Vehicle Factors
Modification, Condition, and Maintenance

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Overview

• 2001 Ford Excursion SUV modifications
• NHTSA alterer requirements
• Ford Qualified Vehicle Modifier (QVM) guidance
• Limousine mechanical condition
• Limousine maintenance
2001 Ford Excursion Modifications

• Originally purchased in March 2001
  • Factory frame cut and additional 144 inches of frame rail added
  • Seating capacity increased from 8 to 18 occupants
  • GVWR increased from 8,600 lbs. to 13,080 lbs.
NHTSA Alterer Requirements

- All manufacturers and vehicle alterers are required to be registered with NHTSA
  - 21st Century Coachworks, company that altered the limousine, was not registered
- Alterers are required to assume legal responsibility for FMVSS certification
- Certification label must be affixed to vehicle
  - Certification label not found on involved limousine
Ford Qualified Vehicle Modifier (QVM) Program

- Ford developed QVM program in 1989
- Voluntary for modifiers and alterers
  - Multiphase approval process for manufacturers
- Ensures final product meets Ford’s engineering parameters
  - 21st Century not a QVM program participant
Ford QVM Program

• Ford determines which vehicle models may be altered under the QVM program
• 2001 Excursion was an approved model
  • Ford provides alteration guidance for each model
Ford QVM Program

• Ford QVM guidance issued in July 2001
  • Limited vehicle wheelbase stretch to 120 inches
  • Limited seating to 10 occupants
  • Set maximum GVWR at 9,900 lbs.
Ford QVM Program

• Updated QVM guidance issued December 2002
  • Limited vehicle wheelbase stretch to 140 inches
  • Limited seating to 15 occupants
  • Set maximum GVWR at 11,000 lbs.
• Crash-involved limousine exceeded all three limitations
Limousine Mechanical Condition

- Limousine precrash mechanical condition poor
- NTSB investigators’ access limited
  - Unable to perform component function testing
  - Visual-only brake component inspection took place 7 months after crash
Limousine Mechanical Condition

- Brake system corroded and portions potentially unserviceable
Limousine Mechanical Condition

- Crimped rear brake line
  - Restricted flow of brake fluid
- Some areas coated in brake fluid
- Front/rear split system
Limousine Mechanical Condition

- Chassis severely corroded throughout
  - Body structural support members deteriorated
  - Floorboard rusted through
Limousine Maintenance

• No maintenance records provided to the NTSB by Prestige Limousine or NYSP
• Maintenance documents located by NTSB investigators at Mavis Discount Tire
  • Serviced four times between September 2016 and May 2018
Summary

• Limousine altered to an extent outside of manufacturer recommendations
  • Alterations performed before guidance was issued
  • Alterer not registered with NHTSA
  • No NHTSA-required FMVSS label was found
  • Limousine in poor precrash mechanical condition and inadequately maintained