3rd Annual Automotive Industry Warranty & Recall Symposium
Agenda – News and Recall Data

- 2015 Recap
- NHTSA Recall Data
- Completion Rate Trends and Observations
- International Recall Data
- NHTSA Investigation Data
- Early Warning Reporting Data
- Recalls of Software Components
Agenda – Other Trends

- NHTSA Fines
- Motor Vehicle Defect Petitions
- Petitions for Inconsequential Non-Compliance
- Warranty and Recall Claims and Accrual Analysis
- Things to Look For: Future Expectations
- 15 Minute Intermission
- Panel Discussion
Panelist Introductions
Select Panelists

Brian Westenberg  
▪ Principal – Miller, Canfield, Paddock and Stone, P.L.C.  
Contact:  
+1.248.267.3220  
westenberg@millercanfield.com

James Derian  
▪ Corporate Counsel – Delphi Automotive Systems  
Contact:  
+1.248.813.3367  
james.derian@delphi.com

Jeff Sutter  
▪ Global Director, Innovation & Continuous Improvement – Nexteer Automotive  
Contact:  
+1.989.757.3561  
jeffrey.sutter@nexteer.com
2015 Recap
Headlines from 2015 - Timeline

- NHTSA announces steps to address Takata recall: expands recall to 34M vehicles, enters in to CRO with Takata
- NHTSA fines Honda $70M for failure to submit EWRs
- NHTSA issues “Path Forward” report
- NHTSA announces FCA consent order and a $105M civil penalty for failing to remedy recalled vehicles
- NHTSA fines FCA $70M for failure to submit EWRs
- NHTSA imposes $200M penalty on Takata – largest civil penalty ever
- NHTSA extends federal oversight of GM per consent order
- FCA recalls 1.4M vehicles due to radio vulnerability
- GM enters into $900M criminal settlement with DOJ related to ignition switch defect
- VW tells EPA that emissions issue extends to 85,000 vehicles in US
- NHTSA fines BMW $40M for failing to issue recalls in a timely manner, issues consent order
- NHTSA fines $200M penalty on Takata – largest civil penalty ever
- NHTSA extends federal oversight of GM per consent order
- FCA recalls 1.4M vehicles due to radio vulnerability
- GM enters into $900M criminal settlement with DOJ related to ignition switch defect
- VW tells EPA that emissions issue extends to 85,000 vehicles in US
- NHTSA fines BMW $40M for failing to issue recalls in a timely manner, issues consent order
Record 51 million vehicles recalled in 2015 in nearly 900 separate recalls
- Record set in 2014 was revised downward to eliminate double-counting related to Takata air bag inflators

Record setting recalls led by Honda, FCA, Ford, and Nissan

Takata air bag inflators linked to approximately 40% of recalled vehicles in 2015
- 29 million vehicles were recalled in 2015 exclusive of the Takata inflator recalls

Other notable recall campaigns included Toyota power window switch, Mazda ignition switch, FCA radio software security, and Toyota inadvertent airbag deployment
Headlines from 2015 – Recall Sizes

- Largest individual recall of 2015:
  - Issued by Honda related to Takata airbag inflators
  - Affected 6,281,043 vehicles

- Largest non-Takata recall of 2015:
  - Issued by Toyota related to a power window electrical switch that could short circuit and potentially catch fire
  - Affected 1,814,284 units

- Smallest recalls of 2015 affected 1 unit
  - Rolls-Royce recalled one Ghost Vehicle for thorax airbags that failed to meet performance standards
  - Ford recalled one F-550 Truck for a power take off switch leaking oil
GM reached an agreement with the Department of Justice that included a $900 million penalty for failing to disclose a safety defect related to the ignition switch defect and misleading U.S. consumers about that defect.

NHTSA assessed nearly $500 million in civil penalties in 2015 – the most of any year in the agency’s history.

NHTSA’s consent order with Takata imposes a record $200 million civil penalty for violations including failure to issue a timely recall and providing selective, incomplete or inaccurate data to NHTSA and consumers.

Also includes $105 million fine levied against FCA for violating the Motor Vehicle Safety Act relating to effective and timely recall remedies, notification to vehicle owners and dealers, and notifications to NHTSA.

NHTSA fined Honda and FCA $70 million each for failing to provide Early Warning data.
In November of 2015, Volkswagen informed the Environmental Protection Agency that the nitrous oxide emissions defeat device scandal extended to 85,000 vehicles in the United States. This followed a notice of violation issued by the EPA two months earlier.

On December 8, 2015 Harbor Freight agreed to a $1,000,000 fine and entered into a consent order with NHTSA for failing to submit the required part 573 report within five days after it knew or should have known of noncompliance related to trailer light kits that did not include rear side-marker lamps to improve night visibility.

On December 21, 2015 BMW agreed to a $40,000,000 fine and entered into a consent order with NHTSA for failing into issue recalls in a timely manner related to non-compliance with side impact crash standards in some MINI Cooper models.
Report released in June of 2015 detailing NHTSA’s goals, improvements, and initiatives in the wake of unprecedented recall action

NHTSA’s Path Forward includes:
- Increase accountability of automotive industry
- Increase NHTSA’s knowledge base of new and emerging technologies
- Enhance Office of Defects Investigation’s (ODI) systems safety approach to detection and analysis
- Enhance information management, analysis and sharing
- Establish improved controls for assessing potential defects
- Ensure effective communications and coordination within the ODI and between ODI and the agency’s special crash investigation division
Data Analysis and Review: NHTSA Recall Data

- “Big Picture” and Year in Review – The Current Automotive Recall Landscape
- General Trends and Observations
- Supplier Focus (573 Letter Review)
Information downloaded from NHTSA website (www.nhtsa.gov) for historical recalls dating back to 1966

NHTSA data provided detail regarding NHTSA campaign number, manufacturer, model and model year, component, total units affected, and certain additional fields

