



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	CHARLESTON, West Virginia	Accident Number:	NYC96GA083
Date & Time:	April 4, 1996, 10:19 Local	Registration:	N79SP
Aircraft:	Bell 206L-1	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Public aircraft		

Analysis

Three minutes after takeoff, an ATC controller heard a garbled transmission with an ELT signal in the background. Witnesses observed the helicopter in level flight, about 300 feet above a hill, when a tail section separated from the helicopter, followed by the helicopter entering a spin, rolling inverted, and descending into trees. The tail boom section aft of boom station 167, which included the upper and lower vertical fin, the tail rotor gear box, and the tail rotor hub and blades, was found 650 feet from the main wreckage. Examination revealed fatigue cracks at the separated area of the tail section. Due to reports of tail boom cracking, an Alert Service Bulletin had been published by the manufacturer in 1987 recommending an inspection of the tail boom every 100 hours, which had been complied with by the operator. The manufacturer and the FAA certification office were aware of a few reports of tail boom cracking, and were not aware of over 220 Service Difficulty Reports that concerned cracks in the Bell 206L tail booms. A doubler was added to the failed area on recent production models; however, no modifications were developed to add a doubler to the failed area of the older models.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the helicopter manufacturer's inadequate maintenance service bulletin inspection interval which failed to provide timely detection of preexisting fatigue cracks in the tail boom. Factors were: the manufacturer's failure to develop a modification of the failed area, and the failure of the FAA certification office to monitor and act upon the significant number of reports of tail boom cracking that were reported by industry.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: CRUISE

Findings

1. (C) MISC ROTORCRAFT, TAIL BOOM - FATIGUE
2. (C) MAINTENANCE, SERVICE BULLETIN/LETTER - INADEQUATE - MANUFACTURER
3. (F) ACFT/EQUIP, INADEQUATE DESIGN - MANUFACTURER
4. (F) INADEQUATE SUBSTANTIATION PROCESS, INSUFF REVIEW - FAA(ORGANIZATION)
5. MISC ROTORCRAFT, TAIL BOOM - SEPARATION

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On April 4, 1996, at 1019 eastern standard time, a Bell 206L-1, a helicopter, N79SP, owned and operated by the West Virginia State Police, was destroyed during an in-flight break-up and collision with terrain, 2.5 miles west of the Yeager Airport, Charleston, West Virginia. The commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed for the positioning flight that originated at the Yeager Airport (CRW), at 1016. No flight plan had been filed for the flight conducted under 14 CFR Part 91.

The State Police pilot and passenger departed the State Police Academy where the helicopter was based, and flew a 1.5 hour flight. The helicopter was landed at CRW, refueled, and departed in a westerly direction for the return flight to the academy. About 1019, a garbled transmission with an ELT signal in the background was received by a CRW Air Traffic Controller. When the controller attempted contact with N79SP, there was no response.

Forty-four witnesses observed the helicopter during various segments of the accident sequence, and many observed the helicopter in level flight about 300 feet above a hill before the event began. Twenty-one witnesses stated that they observed something depart from the tail of the helicopter, followed by the helicopter entering a spin, rolling inverted, and descending into trees. Two of the witnesses stated that they observed the helicopter collide with birds. One of these witnesses stated, "...I did not see anything fall off or break off of the aircraft other than the bird which fell off to the right..." A third witness stated, "...I saw a big dark piece of something, that I originally thought might have been a bird, come off of the helicopter. The piece then seemed to move back into the rotor on top and the helicopter started going down..."

Another witness stated:

"...I saw something fly off ...it looked like it flew up into the propeller because it then ricocheted away from the helicopter...There were papers from it that blew over by where I was working. The wind blew them there eventually. It seemed to be flying normal to the point that something flew off of it. It was flying slow. I didn't notice any birds flying around it..."

