



National Transportation Safety Board Aviation Accident Final Report

Location:	INTRACOASTL CTY, LA	Accident Number:	FTW97FA208A
Date & Time:	06/01/1997, 1125 CDT	Registration:	N115AL
Aircraft:	Bell 206B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

N115AL, a Bell 206B helicopter, and N2773A, a Bell 206L-1 helicopter, collided in midair approximately 3 nm west of Intracoastal City, Louisiana. N2773A was in cruise flight, transiting through the Intracoastal City traffic advisory area from northeast to southwest. N115AL departed Intracoastal City westbound. Radar data indicated that the angle between the flight paths was about 60 degrees. The pilot of N115AL reported that he had just leveled out at 700 feet agl when he saw N2773A to his right at a 'slightly' lower altitude and banked hard left. A witness and physical evidence indicated that the main rotor blades of N115AL struck the tail rotor of N2773A. N2773A was not observed to take evasive action. Subsequently, N2773A impacted the ground in an uncontrolled descent, and N115AL made a forced landing in a slough and sank. Prior to departure, the pilot of N115AL communicated his intentions on the local traffic advisory frequency. There were no radio communications from N2773A on the advisory frequency, and the operator of N2773A did not include the use of traffic advisory services as a company standard operating procedure in its operations manual.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of both pilots to see and avoid each other's aircraft. Factors were the failure of the pilot of N2773A to use the available traffic advisory service and the failure of the operator of N2773A to make the use of traffic advisory services a company standard operating procedure.

Findings

Occurrence #1: MIDAIR COLLISION

Phase of Operation: CRUISE - NORMAL

Findings

1. (F) TRAFFIC ADVISORY - NOT USED - PILOT OF OTHER AIRCRAFT
2. (F) INSUFF STANDARDS/REQUIREMENTS, OPERATION/OPERATOR - COMPANY/OPERATOR MGMT
3. (C) VISUAL LOOKOUT - INADEQUATE - PILOT IN COMMAND
4. (C) VISUAL LOOKOUT - INADEQUATE - PILOT OF OTHER AIRCRAFT

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

5. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF THE FLIGHTS

On June 1, 1997, approximately 1125 central daylight time, a midair collision occurred between N115AL, a Bell 206B helicopter, registered to and operated by Offshore Logistics, Inc., doing business as Air Logistics, and N2773A, a Bell 206L-1 helicopter, registered to and operated by Houston Helicopters, Inc., approximately 3 nautical miles west of Intracoastal City, Louisiana. N115AL sustained substantial damage, and N2773A was destroyed. The commercial pilot of N115AL sustained minor injuries, and the commercial pilot of N2773A was fatally injured. There were no passengers in either helicopter. Visual meteorological conditions prevailed for the Title 14 CFR Part 91 positioning flights and company VFR flight plans were filed by both pilots. N115AL departed the Air Logistics Heliport at Intracoastal City and was en route to Grand Chenier, Louisiana. N2773A departed from the Abbeville Municipal Airport in Abbeville, Louisiana, and was en route to an offshore oil platform in East Cameron Block 109.

During an interview conducted by the NTSB investigator-in-charge (IIC), the pilot of N115AL reported that he departed Intracoastal City at 1120 westbound towards Grand Chenier. He climbed to 700 feet agl, leveled off, set cruise power, and scanned the instruments. The pilot then saw "the nose and left side of a red helicopter" to his right and at a "slightly lower altitude." He rolled his helicopter to the left and was in a "40 to 45 degree" left bank when he felt the impact. The pilot's next recollection was that his helicopter was in a descent on an easterly heading and "shaking violently." His helicopter touched down in the water, rolled over and sank. He was able to free himself from the helicopter and swim to the surface where he was picked up by a man in a boat.

Three witnesses to the collision reported conflicting information concerning the flight paths of the two helicopters. During an interview conducted by the IIC and in a written statement, the witness who picked up the pilot of N115AL reported that he was westbound in his boat in the slough north of the Leland Bowman Lock when he observed a red helicopter (N2773A) overhead and to his right traveling "roughly westbound." The red helicopter "appeared to be climbing slowly." He then noticed a second blue helicopter (N115AL) "slightly north of and slightly higher than the first" helicopter; the blue helicopter was also traveling westbound "but on a course heading that would intersect the red helicopter."

