MOTOR CARRIER FACTORS GROUP CHAIRMAN'S FACTUAL REPORT

Bridge Collapse
Mount Vernon, WA; 05/23/2013

HWY-13-MH-012

(35 Pages)

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF HIGHWAY SAFETY
WASHINGTON, D.C. 20594

A. ACCIDENT

LOCATION:	Interstate 5 at Milepost 228.25 over the Skagit River, in Mount Vernon, Skagit County, Washington.
VEHICLE 1:	2010 Kenworth Truck Tractor and 1997 Aspen Flatbed Semitrailer, Hauling an Oversize Load
OPERATOR:	Mullen Trucking LP, Aldersyde, Alberta, Canada
VEHICLE 2:	1997 Dodge Ram Pickup Truck, Piloting the Oversize Load
OPERATOR:	G&T Crawlers, Olympia, Washington
VEHICLE 3:	2000 Kenworth Truck Tractor and 1996 Utility Refrigerated Semitrailer
OPERATOR:	Motorways Transport LTD, Surrey, British Columbia, Canada
VEHICLE 4:	2010 Dodge Ram Pickup Truck and 2009 Jayco Travel Trailer
OPERATOR:	Private owner
VEHICLE 5:	2013 Subaru VX Crosstrek
OPERATOR:	Private owner
VEHICLE 6:	1995 BMW 525i
OPERATOR:	Private owner
DATE:	May 23, 2013
TIME:	Approximately 7:05 p.m. PDT
FATAL:	0
INJURIED:	3 minor, 5 uninjured
NTSB #:	**HWY13MH012**

B. MOTOR CARRIER FACTORS GROUP

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C. For a summary of the accident, please refer to the *Accident Summary* report in the docket for this investigation.

D. Details of the Investigation

- *Carrier Information*
- *Accident Driver Information*
- *Government Oversight*
- *Specialized Transportation Permit Information*
- *Accident Trip Permits*
- *Washington Pilot Car Certification Program*
- *Pilot Car Information*
- *Second Carrier and Driver Information*
- *Second Involved Carrier and Driver Information*

1. Carrier Information

1.1 General Operations[1]

The accident carrier was Mullen Trucking 2005 LTD (DBA Mullen Trucking LP). The carrier was located in Aldersyde, Alberta, Canada, about 57 km (35 miles) south of Calgary AB. The company operated under the authority of the Canadian National Safety Council[2] certificate #AB087-7936[3] and a Motor Vehicle Identification Number (MVID) 0555-83520, issued by the Province of Alberta, and in the United States (US) under the Federal Motor Carrier Safety Administration's (FMCSA) authority USDOT # 158799 and MC # 144953. The carrier began operations in Canada in 1949 as a for-hire trucking company operating solely in Canada. Over the years the company expanded operations until today there are 25 associated companies under the umbrella company of the Mullen Group. The accident carrier was the original company. The carrier employs 125 drivers; 95 longer term[4] lease drivers and 30 full-time company employee drivers. They operate 127 truck-tractors and 390 trailers. The company requirements for driver qualifications and the requirements for vehicle maintenance are the same for both leased drivers and vehicles and for company employees.

[1] See Motor Carrier Attachment #1 – FMCSA Carrier Profile and Motor Carrier Attachment #2 – Alberta Carrier Profile
[2] See Motor Carrier Attachment #1B – Canadian National Safety
[3] See Motor Carrier Attachment #1A – Alberta Safety Fitness Certificate
[4] Long term lease is for one year, renewable each year.

The majority of the carrier's operations were 'heavy haul' oversize[5] loads that were transported to various locations in the US and Canada. They also conducted 17 dedicated runs[6] and several local delivery routes.

1.2 Hiring Processes

The carrier's hiring process includes the following:

- Job application and resume that includes previous employers
- 2 years of driving experience with a Canadian Class 1 license[7]
- Clean driving record (<6 points on their driving record).
- Complete a road test conducted by an experienced company driver.
- Submit to a pre-employment drug screen with negative results.
- Possess a current medical examination card[8]
- Complete a 5-day orientation/training course and pass the written test with a score of 80 per cent or better.
- Once accepted for employment, the driver must undergo a physical agility examination by an occupational therapist with which the company has a contact.

[5] The term "oversize load" and "extra-legal load" are synonymous this this report.

[6] A dedicated run is from one point to another (generally the same two points) and then returning the same or next day.

[7] The following classes of license are for Alberta Canada.

- Learner's Permit (Class 7): This permit can be obtained at 14 years of age, and can only be used when a non-probationary licensed driver (see below) over the age of 18 is accompanying the driver. However, mopeds may be driven without an accompanying driver. A knowledge test requiring a mark of at least 80% as well as a vision test must be passed
- .Motorcycle / Moped (Class 6): This permit allows an operator to drive a motorcycle or moped. Minimum licensing age is 16.You must have a class 7 for 1 year before getting a class 6, or a class 5.
- Probationary Driver's License (Class 5, Probationary): This license can be obtained at age 16 if the driver has had a Learner's Permit for at least a year. This license allows one to drive without an accompanying fully licensed adult, although it has more restrictions than a non-probationary license, including fewer allowed demerit points. A road test must be passed to obtain this license.
- Non-probationary Driver's License (Class 5): This license can be obtained after having had the probationary Driver's License for two years without suspension; therefore the applicant must be at least 18 years of age. An advanced road test must be passed to obtain this license. A driver with this license is referred to as a "fully licensed driver".
- Class 4: This permit allows the operator to drive a taxi, ambulance, or bus with seats for up to 24 passengers. Minimum learning or licensing age is 18.
- Class 3: This permit allows an operator to drive a single motor vehicle with 3 or more axles, or a motor vehicle with 3 or more axles pulling a trailer with one or more axles (assuming the trailer does not have airbrakes).
- Class 2: This permit allows an operator to operate any bus, in addition to the vehicles permitted by holders of class 3/4/5 permits. Minimum learning or licensing age is 18.
- Class 1: This permit allows an operator to operate any motor vehicle except a motorcycle. Minimum learning or licensing age is 18.

Other Provinces may use other designations; however there is reciprocity between the Provinces.

[8] Medical examination cards, similar to the US requirements, are incorporated into the Canadian driver's license and therefore the driver is not required to carry a medical card on his\her possession while driving. The driver must utilize their personal physician to conduct the physical examination.

Once hired drivers were then placed in a progressive classification of drivers based on experience, driving safety, and evaluation by company management. The driver progression was as follows:

- "P" – probation
- "C" – can drive "legal"[9] freight
- "B" – can drive (minimally) over-dimensional loads
- "A" – All loads and cargo, including hazardous materials.

Owner-operators who were long-term leased (annual leases) are subject to the same requirements.

All drivers were provided a manual – *Driver & Owner Operator Reference* – that contains company policies and procedures.[10] Drivers are not issued company cell phones, but were allowed to carry their own. The company had a "hands free" cell phone use policy.

Drivers were paid by a percentage of the load for each load they haul. According to the carrier they experience a low turn-over rate of about 8 per cent.

1.3 Driver Scheduling

Drivers have much flexibility in scheduling their work load. When the carrier has 'booked' a load, dispatchers send notice of the availability of the load to drivers via the QualComm system.[11] Drivers can indicate whether or not they want to take that load or wait for another load. Due the amount of loads the company accepts, drivers can schedule themselves off-duty for as long as they wish (some take off several months to take advantage of warner weather to be with their families). Loads that go 'unclaimed by drivers are sold to other companies for delivery.

Dispatchers continually review driver hours of service to ensure that drivers do not exceed their available Hours-of-Service (HOS) covered by Canadian or US regulations. The accident vehicle was equipped with a GPS device that generally recorded the vehicle's location every 15 minutes. The Safety Board obtained receipts from the track-tractor's cab (as supporting evidence of the driver's HOS). A review of the driver's logbook, receipts, and the GPS recorded times and locations[12] indicated no violations of either the Canadian or US HOS rules.

[9] Freight that does not exceed legal size and\or weight limits.
[10] See Motor Carrier Attachment #3 – Excerpts From Driver & Owner's Manual
[11] QualComm is a communications company that developed a two-way communication system between mobile units (vehicles) and a company's terminal. The units in the truck cannot be operated while the truck is in motion.
[12] The device would also record whenever a communication was received or sent. See Motor Carrier Attachment #4 – GPS Data

1.4 Vehicle Maintenance

Company vehicles (including leased vehicles) are subject to an "A" preventative maintenance (PM) schedule every 25,000 miles.[13] This includes checking brake adjustment, belts, hoses, changing oil, lubrication, lights, and examination of critical parts. Trailers are on the same maintenance schedule. All vehicles are subject to a Commercial Vehicle Safety Alliance's (CVSA) [14] Level 1[15] examination each and every time they return from a trip as they enter the terminal yard. There is a dedicated indoor inspection lane and inspector on duty during normal business hours. Truck inspection information is logged into the company files by vehicle and there is a 'whiteboard' in the inspection bay with additional inspection information.

The carrier employs 8 full-time qualified truck and trailer mechanics that conduct all the maintenance on the vehicles except the tires and to conduct the required annual vehicle inspections. The carrier contracts with an outside vendor for tire maintenance and replacement.

The *Commercial Vehicle Maintenance Standards Regulation (AR 118/89)* explains the requirements for the retention of maintenance records to comply with Alberta legislation. Section 3(1) requires that the driver of a commercial vehicle shall inspect the vehicle before operating it at the beginning of a work shift and after he ceases to operate it at the end of the work shift. Each trip inspection must include an inspection of at least all items listed under Section 3(2):

a) lighting devices and reflectors;
b) tires;
c) coupling devices;
d) wheel and rims;
e) service brake, including the trailer brake connections;
f) parking brake;
g) steering mechanism;
h) horn;
i) windshield wipers;
j) rear vision mirrors; and
k) emergency equipment.

