

U.S. Department  
of Transportation  
**National Highway  
Traffic Safety  
Administration**

1200 New Jersey Avenue SE.  
Washington, DC 20590

MAR -3 2016

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. Wayne Bahr, Global Director  
Automotive Safety Office  
Environmental and Safety Compliance  
Ford Motor Company  
330 Town Center Drive, Suite 400  
Dearborn, MI 48126-2738

NEF-130jao  
PE16-003

Dear Mr. Bahr:

This letter is to inform you that the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) has opened a Preliminary Evaluation (PE16-003) to investigate allegations of brake fluid leaking from the master cylinder into the brake booster, resulting in loss of brake effectiveness, in model year (MY) 2013 through 2014 Ford F-150 pickup trucks equipped with 3.5L engines that were manufactured by Ford Motor Company (Ford), and to request certain information.

This office has received 35 reports alleging incidents of reduced brake effectiveness due to brake fluid leaking from the master cylinder into the brake booster in MY 2013 through 2014 Ford F-150 pickup trucks. All of the complaints have involved trucks equipped with 3.5L engines. The complaints allege symptoms of brake pedal going to the floor with complete loss of brake effectiveness, brake warning lamp illumination, and/or low or empty master cylinder reservoir fluid level with no visible leakage. Four of the complaints allege that the alleged defect resulted in crashes. A copy of each of the reports is enclosed for your information.

Unless otherwise stated in the text, the following definitions apply to these information requests:

- **Subject vehicles:** all MY 2013 through 2014 Ford F-150 pickup trucks equipped with 3.5L engines, manufactured for sale or lease in the United States, including, but not limited to, the District of Columbia, and current U.S. territories and possessions.
- **Peer vehicles:** all other Ford F-150 pickup trucks equipped with the subject components.
- **Subject components:** the brake master cylinder and brake booster assemblies manufactured for use as original equipment or service parts in the subject vehicles.
- **Alleged defect:** any one or more of the following symptoms or conditions:

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1. Brake fluid leaking from the master cylinder to the brake booster;
  2. Allegations of brake warning lamp illumination and/or low fluid level in one or both chambers of the brake fluid reservoir; or
  3. Increased brake pedal travel, including allegations of pedal going to the floor, with reduced brake effectiveness.
- **Ford:** Ford Motor Company, all of its past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of Ford (including all business units and persons previously referred to), who are or, in or after January 1, 2008, were involved in any way with any of the following related to the alleged defect in the subject vehicles:
    - a. Design, engineering, analysis, modification or production (e.g. quality control);
    - b. Testing, assessment or evaluation;
    - c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, or lawsuits; or
    - d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers.
  - **Document:** "Document(s)" is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all non-identical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas, bulletins, notices, announcements, instructions, blueprints, drawings, as-builts, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar

to any of the foregoing, however denominated by Ford, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, "document(s)" also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by Ford or not. If a document is not in the English language, provide both the original document and an English translation of the document.

- **Other Terms:** To the extent that they are used in these information requests, the terms "claim," "consumer complaint," "dealer field report," "field report," "fire," "fleet," "good will," "make," "model," "model year," "notice," "property damage," "property damage claim," "rollover," "type," "warranty," "warranty adjustment," and "warranty claim," whether used in singular or in plural form, have the same meaning as found in 49 CFR 579.4.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to 49 U.S.C. § 30166, please provide numbered responses to the following information requests. Insofar as Ford has previously provided a document to ODI, Ford may produce it again or identify the document, the document submission to ODI in which it was included and the precise location in that submission where the document is located. When documents are produced, the documents shall be produced in an identified, organized manner that corresponds with the organization of this information request letter (including all individual requests and subparts). When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation.

Please repeat the applicable request verbatim above each response. After Ford's response to each request, identify the source of the information and indicate the last date the information was gathered.

1. State, by model and model year, the number of subject and peer vehicles Ford has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Ford, state the following:
  - a. Vehicle identification number (VIN);
  - b. Make;
  - c. Model;
  - d. Engine (by displacement and company engine code);
  - e. Model Year;
  - f. Date of manufacture;
  - g. Date warranty coverage commenced; and
  - h. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2010, or a compatible format, entitled "PRODUCTION DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

2. State the number of each of the following, received by Ford, or of which Ford is otherwise aware, which relate to, or may relate to, the alleged defect in the subject and peer vehicles:
  - a. Consumer complaints, including those from fleet operators;
  - b. Field reports, including dealer field reports;
  - c. Reports involving a crash, injury or fatality;
  - d. Property damage claims;
  - e. Third-party arbitration proceedings where Ford is or was a party to the arbitration; and
  - f. Lawsuits, both pending and closed, in which Ford is or was a defendant or codefendant.