According to the witness, the pilot of the blue helicopter attempted to avoid the collision "by pitching the aircraft up and simultaneously banking to the right very steeply." The witness then observed the main rotor blades of the blue helicopter impact the tail rotor of the red helicopter. The red helicopter's tail rotor shattered "with visible debris and a loud explosion," and the tailboom "folded downward and separated from the fuselage." The red helicopter "pitched over fully inverted" and impacted in the trees on the north bank of the slough.

Following the collision, the witness observed that the blue helicopter had leveled out facing south and "appeared to be translating, or moving sideways," to the right while "yawing to the left." It moved out over the water and descended "rapidly in a controlled manner to land in the water." As the blue helicopter passed his boat, the witness "observed it shuddering violently and small pieces of debris falling off."

Two crewmen on a tugboat that had "just" passed through the Leland Bowman Lock eastbound also witnessed the midair collision and were interviewed by telephone and provided written

statements to the IIC. One of the crewmen stated that the red helicopter (N2773A) was westbound and the blue helicopter (N115AL) was eastbound. The other crewman stated that the red helicopter was westbound and the blue helicopter was southbound. Both crewmen reported that immediately prior to the collision, the nose of the blue helicopter went up "like it was trying to stop."

PERSONNEL INFORMATION

The pilot of N115AL held a commercial pilot certificate with helicopter, single and multiengine land airplane, and instrument ratings. He successfully completed the competency check required by Title 14 CFR Part 135.293(b) in a Bell 206L-1 helicopter on April 14, 1997. According to FAA records, he held a first class medical certificate dated July 18, 1996, with the restriction, "must wear corrective lenses." The pilot reported that he was wearing prescription sunglasses at the time of the collision. He had a total flight time of 2,345 hours of which 1,395 hours were in helicopters.

The pilot of N2773A held a commercial pilot certificate with helicopter, single and multiengine land airplane, and instrument ratings. He successfully completed the competency check required by Part 135.293(b) in a Bell 206B helicopter on February 20, 1997. According to FAA records, he held a first class medical certificate dated March 3, 1997, with the restriction, "must wear corrective lenses." It could not be determined if the pilot was wearing his glasses at the time of the collision. He had a total flight time of approximately 11,000 hours.

AIRCRAFT INFORMATION

N115AL, a Bell 206B, was manufactured in April of 1978. At the time of the accident, the helicopter had accumulated 18,943 hours of flight time. It was painted blue with white trim markings and had an anti-collision light installed on the top of the vertical fin and two landing lights, one facing down and one facing forward, installed in the nose. During examination of the wreckage, the switch for the anti-collision light was found in the "ON" position, and the switch for the landing lights was found in the "BOTH" position.

N2773A, a Bell 206L-1, was manufactured in August of 1979. At the time of the accident, the helicopter had accumulated 7,310 hours of flight time. It was painted red with white and black trim markings and had an anti-collision light installed on the top of the vertical fin and two landing lights, one facing down and one facing forward, installed in the nose. During examination of the wreckage, the light switch positions could not be determined due to the extent of impact damage.

METEOROLOGICAL INFORMATION

At 1150, the reported weather conditions at Intracoastal City were wind from 330 degrees at 5 knots, visibility 7 statute miles, scattered clouds at 4,000 feet, temperature 77 degrees Fahrenheit, dewpoint 57 degrees Fahrenheit, and altimeter setting 29.90 inches of Hg.

At the time of the accident, the position of the sun at Abbeville, Louisiana, located approximately 12 nautical miles north northeast of the accident site, was 103 degrees (true) in azimuth and 66 degrees in elevation.

COMMUNICATIONS

During examination of the wreckage of N115AL, the digital display of the single communications radio, a King KY-196A, precluded determination of the frequency selected.

Review of Air Logistics's radio log for June 1, 1997, indicated that the pilot of N115AL reported departing Intracoastal City en route to Grand Chenier at 1118.

Examination of the wreckage of N2773A revealed that the helicopter's single communications radio, a King KX170B, was tuned to a frequency of 129.45. The Director of Operations of Houston Helicopters stated that 129.45 was a company frequency used for flight following. A review of Houston Helicopters's radio log for June 1, 1997, indicated that the pilot of N2773A reported departing Abbeville en route to East Cameron 109 at 1119.

The accident occurred approximately 3 nautical miles west of the Petroleum Helicopters Heliport in Intracoastal City. Petroleum Helicopters (PHI) operates a radio base station at this heliport with a frequency of 122.85. The station provides local (within 10 nautical miles of the heliport) traffic advisories to participating VFR aircraft.