SRR summarized, “scrubbed”, and analyzed the data to analyze recall trends for OEMs across various component groupings and timeframes

Additional OEMs added to the study this year including Kia, Tata Motors, and Tesla
Overall Recall Trends (By Decade):

**Unique Campaigns and Units Affected by Decade**

**Includes BMW, Daimler, FCA, Ford, GM, Honda, Hyundai, Isuzu, Kia, Mazda, Mitsubishi, Nissan, Subaru, Tata Motors, Tesla, Toyota, Volkswagen, and Volvo. Contains data through December 2015.**

*Source: NHTSA Recall Data*
**Units Affected by Component Grouping and Year**

- **Other**
- **Electronic Stability Control**
- **Seat Belts**
- **Suspension**
- **Power Train**
- **Fuel System**
- **Exterior Lighting**
- **Service Brakes**
- **Latches/ Locks**
- **Structure**
- **Equipment**
- **Steering**
- **Engine and Engine Cooling**
- **Visibility**
- **Electrical**
- **Air Bags**

**Source:** NHTSA Recall Data

**Includes BMW, Daimler, FCA, Ford, GM, Honda, Hyundai, Isuzu, Kia, Mazda, Mitsubishi, Nissan, Subaru, Tata Motors, Tesla, Toyota, Volkswagen, and Volvo. Contains data through December 2015.**
Units affected by recalls in 2015 narrowly edged the record setting totals in 2014.
- Recalls of Takata inflators played a significant role.
- Still a very active year for other recalls with approximately 29 million units affected by non-Takata campaigns.

More units affected by airbag in 2015 than in prior 10 years combined (heavily influenced by Takata inflator recall affecting 21 million units).

Source: NHTSA Recall Data
Large recalls may be the most newsworthy, but historically have not been the most prevalent. Majority of recalls (on a unique campaign basis) involve fewer than 10,000 units, many with significantly less.

However, we do see a continued increase in the number of large recalls. Recalls over 100,000 units represented more than 20% of all unique recalls in 2015.

We observe certain differences for large recalls as compared to small recalls, such as:
- Differences in completion rates
- Differences in age of vehicles involved
- Differences in frequency of a named supplier
Analysis by Size of Recall

Summary of Recall Trends
Unique Recalls by Size (Unique Campaigns)


Source: NHTSA Recall Data
Analysis by Size of Recall

Summary of Recall Trends
Unique Recalls by Size (Unique Campaigns)


Source: NHTSA Recall Data
For each recall initiated, OEMs are required to submit a Part 573 Report that serves as notification to the U.S. Department of Transportation, National Highway Traffic Safety Administration that a defect related to motor vehicle safety or noncompliance with Federal Motor Vehicle Safety Standards exists.

Required sections of report include:

- Manufacturer, Designated Agent and other Chain of Distribution Information
- Identification of the Recall Population and its Size
- Description of the Defect or Noncompliance and Chronology of Events
- The Remedy Program and its Schedule
- Manufacturer of Defective Component
# Part 573 Safety Recall Report

<table>
<thead>
<tr>
<th>Manufacturer Name</th>
<th>Honda (American Honda Motor Co.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Date</td>
<td>JUN 01, 2015</td>
</tr>
<tr>
<td>NHTSA Recall No.</td>
<td>15V-320</td>
</tr>
<tr>
<td>Manufacturer Recall No.</td>
<td>NR</td>
</tr>
</tbody>
</table>

## Manufacturer Information

- **Manufacturer Name**: Honda (American Honda Motor Co.)
- **Address**: 1919 Torrance Blvd.
- **Torrance CA 90501**
- **Company phone**: 310-783-2000

## Population

- **Number of potentially involved**: 5,100,000
- **Estimated percentage with defect**: 0

## Vehicle Information

- **Vehicle**: 2001-2007 HONDA ACCORD
- **Vehicle Type**: 
- **Body Style**: 
- **Power Train**: NR

**Descriptive Information**: The recall population was determined based on manufacturing records. Based on the safety-defect determination set forth in the driver frontal airbag inflator equipment defect notification (15E-040) filed by TK Holdings Inc. (“Takata”), the VIN range reflects all possible vehicles that could potentially experience the problem.

**Production Dates**: JAN 01, 2001 - DEC 31, 2007

**VIN (Vehicle Identification Number) Range**

- Begin: NR
- End: NR
- Not sequential VINS
For all recalls dating back to January 2000, SRR researched 573 disclosures provided to NHTSA by the OEMs to identify suppliers.
- Supplier subsidiaries and divisions combined and consolidated
- Supplier information was then linked to the NHTSA Recall Database
- Identified whether defect was clearly design, manufacturing, or assembly related

Using supplier recall database, SRR was able to:
- Analyze component groups for which suppliers are most often named
- Analyze recall trends by supplier involved
- Analyze the disclosed cause of the defect

Suppliers are not named for every recall, and there are a number of reasons for this.
Summary of Recall Trends
Recalls with Identified Suppliers - Unique Campaigns


Source: NHTSA Recall Data and 573 Letters
Supplier Identification by Recall Size and Year

Source: NHTSA Recall Data and 573 Letters
573 Letter Review – A Supplier Focus

Recall Classification by Supplier Identified or Not Identified
For Selected Recalls from 2006 - 2010

Source: NHTSA Recall Data and 573 Letters
Recall Classification by Supplier Identified or Not Identified
For Selected Recalls from 2011 - 2015

Source: NHTSA Recall Data and 573 Letters
Completion Rates

- 2015 Completion Rate News
- Explanation of Data Sources and Analysis Performed
- General Trends and Observations
Dr. Rosekind has sought to create a proactive recall environment:
- “I’d rather have people be pre-emptive…[w]e’d rather have people at the proactive end, catching stuff early”
- 100% recall completion has “got to be your target”

NHTSA hosted workshops in April of 2015 entitled “Retooling Recalls: Getting to 100% Completion” with the intention of challenging the industry to come up with creative and innovative ways to remedy all vehicles involved in recalls.
- Improvement to public education of the recall process
- Dealership outreach and notification
- Parts availability challenges

NHTSA’s Assistant Chief Council Tim Goodman mentioned the desire to collaborate on safety issues within the industry as opposed to competing on safety issues.
The Moving Ahead for Progress in the 21st Century Act (MAP-21) authorizes the Secretary of Transportation to amend the means of notification required under the Safety Act (other than, or in addition to First Class Mail).