Fourteen other witnesses described their observations:

"...I didn't notice anything unusual about the sound of the helicopter or the way it was flying that day until it got to the top of the hill...then I saw part of the rear tail section fall off and then the helicopter went into a left bank and did a complete 360 degree;...something black and square looking fell off the side of the helicopter;...I observed a piece of the aircraft fly off;...Something fell behind the helicopter that made a noise when it broke and hit the tail;...I

saw one of the main blades come off and shoot straight out. The helicopter turned again and the rotor came off;...the tail end blew off and it was like it went off the back and then dropped straight down. The helicopter then made a 360 degree rotation;...I saw the top propeller fly off;...I saw something fly off the helicopter. It looked like it came from the middle, then I saw something come from the back. It looked like a piece of metal;...I noticed something fall off the rear. At this time the helicopter was still going forward but was wobbling;...I noticed something black about the size of a basketball fall off the helicopter;...I saw something falling from the rear of the helicopter. It looked to be pretty good size;...I looked up and [saw] the tail fin drop off;...As he was going down, papers were flying out of it;...When we first saw it, it drew our attention and nothing appeared to be out of the ordinary. He dropped down a little bit, and tried to pull himself back up, then it looked like his tail end fell off. He started to twirl then went straight down..."

The helicopter struck the ground inverted, and a post crash fire erupted. The accident occurred during the hours of daylight at approximately 38 degrees, 23 minutes north latitude, and 81 degrees, 39 minutes west longitude.

PERSONNEL INFORMATION

The pilot, Mr. Charles M. Turner, held a Commercial Pilot Certificate with an instrument rating for rotorcraft-helicopter, and a Private Pilot Certificate for airplane single engine land.

His most recent Federal Aviation Administration (FAA) Second Class Medical Certificate was issued on February 29, 1996.

A review of Mr. Turner's pilot log book revealed that he had logged approximately 4,535 hours of total flying experience, of which about 4,400 hours were in helicopters, and 2,500 hours were in this make and model

WRECKAGE AND IMPACT INFORMATION

The helicopter wreckage was examined at the accident site on April 4 and 5, 1996. It was then removed to a hangar and examined further. The examination revealed that all major components of the helicopter were accounted for; however, several components were separated from the main fuselage and located up to 1,400 feet to the east.

The main fuselage was inverted on the east slope of a ravine, at an approximate elevation of 820 feet above mean sea level (msl). The height of the highest terrain in the area was over 1,020 feet msl, and the bottom of the ravine was about 740 feet msl.

Debris located about 1,400 feet east of the fuselage included; shredded papers from the cockpit; blue paint chips and sheet metal that were matched to the nose battery compartment area of the fuselage; sections of brown plastic that were matched to the cockpit overhead circuit breaker panel; and a 6 inch long black and yellow paint chip that was matched to a

position on the (red) main rotor blade, 3 feet from the hub end of the blade.

The tail boom section, aft of center of gravity (CG) station 362 (boom station 167), was located about 650 feet east of the main fuselage. This included the upper and lower vertical fin, the tail rotor gear box, and the tail rotor hub and blades. The tail section at station 362 was torn and twisted, and no external impact marks were visible on the sheet metal. Both tail rotor blades were bent chord wise. The bend in the white blade was 4 inches from the hub and displayed aft compression wrinkles at the bend. The bend in the red blade was 2 inches from the hub. The white blade had an indentation 1/2 inch deep in the leading edge, about 4 inches from the end of the blade. The white blade also displayed several chord wise scratches at the leading edge, similar to the rivet pattern on the right side of the tail boom.

The tail rotor output shaft turned freely, and continuity was observed to the input shaft when the tail rotor was turned. The splines inside of the input shaft were intact and not damaged. Rotational scratches and scoring were observed on the inside of the tail rotor drive shaft cover.

The upper and lower vertical fins were intact. The upper vertical fin had a 1/2 inch indentation on its leading edge, about 5 inches from the top of the fin.

The main rotor hub and blades were separated from the main transmission mast. The hub and the attached sections of main rotor blades were located about 100 feet southeast, up slope, from the main wreckage. The mast separation displayed torsional overload, and had separated at the yoke dynamic stop. The leading edges of both main rotor blades remained attached to the rotor hub; however, several sections of both blades were separated and located up to 400 feet from the hub. One section of the (red) main rotor blade was found 300 feet east of the main fuselage. On the ground next to this section of blade was a piece of the battery cover, with an indentation similar to the leading edge of the main rotor blades.

The collective sleeve and swashplate were separated from the transmission mast and located about 25 feet northeast of the main fuselage. The main transmission was intact and the mast rotated freely. The two transmission chip detector plugs were examined and found absent of metal. All flight control tubes examined displayed overload separation.