According to information provided by PHI, the Intracoastal City traffic advisory area is one of eleven such advisory areas established at onshore high density helicopter traffic locations around the Gulf of Mexico by the Helicopter Safety Advisory Conference (HSAC). HSAC was formed in 1978 "to promote safe procedures in the operation of rotary-winged aircraft," and its voting membership is comprised of companies that have "direct operating involvement in helicopter operations in the Gulf of Mexico." The HSAC recommended practice for operations in the Intracoastal City area states, in part:

Outbound traffic will:

- a. When departing a heliport within the 5 NM circle will call _____ prior to taking off, and wait a few seconds for the traffic advisory _____ (or another aircraft) to respond with any conflicting traffic, before _____ beginning a takeoff.
- b. Execute an expeditious climb between 700 ft. and 1000 ft. _____ after takeoff.
- c. Maintain 700 ft. to 1000 ft. until 5 NM from the Reference Point [PHI heliport].
- d. Climb to desired cruise altitude after reaching 5 NM from the Reference Point.
- e. Call "Clear of the area" 10 NM from the Reference Point _____ including altitude.

Local Traffic:

Traffic passing through the traffic advisory area will do so at 1200 ft. or above. Between the altitudes of 1200 and 3000 ft., pilots will:

- a. Call at 10 NM from the Reference Point, giving altitude and _____ route of flight as they enter the area.
- b. Call "Clear of the area" at 10 NM from the Reference Point as _____ they leave the area.

The landing light will be ON during operations within 10 NM of the Reference Point.

Do not overfly any heliport below 500 ft.

On the NOAA U.S. Gulf Coast VFR Aeronautical Chart issued on November 7, 1996, and valid on the date of the accident, the area within 10 nautical miles of Intracoastal City was identified with blue shading as a High Density Helicopter Activity Area, and 122.85 was listed as the

radio frequency for this area. On the NOAA Houston Sectional Aeronautical Chart issued on March 27, 1997, and valid on the date of the accident, a box containing the following text was placed approximately 4 inches below Intracoastal City.

EXTENSIVE HELICOPTER ACTIVITY WITHIN 10 NM OF THESE AREAS
MONITOR INDICATED FREQUENCIES. MORGAN CITY, LA 123.05
INTRACOASTAL CITY, LA 122.85

According to the pilot of N115AL, prior to takeoff, he filed a flight plan on company frequency, then switched to 122.85 and made the following announcement: "taking off to the west, proceeding westbound." He received a response from the PHI radio operator which he recalled as "no conflicting traffic." He stated that the only traffic he heard on the frequency was a PHI helicopter repositioning at the PHI heliport. Review of the June 1, 1997, radio log maintained by Petroleum Helicopters for their Intracoastal City base revealed an entry indicating a call was received from N115AL at 1120. No record of a call being received from N2773A was found in the PHI radio log.

Both Air Logistics and Houston Helicopters held certificates issued by the FAA authorizing them to conduct on-demand air taxi operations in accordance with Title 14 CFR Part 135. A copy of the operations manual required by Title 14 CFR Part 135.21 was obtained from each operator and reviewed by the IIC. The section in the Air Logistics Operations Manual entitled "Advisory Area Operations (Outbound)" stated:

- A. When departing a heliport within 5 NM of the reference point make an advisory call prior to beginning a takeoff.
- B. Execute an expeditious climb to between 700 and 1000 feet after takeoff.
- C. Maintain 700 to 1000 feet until 5 NM from the reference point.
- D. Climb to desired cruise altitude after 5 NM from the reference point.
- E. Call "Clear of the area" including altitude when 10 NM from the reference point.

The section in the Houston Helicopters Operations Manual entitled "Midair Collision Prevention" stated:

- A. Highest potential for birds around the coastal areas up to 1500'.
- B. Highest potential for aircraft around airports, rigs, offshore fields, and heliports.
- C. In single pilot crews, the pilot shall ensure that he establishes a constant and organized scan pattern, occasionally changing the the position of his head so that his vision is not obscured by a part of the aircraft.
- D. In multi-pilot, one crewmember shall always be conducting a visual search outside the aircraft. Primary responsibility for outside scan is: During VFR conditions: Flying Pilot During IFR conditions: Non-Flying Pilot

No references to the HSAC traffic advisory area recommended practices were found in the Houston Helicopters Operations Manual.