For subparts "a" through "f," state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and Ford's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f" identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:
  - a. Ford's file number or other identifier used;
  - b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
  - c. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
  - d. Vehicle's VIN;
  - e. Vehicle's make, model and model year;
  - f. Vehicle's mileage at time of incident;
  - g. Incident date;
  - h. Report or claim date;
  - i. Whether a crash is alleged;
  - J. Whether property damage is alleged;
  - k. Number of alleged injuries, if any; and
  1. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER TWO DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

4. Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method Ford used for organizing the documents. Describe in detail the search methods and search criteria used by Ford to identify the items in response to Request No. 2.
5. State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by Ford on the subject components to date that relate to, or may relate to, the alleged defect in the subject and peer vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- a. Ford's claim number;
- b. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- c. VIN;
- d. Repair date;
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number(s);
- h. Problem code(s);
- i. Replacement part number(s) and description(s);
- J. Whether there was a claim for a towing expenses on or near the date of the repairs to the subject components;
- k. Concern stated by customer;
  1. Cause as stated on the repair order;
- m. Correction as stated on the repair order; and
- n. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2010, or a compatible format, entitled "WARRANTY DATA." A pre-formatted data collection file, which provides further details regarding this submission, will be provided to you.

6. Describe in detail the search methods and search criteria used by Ford to identify the claims in response to Request No. 5, including the labor operations, problem codes, part numbers and any other pertinent parameters used.

Provide a list of all labor operations, labor operation descriptions, problem codes problem code descriptions applicable to the alleged defect in the subject vehicles.

State, by make and model year, the terms of the new vehicle warranty coverage offered by Ford on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty

coverage option(s) that Ford offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

7. Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that Ford has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that Ford is planning to issue within the next 120 days.
8. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Ford. For each such action, provide the following information:
  - a. Action title or identifier;
  - b. The actual or planned start date;
  - c. The actual or expected end date;
  - d. Brief summary of the subject and objective of the action;
  - e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
  - f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

9. Describe all modifications or changes made by, or on behalf of, Ford in the design, material composition, manufacture, quality control, supply, or installation of the subject components, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:
  - a. The date or approximate date on which the modification or change was incorporated into vehicle production;
  - b. A detailed description of the modification or change;
  - c. The reason(s) for the modification or change;
  - d. The part number(s) (service and engineering) of the original component;
  - e. The part number(s) (service and engineering) of the modified component;
  - f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
  - g. When the modified component was made available as a service component; and
  - h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that Ford is aware of which may be incorporated into vehicle production within the next 120 days.

10. State the number of each of the following that Ford has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales, if applicable):
- a. Subject components; and
  - b. Any kits that have been released, or developed, by Ford for use in service repairs to the subject component/assembly.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which Ford is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

11. Provide the following information regarding the subject vehicle brake system, the subject components and the alleged defect condition:
- a. Provide cross-sectioned side views of the subject components showing the locations and names of all fluid and vacuum seals;
  - b. Provide Ford's assessment of the effect of the alleged defect on the primary and secondary brake circuits and the conditions necessary for fluid leakage to occur from each circuit to the brake booster assembly;
  - c. State the amount of brake fluid leakage required for each circuit to go from a nominally full brake fluid reservoir to (1) illuminate the warning lamp for low fluid level, and (2) empty the reservoir to a level that results in loss of the affected circuit;
  - d. Based on testing and/or evaluation of returned parts or incident vehicles prior to part replacement, provide Ford's assessment of the worst case leak rates from both the primary and secondary circuits to the booster assembly (1) when the engine is running, and (2) when the engine is off;
  - e. Provide Ford's assessment of all variables that may affect the leak rates provided in 12.d and describe all assumptions used in making the assessment;
  - f. Describe all part return/collection actions taken by, or for, Ford related to investigating the alleged defect;
  - g. Provide a chronology of all failed part return/collection efforts or communications issued by Ford that relate to the alleged defect and provide a log of all vehicles from which parts were obtained by Ford for the purpose of testing or analysis, including the VIN, the repair date, and the current status of the parts;
  - h. Describe current part availability and provide a chronology of all periods in which subject components were on backorder;
    1. Describe the brake warning lamp control logic in the subject vehicles, including conditions required to illuminate for low fluid level or pressure differential between circuits;
  - J. Describe the effects of the alleged defect on brake system performance, including effects on pedal travel and ability to generate and control hydraulic pressure in each circuit (using hydraulic circuit diagrams for each condition), in the event of (1) the reservoir chamber for the primary circuit is emptied by leakage to the brake booster, (2) the reservoir chambers for both circuits are emptied by leakage;

- k. Provide Ford's assessment of the effects of the alleged defect on brake booster performance;
- 1. Provide copies of all FMVSS 135 compliance test reports showing the braking performance of the subject vehicles in all load states for (1) normal system operation, (2) loss of primary circuit and (3) loss of secondary circuit;
- m. Provide block diagrams/schematics of the vacuum systems of the subject and peer vehicles, including all check valves and supplemental vacuum subsystems and describe all differences in booster vacuum supply or control that may relate to the alleged defect in the subject vehicles; and
- n. Describe all other differences between the subject vehicles and other MY 2013 through 2014 Ford F-150 pickup trucks that may be relevant to the alleged defect.

12. Furnish Ford's assessment of the alleged defect in the subject vehicle, including:

- a. The root cause and all contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
- f. The reports included with this inquiry.

