage.

In August 2001, the NHTSA EDR Working Group published a final report on the results of its deliberations.<sup>2</sup> Highlights of the Working Group findings were the following:

1. EDRs have the potential to greatly improve highway safety, for example, by improving occupant protection systems and improving the accuracy of crash reconstructions.
2. EDR technology has potential safety applications for all classes of motor vehicles.
3. A wide range of crash related and other data elements have been identified which might usefully be captured by future EDR systems.

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<sup>2</sup> Event Data Recorders, Summary of Findings by the NHTSA EDR Working Group, August 2001, Final Report. (Docket No. NHTSA-99-5218-9)

4. NHTSA has incorporated EDR data collection in its motor vehicle research databases.
5. Open access to EDR data (minus personal identifiers) will benefit researchers, crash investigators, and manufacturers in improving safety on the highways.
6. Studies of EDRs in Europe and the U.S. have shown that driver and employee awareness of an on-board EDR reduces the number and severity of drivers' crashes.
7. Given the differing nature of cars, vans, SUVs, and other lightweight vehicles, compared to heavy trucks, school buses, and motor coaches, different EDR systems may be required to meet the needs of each vehicle class.
8. The degree of benefit from EDRs is directly related to the number of vehicles operating with an EDR and the current infrastructure's ability to use and assimilate these data.
9. Automatic crash notification (ACN) systems integrate the on-board crash sensing and EDR technology with other electronic systems, such as global positioning systems and cellular telephones, to provide early notification of the occurrence, nature, and location of a serious collision.
10. Most systems utilize proprietary technology and require the manufacturer to download and analyze the data.

The record of the NHTSA EDR Working Group, including both minutes of the meetings and the final report, is in Docket NHTSA-99-5218. Persons interested in additional information about EDRs may wish to examine section 12 of the final report, which sets forth a bibliography and references.

Meanwhile, in 2000, NHTSA sponsored a second working group related to EDRs, the NHTSA Truck & Bus EDR Working Group. This Working Group collected facts related to use of EDRs in trucks, school buses, and motor coaches. The record of this second Working Group is in Docket NHTSA-2000-7699. Its final report was published in May 2002.<sup>3</sup>

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<sup>3</sup> Event Data Recorders, Summary of Findings by the NHTSA EDR Working Group, May 2002, Final Report, Volume II, Supplemental Findings for Trucks, Motorcoaches, and School Buses. (Docket No. NHTSA-2000-7699-6)

In 2001, NHTSA developed a website for highway-based EDRs located at the following address:

“<http://www-nrd.nhtsa.dot.gov/edr-site/index.html>”.

Federal Register notices. On two previous occasions, the agency has published documents in the **Federal Register** addressing particular questions about its role with respect to EDRs. Both occasions involved the denial of a petition for rulemaking asking us to require the installation of EDRs in new motor vehicles. (63 FR 60270; November 9, 1998 and 64 FR 29616; June 2, 1999.) The first petitioner, Mr. Price T. Bingham, a private individual, asked the agency to initiate rulemaking to require air bag sensors to be designed so that data would be recorded during a crash, allowing it to be read later by crash investigators. The petitioner cited a concern about air bag deployments that might be "spontaneous," but did not limit the petition to that issue. The second petitioner, Ms. Marie E. Birnbaum, also a private individual, asked us to initiate rulemaking to require passenger cars and light trucks to be equipped with “black boxes” (i.e., EDRs) analogous to those found on commercial aircraft.

In responding to these petitions, NHTSA stated that it believed EDRs could provide information that is very valuable in understanding crashes, and that can be used in a variety of ways to improve motor vehicle safety. The agency denied the petitions because the motor vehicle industry was already voluntarily moving in the direction recommended by the petitioners, and because the agency believed "this area presents some issues that are, at least for the present time, best addressed in a non-regulatory context."

The agency has also received a third petition, from Dr. Ricardo Martinez, President of Safety Intelligence Systems Corporation, asking us to require the installation of EDRs in new motor vehicles. We have not yet responded to that petition. Copies of our responses to the two earlier petitions, and a copy of the petition submitted by Dr. Martinez, are being placed in the docket for this document.

Future actions. In light of the foregoing, the agency believes that it is appropriate to consider what role the agency should now be taking regarding the continued development of EDRs and their installation in motor vehicles.

