DEFECTS: INVESTIGATION AND ANALYSIS

NHTSA
People Saving People
www.nhtsa.dot.gov
ODI Mission

• Identify defects that relate to motor vehicle safety

• To assure that defects are remedied effectively and promptly
DEFECTS INVESTIGATION PROCESS

- U.S. Registered Vehicles: 215 Million
- Complaints: 50,000 per year
  Hotline VOQ, EVOQ, Letters, Internet
- Issues Screened: 200
- Investigations: 140
- ODI Influenced Vehicle Defect Recalls: 75
- ODI Influenced Vehicles Recalled: 11 Million
REPORTING DEFECTS

Callers to the Hotline can report safety defects in vehicles and vehicle equipment.

Vehicle equipment includes:

- Add-on accessories
- Tires
- Jacks
- Child Safety Seats
## Vehicle Owner's Questionnaire

**To Report Vehicle Safety Defects**

**1-888-DASH-2-DOT**

**INTERNET: www.nhtsa.dot.gov/hotline**

### Owner Information (Type or Print)

<table>
<thead>
<tr>
<th>Name</th>
<th>Apt. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Street No.</th>
<th>City</th>
<th>State</th>
<th>Zip Code</th>
<th>Daytime Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Do you authorize NHTSA to provide a copy of this report to the manufacturer of your vehicle? **

☐ Yes ☐ No

In the absence of an authorization, NHTSA WILL NOT provide your name or address to the vehicle manufacturer.

**Signature of Owner**

____________________

**Date** ______/_____/______

### Product Information

<table>
<thead>
<tr>
<th>Vehicle Identification No. (VIN) (Located at bottom of windshield on driver's side)</th>
<th>Make</th>
<th>Model</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine Size (CID/COIL)</th>
<th>Turbo</th>
<th>Diesel</th>
<th>Gas</th>
<th>Fuel Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Cylinders</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transmission Type</th>
<th>Manual</th>
<th>Automatic</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Restraint System</th>
<th>Driver Side Air Bag</th>
<th>Passenger Side Air Bag</th>
<th>3-Point Belt</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cruise Control</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Drivetrain</th>
<th>Front</th>
<th>Rear</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Car</th>
<th>Sport Utility</th>
<th>Van</th>
<th>Truck</th>
<th>Minivan</th>
<th>Motorcycle</th>
<th>Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Body Style</th>
<th>2-Door</th>
<th>4-Door</th>
<th>Stationwagon</th>
<th>Pick-Up Truck</th>
<th>Other</th>
</tr>
</thead>
</table>

### Failed Component(s)/Part(s) Information

**Part Name(s):**

________________________

**Location:**

<table>
<thead>
<tr>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
</table>

**Failed Part(s):**

Original Replacement

**Handicap Adaptive Equip:**

☐ Yes ☐ No

### To Be Completed When Reporting a Tire Failure

**Tire Brand:**

____________________

**Tire Name:**

____________________

**Complete Tire Size:**

____________________

<table>
<thead>
<tr>
<th>No. of Failures</th>
<th>Date(s) of Failure(s)</th>
<th>Mileage at Failure(s)</th>
<th>Vehicle Speed at Failure(s)</th>
<th>Failed Part(s) Available?</th>
<th>NHTSA Previously Contacted?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Applicable Incident Information

*(Please describe in detail the Incident(s), Failure(s), Crash(es), and Injury(es). Attach photos if available.)*

<table>
<thead>
<tr>
<th>Crash</th>
<th>Fire</th>
<th>Number of Persons Injured</th>
<th>Number of Fatalities</th>
<th>Reported to Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ Yes ☐ No ☐ No</td>
<td>☐ Yes ☐ No</td>
<td>☐ Yes ☐ No</td>
</tr>
</tbody>
</table>

**Narrative Description of Incident(s), Failure(s), Crash(es), and Injury(es).**

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

**Continue on back.**
Sources of Complaints
DOT Auto Safety HOTLINE
DASH-2-DOT
(1-888-327-4236)
Letters
Electronic VOQ
Internet VOQ
Additional Information
Early Warning Information

NTSA
People Saving People
www.nhtsa.dot.gov
Screening

- Assemble & Review Complaints
- Understand the Safety Consequence & Trend
- Interview & Verify Complaints
- Conduct Field Inspections
- Make Peer Vehicle Comparison
- Review Current & Past Activity
- Early Warning Information
Screening

Assemble & Review Complaints

• Read all new complaints
• Search NHTSA complaint database
• Check Model/MY for complaint history
• Search “Corporate Cousins”
  – Ford Expedition -- Lincoln Navigator
• Make peer complaint comparison
• Review other NHTSA data & data bases
Screening

Understand the Safety Consequence & Trend

• Is defect related to motor vehicle safety?
• What is result of alleged defect?
• Is there a complaint trend?
Screening

Interview & Verify Complaints

- Phone owners and vehicle operators
- Clarify or correct the information on VOQ
  - VIN, dates, injuries etc.
- Get details on what happened before, during and after the incident
- Clarify exactly what is the allegation
- Get information for follow up if necessary
Screening
Conduct Field Inspections