### **Legal Authority for This Request**

This letter is being sent to Ford pursuant to 49 U.S.C. § 30166, which authorizes NHTSA to conduct any investigation that may be necessary to enforce Chapter 301 of Title 49 and to request reports and the production of things. It constitutes a new request for information.

### **Civil Penalties**

Ford's failure to respond promptly and fully to this letter could subject Ford to civil penalties pursuant to 49 U.S.C. § 30165 or lead to an action for injunctive relief pursuant to 49 U.S.C. § 30163. (Other remedies and sanctions are available as well.) The Vehicle Safety Act, as amended, 49 U.S.C. § 30165(a)(3), provides for civil penalties of up to \$7,000 per violation per day, with a maximum of \$35,000,000 for a related series of daily violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. This includes failing to respond completely, accurately, and in a timely manner to ODI information requests. The maximum civil penalty of \$7,000 per violation per day is established by 49 CFR 578.6(a)(3). The maximum civil penalty of \$35,000,000 for a related series of daily violations of 49 U.S.C. § 30166 is authorized by 49 U.S.C. § 30165(a)(3) as amended by § 31203(a)(1)(B) of the Moving Ahead for Progress in the 21st Century Act, Public Law 112-141.

If Ford cannot respond to any specific request or subpart(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, Ford does not submit one or more requested documents or items of information in response to



this information request, Ford must provide a privilege log identifying each document or item withheld, and stating the date, subject or title, the name and position of the person(s) from, and the person(s) to whom it was sent, and the name and position of any other recipient (to include all carbon copies or blind carbon copies), the nature of that information or material, and the basis for the claim of privilege and why that privilege applies.

### **Confidential Business Information**

**All business confidential information must be submitted directly to the Office of Chief Counsel as described in the following paragraph and should not be sent to this office.** In addition, do not submit any business confidential information in the body of the letter submitted to this office. Please refer to **PE16-003** in Ford's response to this letter and in any confidentiality request submitted to the Office of Chief Counsel.

If Ford claims that any of the information or documents provided in response to this information request constitute confidential commercial material within the meaning of 5 U.S.C. § 552(b)(4), or are protected from disclosure pursuant to 18 U.S.C. § 1905, Ford must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with 49 CFR Part 512, as amended, to the Office of Chief Counsel (NCC-111), National Highway Traffic Safety Administration, Room W41-227, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Ford is required to **submit two copies of the documents containing allegedly confidential information (except only one copy of blueprints) and one copy of the documents from which information claimed to be confidential has been deleted.** Please remember that the phrase "ENTIRE PAGE CONFIDENTIAL BUSINESS INFORMATION" or "CONTAINS CONFIDENTIAL BUSINESS INFORMATION" (as appropriate) must appear at the top of each page containing information claimed to be confidential, and the information must be clearly identified in accordance with 49 CFR 512.6. If you submit a request for confidentiality for all or part of your response to this IR, that is in an electronic format (e.g., CD-ROM), your request and associated submission must conform to the new requirements in NHTSA's Confidential Business Information Rule regarding submissions in electronic formats. *See* 49 CFR 512.6(c) (as amended by 72 Fed. Reg. 59434 (October 19, 2007)).

If you have any questions regarding submission of a request for confidential treatment, contact Otto Matheke, Senior Attorney, Office of Chief Counsel at [otto.matheke@dot.gov](mailto:otto.matheke@dot.gov) or (202) 366-5253.

### **Due Date**

Ford's response to this letter, in duplicate, together with a copy of any confidentiality request, must be submitted to this office by **April 20, 2016**. Ford's response must include all non-confidential attachments and a redacted version of all documents that contain confidential information. If Ford finds that it is unable to provide all of the information requested within the time allotted, Ford must request an extension from me at (202) 366-5207 no later than five business days before the response due date. If Ford is unable to provide all of the information

requested by the original deadline, it must submit a partial response by the original deadline with whatever information Ford then has available, even if an extension has been granted.

Please send email notification to Joseph Oxenham at [Joseph.Oxenham@dot.gov](mailto:Joseph.Oxenham@dot.gov) and to [ODI\\_IRresponse@dot.gov](mailto:ODI_IRresponse@dot.gov) when Ford sends its response to this office and indicate whether there is confidential information as part of Ford's response.

If you have any technical questions concerning this matter, please call Joseph Oxenham of my staff at (202)366-5464.

Sincerely,



Jeffrey L. Quandt, Chief  
Vehicle Control Division  
Office of Defects Investigation

Enclosure 1: Copies of the subject reports referenced in the introduction of this letter identified by the following ODI reference numbers:

10838782, 10838510, 10818273, 10817706, 10809601, 10788886, 10788369, 10785526, 10779854, 10776834, 10766291, 10762034, 10761412, 10760663, 10758997, 10750065, 10749886, 10748122, 10747875, 10747531, 10746143, 10745511, 10744847, 10743344, 10733196, 10733023; 10731327, 10725476, 10725096, 10725046, 10724169, 10715103, 10692723, 10662564, and 10632103.