MAP-21 also authorizes the Secretary to require additional notifications if a second notification does not result in adequate completion.

NHTSA sought public comment on additional means of notification to owners, purchasers, and dealers of recall actions. These comments include:

- Truck and Engine Manufacturers Association (“EMA”): “EMA members have found the traditional method of notifying purchasers and owners by first class mail to be very effective for commercial vehicle recalls.”

- FCA US LLC: “FCA is currently conducting a comprehensive study on consumer participation in recall and consumer satisfaction campaigns and anticipates the findings will identify opportunities for improved vehicle owner communication.”
NHTSA requires that beginning the quarter after the start of a recall, the manufacturer must submit a Quarterly Progress Report for **six** consecutive calendar quarters. The deadline for the report is the 30th day of the month following the quarter’s end.

In analyzing this data, SRR linked Quarterly Progress Reports to NHTSA’s larger recall database using campaign numbers in order to analyze trends in completion rates across different subsets of recall data.

**Required Data to be disclosed includes:**
- NHTSA-assigned recall identification number
- Manufacturer-assigned recall identification number, if applicable
- Various dates of notification for dealers and purchasers
- Number of items involved in the recall
- Number of items at respective quarter’s end that have been remedied
- Number of items as respective quarter’s end that have been inspected and determined to not need a remedy
- Number of items unreachable for inspection
- Number of items returned and/or repaired by dealers, retailers and distributors
For all recalls dating back to January 2000, SRR summarized and compiled information from Quarterly Progress Reports relating to completion rates. Quarterly completion rates were calculated for each recall and each quarter for every OEM included in our study.

Quarterly Completion Rates calculated as:

\[
\frac{\text{(Total Repaired and/or Inspected)}}{\text{(Total Vehicles Affected)}} - \text{(Unreachable)}
\]

All quarters and recalls were summarized and analyzed. Only Recalls with at least six quarters of reported data were included analyses or charts considering final “completion rates”

Source: NHTSA Recall Data and Quarterly Progress Reports
Overall Median and Average Completion Rates by Year (2005 - 2014)
Includes only Recalls with 6 or More Reported Quarters


Source: NHTSA Recall Data and Quarterly Progress Reports
Completion Rates – Overall Trends

Summary of Recall Trends
Summary of Average Completion Rate by Component Group (Last 5 Years)
Including Only Recalls with 6 Quarters Reported


Source: NHTSA Recall Data and Quarterly Progress Reports
Completion Rates – Pace of Completion

Summary of Recall Trends
Completion Rates for Recalls with at Least 6 Quarters of QPR Data, (Last 10 Years)
ALL RECALL SIZES


Source: NHTSA Recall Data and Quarterly Progress Reports
In addition to specific differences observed for certain OEMs or component groups, certain factors appear to have a universal impact on the ultimate completion rates for recalls.

- **Vehicle Age**: Completion rates for recalls involving older vehicles are generally lower, sometimes significantly. This appears to get more pronounced as vehicles get older.

- **Recall Size**: Completion rates for larger recalls (>100,000 units) are often approximately 5-10% lower than for smaller-sized recalls.

- **Vehicle Type**: Completion rates for trucks and minivans appear to perform differently than for sedans and full-size vehicles.

- **Owner Ability to Self-Diagnosis**: If the vehicle owner can easily self-diagnosis whether the vehicle suffers from the defect, completion rates may suffer.

- **Outreach Efforts**: New ways of engaging with vehicle owners is demonstrating success – email, television advertising, print advertising, mobile apps, etc.
Completion Rates – Influential Forces

Summary of Recall Trends
Completion Rates for Recalls with at Least 6 Quarters of QPR Data, (Last 10 Years)
BY RECALL SIZE (<100k and >=100k Units)


Source: NHTSA Recall Data and Quarterly Progress Reports
**Summary of Recall Trends**
Completion Rates for Recalls with at Least 6 Quarters of QPR Data, (Last 10 Years)
SUMMARY BY AGE OF VEHICLES RECALLED

<table>
<thead>
<tr>
<th></th>
<th>1st Quarter Avg</th>
<th>2nd Quarter Avg</th>
<th>3rd Quarter Avg</th>
<th>4th Quarter Avg</th>
<th>5th Quarter Avg</th>
<th>Last Quarter Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall with MY's Over 3 Years Old</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Recall with MY's 3 Years Old or Less</td>
<td>20%</td>
<td>50%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>70%</td>
</tr>
</tbody>
</table>

**Includes BMW, Daimler, FCA, Ford, GM, Honda, Hyundai, Isuzu, Kia, Mazda, Mitsubishi, Nissan, Subaru, Tata Motors, Tesla, Toyota, Volkswagen, and Volvo. Contains data through December 2015.**

Source: NHTSA Recall Data and Quarterly Progress Reports
**Summary of Recall Trends**
Completion Rates for Recalls with at Least 6 Quarters of QPR Data, (Last 10 Years)
SUMMARY BY AGE OF VEHICLES RECALLED

**Includes BMW, Daimler, FCA, Ford, GM, Honda, Hyundai, Isuzu, Kia, Mazda, Mitsubishi, Nissan, Subaru, Tata Motors, Tesla, Toyota, Volkswagen, and Volvo. Contains data through December 2015.**

Source: NHTSA Recall Data and Quarterly Progress Reports
Completion Rates – Influential Forces

Average Completion Rate by Vehicle Age at Time of Recall

Completion Rates represent arithmetic average for each vehicle age
Source: NHTSA Recall Data, Quarterly Progress Reports
SRR also reviewed a subset of Form 577 Letters from over 1,400 recall campaigns since 2000. This data was used to indicate potentially influential aspects of owner notification letters on completion rates. These factors included:

- **Apology Word**: Owner notification letters that used versions of “Apologize” and/or “Sorry” tended to have higher completion rates.
- **Vehicle Type**: Completion rates for trucks and minivans appear to perform differently than for sedans and full-size vehicles.
- **Vehicle Age**: Newer vehicles (at time of recall) tend to have higher completion rates.
- **Length of Owner Notification Letter**: Shorter letters had slightly higher completion rates.
- **Personalized Text**: Letters addressed to a specific person as opposed to “vehicle owner” or “customer” tended to do slightly better.
- **Impact Words**: Recall letters with “accident” or “crash” in the defect description had slightly higher completion rates.