[13] See Motor Carrier Attachment # 12 – Carrier Preventative Maintenance Program

[14] The Commercial Vehicle Safety Alliance (CVSA) is an international not-for-profit organization comprised of local, state, provincial, territorial and federal motor carrier safety officials and industry representatives from the United States, Canada, and Mexico.

[15]There are 7 Levels (or categories) of roadside inspections. A Level 1 inspection includes the driver and vehicle (including an inspection of the components on the under carriage such as brake adjustment); a Level 2 is the driver and vehicle walk around only (a walk around inspection and does NOT include an inspection of the vehicle's undercarriage components); a Level 3 a driver\credential inspection only; Level 4 is a special item inspection; Level 5 is terminal inspection of a vehicle only (driver not present); Level 6 is a Transuranic Waste and Highway Route Controlled Quantities (HRCR) of Radioactive Material inspection; Level 7 is a Jurisdictional Mandated Commercial Vehicle Inspection.

Alberta legislation does not require a trip inspection to be in writing. However, if a written pre-trip and a post-trip inspection is required by the carrier, then each is considered to be an "inspection" as specified by Section 8 of AR 118/89 and must be retained for the 4+ years as required by Section 9. In addition, any vehicle deficiency reports generated as the result of a trip inspection are addressed by Section 4 and must be in writing. Any written record of an inspection must contain at least the information specified in Section 8(c) including: vehicle identification, nature of inspection, date and odometer reading. Some other jurisdictions do require trip inspection to be written while operating in their jurisdiction.

The carrier requires pre- and post-trip inspections, however according to the provision of above section the carrier only requires a written pre-trip inspection by the driver. The inspection form is located on the bottom of the driver's Daily Log (records of duty status – RODS). Defects noted while at the terminal are brought to the attention of the mechanic on duty by completing a "Cry Sheet"[16] and repaired immediately, when possible. If not possible the vehicle is held over until repairs can be accomplished. When defects noted while "on the road" the driver sends a message to the terminal mechanic via the QualComm communication device and the driver is given instructions on where to take the vehicle for repairs or if the driver can make the repairs, to do so.

All commercial vehicles in the fleet are subject to the annual vehicle requirements. The Safety Board obtained the inspection records for the accident truck-tractor and found it had received the required annual inspection each year since 2009.

See the Vehicle Group Chairman's Factual Report for additional information.

1.5 Carrier Oversize Permit Procedure

The following is a process used by the carrier to determine routing in the various jurisdictions through which the oversized vehicle and load will travel. The carrier has a dedicated person to accomplish these tasks as described by the carrier in their own words below.

- Receive an oversize dimension (OD) macro from our driver [who measures the vehicle and load]. This will show the width, length, height and the weight of the shipment along with other information needed.
- Check the order to see what we are hauling, the origin of the shipment and the destination. This information determines the states/provinces we will need to be in.
- Know the legal dimensions of the states/ provinces that we will be traveling through.
- Check Vertical Bridge Clearances for each state/province.[17]
- Check for construction on all routes for length, width, and height restrictions.
- Check for weight restrictions or seasonal bans that may be on.

[16] A "Cry Sheet" is the term the carrier uses to identify a written request for maintenance.
[17] Each state or province has a website for routing of oversized vehicles and loads. See Permitting Process section in this report.

- Determine if city or county permits are required.
- Determine if there is a need for utility companies to escort the vehicle or just authorization for travel.
- Some states require us to run route surveys depending on size prior to issuing a permit.
- Each state has different rules on how many pilots [escort vehicles] are needed or if a pole car or police escort is required.
- With the above criteria met we determine the "best" route thru each state. The best route is the safest route. Rarely is the best route the quickest or the shortest route.
- We will then go in and enter the permit. In some states the permits are still being done by phone calls and the majority is being done on the internet. Many have mapping systems that determine our route through the state and others we choose the route by either clicking on a map or by entering the route. Some states are self-issued while in others a person must approve each permit or just the permits that are of a special size. The approval time can be anywhere from a few minutes to 1-7 days depending on the overall size and weight.
- Once a permit is received we go over that permit to make sure that the route and information on it is correct. We double check the Pilot/Pole Car requirements and make sure the driver is informed of what is required.

2. Accident Truck Driver Information[18]

2.1 Driving Record

The 41-year-old accident driver held a current Class 1 Alberta driver's license[19] issued in February 2013 and was due to expire in February 2017. There were no conditions (restrictions) listed on the license. His required medical examination was conducted in February 2013 and was due to expire in February 2015. In an interview with the Safety Board the driver indicated he had been driving trucks since he was 18 years old. He attended the Petroleum Institute's Defensive Driving course in February 2005.

He applied to the accident carrier for employment in September 2004 and was hired as a contract carrier[20] in October 2004. The contract was renewable each year. His job application listed 6 previous employers, all as a truck driver. The accident carrier made inquiries to some of the previous employers as to his job performance and the responses were very positive and complementary. The driver has received "Safe Driving" awards from the company in 2009, 2010, 2011, 2012 and 2013. These awards are based on accident free driving and a limited amount of citations.

[18] See Motor Carrier Attachment #5 – Excerpts From Driver Qualification File

[19] The Canadian Class 1 driver's license is given reciprocity in the US as a Class "A" Commercial Driver's License (CDL) including all the US endorsements.

[20] A contract carrier is one who enters into an exclusive contract with only one carrier.

The Alberta driver's license records show no current violations or accidents. Company records indicate that the driver had received the following citations:[21]

- 3/15/2013 Overweight vehicle
- 1/07/2013 Log book entries not current
- 9/07/2012 Overweight on steer axle
- 6/08/2011 Air leak #2 axle
- 9/30/2010 No single 'jeep' permit
- 4/22/2010 Front license plate broken off
- 1/28/2010 Permit violation (not specified)

The FMCSA's Pre-Employment Screening Program (PSP) records show two roadside inspections 4/30/2010 and 3/03/2013. In the 2013 inspection (reflected on the 3/15/2013 violation shown above) the driver received 1 violation for an overweight vehicle.

2.2 Hours of Service (HOS)

The Canadian HOS[22] for cargo and passenger carriers is:

- 13-hours of driving time per day
- No driving after 14-hours of on-duty time in a day

Driver must take:

- 10-hours of off-duty time in a day, 8 hrs. of which must be consecutive
- 8 consecutive hours of off-duty time between work shifts
- 24 consecutive hours of off-duty time every 14 days
    - Off-duty time other than the mandatory 8 consecutive hours may be taken in increments of no fewer than 30 minutes each.

The US HOS[23] of service for cargo-carriers is:

- 11-hours of driving time then must take
- 10 consecutive hours of off-duty time
- No driving after 14 hours of on-duty time
- No driving after 60-hours of on-duty time in 7 days
- No driving after 70-hours of on-duty time in 8 days

While operating in the US the US hours of service regulations apply to all CMV drivers.

[21] Liability for mechanical and weight violations are generally assumed by the company and may be recorded on a driver's driving record but would not count as point violations against their record. None of the citations contained OOS defects.

[22] See Motor Carrier Attachment #6 - Alberta Commercial Vehicle Safety Compliance Manual Module - Hours of Service

[23] See Title 49 CFR 395. As of June 1, 2013 the FMCSA initated new HOS rules that are not enumerated here.

The driver's logbook for the previous 30 days and the GPS data for the same time period were reviewed for compliance with the Canadian and US HOS regulations. No violations were found.[24]

2.3 Accident Trip

The accident trip began on May 21, 2013 when the driver drove to the carrier's terminal from his home – about a 3 ¾ hour drive. He picked up the instructions for the trip and hooked-up to the semitrailer without the cargo. He then drove to the location where he was to pick-up the cargo – about a 4 hour drive. He logged off-duty and sleeper berth time for the next 20 hours, and was awake and supervised the loading of the vehicle. He departed on May 22 at 4:00 pm, traveling west through Alberta and British Columbia. En route he stopped and logged sleeper berth time from 11:00 pm on May 22 to 8:00 am on May 23. He arrived at the Canadian-US border at Sumas Washington at 4:51 pm on May 23 and departed at 6:30 pm. After clearing US Customs at Sumas Washington the driver proceed to the accident site on Interstate Highway 5 where the accident occurred at approximately 5:30 pm.

3. Government Oversight

3.1 Canadian Carrier Oversight[25]

Each jurisdiction in Canada is required under the National Safety Code (NSC)[26] to develop and maintain a Carrier Profile System to record all collisions, convictions, results of CVSA inspections and the results of facility audits. One of the purposes of the Carrier Profile System is to monitor commercial carriers for compliance to safety laws. Another is to provide the carrier and the public comprehensive summaries of safety performance information.

The Carrier Profile summarizes most of the incidents relating to the specific carrier that have been provided to Alberta Transportation by law enforcement and other government agencies across North America. The overall status of a carrier's profile is reviewed to assign the carrier's Safety Fitness Rating.[27]

[24] See Motor Carrier Attachment #16 – Driver's Log Book

[25] See Motor Carrier Attachment #7 - Commercial Vehicle Safety Compliance in Alberta

[26] The National Safety Code (NSC) is a set of national standards supported by provincial regulations. The program establishes management and performance requirements for commercial carriers. The NSC standards establish minimum safety standards for commercial vehicles and drivers. See Motor Carrier Attachment # 8 – Alberta Transportation Compliance Manual

[27] Alberta's program objective is to ensure that carriers maintain the minimum standards for their drivers and their vehicles, thus preserving road safety through lower numbers of safety related offences, vehicles out-of-service and, ultimately, crash rates. The rationale behind the program is that carriers are responsible for mechanical maintenance of their commercial vehicles and the actions of drivers over which they exercise control. See Alberta's *Commercial Safety Compliance Manual* – Carrier Services Branch of Alberta Transportation Motor Carrier Attachment #8.