The main fuselage was inverted, and partially consumed by post crash fire. All pilot, passenger, cargo and inspection doors were accounted for in the vicinity of the main fuselage. The nose mounted high intensity spot light was found in the main wreckage, and the Forward Looking Infrared Radar (FLIR) unit was located 40 feet north, and down slope, from the main wreckage.

The tail boom remained attached to the fuselage and displayed wrinkling, with a right twist near the fuselage attaching points. The tail boom sheet metal near the separation point at CG station 362 was torn with a right twist in the metal.

The engine received extensive damage during impact and post crash fire.

Several components of the main rotor head, tail boom, and three hydraulic control servos were removed for further examination.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on Mr. Charles Turner, on April 5, 1996, by Dr. Irvin M. Sopher, of the Office of Chief Medical Examiner, South Charleston, West Virginia.

The toxicological testing reports from the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, and the Office of the Chief Medical Examiner, was negative for drugs and alcohol for Mr. Charles Turner.

TESTS AND RESEARCH

Components of the main rotor head and tail boom were examined at the National Transportation Safety Board Materials Laboratory, Washington, D.C. The metallurgist examination revealed that in the area of the separation, the tail boom was made of two semicircular pieces of skin that were overlapped and longitudinally riveted. Looking forward, one piece of the tail boom skin extended from about the 7:30 o'clock position to about the 1:30 o'clock position along the left and top surface of the boom and was referred to as the top skin section. There was extensive rubbing of the tail boom skin from both the gearbox fairing and the tail rotor driveshaft cover on the left upper side of the tail boom. The tail boom fractures in that area were flat and transverse, indicative of fatigue fracture planes. However, extensive rubbing and oxidization obliterated the original fracture features. Farther away from the rubbed areas were indications of fatigue fractures in the skin. Fatigue cracking was limited to the top skin portion of the tail boom skin on the left side, with probable fatigue propagation 4 to 5 inches in opposite circumferential directions from the fairing fastener nutplate location.

A representative of Bell Helicopter Textron was present at the NTSB Materials Laboratory in Washington, D.C., to examine the tail boom components. The conclusion of his report stated:

"Examination of the fractured tailboom revealed evidence that fatigue cracking had been present prior to the accident. The cracking was centered near a nutplate attachment rivet hole on the upper left side at boom station 167. The nutplate was used as an attachment for the 90 degree gearbox fairing. No material discrepancies and/or deficiencies were found which would have caused the fatigue cracking to occur."

The three hydraulic control servos were examined at Bell Helicopter Textron, Inc., Fort Worth, Texas, on May 15, 1996. Present during the examination were representatives from Bell Helicopter, and the Federal Aviation Administration Certification Office, Fort Worth, Texas. The servos were examined, and a functional test was performed. No preimpact failures were noted during the examination.

ADDITIONAL INFORMATION

Weight and Balance data was computed from the helicopter historical records, and using an estimated 85 gallons of fuel on board at takeoff. The tail section that separated (upper and lower vertical fin, tail rotor gear box and blades) was approximately 56 pounds. The estimated center of gravity (CG) conditions computed were as follows:

Takeoff from Yeager, helicopter weight 4010 pounds, at a CG of 119.833 inches. Maximum forward CG allowed at 4010 pounds, 119.00 inches.

After tail separation, helicopter weight 3954 pounds, at a CG of 116.169 inches. Maximum forward CG allowed at 3950 pounds, 118.9 inches. The helicopter was issued its original airworthiness certificate on October 16, 1980, as a Bell 206L-1. In January 1988, an Allison C30P engine was installed in place of the Allison C28 engine, in accordance with STC Number SH296NM. On December 1, 1995, the helicopter's engine (S/N CAE-890307) was removed, and a temporary replacement engine (S/N CAE-890289) was installed. The original C30P engine was reinstalled on March 19, 1996, at an airframe time of 2877.4 hours.

The helicopter's last annual inspection occurred on July 14, 1995, at an airframe time of 2593.5 hours. The last 100 hour inspection occurred on November 10, 1995, at an airframe total time of 2790.4 hours. The next 100 hour inspection was due at a total airframe time of 2890.4. At the time of the accident, the helicopter's total airframe time was estimated to be 2898.6 hours.