In addition, we know outreach by OEMs is an influential force in improving completion rates.
Completion Rates – Influential Forces

Apology Word Used

<table>
<thead>
<tr>
<th>Quartile</th>
<th>Apologize</th>
<th>Regret</th>
<th>Sorry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>2</td>
<td>50%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>3</td>
<td>50%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>4</td>
<td>50%</td>
<td>20%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: NHTSA Recall Data, Quarterly Progress Reports, Form 577 Letters
<table>
<thead>
<tr>
<th>Quartile</th>
<th>Compact</th>
<th>Minivan</th>
<th>Sedan</th>
<th>SUV/Crossover</th>
<th>Pickup Truck</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40%</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>30%</td>
<td>30%</td>
<td>20%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>4</td>
<td>10%</td>
<td>40%</td>
<td>40%</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

**Source:** NHTSA Recall Data, Quarterly Progress Reports, Form 577 Letters
Completion Rates – Influential Forces

<table>
<thead>
<tr>
<th>Vehicle Age at Time of Recall</th>
<th>Apologize</th>
<th>Regret</th>
<th>Sorry</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Years or Less</td>
<td>80.00%</td>
<td>70.00%</td>
<td>60.00%</td>
</tr>
<tr>
<td>3 - 5 Years Old</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Older than 5 Years</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Completion Rates represent arithmetic average for each vehicle age
Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Completion Rate by Year of Recall and Type of Vehicle

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

### Percentage of Recalls of Recalls by Components and Vehicle Age at Time of Recall

<table>
<thead>
<tr>
<th>Component Part</th>
<th>Older than 5 Years</th>
<th>3 - 5 Years Old</th>
<th>3 Years or Less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid Propulsion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal Belts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Brake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Brakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latches/Locks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Train</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior Lighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Bags</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine and Engine Cooling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Stability Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Speed Control</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Completion Rate by Characters in Defect Summary Field

Completion Rate by Characters in Consequence Summary Field

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Source: NHTSA Recall Data, Quarterly Progress Reports
Completion Rates – Influential Forces

Any Re-Notification

<table>
<thead>
<tr>
<th>Quartile</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NHTSA Recall Data, Quarterly Progress Reports
Historic Year for Recalls

“Safety Components” still a huge contributor
Large recalls the minority, but increasing as a %

573 Reports and Quarterly Progress Reports provide additional valuable information not previously analyzed

The trend in 573 Reports is for more frequent supplier identification, particularly for certain components
Suppliers are increasingly being identified in recalls related to design defects
Completion rates generally in the range of 80% across all recalls and OEMs
- Number of factors contribute to lower or higher completion rates (recall size, age of vehicles, component affected)
The content of 577 letters impacts recall completion rates. Additionally, OEM outreach improves completion rates.
Data Analysis and Review: International Recall Data

- Legislative Requirements
- Specific International Campaign Review
- Observations Relating to International Campaign Data
NHTSA legislative requirements relating to international recall campaigns:

- Manufacturers of motor vehicles or items of motor vehicle equipment must notify NHTSA if the manufacturer or a foreign government determines that the manufacturer should conduct a recall or other safety campaign on a motor vehicle or item of motor vehicle equipment that is identical or substantially similar to a motor vehicle or item of motor vehicle equipment offered for sale in the United States.
SRR compiled all international recall data for the OEMs analyzed dating back to 2000. Information reported to NHTSA includes subject vehicles and dates of manufacture, description of defect, identification of “substantially similar” vehicles sold in U.S., and comments regarding whether these vehicles may also be affected.

Significant limitations relating to analysis of international campaign data:
- Data generally not as “clean” or uniform
- No standard component classification (generally only verbatims) and the component at issue is not always clear
- Information provided by region or country, but it is not always possible to identify number of vehicles impacted in each area
Summary of Foreign Campaign Trends
Unique Field Actions by OEM

Source: NHTSA International Campaign Data
### Summary of Foreign Campaign Trends

**Unique Field Actions by OEM**

- **2000**
- **2001**
- **2002**
- **2003**
- **2004**
- **2005**
- **2006**
- **2007**
- **2008**
- **2009**
- **2010**
- **2011**
- **2012**
- **2013**
- **2014**
- **2015**

**Source:** NHTSA International Campaign Data
Honda and Toyota made up a large percentage of the units affected in international campaigns in 2015, primarily related to the recall of Takata airbag inflators.

- Toyota recalled 6.4 million vehicles globally related to Takata SDI inflators.
- Honda recalled 4.9 million vehicles globally related to Takata inflator recalls.
SRR reviewed data relating to international campaigns to see if there was a correlation to U.S. data (i.e., recalls, investigations)

For nearly every international campaign reviewed, reports to NHTSA indicated issue was not relevant to U.S. vehicles

However, for certain campaigns it does appear that a similar issue had the potential to affect vehicles in the U.S:
- Nissan provided a disclosure for Campaign 13F067 (September 26, 2013), indicating that certain Infiniti M Series models in the U.S. may be affected
  - In U.S. recall data, we do in fact see a U.S. recall for M Series vehicles, on the same date as the international campaign (involving 98,307 units)

It was observed that the issues underlying foreign campaigns often do not necessarily affect U.S. vehicles
- However, more detailed and affirmative analyses are a challenge given the nature of the international campaign data
- This may change in the future as production and supply of components continues to become more global and standardized
Data Analysis and Review: NHTSA Investigations Data

- NHTSA Investigative Process
- Overall Trends
- SRR Observations
Agency technical experts review each call, letter, and online report of an alleged safety problem filed with NHTSA.