Carriers can use their company's profile to help monitor the success of their company's safety operations. A Carrier Profile report summarizes most on-road law enforcement documentation. It also provides a detailed analysis of the activities and results of contact between all drivers and enforcement officers, including dates and times. The data from the Carrier Profile can be used to help monitor drivers' daily logs for accuracy. The information can also be used to monitor all drivers, including new drivers, to ensure that company rules and regulations, as well as transport legislation, are being followed and to take corrective action as needed. The information can also help carrier owners and management to identify training needs, supervision, or other requirements for drivers, mechanics and other staff.

Carrier Profile Reports usually include a carrier's previous one-year record for the following:

1. Convictions
All convictions are recorded against the carrier or their drivers.

2. Commercial Vehicle Safety Alliance (CVSA) Inspections
All CVSA inspections on Alberta-plated vehicles and trailers will be recorded on the Carrier Profile.

3. Reportable Collisions
Reportable collisions are collisions involving a vehicle which result in property damage over $2,000.00, injury or death.

4. Compliance Audits
A Facility Audit examines a carrier's safety records. The audit is an evaluation of a carrier's compliance with regulations and safety performance with NSC requirements as legislated in Alberta. The audit is an orderly collection of data about a carrier, including the vehicles used by the carrier and the drivers that work for the carrier.

5. Motor Carrier Safety Fitness Rating
Safety Fitness Ratings are based on a combination of the carrier's record for, convictions, CVSA inspections, preventable collisions and audits. A carrier's performance is measured by evaluating their on road performance and administrative activities in relation to convictions, CVSA inspections, collisions and Facility Audit information; all of which is based on fleet size.

6. Other Information
General carrier information including:

- Carrier's demographic information;
- Operating Status (Provincial or Federal);
- Fleet size (number of power units);
- Monthly monitoring summaries;
- CVIP station information, if applicable; and
- Event histories.

The Alberta oversight consists of a numerical value safety performance score. The process is based on fleet size and carriers are compared to other carriers of similar size, as shown in the fleet size category

Fleet size is calculated by the total number of days each vehicle is actively licensed for the carrier in the last 12 months, divide that by 365 and that gives you Average Fleet size.

NSC Points are assigned to carriers for each type of incident in 3 categories:

1. Contraventions – Each violation deemed guilty has 1, 2 or 3 NSC points, depending on the seriousness of the offence, assigned to it. Contraventions score is the Total NSC points in the last 12 months divided by the fleet size.

2. OOS/CVSA Profile – Each Out Of Service has 3 NSC points assigned to it. The OOS score is Total NSC points in the last 12 months divide by the fleet size.

3. Accident – Each accident other than a not at fault has points 2 (where the fault is unknown – 50/50, 30/70) NSC points, Injury has 4 NSC points for and fatality has 6 NSC points. Again total points in the last 12 months divided by the fleet size.

"Overall" score is a sum of the NSC points assigned for contraventions, inspections and accidents in the last 12 months divided by the fleet size. Each category score is compared to the "Annual Provincial Median" [score] for carriers with similar operations. The carrier categories include both passenger-carriers and cargo-carriers.

Carrier ratings are determined by the profile scores in each category to a set standard score. Those scores falling below a certain threshold/overall score are rated "Satisfactory".

If the scores cross the satisfactory thresholds the carriers are rated "Conditional" and are scheduled for an intervention e.g. warning letters, compliance review and audits. Those scores above a specified score/threshold is rated "Unsatisfactory".

If the carriers' road performance is "Unsatisfactory" or has two consecutive "Unsatisfactory audits" the carrier is recommended for a show cause process. The carrier has to then show cause as to why their license should not be revoked/cancelled. Once the National Safety Code number (license) is cancelled, the carrier has to cease all its operations.

Alberta inspection data indicate the accident truck-tractor was subject to 14 vehicle inspections between March 2009 and March 2013; 5 were annual inspections and 9[28] were Commercial Vehicle Safety Alliance (CVSA) inspections. Two of the CVSA inspections resulted in defects that "required attention" but were not OOS defects.

The carrier was subject to an Alberta audit on March 26, 2013 and received a "Satisfactory" rating.[29] The audit included an inspection to determine the carrier's compliance with the requirements for driver records for 20 drivers and the compliance with the vehicle requirements for 19 vehicles. Minor violations were found in each category however the point count and percentages calculated did not raise to a count that would warrant a less than "Satisfactory" rating.

Carriers operating in Canada are required to have a safety plan in place[30] when they apply for Canadian operating authority. Section 37.03 of the Canadian Motor Vehicle Act – Application of Safety Certificate reads:

> "A person wishing to obtain a safety certificate from the director must first provide to the director – (d) a safety plan demonstrating the establishment of and the ability to maintain practices and procedures necessary to ensure that the person complies with the Act and this regulation."

Section 40(1) of *The Commercial Vehicle Certificate and Insurance Regulation (AR 314/2002)* specifies that a carrier must establish, maintain and follow a written safety program and retain it at the carrier's principal place of business in Alberta. This program document must contain the carrier's policies and procedures regarding at least the following information:[31]

- Speed limits, seat-belt use, drug and alcohol use, defensive driving, load security, and fuelling;
- Proper records and recording of information including, as required, bills of lading, manifests, dangerous goods documents, time records, drivers' daily logs and weigh slips;
- Policies that drivers are expected to comply with the law and policy and procedures related to driver training, responsibilities, conduct and discipline;
- Instructions for the use of safety equipment, including, as required, the use of flags and flares, fire extinguishers, goggles, and hard hats;
- Training for employees about safety laws and their application and an ongoing program for evaluating their driving skills;
- Retention of complete records for each driver (see section B below); and

[28] 2 Level 1 inspections; 4 Level 2 inspections; and 3 Level 3 inspections. 7 of the 13 inspections were conducted in the US; WA (3), CA, MN, OK, and MT.
[29] See Motor Carrier Attachment #9 – Summary Audit Report March 26, 2013
[27] http://www.th.gov.bc.ca/cvse/national_safety_code/pdf/NSC_Safety_Plan_Guidelines.pdf
[31] http://www.biology.ualberta.ca/facilities/safety/uploads/PDF/ABtransportcompliance.pdf

• Policies for ensuring that drivers are properly qualified for the type of vehicle they operate.

The registered owner must designate a person as responsible for:

• Maintaining and implementing the safety program; and

• Ensuring compliance with safety laws.

It is a condition of every safety fitness certificate that the registered owner and their employees must comply with the safety program. This applies to carriers who obtain an Alberta Safety Fitness Certificate with either Provincial or Federal Operating Status designation.

According to the National Safety Code guidelines a general safety plan areas should include:

- Company Policy
  - Hiring policy for drivers
  - Monitoring process for driver performance
  - Monitoring process for hours of service
  - Monitoring process for trip inspection
  - Monitoring process for vehicle maintenance
  - Monitoring process for hazardous materials (if applicable)
  - Employment signature and date in agreement with the policy
- Driver Policy
  - Driver licensing
  - Obtaining driver abstracts every 12 months
  - Handling violation tickets, Notice and Orders, roadside inspections and accident reports
  - Hours of service
  - Disciplinary policy
  - Driver signature and date in agreement with the policy
- Vehicle Maintenance
  - Schedule of maintenance
  - Cheek sheets for each schedule
  - Trip inspection report (pre- and post-trip)
- Dangerous Goods/Required Certificates
  - Defensive driver training certificates
  - First aid training certificate
  - Certificates of Training for Dangerous Goods

A review of the carrier's operating documents indicated that the company did have and utilized a safety plan that contained the required information.

3.2 US Carrier Oversight

The carrier applied for US operating authority prior to 1989[32] and was subject to an Office of Motor Carrier[33] Compliance Review on March 20, 1989. The 1989 Compliance Review resulted in a "Satisfactory" rating.[34] Current (as of June 1, 2013) FMCSA data found in SAFER[35] indicated the carrier had been subject to 271 roadside inspections in the 24 months prior to May 23, 1013. These inspections resulted in a 14.7 per cent OOS rate for Vehicle as compared to the national average of 20.72 per cent; a 0 per cent OOS rate for Driver as compared to a national average of 5.51 per cent; and a 1 per cent OOS for Hazardous Materials as compared to the national average of 4.50 per cent. The data also indicated 3 crashes (tow away only) in the 24 months prior to May 23, 2013.

On March 30, 2013 the FMCSA conducted a compliance review of the carrier. Minor violations were found in Parts 382 [Drug and Alcohol program], 391 [driver files], 395 [hours of service], and 396 [vehicle maintenance]. The final rating was "Satisfactory".[36]

[32] In 1989 US operating authority was issued by the Interstate Commerce Commission (ICC). In 1995 much of their responsibilities in this area were transferred to the Federal Highway Administration (FHWA) Office of Motor Carrier. Operating authority records were not transferred well and therefore, according to the FMCSA the exact date the carrier applied and was granted authority is not available.

[33] The Office of Motor Carrier was re-organized and became its own administration – the Federal Motor Carrier Safety Administration (FMCSA) in 2000.