The requirement for a 100 hour inspection was published in Part 91.409, of the Federal Aviation Regulations. In part it stated:

"...no person may operate an aircraft carrying any person for hire, and no person may give flight instruction for hire in an aircraft...unless within the preceding 100 hours of time in service the aircraft has received an annual or 100 hour inspection and been approved for return to service..."

Part 91.409 also stated that the 100 hour limitation may be exceeded by not more than 10 hours while en route to reach a place where the inspection can be accomplished. The West Virginia State Police were a public use operator that conducted flights under Part 91, not for hire, and were not required to comply with 100 hour inspections.

A review of the helicopter's maintenance records revealed that 100 hour maintenance inspections were routinely performed since the helicopter was issued its airworthiness certificate in 1980.

On August 12, 1987, Bell Helicopter Textron (BHT) published Alert Service Bulletin (ASB) 206L-87-47, and subsequently revised it in 1989, to inspect the tail booms of the 206L, 206L-1,

and 206L-3 helicopters. The bulletin stated:

"Bell Helicopter Textron has received several reports of severe upper skin cracks in tail booms, P/N 206-033-004-3/-11/-103/-45 in the area of aft most drive cover retention clips (Boom Station 153.79). Improperly secured tail rotor gearbox, unbalanced tail rotor, and added mass such as antenna, and/or lights which are not approved by Bell Helicopter Textron may be major causes. Failure to locate and repair skin damage on tail boom could result in tail boom failure."

The ASB listed the compliance requirements in three parts. Part I described the modification required to the tail boom. Part II described the interim inspection of unmodified tail booms every 50 flight hours, and Part III described the inspection of the field-modified tail booms to be accomplished every 100 flight hours.

A review of N79SP's maintenance records revealed that it had been modified in accordance with the ASB on December 20, 1989. Since the modification, the inspection required by the ASB had been completed during the regular 100 hour inspections. The ASB inspection was last completed during the 100 hour inspection performed on November 10, 1995, approximately 108 flight hours prior to the accident.

On August 13, 1987, BHT forwarded a letter to the FAA Helicopter Certification Branch, Fort Worth, Texas. The letter recommended to the FAA that the ASB be the subject of an FAA Airworthiness Directive. According to the BHT representative, as of May 7, 1996, the FAA had not responded to the letter.

The BHT representative was not aware of any significant problems with the Bell 206L tail booms during the on scene investigation. After the on scene investigation, the BHT representative provided the NTSB investigator with three reports of cracking in the vicinity of the tail boom separation.

The FAA Aircraft Certification Service, ASW-100, Rotorcraft Directorate, Fort Worth, Texas, was consulted after the on scene investigation. The ASW-100 representative responsible for oversight of the Bell 206 was only aware of the reports of cracking that the BHT representative had provided to the NTSB.

The FAA maintained a data bank of Service Difficulty Reports (SDR) submitted by aircraft operators. Any operator of aircraft could submit SDRs; however, only operators conducting operation under Parts 121 and 135 of the Federal Aviation Regulations were required to submit SDRs.

The NTSB investigator contacted the FAA Flight Standards Service, Safety Data Analysis Section, AFS-643, Oklahoma City, Oklahoma, and requested a print out of all SDRs concerning the tail boom part number specified in the BHT ASB. A total of 221 SDRs concerning Bell 206L, L-1, and L-3 tail booms were provided by AFS-643. Approximately 135 reports dealt with

general tail boom cracks. Many of these reports were vague, and the specific area of cracking could not be identified. About 25 reports related to working or loose rivets on the tail boom. Another 45 reports concerned cracking in the aft tail boom and the tail rotor gear box areas. Many of these reports were derived from the inspection required by the BHT ASB.

One report stated:

"Pilot washing aircraft found a crack coming from under the left aft t/r [tail rotor] longshaft cowl camlock position. Further investigation revealed that the top skin was tearing under the cowl, hidden from view. No vibration(s) were felt by the pilot or flight crew prior to finding this defect. Tailboom assembly was replaced, no abnormal vibrations were detected upon installing rotation components(s). Aircraft was 75.1 hours since last 100 hour inspection. T/R was strobed at the time and Bell Alert SB 206L-87-47, 50 hour inspection of this area was complied with..."