WRECKAGE AND IMPACT INFORMATION

Wreckage from the two helicopters was located in a debris field and at two main sites in the slough and marsh north of the Leland Bowman Lock on the Intracoastal Waterway. N115AL came to rest submerged in the slough, approximately 29 degrees 47.25 minutes north latitude and 92 degrees 12.40 minutes west longitude. About 1,000 feet to the west, the fuselage of N2773A came to rest on the north bank of the slough, approximately 29 degrees 47.32 minutes north latitude and 92 degrees 12.55 minutes west longitude.

All major components of N115AL were recovered from the slough. The main rotor mast separated approximately 2 and 1/2 inches below the upper end, and the fracture surface displayed evidence of shear overload. Divers found the main rotor hub and blade assembly submerged beside the fuselage. The tail boom separated about 1 foot aft of the fuselage attach point, but remained attached to the fuselage by wires which were cut during recovery. Examination of the tail boom, tail rotor, horizontal stabilizer, vertical fin, and landing gear of N115AL did not reveal the presence of any rotor strikes or paint transfers. One main rotor blade strike was noted on the upper left side of N115AL's fuselage above the baggage compartment door. This strike slanted slightly downward from front to rear and had deformed, but not penetrated, the fuselage skin.

Examination of N115AL's main rotor blades revealed evidence of impact damage to the outboard portions of both blades. Damage to the red blade consisted of a section of chordwise scratches and gouges on the leading edge and underside of the blade extending from the tip inboard about 2 and 1/2 feet. Blue paint transfers were present on the leading edge of the blade overlaying the scratches.

Damage to N115AL's white blade was more severe, consisting of a section of chordwise scratches and gouges on the leading edge and underside of the blade extending from the tip inboard about 3 and 1/2 feet. A pattern of alternating bands of white and black paint transfers corresponding to the paint pattern on the tail rotor blades of N2773A was identified on the underside of the blade inboard of the heaviest gouges. Additionally, red paint transfers were found on the leading edge of the blade in an area approximately 2 feet wide beginning about 1 and 1/2 feet inboard from the tip.

The fuselage of N2773A came to rest inverted on a measured magnetic heading of 110 degrees. The main rotor mast separated about midway between the transmission and the rotor head, and the fracture surface displayed evidence of shear overload. The tail boom separated along a diagonal cut running forward and down from approximately 18 inches to 3 inches aft of the tail boom attach point. Sheet metal at the edges of the separation was deformed in a pattern indicating the cut was made from the upper left towards the lower right. The left and right float trays were severed approximately 2 feet and 5 feet forward of their aft ends, respectively. (Float trays are installed in place of skids on some helicopters operated offshore.)

The debris field extended into the marsh for a distance of approximately 435 feet on a northeasterly heading from the fuselage of N2773A. Items recovered at the northeast end of the debris field included the tip section of one tail rotor blade and the upper portion of the vertical fin from N2773A. The tail rotor blade section measured about 18 inches long and was cut along a diagonal line slanting towards the tail rotor hub from the trailing edge towards the leading edge. The vertical fin was cut on a diagonal line slanting downward from the rear towards the front, and an aluminum casting shard, measuring about 6 inches long, was

embedded in the left side of the fin. The shard was identified as part of the tail rotor blade yoke of N2773A.

Additional items recovered from the debris field and identified as belonging to N2773A included the main rotor hub and blade assembly, a section of the tail boom with the horizontal stabilizer attached, the rear portions of both float trays, the left forward door, the baggage compartment door, and pieces of the left forward fuselage structure. The only item recovered from the debris field that was identified as belonging to N115AL was a 5 foot section of the after body of the red main rotor blade which was found near the upper portion of the vertical fin of N2773A.

Both of N2773A's main rotor blades remained attached to the rotor hub. The red blade was intact and displayed no evidence of impact damage. The white blade separated about 8 feet outboard of the hub, and the separated section was not recovered. At the point of separation, the after body of the white blade was crushed and bent as though it had contacted a tube with a diameter similar to that of the helicopter's crosstubes.

The section of N2773A's tail boom recovered from the debris field extended from the previously described diagonal cut just aft of the fuselage attach point to a second diagonal cut aft of the horizontal stabilizer. The second cut ran forward and down from approximately 64 inches to 52 inches aft of the aft edge of the horizontal stabilizer attach plate. Sheet metal at the edges of the separation was deformed in a pattern indicating the cut was made from the left towards the right. Projecting the plane of this separation aft and upward indicated that the cut corresponded to the separation of the upper portion of the vertical fin.