## **II. Discussion of Issues**

This section discusses a range of issues and presents a series of questions for public comment to aid the agency in evaluating what role it should take at this time relating to EDRs. The issues and questions are grouped as follows: (a) safety benefits, (b) technical issues, and (c) privacy issues. Finally, in section (d), we ask a general question about NHTSA's role in this area.

### **a. Safety benefits.**

As we noted earlier, the information collected by EDRs aids investigations of the causes of crashes and injury mechanisms, and makes it possible to better define safety problems. This information can ultimately be used to improve motor vehicle safety. By way of illustration, the more that is known about such things as the change in velocity in real crashes and the more that is known about how key safety countermeasures work in real crashes (e.g., which stage of a multi-stage air bag fired), the better the chances are of developing improved safety countermeasures and test procedures.

We invite comments on the following questions related to safety benefits:

(1) Safety potential. The NHTSA EDR Working Group concluded in its August 2001 final report (section 11.1) that EDRs have the potential to improve highway safety greatly. Do you agree with this finding? What do you see as the most significant safety potential of EDRs?

(2) Application. EDR technology has potential safety applications for all classes of motor vehicles. Do you believe different types of EDRs should be used for different vehicle types, such as light duty vehicles, heavy trucks, intercity motor coaches, city transit buses and school buses? If so, why? If not, why not? Do you believe different types of EDRs should be used for different applications, such as private vehicles and commercial vehicles? If so, why? If not, why not?

(3) Use of EDR data. NHTSA has used EDR data primarily to improve its investigations and analyses of crashes. In some cases, EDR data includes information that the agency could not otherwise obtain; e.g., which stage(s) of a multi-stage air bag deployed in a crash and when. In other cases, EDR data provide a more accurate indication of matters, e.g., level of crash severity, that have previously been estimated based on crash reconstruction programs. NHTSA includes the new or improved information from EDRs in its crash databases as appropriate. We request comments concerning how other parties, including government agencies, vehicle manufacturers, insurance companies, and researchers, are using these data. We also request comments concerning other potential uses of these data, by NHTSA and/or other parties, which are related to improving vehicle safety, either in the short term or long term.

(4) Future safety benefits. What additional safety benefits are likely from continued development, installation, collection, storage, and use of EDRs?



(5) Research databases. NHTSA acquires EDR data in its Special Crash Investigations (SCI), National Automotive Sampling System Crashworthiness Data System (NASS-CDS), and Crash Injury Research and Engineering Network (CIREN) and incorporates them in its motor vehicle research databases. Have you ever used the EDR data stored in these databases? How could the presentation and/or use of EDR data be improved?

(6) Prevention of crashes. Several researchers have documented that the use of EDRs could have the potential to prevent crashes. Some studies of European fleets found that driver and employee awareness of an on-board EDR reduced the number of crashes by 20 to 30 percent, lowered the severity of such crashes, and decreased the associated costs. (See section 2.5.1.1 of the August 2001 NHTSA EDR Working Group final report.) These studies have generally been based on small samples and concentrated on commercial application of EDRs. We request comments on other studies of this type and on this potential benefit from EDRs, particularly for the U.S. driving population.

(7) Possible new databases. As more and more vehicles are equipped with EDRs, more EDR crash data will be generated. Collection of these data is likely to increase as state and local officials collect these data as part of their investigations. Do you have any recommendations for storing and maintaining a national or other database? Do you believe maintaining a database would be beneficial to motor vehicle safety? Please provide specific examples.

(8) Standards. What standards exist for collecting EDR data? The Society of Automotive Engineers (SAE) has a recommended practice (SAE J211) that provides guidance for collecting crash test data. Would it be possible to use this or similar

standards for collecting EDR data regarding real-world crashes? The Institute of Electrical and Electronics Engineers, Inc. (IEEE) has recently initiated a new program to develop a standard for motor vehicle EDRs.<sup>4</sup> We request comments on the current activities of SAE, IEEE, and other standards organizations (U.S. and international) in developing standards for EDRs, and on what types of standards should be developed.

(9) Standardization. We request comments on whether there would be any safety benefits from standardizing certain aspects of EDRs, e.g., defining specific data elements such as vehicle speed, brake application, air bag deployment time, etc. Would such standardization promote further development and implementation of automatic crash notification systems or other safety devices?