- Examine selected complaint vehicles
- Examine exemplar vehicles
- Examine peer vehicles
  - (same model different model year)
Screening

Make Peer Vehicle Comparison

- Examine peer vehicles
  - other model in same class (compact, trucks, vans, SUV)
  - same model different model year
- Compare complaint rate
- Examine readily apparent design differences
  - e.g. does subject vehicle have exposed brake line and others have a shield?
Screening

Review Current & Past Activity

• Review prior NHTSA recalls
  – for specific Model/MY
  – for similar problem on other Model/MYs
• Search for service bulletins
• Check foreign activity/recalls
Screening

Early Warning Information

- Warranty data
- Claims and incidents involving serious injury or death
- Data on property damages
- Field reports
- Complaints
- Other data
INVESTIGATION PROCESS

Preliminary Evaluation (PE)
Most Investigations Start at PE Level
Obtain Limited Info for Analysis
To be completed in 4 Mos
INVESTIGATION PROCESS

• Send Information Request (IR) Letter
• 6 Week IR Turn Around
• Evaluate Response
• Recall, Close or Upgrade
INVESTIGATION PROCESS

Engineering Analysis (EA)
Detailed Technical Analysis
To be completed in 12 Mos
INVESTIGATION PROCESS

ENGINEERING ANALYSIS

• Send Information Request (IR) Letter
• 7 Week IR Turn Around
• Test Components
• Survey
• Inspect Vehicles
• Follow Up IR, Peer IR Letters
• Evaluate and Analyze
• Informal Communication with Manufacturer
INVESTIGATION PROCESS

After this is complete

Panel of Peer Experts Within NHTSA

Recall Request Letter (Office Director)
INVESTIGATION PROCESS

Initial Decision That a Defect Exists
(Associate Administrator)

9

Public Meeting

9

Final Decision
(NHTSA Administrator)

9

Recall Order
RECALL MANAGEMENT

INVESTIGATIONS

• Tracking Recalls & Completion Rates
• Supplemental Notification
• Recall Query (RQ) -- Investigate the scope or effectiveness of recall action
• Audit Query (AQ)
Vehicle Safety Recalls By Influence
For January through December, 1991-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>NSA</th>
<th>MFR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>70</td>
<td>150</td>
<td>220</td>
</tr>
<tr>
<td>1992</td>
<td>64</td>
<td>123</td>
<td>187</td>
</tr>
<tr>
<td>1993</td>
<td>80</td>
<td>144</td>
<td>224</td>
</tr>
<tr>
<td>1994</td>
<td>49</td>
<td>195</td>
<td>244</td>
</tr>
<tr>
<td>1995</td>
<td>55</td>
<td>204</td>
<td>259</td>
</tr>
<tr>
<td>1996</td>
<td>54</td>
<td>197</td>
<td>251</td>
</tr>
<tr>
<td>1997</td>
<td>46</td>
<td>200</td>
<td>246</td>
</tr>
<tr>
<td>1998</td>
<td>64</td>
<td>262</td>
<td>326</td>
</tr>
<tr>
<td>1999</td>
<td>85</td>
<td>285</td>
<td>370</td>
</tr>
<tr>
<td>2000</td>
<td>76</td>
<td>407</td>
<td>483</td>
</tr>
</tbody>
</table>
### Number of Vehicles Recalled by Influence
For January through December, 1991-2000

#### Vehicles Recalled (Millions)

![Bar Chart showing vehicles recalled by influence for 1991-2000](chart.png)

<table>
<thead>
<tr>
<th>Year</th>
<th>NSA</th>
<th>MFR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>5.43</td>
<td>2.85</td>
<td>8.28</td>
</tr>
<tr>
<td>1992</td>
<td>7.00</td>
<td>3.12</td>
<td>10.12</td>
</tr>
<tr>
<td>1993</td>
<td>9.34</td>
<td>1.60</td>
<td>10.94</td>
</tr>
<tr>
<td>1994</td>
<td>3.27</td>
<td>2.78</td>
<td>6.05</td>
</tr>
<tr>
<td>1995</td>
<td>11.83</td>
<td>6.40</td>
<td>18.23</td>
</tr>
<tr>
<td>1996</td>
<td>12.71</td>
<td>4.96</td>
<td>17.66</td>
</tr>
<tr>
<td>1997</td>
<td>10.16</td>
<td>4.43</td>
<td>14.59</td>
</tr>
<tr>
<td>1998</td>
<td>11.08</td>
<td>6.17</td>
<td>17.25</td>
</tr>
<tr>
<td>1999</td>
<td>11.24</td>
<td>7.93</td>
<td>19.17</td>
</tr>
<tr>
<td>2000</td>
<td>11.48</td>
<td>11.92</td>
<td>23.40</td>
</tr>
</tbody>
</table>

This chart illustrates the number of vehicles recalled by influence for January through December, 1991-2000, with separate sections for NSA and MFR. The total number of vehicles recalled each year is also shown.