[34] A Compliance Review is an on-site examination of motor carrier operations, such as drivers' hours of service, maintenance and inspection, driver qualification, commercial driver's license requirements, financial responsibility, accidents, hazardous materials, and other safety and transportation records to determine whether a motor carrier meets the safety fitness standard. A compliance review may be conducted in response to a request to change a safety rating, to investigate potential violations of safety regulations by motor carriers, or to investigate complaints or other evidence of safety violations. The compliance review may result in the initiation of an enforcement action." (49 CFR 385.3)

(1) **Satisfactory** safety rating means that a motor carrier has in place and functioning adequate safety management controls to meet the safety fitness standard prescribed in §385.5.

(2) **Conditional** safety rating means a motor carrier does not have adequate safety management controls in place to ensure compliance with the safety fitness standard that could result in occurrences listed in §385.5 (a) through (k).

(3) **Unsatisfactory** safety rating means a motor carrier does not have adequate safety management controls in place to ensure compliance with the safety fitness standard which has resulted in occurrences listed in §385.5 (a) through (k).

(4) **Un-rated** carrier means that a safety rating has not been assigned to the motor carrier by the FMCSA.

[35] http://www.safersys.org/

[36] See Motor Carrier Attachment #10 – 2013 Compliance Review

3.2.1 SAFESTAT

Prior to 2010 the FMCSA used the Motor Carrier Safety Status Measurement System (SAFESTAT) system to evaluate and rank carriers. In 2010 SAFESTAT was replaced by the Compliance, Safety, and Accountability (CSA) system and the Safety Measurement System (SMS) programs.

How SAFESTAT Worked

The FMCSA utilized a computer data program known as SAFESTAT to determine a motor carrier's safety fitness. The primary purpose of the SafeStat score was to identify and prioritize carriers for FMCSA safety improvement programs. SAFESTAT allowed the FMCSA to continuously monitor the safety status of a motor carrier based on current roadside inspection, enforcement, and compliance review history. SAFESTAT was not dependent on a compliance review and could assess a carrier's safety performance through roadside inspection and enforcement data. The data was used to measure the relative safety status of motor carrier in four Safety Evaluation Areas (SEAs): (1) Accident, (2) Driver, (3) Vehicle and (4) Safety Management. SEA values ranged between (0-best to 100-worst) and were calculated for carriers with sufficient safety data related to each SEA. A SEA with a value from 75 to 100 was defined as deficient. Carriers were ranked by a letter designation "A" thru "H" with the "A" and "B" categories prioritized for a Compliance Review.

Carrier History in SAFESTAT[37]

The Safety Board reviewed the carrier's SAFESTAT history to determine the deficiencies recorded and to compare those areas to the current SMS ratings to determine if there had been any improvement or reduction in the carrier's operations.

From 2006 through 2010 the carrier had been rated an "H" carrier, which means that the carrier's performance was rated better than 75 per cent of all other carriers in the SAFESTAT system.

3.2.2 SMS – Safety Measurement System

The SMS program replaced the SAFESTAT system in December 2010. Under the SMS carriers are evaluated in the following seven categories called Behavior Analysis and Safety Improvement Categories (BASICs).[38]

[37] See Motor Carrier Attachment #5 – SAFESTAT History

[38] **BASIC** – **B**ehavior **A**nalysis and **S**afety **I**mprovement **C**ategories. **1. Unsafe Driving BASIC** — Operation of commercial motor vehicles (CMVs) in a dangerous or careless manner. Example violations: speeding, reckless driving, improper lane change, and inattention. (FMCSR Parts 392 and 397) **2. Fatigued Driving (Hours-of-Service) BASIC** — Operation of CMVs by drivers who are ill, fatigued, or in non-compliance with the Hours-of-Service (HOS) regulations. Example violations: exceeding HOS, maintaining an incomplete or inaccurate logbook, and operating a CMV while ill or fatigued. (FMCSR Parts 392 and 395) **3. Driver Fitness BASIC** — Operation of CMVs by drivers who are unfit to operate a CMV due to lack of training, experience, or medical qualifications. Example violations: failing to have a valid and appropriate commercial driver's license and being medically

- Unsafe Driving
- Fatigued Driving
- Driver Fitness
- Controlled Substance and Alcohol
- Vehicle Maintenance
- Hazardous Materials Compliance
- Crash Indicator

Each BASIC has a threshold percentage above which that BASIC is shown with a warning notice.  - Indicates a score has exceeded the threshold in any BASIC category. It is displayed next to the score for the BASIC. Based on the data in that category the FMCSA may prioritize a motor carrier for further monitoring. The BASIC scores are available on the FMCSA's public website at www.safersys.org and by following the link to the SMS information. The FMCSA can then target a carrier's deficient area via a series of increasingly aggressive measures beginning with a warning letter and progressing to a full Compliance Review.

3.2.3 SMS Interventions[39]

Early Contact

Warning Letter – Correspondence sent to a carrier's place of business that specifically identifies a deficient Behavior Analysis and Safety Improvement Category (BASIC) and outlines possible consequences of continued safety problems. The warning letter provides instructions for accessing carrier safety data and measurement as well as a point of contact.

Carrier Access to Safety Data and Measurement – Carriers have access to their measurement results (BASICs percentile ranks), as well as the inspection reports and violations that went into those results. With this information, carriers can chart a course of self-improvement. Carriers can also monitor this data for accuracy and challenge it as necessary through the FMCSA's Data Q system.

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unqualified to operate a CMV. (FMCSR Parts 383 and 391) **4. Controlled Substances and Alcohol BASIC** — Operation of CMVs by drivers who are impaired due to alcohol, illegal drugs, and misuse of prescription or over-the-counter medications. Example violations: use or possession of controlled substances or alcohol. (FMCSR Parts 383 and 392) **5. Vehicle Maintenance BASIC** — Failure to properly maintain a CMV. Example violations: brakes, lights, and other mechanical defects, and failure to make required repairs. (FMCSR Parts 393 and 396) and failure to properly prevent shifting loads, spilled or dropped cargo, and unsafe handling of hazardous materials on a CMV. Example violations: improper load securement, cargo retention. (FMCSR Parts 392, 292) **6. Hazardous Materials Compliance BASIC** - Unsafe handling of HM on a CMV. *Example violations:* Release of HM from package, no shipping papers (carrier), and no placards/markings when required. (FMCSR Part 397 and Hazardous Materials Regulations Parts 171, 172, 173, 177, 178, 179, and 180) **7. Crash Indicator** — SMS evaluates a motor carrier's crash history. Crash history is not specifically a behavior. Rather, it is a consequence of a behavior and may indicate a problem with the carrier that warrants intervention. It is based on information from State-reported crash reports and identifies histories or patterns of high crash involvement, including frequency and severity.

[39] http://csa.fmcsa.dot.gov/FAQs.aspx

Targeted Roadside Inspection – CSA provides roadside inspectors with data that identifies a carrier's specific safety problems, by BASIC, based on the new measurement system. Targeted roadside inspections occur at permanent and temporary roadside inspection locations where connectivity to the Safety Measurement System (SMS) information is available. As Commercial Vehicle Information Systems and Networks technologies evolve they will be incorporated into the roadside inspections.

Investigation

Offsite Investigation – A carrier is required to submit documents to FMCSA or a State Partner. These documents are used to evaluate the safety problems identified through the SMS and to determine their root causes. Types of documents requested may include third party documents such as toll receipts, border crossing records, or drug testing records. The goal is to identify issues responsible for poor safety performance. If the carrier does not submit requested documents they may be subject to an Onsite Investigation or to subpoena records (see below).

Onsite Focused Investigation – The purpose of this intervention is to evaluate the safety problems identified through the SMS and their root causes. An Onsite Focused Investigation may be selected when exceeding the threshold in two or fewer BASICs. Onsite Focused Investigations target specific problem areas (for example, maintenance records), while Onsite Comprehensive Investigations address all aspects of the carrier's operation.

Onsite Comprehensive Investigation – This intervention is similar to a CR and takes place at the carrier's place of business. It is used when the carrier exhibits broad and complex safety problems through BASICs continually exceeding the threshold, worsening BASICs (three or more), or a fatal crash or complaint.

The carrier had a history of "Alerts". From September 2011 through October 2012 the carrier had "Alerts" in the Improper Loading/Cargo *BASIC*. They received warning letters from the FMCSA on October 23, 2009 (pre-SMS program) and on November 14, 2011 addressing the "Alerts" in the Loading/Cargo BASIC.[40]

They currently (as of June 1, 2013) have no "Alerts" in SMS.

[40] In June 2012 the FMCSA instituted changes in the SMS BASICS assessment program. In their re-evaluation of the Cargo BASIC they determined that the scoring algorithm was insufficient. As a result of the way the FMCSA calculated the Cargo BASIC many flat-bed carriers received high Cargo BASIC scores, including the accident carrier in this accident investigation. As a result of the high scores an "Alert" appeared in carriers SMS scores and warning letters were sent. They determined that the Cargo BASIC should exclude all cargo-related violations and those violations should be moved to the Vehicle Maintenance BASIC. The Cargo BASIC was changed to the Hazardous Materials BASIC. See http://CSA.FMCSA.DOT.GOV, June 2012 – Safety Measurement System Changes bulletin. Also see Motor Carrier Attachment #13 – SMS Data (5/26/2013) and FMCSA Warning Letter

4. The Specialized Transportation Permitting Process

A specialized transportation permit is a variance, granted by the governmental agency having jurisdiction over a roadway, to a company that transports loads on their highways and roadways where (1) the load or (2) the vehicle and load exceeds state size and/or weight limitations.