#### **b. Technical issues**

(10) Data elements. The NHTSA EDR Working Group identified many data elements that could be collected by an EDR. See section 4 of the August 2001 final report.<sup>5</sup> More recently, the Truck & Bus EDR Working Group generated a list of 28 data elements. See section 4 of the May 2002 final report.<sup>6</sup> What data elements should be considered for inclusion in an EDR? Should they vary by vehicle type and/or application? Please provide a rationale for each element, with particular emphasis on how it would lead to improvements in safety. What costs are related to each of your proposed data elements?

(11) Amount of data. Many late-model vehicles are equipped with OEM-installed EDRs, but even among the vehicles of a given manufacturer, the type and

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<sup>4</sup> IEEE's program is titled IEEE Project 1616: Draft Standard, Motor Vehicle Event Data Recorders (MVEDRs). The web address for this program is "<http://grouper.ieee.org/groups/1616/home.htm>".

<sup>5</sup> Docket No. NHTSA-99-5218-9.

<sup>6</sup> Docket No. NHTSA-2000-7699-6.

amount of data collected vary. Do you have any recommendations for the amount of data to collect; e.g., how long before the crash occurs should the data be collected? How should the data integrity be maintained?

(12) Storage and collection. Currently, data are accessed by a physical connection to the EDR unit. Manufacturers are developing wireless connections, e.g., using a wireless probe near the crashed vehicle, or by having the on-board device upload the stored data to a central location using a telecommunications link, but such devices are not in widespread production. How should data be collected and stored in a motor vehicle? What measures should be in place to control traceability of EDR data to an actual vehicle or crash, such as EDR IDs or location and date stamping?

(13) Training. What training is needed for EDR data collection officials?

(14) Survivability. Recording and power systems need to withstand temperature and environmental effects, power failures, and the forces of different types and modes of crashes. They also need to be tamper proof. How can all these be accomplished? What needs to be done to ensure survivability of an EDR? What level of crash severity should an EDR be able to survive? What are the costs associated with producing an EDR with this level of crash survivability?

(15) Effect of EDR technologies on your responses. Indicate how the nature of the EDRs currently being installed in motor vehicles affects your answers to the questions in this notice. To the extent that future EDR technologies are foreseeable, how would the implementation of those technologies affect your answers?

### **c. Privacy Issues.**

The recording of information by EDRs raises a number of privacy issues.<sup>7</sup> These include the question of who owns the information that has been recorded, the circumstances under which other persons may obtain that information, and the purposes for which those other persons may use that information.

We recognize the importance of these privacy and related legal issues. The EDR Working Group, too, recognized their importance and devoted a considerable amount of time to discussing them. It also included a chapter on them in its August 2001 final report. Among other things, the chapter summarizes the positions that various participants in the EDR Working Group took on privacy issues.

We also recognize the importance of public acceptance of this device, whether voluntarily provided by vehicle manufacturers or required by the government. We note that General Motors informed the EDR Working Group (Docket No. NHTSA-99-5218-9; section 8.3.5) that it believes the risk of private citizens reacting negatively to the "monitoring" function of the EDR can be addressed through honest and open communications to customers by means of statements in owners' manuals informing them that such data are recorded. That company indicated that the recording of these data is more likely to be accepted if the data are used to improve the product or improve the general cause of public safety.

While we believe that continued attention to privacy issues is important, we observe that, from the standpoint of statutory authority, our role in protecting privacy is a limited one. For example, we do not have authority over such areas as who owns the information that has been recorded, or the circumstances under which other persons may

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<sup>7</sup> We note that, in some press articles and op-ed pieces, persons have cited privacy issues as a reason for opposing the basic concept of EDRs.

obtain and use that information. These areas are covered by a variety of Federal and State laws not administered by NHTSA.

In our own use of information from EDRs, we are careful to protect privacy. As part of our crash investigations, including those with EDRs, we often obtain personal information. In handling this information, we are careful to comply with applicable provisions of the Privacy Act of 1974 and other statutory requirements that limit the disclosure of personal information by Federal agencies. In order to gain access to EDR data to aid our crash investigations, we obtain a release for the data from the owner of the vehicle. We assure the owner that all personally identifiable information will be held confidential.

We invite comments on the general topic of privacy as it relates to EDRs.