The agency's ODI investigative process consists of four parts:

- **Screening** - A preliminary review of consumer complaints and other information related to alleged defects to decide whether to open an investigation.
- **Analysis** - An analysis of any petitions calling for defect investigations and/or reviews of safety-related recalls.
- **Investigation** - The investigation of alleged safety defects.
- **Management** - Investigation of the effectiveness of safety recalls.

Starts at the Preliminary Evaluation (PE) level which is completed within 4 months.

May result in a more detailed Engineering Analysis (EA) to be completed within 12 months.

NHTSA panel meets and ultimately determines if recall order necessary.
Summary of Investigations Opened by Year


Source: NHTSA Investigations Data
Summary of Investigations Opened by Year and Component Group
Last 10 Years


Source: NHTSA Investigations Data
NHTSA Investigations – SRR Observations

- Reduction in investigations in recent years may be impacted by increased OEM willingness to initiate recalls before investigation opened (corresponds to more manufacturer-initiated recalls)

- Not every recall has an associated investigation
  - In 2015, only approximately 4% of recalls had an associated investigation previously opened
  - Conversely, about 32% of investigations had an associated recall campaign listed

- However, recalls influenced by NHTSA (ODI, OVSC) each start with an investigation

- Investigations initiated by NHTSA lead to a disproportionate number of large recalls (relative to overall recall population)
  - 2015 average size of a NHTSA-influenced recall: approx. 720,000
  - 2015 average size of manufacturer influenced recall: approx. 114,000
Data Analysis and Review: Early Warning Reporting (EWR) Data

- Legislative Requirements
- Overall Trends and Observations
On July 10, 2002, NHTSA published its Early Warning Reporting (EWR) regulations requiring that motor vehicle and equipment manufacturers provide certain early warning data.

The EWR rule requires quarterly reporting of early warning information:
- Production information
- Information on incidents involving death or injury
- Aggregate data on property damage claims, consumer complaints, warranty claims, and field reports
- Copies of field reports (other than dealer reports and product evaluation reports) involving specified vehicle components, a fire, or a rollover
EWR Data Analysis

- SRR compiled all EWR data from NHTSA’s website for the OEMs analyzed dating back to 2003.
- Information available included date if incident, OEM, Model and Model Year, VIN, State of Incident, and Component.
- Most OEMs had data available through Q2 2015.

- SRR then compiled into database and analyzed trends in EWR volume by component, makes/models, OEM and other criteria.
NHTSA has added several categories for EWR reporting this year:

- Electronic Stability Control (ESC) for Light Vehicles and a combined ESC and Roll Stability Control category for Heavy & Medium Trucks.
- Categories for Forward Collision Avoidance and Land Departure Prevention systems.
- Backover Prevention
- Separated Service Brakes into Foundation Brake Systems and Automatic Brake Controls

These additions and changes reflect the recent changes and increased sophistication found in newer vehicles.

According to the Insurance Institute for Highway Safety (IIHS) autonomous collision avoidance technology is being offered by as many as 22 OEMs as of January 2016.

Accordingly, the increased prevalence of autonomous technologies as key safety features has attracted the interest of NHTSA and will likely be the subject of increased focus in years to come.
The first year of these new categories included interesting data:

- Automatic Braking was only listed on 21 EWR reports, resulting in 26 injuries and 1 fatality
  - 1 Fatality was from a 2007 Dodge Charger in California
  - Electrical and Electronic Stability Control were also listed as components

- Electronic Stability was listed on 6 EWR reports, resulting in 7 injuries and 1 fatality
  - 1 Fatality was from a 2006 Ford Ranger in New Mexico
  - Rollover, Tire Related, Structure, and Seat Belts also listed as components

- Forward Collision Avoidance was only listed in 1 EWR report that resulted in 1 injury and no fatalities
  - 2012 Volvo S60 – Electrical also listed as a component
Recalls of Software Components

- Recent News
- Classification of Software Component Recalls
- Analysis of Software Component Recall and TSB Trends
- Review of Software Component Investigations
Vulnerabilities in software components have been the subject of increased attention by manufacturers, NHTSA, and the public.

Wired magazine reported on July 21, 2015 that security experts had identified a vulnerability that would allow them to remotely hack into and control the entertainment system in a 2015 Jeep Cherokee, allowing them access into various electronic control units in the vehicle.


On February 24 of this year, Nissan disabled an app in Leafs that allows owners to control the vehicle’s climate system after a security expert identified a vulnerability that would allow a hacker to access the Leaf’s temperature control and review its driving record.
Software components continue to become increasingly important aspects of vehicle safety and customer satisfaction, as these systems become more sophisticated and integrated into vehicles and consumer devices.

SRR examined recalls of software components included in NHTSA’s data, and analyzed trends related to recalls of these components.

These recalls were identified in the NHTSA data as “software” in the Defect Summary and Corrective Action fields.

This analysis captures software-related defects as well as defects related to other components that remedied by updating or changing vehicle software.
Summary of Recall Trends
Summary of Software Recalls by Year (Last 10 Years) - Unique Campaigns


Source: NHTSA Recall Data
Summary of Software Recalls by Year and Component Part
Last 10 Years


Source: NHTSA Recall Data
Summary of Technical Service Bulletin Trends
Summary of Software TSBs by Year (Last 10 Years)

Year of TSB

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique TSBs</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>100</td>
<td>150</td>
<td>160</td>
</tr>
</tbody>
</table>


Source: NHTSA Technical Service Bulletin Data
Software components are becoming increasingly common and integrated into vehicle safety and customer comfort systems.