4.1 Background[41]

States and Provinces are the primary entities responsible for setting size and weight limits and standards vary from state to state and Province to Province. There are federal size and weight standards for vehicles using the Dwight D. Eisenhower National System of Interstate and Defense Highways (commonly known as the Interstate Highway System)[42] however there are no federal regulations relating to permitting. Roadways are built and maintained by both state and local (county and city) jurisdictions, sometimes with federal assistance. Local regulations provide that each layer of government has the responsibility for traffic usage on those roadways within their jurisdiction. For example, state highway departments have jurisdiction over interstate and intrastate highways and other state routes; counties have jurisdiction over roadways in the unincorporated areas and in cities that contract for county roadway services; and independent cities have jurisdiction over roadways (other than interstate highways and state routes) within the city limits. Therefore, whenever a vehicle or load is transported on a roadway in excess of state size and/or weight limits, permission must be granted by each jurisdiction to move that vehicle and load on their respective roadways. Generally, permission is granted via the issuance of a written special moving permit. Some jurisdictions, however, only require some sort of notification, i.e. a phone call, as to when the load will be entering and leaving their jurisdiction and which routes will be taken.[43]

Permits can be issued on either an annual basis, multi-trip basis or on a single trip basis. An annual permit would be issued under conditions where the vehicle or load dimensions and or weight remain constant, i.e. a mobile crane or where the vehicle and/or loads transported do not exceed certain limitations. Vehicles and/or loads that fall in this category receive permits without specified routes, but are limited to those roadways designated as 'trucks routes'. Multi-trip and single trip permits are issued in specialized cases where a single load or group of loads require permitting but are only in use for a limited time. Routing is generally specified on these types of permits, as are pilot cars. A fee is generally charged for the issuance of the permit. The fee structure is different in each state; however, a general practice is to charge a flat fee for services regardless of the size or weight of the vehicle and/or load. The cost of the permit varies widely between jurisdictions, from several hundred dollars to less than twenty dollars. Permits and Motor Carrier Attachments are required to be carried by the driver and be presented to enforcement personnel.

[41] See Motor Carrier Attachment #20 – Washington State Survey of States' Oversize Loads and Permit Requirements

[42] The regulations are found in Code of Federal Regulations (CFR), 23 CFR Part 658.

[43] Note: This method is a rare exception to the written permit practiced by most jurisdictions.

4.2 Weight Limits

The maximum gross weight limit for 32 states on US interstate highways is 80,000 lbs. The maximum gross weight limit for the other 18 states[44] on interstate highways varies from 83,400 lbs. to 129,000 lbs. The maximum gross weight limit on non-interstate highways varies greatly from state to state that also includes "bridge weight"[45] and/or combination vehicle or trailer lengths. In addition to maximum gross vehicle weight limits there are axle and tandem axle weight limits. Forty-two states have a single axle weight limit of 20,000 lbs. Eight states[46] have single weight limits from 20,340 lbs. to 22,500 lbs. Forty-two states have tandem axle weight limits of 34,000 lbs. Eight states have tandem axle weight limits from 34,320 lbs. to no limit. Vehicles and loads that exceed these weight limits require a special permit.

4.3 Length Limits

Maximum length for single vehicle varies from 40 feet to 60 feet. Maximum length for a single semitrailer in combination with a truck tractor in 13 states is 48 feet. However, in some of these states the length of the semitrailer may be up to 53 feet if the 'kingpin setting'[47] meets specified distances. Forty-two states permit semitrailer lengths up to 60 feet, with several states having a 'kingpin setting' requirement for 53-foot-long semitrailers, typically 40-feet. A 'king pin setting' [distance] of 40-feet on semitrailers over 48-feet long is necessary for safe turning distances.[48]

The maximum overall length of a truck tractor in combination with a single semitrailer varies from 55 feet to 75 feet. "kingpin setting" requirements are common on the longer vehicles. The maximum overall length of a truck tractor and multiple semitrailers/trailers varies greatly, and may be any length depending on the length of each of the vehicles in combination. Twenty-three[49] states regulate the length of the individual semitrailer and\or trailer to 28 ft. 6 inches. Two states (MS and LA) have a 30-foot length limitation. In addition to the 28-foot 6-inch and 30-foot single vehicle restriction, these states also have restrictions on the overall length of a combination vehicle that includes multiple semitrailers and trailers. The remaining states only regulate the overall length of the combination vehicle (tractor and multiple semitrailers and trailers). These limitations vary from 58-feet to 95-feet. Lengths of vehicles may be less on certain roadways due to the roadway geometry and environment (i.e. buildings close to the roadway, signs and signals, etc.) These limitations would be found in local regulations.

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[44] WA, OR, ID, MT, NV, AZ, NM, CO, WY, ND, SD, NE, OK, LA, MA, ME, MI, AK

[45] A 'bridge' is the distance between any *set* of axles, measured from center hub to center hub.

[46] *NY*, MA, RI, CT, NJ, GA, FL, NM

[47] The kingpin, a part of the fifth wheel connection, is the pivot point between the tractor and semitrailer. The kingpin setting is the distance from the center of the fifth wheel connection to the center of the rear axle group, and affects the turning radius of the vehicle. The longer the kingpin setting, the larger the turning radius.

[48] See FHWA publication Chapter 7 on longer combination vehicles – Roadway Geometry - http://www.fhwa.dot.gov/reports/tswstudy/Vol3-Chapter7.pdf

[49] *AL, AZ*, CA, CO, IL, IN, IA, KS, ME, MN, MT, NV, NM, NY, OH, PA, RI, SC, TN, TX, VA, WV, WI

In addition to the state regulations on length, the Federal Government has enacted legislation (Surface Transportation Act 1982), which standardized length dimensions on US routes, the National System of Interstate and Defense Highways and on those roadways designated as part of the federal-aid primary system of highways. Combination vehicles using these roadways are not restricted as to length (combination vehicle can be any length) when they meet the following two conditions:

1. The length of either the semitrailer or trailer cannot exceed 28-feet 6-inches.
2. The length of a semitrailer, in combination with a truck tractor, cannot exceed 48-feet, except that a semitrailer that measures between 48-feet and 53-feet may be used if the distance from the kingpin to the rear most axle does not exceed 38-feet for a semitrailer configured with a single axle or 40-feet for a semitrailer configured with dual axles.

States are required to designate highway/freeway on-ramps and exit ramps for use by these longer vehicles, known as long combination vehicles (LCV). In addition, states are required to designate special 'off-highway routes' for use by LCVs. These are normally the roadways designated by the states as 'truck routes' that were so designated prior to the passage of the federal legislation.

US drivers that operate certain specified LCVs must complete specialized training as required in Part 380 and the 380 Appendix.[50]

4.4 Width Limits

All states, except Hawaii, limit the width of the vehicle and load to 102-inches. Nineteen states[51] restrict the 102-inch width limit to interstate and designated highways only. On other roadways in those states the width limit is less than 102-inches, and that limit varies from state to state. Hawaii has a 108-inch width limitation.

4.5 Height Limits (Vehicle and Load)

Seventeen western states[52] have a height limit of 14-feet. Two states (Colorado and Nebraska) have a height limit of 14-feet 6-inches. The remaining 31 states have a height limit of 13-feet 6-inches.

4.6 Alberta and British Columbia Size Requirements

4.6.1 Alberta[53]

Width: 2.6 meters (8' 6")
Height: 4.15 meters (13' 6")

[50] See Oversized Vehicle Driver Training Section in this report.
[51] AK, AZ, NE, OK, LA, FL, GA, AL, NC, VA, KY, IL, MI, WV, PA, MD, DE, NJ, NY
[52] AK, HI, WA, OR, CA, AZ, NV, UT, ID, MT, WY, NM, TX, KS, SD, ND, MO
[53] See Motor Carrier Attachment #11 – Alberta Over-dimensional and Overweight Commercial Vehicles

Length:
Single Vehicle 12.5 meters (41'0")
Truck-tractor and semi-trailer 23.0 meters (75'6")
Truck and towed trailer in combination 23.0 meters (75'6")
Truck-tractor, semi-trailer and full trailer and or semi-trailer in combination 25.0 meters (82'0")

4.6.2 British Columbia[54]

Height: 4.15 meters (13' 6")
Width: 2.6 meters (8' 6")
Length:
Bus – 2 Axles - 12.5 meters (41')
Bus – 3 Axles – 14 meters (45' 10")
Bus – Articulated – 20 meters (65' 6")
Single vehicle – 12.5 meters (41')
Truck-tractor and semi-trailer (48')
Truck-tractor and 2 semi-trailers – one articulation point - 20 meters (65'6")
Truck-tractor and 2 semi-trailers – two articulation points – 23 meters (75' 6")

4.7 Routing

The company transporting the oversize load or the company's agent generally selects the route(s) for extra-legal loads. Routes are selected by determining the size and weight of the vehicle and/or load and then reviewing highway maps, calling on the company's 'corporate knowledge' of an area, and/or consulting with state and local Departments of Public Works or Road Departments.

There are a number of websites that provide routing and other permit information. For example the Western Association of State Highway Transportation Officials (WASHTO) publishes the *Guide for Uniform Laws and Regulations Governing Truck Size and Weight among the WASHTO States*[55] that provides guidance to companies transporting extra-legal loads between the western states. Washington also provides a website on roadway\vehicle size restrictions.[56] Companies engaged in transporting extra-legal loads on State routes, can access a computerized map of the State's approved roadways, select the appropriate route(s), and submit all required information electronically. The computer generates a special moving permit and sends it electronically to the applying company. The company pays a fee for this service, and some sates require carriers to be pre-approved by the State by submitting required insurance forms.[57]

[54] See http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/30_78
[55] http://www.washto.org/pdf/WASHTO_Guide_for_Uniform_Laws_and_Regulations_2009.pdf
[56] http://www.wsdot.wa.gov/commercialVehicle/Restrictions/roadlist.aspx
[57] The pre-approval is not required in Washington.