(16) Privacy. What organizations are analyzing privacy issues in the context of roadways, vehicles, and vehicle owners? Are any additional types of analyses needed? Are privacy concerns adequately met by the current Federal and State law and practices relating to the collection and use of the information recorded by EDRs? Are there significant differences in privacy and/or liability law among states, in the circumstances under which persons or institutions other than vehicle owners may obtain that information, and the purposes for which those other persons or institutions may use that information? In what circumstances are police officers and crash investigators (from government agencies or the private sector) allowed to access EDR data? What damages may result from inappropriate access to EDR data? What roles do technical solutions, such as data partitioning, encryption, and secure databases/vaults, play in addressing privacy concerns?

**d. Role of NHTSA.**

(17) Role of NHTSA. Over the past several years, NHTSA has been actively involved with EDRs, through the two working groups discussed above, as part of its crash investigations, and in research and development. Particularly since one working group has completed its work and the other is nearing completion, we request comments on what future role the agency should take related to the continued development and implementation of EDRs in motor vehicles.

**III. Rulemaking Analyses and Notices**

NHTSA has considered the potential impacts of this request for comments under Executive Order 12866 and the Department of Transportation's regulatory policies and procedures. This document was reviewed by the Office of Management and Budget under E.O. 12866, "Regulatory Planning and Review." This document has been determined to be significant under the Department's regulatory policies and procedures.

This document seeks comment on what future role the agency should take related to the continued development and implementation of EDRs in motor vehicles. The agency could take a variety of nonregulatory and/or regulatory actions.

This document does not contain any regulatory actions. Further, this agency has not identified any regulatory actions sufficiently likely to warrant calculation of possible benefits and costs. The EDRs currently installed in motor vehicles cost very little as they take advantage of the existing sensors, processor and memory that the vehicles have. We estimate that an EDR that records basic air bag related data such as air bag deployment, deployment timing, and seat belt status, with moderate survivability, typically costs five dollars or less. We believe that a substantial percentage of light vehicles are already

being equipped with such an EDR. However, EDRs with additional sensors, processing capability and memory, and greater survivability capabilities, could cost more.

Given the costs associated with various EDRs, and the fact that 17 million light vehicles are produced each year, a rulemaking proposal for EDRs could, but would not necessarily, have cost impacts that exceed \$100 million annually. If NHTSA were to initiate rulemaking and develop a rulemaking proposal, the agency would calculate the costs and benefits associated with the specific proposal and place its analysis in the docket for that proposal. The agency would also conduct the various other rulemaking analyses required by applicable statutes and Executive Orders.

#### **IV. Submission of Comments**

##### **How do I prepare and submit comments?**

Interested persons are invited to submit comments in response to this request for comments. For easy reference, the agency has consecutively numbered its questions. We request that commenters respond to each question by these numbers and provide all relevant factual information of which they are aware to support their conclusion or opinions, including but not limited to statistical data and estimated cost and benefits, and the source of such information.

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long. (49 CFR 553.21). We established this limit to encourage you to write your primary comments in a concise

fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments, to Docket Management at the address given above under ADDRESS.

**How can I be sure that my comments were received?**

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

**How do I submit confidential business information?**

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given above under FOR FURTHER INFORMATION CONTACT. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above under ADDRESS. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR Part 512.)

**Will the agency consider late comments?**

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under DATES. To the extent possible, we will also consider comments that Docket Management receives after that date.



**How can I read the comments submitted by other people?**

You may read the comments received by Docket Management at the address given above under ADDRESS. The hours of the Docket are 9:00 a.m. to 5:00 p.m., Monday to Friday, except Federal holidays.

You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

- Go to the Docket Management System (DMS) Web page of the Department of Transportation (<http://dms.dot.gov>).
- On that page, click on "search."
- On the next page (<http://dms.dot.gov/search/>), type in the five-digit docket number shown at the beginning of this document. Example: If the docket number were "NHTSA-2001-12345," you would type "12345." After typing the docket number, click on "search."
- On the next page, which contains docket summary information for the docket you selected, click on the desired comments. You may download the comments.

Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material.

**Authority:** 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.50.

Issued on:

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Stephen R. Kratzke  
Associate Administrator  
for Rulemaking

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[Signature page for Event Data Recorders, Request for Comments]