The Bell 206 Jet Ranger series of helicopters was first produced in 1967, and there were over 8,000 in use worldwide in various models. The Bell 206L (Long Ranger) had been in production since 1975, of which there were over 1,575 in service worldwide. The primary extension of the Bell 206L, compared to the original 206, occurred in the area of the fuselage where the cabin was stretched. Except for a slight extension added to the tail boom where it attached to the main fuselage, the 206L tail boom design remained the same as the original 206.

The factory empty weight of the earlier Bell 206A was listed at less than 1,600 pounds, with a maximum gross weight of 3,000 pounds. The 206L-1 had a listed empty weight of 2,156 pounds, and a maximum gross weight of 4,150 pounds. The original 206A was equipped with a 317 horsepower engine, while the 206L-1, N79SP, was equipped with a 650 horsepower engine.

The 206L has been used by television stations and law enforcement agencies with equipment such as stabilized cameras, high intensity spotlights, and FLIR units. The installation of this equipment has required the helicopters to operate at or near maximum gross weight, and the missions have required the helicopters to hover out of ground effect. The maneuvering has required maximum power and concurrently maximum anti-torque application.

The BHT ASB modification added an extra layer of sheet metal (doubler) on the left side of the tail boom, near the horizontal stabilizer. This double did not include the failed area on N79SP. Production Bell 206L-3 models, starting with serial number 51284 and higher, and all Bell 206L-4 models, have a doubler incorporated in their production which includes the failed area of N79SP.

On May 14, 1996, the National Transportation Safety Board issued a Safety Recommendation A-96-8, to the Federal Aviation Administration. The recommendation stated:

"...To reduce the possibility of additional tail boom separations, the National Transportation Safety Board recommends that the Federal Aviation Administration: Issue an emergency Airworthiness Directive for Bell Helicopter Textron 206L, L-1, and L-3 model helicopters that do not have doublers in the gearbox fairing attachment areas to require immediate and recurring inspections for cracks in the tail boom in the areas specified in Bell Helicopter Textron Alert Service Bulletin 206L-87-47, with inspection intervals to be no more than 50 hours..."

The FAA published priority letter AD 96-14-10, issued July 3, 1996, and a subsequent Airworthiness Directive, that required, "...Before further flight, and there after at intervals not to exceed 50 hours time-in-service (TIS), using a 10-power or higher magnifying glass, inspect the tailboom for cracks or corrosion. Perform this inspection in accordance with the inspection procedures stated in the Accomplishment Instructions, Part II or Part III, as applicable, of Bell Helicopter Textron Inc. Alert Service Bulletin 206L-87-47, Revision C, dated October 23, 1989..."

The main helicopter wreckage was released on October 31, 1996, to the West Virginia State Police. Components of the main rotor system and tailboom were retained for further examination by the NTSB Metallurgy Laboratory.

Pilot Information

Certificate:	Commercial	Age:	41, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	February 29, 1996
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	4537 hours (Total, all aircraft), 2500 hours (Total, this make and model), 4031 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N79SP
Model/Series:	206L-1 206L-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	45540
Landing Gear Type:	Skid	Seats:	7
Date/Type of Last Inspection:	November 10, 1996 100 hour	Certified Max Gross Wt.:	4250 lbs
Time Since Last Inspection:	108 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	2898 Hrs	Engine Manufacturer:	Allison
ELT:	Installed, not activated	Engine Model/Series:	250-C30P
Registered Owner:	WEST VIRGINIA STATE POLICE	Rated Power:	650 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CRW ,982 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	09:56 Local	Direction from Accident Site:	90°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	11 knots / 21 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	26°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(CRW)	Type of Flight Plan Filed:	None
Destination:	S. CHARLESTON (WV07)	Type of Clearance:	VFR
Departure Time:	10:16 Local	Type of Airspace:	Class C

Airport Information

Airport:	YEAGER CRW	Runway Surface Type:	
Airport Elevation:	982 ft msl	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	38.310569,-81.750114(est)

Administrative Information

Investigator In Charge (IIC):	Pearce, Robert
Additional Participating Persons:	DAVID E TOWNSEND; CHARLESTON , WV JOHN J SWIFT; INDIANAPOLIS , IN DALLAS ST. JOHN; FORT WORTH , TX
Original Publish Date:	May 2, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=39099

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).