These components are also increasingly integrated with customer devices and data networks.

As software components continue to be integrated into vehicle systems, the pace of related recalls, field service actions, and investigations has increased.

Just as NHTSA has created new EWR reporting categories related to forward collision avoidance and automatic breaking, we expect to see continued interest by the regulator in related to software components.
Data Analysis and Review: NHTSA Fines

- Explanation of Data
- Overall Trends in NHTSA Fines
The Vehicle Safety Act (49 USC 30165) provides for civil penalties for certain violations and authorizes NHTSA to enter into settlements on penalties.

NHTSA publishes annually a list of all fines that it collected during the fiscal year, including the parties against whom they were levied and for what cause.

NHTSA collected nearly $80 million of fines in fiscal year 2015.

However, NHTSA has assessed nearly $500 million in fines during calendar year 2015 – more than any year in the agency’s history.
The Moving Ahead for Progress in the 21st Century Act (MAP-21) states that the Secretary of Transportation shall determine the amount of civil penalty or compromise under the Safety Act.

MAP-21 identifies mandatory factors that the Secretary must consider and discretionary factors for the Secretary to consider as appropriate in making such determinations.

MAP-21 also directs NHTSA to issue a rule providing an interpretation of these penalty factors.

The final rule also amends NHTSA’s regulation to increase penalties and damages for odometer fraud, and to include the statutory penalty for knowingly and willfully submitting materially false or misleading information to the Secretary after certifying the same information as accurate.
The FAST Act (signed December 4, 2015) requires NHTSA to issue a final rule providing an interpretation of penalty factors and allowed for an increase in the maximum amount NHTSA can collect in civil penalties.

- Increased the maximum fine for violations of the Safety Act from $35 million to $105 million.

Additionally, the FAST Act:

- Requires rental car fleets to comply with the limitations on sale, lease, or rental of vehicles within 24 – 48 hours after earliest receipt of defect notice.

- Provides for awards to whistleblowers of 10% - 30% of collected monetary sanctions.

- Extended manufacturers’ obligation to provide remedies for defects and noncompliance from 10 to 15 years.
Total NHTSA Fines Collected by Year

Fines Collected (in Thousands of USD)

Fiscal Year

Source: NHTSA
Total NHTSA Fines Collected by Year (Light Vehicle Manufacturers Only): 2010 - 2015

Source: NHTSA
Total NHTSA Fines by Category (Light Vehicle Manufacturers Only) - 1999 - 2015

Source: NHTSA
Total NHTSA Fines by Subject (Light Vehicle Manufacturers Only)- Last 5 Years

- Untimely Recall, 62.61%
- Failure to Report Incidents, 35.35%
- Failure to Submit EWRs, 1.77%
- False Certification of FMVSS, 0.00%
- Importation if non-compliant vehicles, 0.04%
- Failure to notify NHTSA of Service Campaigns, 0.00%
- Failure to fully respond to Special Order, 0.22%

Source: NHTSA
Data Analysis and Review: Motor Vehicle Defect Petition (MVDP) Data

- Understanding MVDPs
- Overall Trends in MVDP Data
Under the Safety Act, the public has the ability to petition NHTSA to open an investigation into a suspected defect or determine whether a manufacturer has appropriately conducted the recall notification and remedy process.

According to safercar.gov:
- “Any person may submit a petition requesting NHTSA to open an investigation into an **alleged safety defect**. After conducting a technical analysis of such a petition, ODI informs the petitioner whether it has been granted or denied. If the petition is granted, a defect investigation is opened. If the petition is denied, the reasons for the denial are published in the Federal Register. Similarly, a person may submit a petition requesting NHTSA to hold a hearing on whether a manufacturer has **reasonably met its obligation to notify and/or remedy a safety defect or noncompliance with a Federal motor vehicle safety standard**. If the petition is granted, a hearing is held to assess the matter and decide what corrective action should be taken. If the petition is denied, the reasons for the denial are published in the Federal Register.”

The filing, granting and denial of MVDPs may be an early indicator of defects, field service actions, and recalls.
Motor Vehicle Defect Petitions (MVDP)

Motor Vehicle Defect Petitions - Granted and Denied Requests by Year


Source: NHTSA
NHTSA has granted three MVDPs since 2012

- In April of 2012 a consumer petitioned NHTSA to investigate stability control failures in 2005 Honda Pilots. NHTSA discovered potentially faulty yaw rate sensors and launched a preliminary investigation.

- In August of 2012 the North Carolina Consumers Council petitioned NHTSA to investigate electronic throttle body failures in 2012 Ford Escapes. NHTSA discovered a potential manufacturing defect with the circuit boards of the throttle body and launched a preliminary investigation. Ford also initiated a TSB.

- In November of 2013 a consumer petitioned NHTSA to investigate a potential defect in the airbag Occupant Classification System in 2004-2010 GM vehicles. NHTSA did not discover clear evidence of a defect, but out of an abundance of caution, launched a more detailed examination of the claim.
NHTSA denied two MVDPs in 2015

Defective fuel valve in Chrysler Town & County that was allegedly causing stalling. Complete replacement of the fuel tank was necessary to remedy situation.

Investigation into low-speed surging in Toyota Corollas with ETCS-i, in which the brakes failed to stop the vehicle in time to prevent a crash.