In determining the safest route to take, a carrier must access a state's bridge list that identifies bridges by mile post marker and lists the vertical clearances for the bridge. In the Washington State instructions for carriers to populate their permit routes the Department includes the following disclaimer:

> "It is emphasized here that the Bridge List is only a guide, and WSDOT assumes no responsibility for its completeness or accuracy, or for any damage or injury resulting for its use or misuse."[58]

According to WSDOT officials this disclaimer is necessary because variations in vertical clearances occur due to roadway construction (i.e. roadway re-surfacing) and other conditions not readily reported to or known by the WSDOT. They also indicated that for the purposes of issuing an over-height load permit, the clearances they publish in the Bridge List are listed at 3-inches LOWER than the actual measured clearance to provide an extra margin safety.

On occasion a state may require a 'route survey' be conducted to verify the safety of the anticipated route. Upon completion of a route survey the carrier must submit the results of the survey, usually on a specified state form[5960], with the request for a transportation permit. A 'route survey' is accomplished by driving the proposed route in a passenger vehicle (usually in a specially equipped pick-up truck) to determine the compatibility of the route with the size and/or weight of the vehicle and load and to identify potential hazards that need to be avoided.[61] The Alberta, British Columbia, and Washington State permits state that:

> "WSDOT [Alberta or British Columbia] does not guarantee height clearances".

Because of this disclaimer, carriers are encouraged to conduct a route survey prior to any overheight load. However, carriers, such as the accident carrier, often travel the same routes and therefore are familiar with the physical size restrictions on those routes. In these cases the carrier will generally not conduct a route survey every time they send an oversize load on those routes. The Safety Board obtained the accident carrier's permits for their vehicles traveling on Interstate Highway 5 (including the bridge over the Skagit River in Mount Vernon) for the six months prior to the accident (12/03/2012 through 5/15/2013) – a total of 53 trips. Heights of loads ranged from 13-feet 6-inches to 16-feet 4-inches[6263] and widths varied from 9-feet 0-inches to 15-feet 0-inches. All of these

[58] WSDOT Bridge List form M 23-09.03 June 2011 See http://www.wsdot.wa.gov/publications/manuals/fulltext/m23-09/Bridgelist.pdf

[59] See Motor Carrier Attachment # 18 – New York, Colorado, and New Mexico Route Survey Check Lists

[60] See Motor Carrier Attachment #19 – New York City, Colorado, New Mexico, and California Permit Forms

[61] See Motor Carrier Attachment #24 – Sample Route Survey

[62] See Motor Carrier Attachment #14A – Super Load Permit December 2012

[63] The 16'4" high load traveled over the Skagit River Bridge travelling southbound. The load was a generator skid, similar to a rectangle but larger than the piece that struck the bridge. It had a lead pilot cat car with a height pole and a trail escort car as this was a steerable trailer. The driver straddled both lanes during the crossing and the trail car blocked traffic when he moved left.

vehicles and loads cleared the accident bridge structure; however, it is not known what lanes(s) were used to gain clearance.

The permit process requires sufficient 'lead-time' for the agencies to accomplish their review, which may be as long as several weeks prior to the move or momentarily for electronic permit applications with little or no special requirements.

Vehicles are required to remain on the approved roadway(s), unless they encounter a circumstance that would prohibit further movement, such as a low clearance bridge. In such cases when alternate routes are necessary, approval must be obtained from the issuing agency before further movement can occur. If the movement cannot be accomplished in the time (dates) indicated on the permit, the movement must stop and a new permit or extension issued.

4.8 Permit Conditions

Standard requirements for vehicles transporting extra-legal loads include signage, lighting, and flags. Vehicles and loads are required to display signs, such as Oversized Load" or "Wide Load" on the front and rear of the vehicle and/or load. There are size and color requirements for these signs. Permitted vehicle lighting includes revolving or flashing yellow lights, side marker lights, or rear-end projection lights. Red flags may also be required on the sides of the loads.

In addition to standard extra-legal vehicle and load requirements, and routing designation, approving agencies will usually restrict the movement of the vehicle and load in a number of other ways. These limitations are known as 'conditions' and are usually in written form called 'Motor Carrier Attachments' that accompanies the written permit. In some jurisdictions the permit is invalid if the Motor Carrier Attachments do not accompany the permit. Permit conditions fall generally into the following categories:

- Hours of operation - movement is generally prohibited during peak traffic times, and dependent on the size of the vehicle and load, may be restricted to nighttime operation only. Transportation is prohibited during restricted times.
- Weather Conditions - moving is generally prohibited in the rain, fog, snow and other conditions which limit visibility.
- Specified Days - transportation is usually prohibited on certain days, such as New Year' Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving and Christmas.
- Night Moves - specified lighting such as additional lights attached to the outside edges of the vehicle and/or load
- Pilot Cars - each jurisdiction has size limits which when exceeded would require pilot cars to escort the vehicle. One or two pilot cars may be required.
- Other Escorts - Police and/or other officials from a department of public works or roadway department may be required to accompany the vehicle.

Violations of the terms and conditions of the permit, including routing violations, can result in severe fines.

5. Accident Trip Permits[64]

The accident driver picked-up the load at the manufacturer's terminal in Nisku, Alberta Canada. The load was one of four such loads going from Nisku Alberta to Vancouver Washington where they were to be loaded on a ship for an oil field location in Alaska. This was the first of those loads being transported. A second load was trailing the accident load by several miles. Two identical loads were not transported due to the accident and remained at the fabricator's terminal until clearance was granted to proceed.

5.1 Vehicle Dimensions

According to the Bill of Lading the load was an 'open sided casing shed'. It measured 11-feet 6-inches wide, 12-feet 3-inches tall, 60-feet long, and weighed 44,000 lbs.[65] Once loaded on the vehicle the driver measured the total dimensions (vehicle and load) as 11-feet 6-inches wide, 15-feet 9-inches tall, and 70-feet 4-inches long. These were the dimensions listed on the permit.

The driver used a commercially made 'height pole' and tape measure to determine the dimensions of the vehicle and load. This height pole was constructed of two hollow plastic pipes (similar to PVC pipe) that telescope to a height of 15-feet with a second 4-foot long pipe, hinged at one end of the 15-foot pole. The 15-foot pole was graduated in ¼ inch spaces. Because the height of the load on the vehicle exceeded 15-feet, the driver hooked the 4-foot section of the pole on the top of the load and let the 15-foot section hang down. He then used a steel tape measure to determine the distance from the bottom of the pole to the ground. He determined the height as 15-feet 9-inches.

The dimensions were transmitted to the carrier for submission to Alberta, British Columbia, and Washington State for the issuance of the permit. When the permit was approved by the jurisdictions, it was faxed to the driver at the manufacturer's terminal and he began his trip.

The Vehicle Group Chairman measured the accident vehicle on level ground (post-accident) and determined the following heights:[66]

- Left Front 15-ft $10^{7/8}$-in
- Right Front 15-ft $11^{1/16}$-in (damaged from collision)
- Left Rear 15-ft $6^{13/16}$-in
- Right Rear 15-ft $5^{5/8}$-in

[64] See Motor Carrier Attachment #14 – Accident and Post-Accident Trip Permits
[65] See Motor Carrier Attachment #11 - Bill of Lading. The manufacturer indicated a weight of 40,000 lbs. and the bill of lading indicted a weight of 44,000 lbs.
[66] Note – The load sustained some damage both to the top and base and cannot be assumed to be the pre-accident heights

The Vehicle Group Chairman also measured the trailing exemplar vehicle[67] and load on level ground and determined the following heights:

- Left Front 15-ft $11^{7/8}$-in
- Right Front 16-ft $^{3/8}$-in
- Left Rear 15-ft $7^{5/8}$-in
- Right Rear 15-ft 7¾-in

5.2 Post-Accident Transportation

The accident load and the exemplar load were required to obtain new permits to move the loads to their destination in Vancouver WA because the time limits on the pre-accident permits in Washington had expired. These permit dimensions were re-measured by the carrier with other than the accident tractor or exemplar tractor attached. The Safety Board obtained copies of those permits that listed the following dimensions:

Accident Vehicle

Accident Permit
Height. 15 ft. 9 in.
Width 11 ft. 6 in.
Length 70 ft. 4 in.

Post-Accident Permit
Height. 16 ft. 0 in.
Width 11 ft. 8 in.
Length 72 ft. 0 in.

Exemplar Vehicle

Pre-Accident Permit
Height. 15 ft. 11 in.
Width 11 ft. 8 in.
Length 71 ft. 9 in.

Post-Accident Permit
Height. 16 ft. 0 in.
Width 11 ft. 8 in.
Length 72 ft. 0 in.

(See Vehicle Group Chairman's Factual Report for additional information.)

[67] The term "exemplar" refers to a vehicle or vehicle component that is of the same make, model, or build as the subject vehicle or vehicle components involved in the accident, but not necessarily identical, and is used as a model or example of pre-crash vehicle features.

5.3 Permit Pilot\Escort Vehicle(s) Requirements[68]

Because the total height and width of the load exceeded legal limits in the jurisdictions to be traversed, pilot cars were required. [69]

- No pilot car was required in Alberta,
- One pilot car, a trailing car, was required in British Columbia, and
- Two pilot cars (front and rear) were required on the two-lane roadway between the Washington Port of Entry at Sumas, WA but only one was required on Interstate Highway 5 – a front pilot car with a height pole.