MEDICAL AND PATHOLOGICAL INFORMATION

The pilot of N115AL submitted a urine sample about 1335 on June 1, 1997, in accordance with Air Logistics's drug testing program. The sample was tested at an independent laboratory for THC, cocaine, PCP, opiates, and amphetamines with negative results. At 1347 on June 1, 1997, the pilot of N115AL was administered a breath alcohol test, and the result was negative.

An autopsy of the pilot of N2773A was performed by Emil M. Laga, M.D., of New Iberia, Louisiana. Toxicological tests were performed by the FAA's Civil Aeromedical Institute (CAMI). According to Dr. Canfield of CAMI, the finding of 92.600 ug/ml salicylate (aspirin) in the pilot's urine "is insignificant."

TESTS AND RESEARCH

Radar data for the two helicopters, recorded by the U.S. Air Force at the aerostat (tethered balloon) site located about 25 nautical miles east of Intracoastal City, were examined by the NTSB. The data indicated that between 1122:18 and 1123:55, N115AL headed approximately west (270 degrees) while its ground speed fluctuated around 80 knots. During this time, the helicopter's Mode C altitude increased from 400 feet msl to 1,000 feet msl. Between 1123:55 and 1124:08, N115AL's ground speed increased to approximately 105 knots, and its Mode C altitude decreased to 800 feet msl, while its heading remained west. The last radar return from N115AL was recorded at 1124:08.

Radar data indicated that between 1121:17 and 1124:20, N2773A headed south southwest (210 degrees) while its ground speed fluctuated around 110 knots. From 1121:17 to 1122:06, N2773A's Mode C altitude was 600 feet msl. At 1122:18, the helicopter's Mode C altitude decreased to 500 feet msl where it remained until the last radar return from N2773A was

recorded at 1124:20.

The last radar sweep which recorded returns from both helicopters occurred approximately 1123:55. At that time, N2773A was located approximately 0.4 nautical miles on a northwesterly heading from N115AL. See the enclosed NTSB Recorded Radar Study for further details.

ADDITIONAL INFORMATION

N115AL was recovered from the water on the evening of June 1, 1997, and transported to Air Logistics Airframe Rebuild Hangar in New Iberia, Louisiana, where it was examined on June 2, 3, and 4, 1997. The fuselage and tail boom section of N2773A were examined at the accident site on June 2, 1997, and then transported to Houston Helicopters' base at the Abbeville Municipal Airport in Abbeville, Louisiana, where they were examined on June 3, 1997. On June 4, 1997, the tail boom section of N2773A was transported to New Iberia and examined in conjunction with the wreckage of N115AL. Subsequently, both helicopters were conditionally released to their respective owners for removal to secure storage.

During the initial on scene investigation, the only item recovered from the debris field was the tail boom section of N2773A. In February 1998, additional items were recovered from the debris field. On March 26, 1998, these newly recovered items and the wreckage recovered in June 1997 were examined at the facilities of Arrow Aviation in Broussard, Louisiana. Following this examination, the two helicopters were released to their respective owners.

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	34, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	07/18/1996
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2345 hours (Total, all aircraft), 18 hours (Total, this make and model), 2114 hours (Pilot In Command, all aircraft), 165 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N115AL
Model/Series:	206B 206B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	2383
Landing Gear Type:	Skid	Seats:	5
Date/Type of Last Inspection:	04/29/1997, AAIP	Certified Max Gross Wt.:	3200 lbs
Time Since Last Inspection:	124 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	18943 Hours	Engine Manufacturer:	Allison
ELT:	Installed, not activated	Engine Model/Series:	250-C20B
Registered Owner:	OFFSHORE LOGISTICS INC.	Rated Power:	420 hp
Operator:	OFFSHORE LOGISTICS INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:	AIR LOGISTICS	Operator Designator Code:	ALGA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ICY, 4 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	1150 CDT	Direction from Accident Site:	90°
Lowest Cloud Condition:	Scattered / 4000 ft agl	Visibility	7 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	25° C / 14° C
Precipitation and Obscuration:			
Departure Point:	(LA09)	Type of Flight Plan Filed:	Company VFR
Destination:	GRAND CHENIER, LA (LA53)	Type of Clearance:	None
Departure Time:	1120 CDT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): GEORGIA R SNYDER **Report Date:** 04/15/1999

Additional Participating Persons: MICHAEL B CHAPMAN; BATON ROUGE, LA
DAVID C DOSKER; FORT WORTH, TX
CARL BROWN; LAFAYETTE, LA
BILL THORNTON; PEARLAND, TX

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).