On March 3, 2016 NHTSA denied a Toyota MVDP related to software defects in their electronic software controls. NHTSA stated the following their denial:

“…given a thorough analysis of the potential for finding a safety related defect in the vehicle, and in view of NHTSA's enforcement priorities and its previous investigations into this issue, the petition is denied. This action does not constitute a finding by NHTSA that a safety related defect does not exist. The agency will take further action if warranted by future circumstances.”
Although several petitions are still pending, NHTSA has granted MVDPs at about three times its historical rate since 2012:
- 14% from 2000 – 2011
- 42% from 2012 – 2015
- 41% of petitions filed from 2012 – 2015 are still pending

The number of MVDPs has steadily declined since their peak in 2002, however the relative increase in the number of MVDPs granted may be indicative of NHTSA’s tone, focus and perspective regarding the threshold for safety concerns.
Data Analysis and Review: Petitions for Inconsequential Noncompliance

- Understanding Petitions for Inconsequential Noncompliance
- Overall Trends in Inconsequential Noncompliance Data
Manufacturers can petition NHTSA to alert them of a potential violation or defect that the manufacturer believes is an inconsequential issue that does not pose a safety risk.

The existence of these defects may be determined by the manufacturer or by an initial determination of NHTSA's

By NHTSA's grant of a petition, the manufacturer is relieved of any further responsibility to provide notice and remedy the defect or noncompliance. A denial will continue to enforce all duties of the manufacturer relating to notice and remedy of the defect or noncompliance.

Examples of issues that may be included on such a petition are listed below:
- Misspelling on safety label that wouldn’t reasonable lead to confusion
- Failure of cup-holder mechanism
- Seat cushions that fail to meet the burn rate requirements set forth by NHTSA
## Petitions for Inconsequential Noncompliance

### Petitions of Inconsequential Noncompliance by Year

<table>
<thead>
<tr>
<th>Year of Petition</th>
<th>Granted</th>
<th>Denied</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: NHTSA*
NHTSA has only denied 5 petitions for Inconsequential Noncompliance in the last 5 years:

- In 2013 NHTSA denied a Ford petition related to the formation of air bubbles in the windshield of F-Series trucks when subjected to high temperatures.
- In 2014 NHTSA denied a Daimler (Mercedes Benz) petition related to a tire pressure monitoring system software misprogramming that resulted in the indicator light not illuminating properly.
- In 2014 NHTSA denied a GM petition in which the indicator for a turn signal failure of a multiple bulb turn signal would not illuminate until all bulbs failed.
- In 2015 NHTSA denied a GM petition related to the height of letters in labels that were applied to CNG vehicles.
- In 2015 NHTSA denied a Daimler (Mercedes Benz) petition related to the candle power output level of turn signals resulting from a programming issue.

It is unclear if recent denials relate to a more focused effort on NHTSA’s behalf. Recent denials may be indicative of NHTSA’s threshold for safety concerns.
Financial Statement Analysis and Review: Warranty and Recall Claims and Accruals

- Refresher: Disclosure Requirements and Common Claims and Accruals Practices
- Overall Trends in Claims and Accrual Data
- Notable Disclosures for Ford and GM
A record year for vehicle sales: 17.47 million vehicles
  - Topping previous record of 17.35 from 2000

Improved product reliability

Warranty expense spending has come down from the unprecedentedly high levels seen in 2014
  - Spending remains elevated in 2015

Warranty costs are lower as a percentage of revenue and on a per-vehicle basis

Source: Warranty Week
Disclosure Requirements for Publicly Traded Companies

- Disclosure of Loss Contingencies (ASC 450-20)
  - Probable and Reasonably Estimable
  - Accrual vs. Disclosure

- GAAP vs. IFRS

- Contingent Gains
  - IFRS ONLY

Table 1: **Key Contingency Differences**

<table>
<thead>
<tr>
<th>Standard</th>
<th>U.S. GAAP</th>
<th>IFRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC 450-20-25 (formerly SFAS No. 5)</td>
<td></td>
<td>IAS 37</td>
</tr>
<tr>
<td>Definition of Probable</td>
<td>Likely</td>
<td>More likely than not</td>
</tr>
<tr>
<td>Amount of Range of Outcomes</td>
<td>Minimum in range</td>
<td>Midpoint in range</td>
</tr>
<tr>
<td>Discounting</td>
<td>Generally does not allow discounting</td>
<td>Requires that the liability be discounted</td>
</tr>
<tr>
<td>Disclosure Exception</td>
<td>None</td>
<td>In case of serious prejudice to company</td>
</tr>
<tr>
<td>Contingent Gains</td>
<td>Not recognized</td>
<td>Some recognition allowed</td>
</tr>
</tbody>
</table>

*Accounting For Contingencies,* Management Accounting Quarterly, Spring 2012, Jonathan Schiff, Allen Schiff, Hannah Rozen
Typical Industry Results

- Sales and accruals should rise and fall together, but claims will lag between the time a product was sold and when the warranty repair is conducted (typically 1-2 years).

- Reserves = Accruals – Claims Paid + Other Adjustments

- Typical reason for increase in reserve estimate is discovery of a shortfall in previous years — a product was not as reliable as believed when the original accrual was made.
Accruals related to the US OEMs have decreased 24% since 2014.

Accruals + Adjustments, First 9 month of 2014 (in US$ per company)

Accruals + Adjustments, First 9 month of 2015 (in US$ per company)

Total = $10.85B
Source: Warranty Week

Total = $8.27B
Source: Warranty Week
Warranty Accruals per Vehicle, 2002 - 2015

Source: Warranty Week

* first 9 months of 2015
SRR compiled data from multiple sources to analyze and compare claims and accruals of OEMs and suppliers
- Capital IQ: publicly-available financial information
- Warranty Week: warranty claims, accruals, and reserves information
- SEC Filings and related disclosures

Information summarized and analyzed to provide insights into the warranty experience of different OEMs and suppliers
Recall trends over the last few years appears to be impacting how some OEMs are reserving for warranty and recall costs.

Recent disclosures from Ford, GM, and FCA indicate upward adjustments to accruals (adding to the balance).
- GM refers to these as “adjustment to pre-existing warranties”
- This indicates higher expected warranty and recall costs for vehicles sold in previous periods.
- Could be a direct result of the increased large recalls seen in 2014 and 2015.

This activity seems to have slowed in 2015, but is still present.