The front pilot car driver met the driver and load at the Sumas WA Port of Entry at about 4:30 pm. There the vehicle and load was required to pass through a US Customs x-ray machine as part of their examination of the vehicle for contraband. The x-ray machine was 16-feet tall and the driver said that the vehicle "barely passed under the machine". The pilot car driver examined the special transportation permit and saw that the total height listed was 15-feet 9-inches. Per the instructions in the Washington State Pilot Car training/certification program she set her height pole at 16-feet 2-inches (5-inches above the height of the load as recorded on the permit). The lead pilot car escorted the vehicle from the Post of Entry to I-5 and then on I-5 until the accident occurred.

6. Washington Pilot Car Certification Program

The requirement for certification of a person who acts as a pilot (escort) car is found in WAC 468-38-100. The program began in 1998 and includes an eight-hour course consisting of classroom lectures and written tests. The Washington Certification is honored by UT, CO, NC, OK, and GA; those states also have a pilot car certification program.[70] These states only allow those pilot car operators who are certified in their state or with whom their state has reciprocity. States not having a certification program allow anyone to conduct pilot car operations providing they have the equipment (i.e. signs, lights, two-way radio communication, etc.) required by that state.

The only requirement for qualifying for certification in Washington is to possess a valid driver's license, and attend and pass the certification course. However, course material suggests the following are general qualifications for a pilot car operator:

- Possess a valid driver's license
- Be at least 18 years old
- Be able to follow written and verbal instructions in the English language
- Perform emergency flagging duties and traffic control[71]

[68] Only the following states require some type of pilot car driver certification: WA, UT, AZ, CO, OK, GA, FL, WI, NY, NC, VA, and KS.
[69] The requirement for pilot cars to escort an oversized vehicle is found in Washington Administrative Code (WAC) 468-38-100.
[70] New York also has a pilot car certification requirement, but do not grant reciprocity to any other state.
[71] Requires a separate certification course in all states

- Wear corrective lenses when required
- Be drug and alcohol free when performing pilot car duties
- Possess minimum liability insurance of $100,000 per person, $300,000 per accident, and $50,000 for property damage.

Washington will train drivers holding driver licenses in another state, even if that state does not have a certification program, and certify them with a Washington certification. Pilot car operators take advantage of this and other state certifications because they want to escort loads in states with certification programs.

The curriculum for the Washington course was developed by the Pilot Escort Oversight Committee and approved by the Permit Unit of the WSDOT. The 13 member committee was comprised of representatives from the Washington State Patrol, WSDOT, the State Labor and Industries, Washington State Trucking Association, and pilot car operators. The committee meets periodically when issues arise that require changes in the program. The certification process is administered by the Evergreen Safety Council, a member of the National Safety Council, a 501 (c) (3) non-profit organization under a contract with WSDOT. The primary function of the Safety Council is to develop course material and conduct train-the-trainer courses.[72] These trained instructors then conduct certification courses throughout the state. Oversight is conducted by Evergreen by monitoring instructors conducting follow-up inquiries from complaints lodged against instructors. The program's overall oversight is by the Washington State Department of Transportation.

Students in the certification course are provided a student manual covering the following topics:

- Pilot Vehicle Requirements and Restrictions
- Driver Responsibilities
- Pilot Vehicle and Operator Pre-Trip Planning
- Maneuvering The Oversize Load
- Emergency Equipment Use and Maintenance
- Response to Vehicle Breakdown or Accident
- Industry Unique Requirements

Certification is valid for 3 years. A 4-hr. re-certification course must be completed once every 3 years to retain certification.

The Safety Board reviewed the Instructor's and Students manuals and instruction material. The content of the manuals contain the following:

- The *Certified Pilot/Escort Vehicle Operator Handbook* [5th edition],
- Various Washington State Regulations pertaining to the movement of oversized loads/vehicles,

[72] A two day course.

- A sample of the Washington Bridge List [2001],[73]and
- Highway maps of Washington State.

Course material in the Handbook recommended some of the following operating procedures:[74]

- "Loads that are over-height *must be verified by the P/EVO*[75]*prior to departure. Operators should determine actual load dimensions."*
- *"P/EVOs should not climb on an Oversize Load wither to gain exact measurements or to clear overhead obstructions. The true measurement of the load is the responsibility of the permitted load driver. However, the P/EVO should verify the load dimensions with their height pole and/or tape measure before departure."*
- "The height pole, when mounted on the vehicle, should be not **less than three inches** above the permitted load height **or greater than six** inches above the maximum height of the permitted load." [emphasis added]
- "It is recommended that the height pole be mounted on the left side of the P/E vehicle to provide the operator visual alignment with the overhead obstruction."
- Height poles must be constructed:
    - Of non-conductive material to prevent electrical currents from entering the P/E vehicle and
    - Of non-destructive material so that they do not damage overhead wires or signals.
    - The height pole should no break if it hits an overpass or bridge structure and,
    - Should be constructed so that one section will slide into another and allow for adjustments and storage.

6.1 – Suggested Lead and Trailing Distances

"It is recommended that the lead P/EVO manage the spacing between the permitted vehicle and the P/E vehicle based on the '*one plus one second rule'*. Allow one second lead-space for every 10 feet of the permitted vehicle's length, and add one second when exceeding 40 miles per hour. In some states, such as Washington, the lead P/EVO **shall not lead the permitted load by more than ½ mile.**" [Emphasis added]

- The escorted permitted load in this accident was 70-feet 4-inches long and was traveling about 58 miles per hour. This translates to 7 seconds + 1 second = 8 seconds

[73] The actual current Washington State Bridge List can be found at website http://www.wsdot.wa.gov/Publications/Manuals/M23-09.htm
[74] See Motor Carrier Attachment #17A – Excerpts From Washington State's Pilot\Escort Vehicle Driver Training Manual
[75] P/EVO – **P**ilot/**E**scort **V**ehicle **O**perator

lead time. A vehicle moving at 58 miles per hour travels 85 feet per second (fps).[76] 85 fps. X 8 seconds = 680-foot-lead distance between the P/EVO and the permitted load.

In the carrier's driver & owner manual[77] the following distances are suggested for pilot vehicles as a matter of company policy:

- "A pilot vehicle should travel between **300** to **1000** meters (**1000 ft. to 3280 ft**.) ahead of an over-dimensional vehicle."
- "The trail vehicle should travel **100** to **300** meters (**328** ft. to **984** ft.) behind the over-dimensional vehicle."

6.2 Safety Board's Previous Investigations

In January 2000, the Safety Board conducted an investigation of an oversized load that became stuck on a highway-railroad grade crossing and was struck by a commuter train in Glendale CA (HWY-00-FH-027). As a result of that investigation and recommendations[78] the Special Carriers and Riggers Association, American Trucking Associations, FHWA, and CVSA published a "*Pilot Car Escort Best Practices"*[79] book in 2004. Much of the training in states that have pilot car certification programs reference that book as a source for their curriculum.

In June 2010, the Safety Board conducted an investigation of a traffic collision between a pilot vehicle and a private person's vehicle in St. Joseph, IL (HWY-10-FH-15). The purpose of the investigation was to assess the value of the "*Pilot Car Escort Best Practices"* book in use at that time. The pilot car driver had a copy of the book in his possession during the Safety Board's interview with him. He was familiar with the contents. The Probable Cause of the collision was determined to be the pilot car driver's poor judgment because he stopped his vehicle on the roadway while trying to warn the on-coming over-height vehicle of a low-clearance bridge.

[76] A vehicle moving at 1 mile per hour travels 1.466 feet in 1 second. Therefore, a vehicle moving at 58 mph travels at the rate of 58 X 1.466 = 85.028 fps.
[77] See Motor Carrier Attachment #21 – Glendale CA (HWY-00-FH-027) Safety Recommendation History.
[78] See Recommendations – H-01-030 through H-01-037. Recommendations included the following subject areas: conducting route surveys, when pilot cars vehicles are required, pilot car driver training, testing, and certification, use of height poles, traffic control, maneuvering of heavy-haul vehicles, effects of fatigue on driving performance, hazard assessment especially at low vertical clearance locations, and railroad notification. All the recommendations were classified as either Closed Exceeds Recommendation Action or Closed Acceptable Action, except H-01-033 to American Association of Motor Vehicle Administrators and H-01-36 to the International Association of Chiefs of Police that were classified Closed Unacceptable Action due to a lack of response to the Recommendation.
[79] See Motor Carrier Attachment #17 – Pilot Car Escort Best Practices

7. Pilot Car Driver

7.1 Pilot Car Information[80]

The pilot car operator in this event obtained her Washington certification in 1998 and was most recently certified in January 2012. Her certificate was due to expire in January 2015. She had been a pilot car operator since 1982 and then obtained the state certification when the program began. She indicated in an interview with the Safety Board that she conducts pilot car operations about 2 – 3 days per week, and is usually home every night. She said she has escorted over-height loads many times (exact number not known) across the Skagit River bridge, the most recent time was the week before the accident and she believed that the height of that load was 15-feet 6-inches.

The pilot car driver indicated during her interview with the NTSB that the route on the permit indicated the following routes:

- South on State Route 9 from Sumas to
- South on State Route 542 to
- South on Interstate Highway 5.
- There was to be a scheduled stop at the Smokey Point Rest Stop between Exit 208 and 206. The pilot car driver indicated she would have left the load there for the evening and continued home. [Not on the schedule, but was to be taken so the driver could stay within his HOS.]
- The pilot car driver told the NTSB that she was concerned about a pedestrian bridge over I-405 because of a low clearance point. She identified the bridge being between Exit 22 and 23 on I-405, a route specified by the permit. She said she probably would not return for the load and had intended to call someone else to complete the trip.
- The trip was schedule to follow I-5 to I-405 south, to avoid the Seattle area, and then return to I-5 at exit 154.
- Then south on I-5 to State Route 5 to Vancouver WA – end of trip.

The driver was operating a 2004 Dodge Ram pick-up truck as the escort vehicle. It was equipped with flashing yellow lights, a yellow sign with black lettering reading "OVERSIZE LOAD", a CB radio tuned to the same frequency as the permit-vehicle, and a height pole.

The height pole was constructed of a plastic telescoping painter's pole with a 39-inch vehicle radio antenna attached. Atop the antenna was a 1/2-inch diameter rubber ball secured to the antenna with red tape. The driver used a commercially made plastic 'height pole' measuring device with 1/8-inch gradations that telescoped to a distance of 18-feet. The gradations were verified by the NTSB using a steel measuring tape. The pole was secured to the front bumper of the vehicle with a 3-inch–long metal tube located 9 ½ - inches from the right side of the vehicle. Because the metal tube was canted slightly

[80] See Motor Carrier Attachment #15 – Accident Pilot Car Driver Information

toward the center of the vehicle (estimated at 2-3 degrees) the plastic portion of the height pole leaned toward the center of the vehicle. The top of the pole (radio antenna) was more flexible than the plastic painter's pole and with the heavier ball atop the antenna, caused the antenna to lean further to the center of the vehicle. With the vehicle on level surface, the Safety Board measured horizontal distance from the metal tube to the vertical distance of the leaning antenna and determined that the ball was 16-inches to the left of the metal tube. This placed the ball closer to the centerline of the truck.

The pilot car driver said she measured the vertical distance from the top of the pole (i.e. ball) to the roadway surface at 16-feet 2-inches when she met the permitted vehicle at the Canadian-US Border. She used the 16-feet 2-inch height because she reviewed the permit and saw that the height of the load was listed as 15-feet 9-inches. The 16-feet 2-inches height fell within the "height above the load height" recommendation found in the Washington State training guidelines. The WSP measured this distance at 16-feet 0-inches while the pilot car was stopped at the scene and on a downgrade on the south side of the bridge ramp.

See Vehicle Factors Group Chairman's Factual Report of additional information.

7.2 Bridge Vertical Lane Clearances

The NTSB Highway Group Chairman determined the following vertical height clearances for southbound traffic at the Skagit River bridge spans 5, 6, and 7[81] while on scene:

- Minimum clearance at the outside concrete traffic barrier edge at span 6 was 14.75 ft. (14'9") and the maximum clearance at span 7 was 15.05 ft. (<15' 1")
- Minimum clearance at the solid white edge line at span 6 was 15.56 ft. (≈ 15' 6") and the maximum clearance at span 7 was 15.88 ft. (≈ 15' 11")
- Minimum clearance at the center of the right lane at span 6 was 16.96 ft. (≈ 17 ft.) and the maximum clearance at span 5 was 17.09 ft. (≈ 17' 1").
- Minimum clearance at the center line (between the two southbound lanes) at span 6 was 16.96 ft. (≈ 17' 0") and the maximum clearance on span 5 was 17.09 ft. (≈ 17' 2")

The NTSB Highway Group Chairman also measured the southbound lane widths on I-5 just prior to the bridge and determined they were 12-feet-wide. The lane widths on the bridge (at the accident point) were 11 ft. [The load width was 11-feet 6-inches.]

8. Oversize Vehicle Driver Training

There is currently no specific training requirements for drivers transporting oversized loads. 49 CFR 380 contains requirements for driver training for vehicles that are defined

[81] The accident bridge span was span # 8 that collapsed in the accident.

as "Longer Combination Vehicles" (LCV). These vehicles are defined as "…any combination of a truck tractor and two or more trailers or semitrailers [operating on the National Defense System of Interstate Highways] with a gross weight (GVW) of …80,000 lbs. or more." The accident vehicle consisted of a truck tractor and one semitrailer and weighed 88,7000 lbs. This training is intended to be provided by a third party or the carrier. Instructor qualifications are listed in the regulation. Drivers that qualify are issued a certification of completion of the course. However, there is no equivalent CDL Endorsement.

In the Glendale CA accident investigation (HWY-00-FH-027) in 2000 the Safety Board included in Recommendation H-01-32[82] that the CVSA Driver-Traffic Enforcement Committee explore the possibility of "…adding a specific endorsement to the commercial Driver's License for drivers of oversized\overweight shipments." The Committee responded that they would explore the issue with the FMCSA and Operation Lifesaver, however no formal response to this element of the Recommendation was ever received by the Board; the full Recommendation is currently classified "Closed – Exceeds Recommended Action".

9. Second Involved Carrier and Driver Information

During the collision event of the accident vehicle with the bridge, the Safety Board determined that the vehicle's dynamics were such that the top left edge of the load came in contact with the truck – semitrailer combination vehicle immediately to the left of the accident vehicle. This contact created minor damage to the oversized load[83] and deposited blue paint transfer on the top right edge of the 2nd vehicle's semitrailer. The Washington State Police researched this portion of the event and identified the second vehicle.

The vehicle was a 2000 Kenworth truck tractor in combination with a 1996 Utility van semitrailer owned and operated by Motorways Transport located in Surrey, British Columbia Canada. This carrier was authorized to operate in the United States under the USDOT #1378651 and MC #526017. They successfully completed the US New Entrant program in 2005, but have not been subject to a Compliance Review or any other US review since that time. As of August 12, 2013 the carrier's SAFER report (www.safersys.org) indicated that the carrier had been subject to 112 inspections in the 24 months prior to 08/11/2013 with the following results: a Driver out-of-service rate of 18.4 per cent as opposed to the US national average of 20.72 per cent, a Vehicle out-of-service rate of 2.7 per cent as opposed to a US national average of 5.51 per cent. The data also indicates the carrier had been involved in 2 reportable accidents[84] in the 24 months prior to 08/11/2013 – both were listed a tow-away only.[85]

[82] The Recommendation's main objective was to establish a elements of a model pilot car driver training program. The contact with the CVSA Driver Committee was part of the Board's advocacy presentation to the Committee and was not a formal Recommendation to the CVSA.

[83] See Vehicle Factors Group Chairman's Factual report.

[84] A recordable accident is defined in 49 Code of Federal Regulations (49CFR390.5) as (1) an occurrence involving a commercial motor vehicle operating on a highway in interstate or intrastate commerce which results in: (i) A fatality; (ii) Bodily injury to a person who, as a result of the injury, immediately receives medical treatment away

The accident driver was identified by the Washington State Police. US inspection data for the driver showed one Level 2 (Walk-Around vehicle inspection only) inspection that occurred on June 26, 2013 that resulted in no violations. The Washington State Police obtained his driving history from Canada[86] that showed no traffic violations or traffic accidents. However, the Safety Board obtained the driver's history from British Columbia that indicated two equipment violations: [87]

- February 2011 Unauthorized lamp on CMV
- August 2011 Inadequate tire tread on CMV

The driver indicated he was unaware that the accident vehicle struck his vehicle and therefore did not report the incident to his carrier or the police.

END OF REPORT

MOTOR CARRIER ATTACHMENTS

Motor Carrier Attachment #1	FMCSA Carrier Profile
Motor Carrier Attachment #1A	Alberta Safety Certificate
Motor Carrier Attachment #2	Alberta Carrier Profile
Motor Carrier Attachment #3	Excerpts from Driver & Owner Manual
Motor Carrier Attachment #4	GPS Data
Motor Carrier Attachment #5	Driver Qualification File
Motor Carrier Attachment #6	Alberta Commercial Vehicle Safety Manual - Chapter 5 – HOS
Motor Carrier Attachment #7	Alberta Commercial Safety Compliance Manual
Motor Carrier Attachment #8	Alberta Transportation Compliance Guidelines
Motor Carrier Attachment #9	Summary Audit Report March 26, 2013
Motor Carrier Attachment #10	2013 Compliance Review
Motor Carrier Attachment #11	Alberta Over-dimensional and Overweight Commercial Vehicle Regulations
Motor Carrier Attachment #12	Carrier Preventative Maintenance Program
Motor Carrier Attachment #13	SMS Data (5-26-2013) and FMCSA Warning Letter (10-23-2009)
Motor Carrier Attachment #14	Washington State and Canadian Permits
Motor Carrier Attachment #14A	Super Load Permit
Motor Carrier Attachment #16	Driver's Log Book
Motor Carrier Attachment #17	Pilot Car Best Practices 2004

from the scene of the accident; or (iii) One or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicles to be transported away from the scene by a tow truck or other motor vehicle.

[85] See Motor Carrier Attachment #23 – Carrier Profile

[86] Canadian national driver's license record.

[87] See Motor Carrier Attachment #22 – 2nd Driver's Driving History

Motor Carrier Attachment #17A	Excerpts From Washington State's Pilot\Escort Vehicle Driver's Training Manual
Motor Carrier Attachment #17B	Washington State Pilot Car Requirements – WAC 468-38-010
Motor Carrier Attachment #17C	Guide for Uniform Laws and Regulations Governing Size and Weight Among the WASHTO
Motor Carrier Attachment #18	New York, New Mexico, and Colorado Route Survey Forms
Motor Carrier Attachment #19	New York City, Colorado, New Mexico, and California Oversize Load Permit Forms
Motor Carrier Attachment #20	Washington State's States' Survey Oversized Load Permit Requirements
Motor Carrier Attachment #21	Glendale CA Safety Board's Recommendation History
Motor Carrier Attachment #22	2nd Driver's Driving History
Motor Carrier Attachment #23	Motorways Transport Carrier Profile
Motor Carrier Attachment #24	Sample Route Survey