With the exception of GM in 2014, warranty accruals per vehicle for Ford and GM have fallen substantially since 2005.
Claims / Accrual Analysis: Overall Trends

Quarterly Claims / Revenue: General Motors

Quarterly Accrual / Revenue: General Motors

Quarterly Claims / Accrual Ratio: General Motors

Society of Actuaries
From GM Form 10-K for the period ended December 31, 2015

In connection with ongoing comprehensive safety reviews, engineering analysis and our overall commitment to customer satisfaction we have experienced an increase in costs associated with repairs and courtesy transportation for vehicles subject to recalls. During the three months ended September 30, 2014 we began accruing the costs for recall campaigns at the time of vehicle sale in GMNA, which resulted in a charge due to a change in estimate for previously sold vehicles of $0.9 billion recorded in the three months ended June 30, 2014. We had historically accrued estimated costs related to recall campaigns in GMNA when probable and reasonably estimable, which typically occurs once it is determined a specific recall campaign is needed and announced.”
Warranty and Field Service Actions

We accrue obligations for warranty costs and field service actions (i.e., safety recalls, emission recalls, and other product campaigns) at the time of sale using a patterned estimation model that includes historical information regarding the nature, frequency, and average cost of claims for each vehicle line by model year. Warranty and field service action obligations are reported in Other liabilities and deferred revenue. We reevaluate the adequacy of our accruals on a regular basis.

We recognize the benefit from a recovery of the costs associated with our warranty and field service actions when specifics of the recovery have been agreed with our supplier and the amount of the recovery is virtually certain. Recoveries are reported in Receivables and Other assets.

The estimate of our future warranty and field service action costs, net of supplier recoveries, for the years ended December 31 were as follows (in millions):

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning balance</td>
<td>$4,788</td>
<td>$3,927</td>
</tr>
<tr>
<td>Payments made during the period</td>
<td>(2,849)</td>
<td>(2,859)</td>
</tr>
<tr>
<td>Changes in accrual related to warranties issued during the period</td>
<td>2,046</td>
<td>2,108</td>
</tr>
<tr>
<td>Changes in accrual related to pre-existing warranties</td>
<td>807</td>
<td>1,746</td>
</tr>
<tr>
<td>Foreign currency translation and other</td>
<td>(232)</td>
<td>(145)</td>
</tr>
<tr>
<td>Ending balance</td>
<td>$4,558</td>
<td>$4,786</td>
</tr>
</tbody>
</table>

Revisions to our estimated costs are reported as Changes in accrual related to pre-existing warranties in the table above.

FS-65
Claims and Accrual Analysis: Conclusion

- Warranty costs are often significant in relation to OEM and supplier margins
  - While these costs are often significant, there is often limited transparency in their estimation and measurement

- As of Q3 2015, the four US OEMs have recorded record reserves of over $20 billion
  - More than 40% higher than total warranty reserves before 2014

- Is warranty accrual activity beginning to stabilize?
  - GM and Ford were the first to change accrual practices and are returning to historic averages
Things to Look For: Future Expectations
Things to Look For: Future Expectations

- Continued Elevated Recall Activity
  - Increasing number of software and technology recalls
  - Continued focus from NHTSA
  - Increasing number of larger recalls

- Focus on Higher Completion Rates
  - NHTSA’s target of 100% completion
  - Proactive OEM behavior
  - Refining customer outreach
Things to Look For: Future Expectations

- Continued Proactive Regulatory Enforcement
  - Record setting fines
  - NHTSA’s authority to levy increased penalties
  - Consent orders

- Recalls of New Safety and Comfort Technologies
  - Software components and crash avoidance are becoming more prevalent
  - More demand for advanced components from consumers
  - More products in the field
  - Increased level of awareness and scrutiny
Intermission
Select Panelists

Brian Westenberg
- Principal – Miller, Canfield, Paddock and Stone, P.L.C.
  
  Contact:
  +1.248.267.3220
  westenberg@millercanfield.com

James Derian
- Corporate Counsel – Delphi Automotive Systems
  
  Contact:
  +1.248.813.3367
  james.derian@delphi.com

Jeff Sutter
- Global Director, Innovation & Continuous Improvement – Nexteer Automotive
  
  Contact:
  +1.989.757.3561
  jeffrey.sutter@nexteer.com
For further information regarding this presentation please contact one of the following SRR representatives:

**Neil Steinkamp**  
Managing Director  
+1.646.807.4229  
nsteinkamp@srr.com

**Raymond Roth**  
Senior Manager  
+1.248.432.1337  
rroth@srr.com

**Robert Levine**  
Manager  
+1.248.432.1294  
rlevine@srr.com

SRR is a trade name for Stout Risius Ross, Inc. and Stout Risius Ross Advisors, LLC, a FINRA registered broker-dealer and SIPC member firm.  
Privileged & confidential information.
Footnotes

2 NHTSA Recall Database
3 “Manhattan U.S. Attorney Announces Criminal Charges Against General Motors And Deferred Prosecution Agreement With $900 Million Forfeiture”, US Department of Justice, September 17, 2015
4 http://www.nhtsa.gov/
8 “New NHTSA Chief Says 2015 Might See Even More Recalls Than Last Year” Ashlee Kieler, Consumerist, January 13, 2015
10 “Update Means of Providing Notification; Improving Efficacy of Recalls” https://www.federalregister.gov/
15 “Nissan Disables Leaf Electric Car App After Cross-Continent Hack” Ma Jie and Craig Trudell, Bloomberg, February 26, 2016
16 “Civil Penalty Factors” https://www.federalregister.gov/articles/2016/03/01/2016-04311/civil-penalty-factors
17 “FAST Act” https://www.congress.gov/114/bills/hr22/BILLS-114hr22enr.pdf
19 “Declining Accruals in Detroit” Warranty Week Newsletter, February 25, 2016
20 GM Form 10-K for the Period ended December 31, 2015
21 Ford Form 10-K for the Period ended December 31, 2015