Aviation Investigation Final Report

Location:	PANHANDLE, Texas	**Accident Number:**	FTW98FA290
Date & Time:	June 30, 1998, 12:03 Local	**Registration:**	N3845J
Aircraft:	Cessna A188B	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The agricultural airplane collided with a power line while maneuvering during a local aerial application flight. Examination of the accident site and the airplane revealed that the commercial pilot attempted to fly under the power line. The upper portion of the vertical stabilizer contacted two power transmission wires, which were 19 feet above ground level. Subsequently, the airplane impacted the ground, and a postimpact fire erupted. Examination of the engine, airframe and maintenance logbooks revealed no evidence of any anomalies that would have precluded normal operation of the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain clearance from the power transmission wires while maneuvering during an aerial application flight.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings
1. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. OBJECT - WIRE,TRANSMISSION

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - OPEN FIELD
4. TERRAIN CONDITION - GRASS

Factual Information

HISTORY OF FLIGHT On June 30, 1998, at 1203 central daylight time, a Cessna A188B agricultural airplane, N3845J, impacted power transmission wires and terrain while maneuvering near Panhandle, Texas. Impact forces and a postimpact fire destroyed the airplane, which was owned and operated by Lewis Spraying Service of Panhandle, Texas. The non-instrument rated commercial pilot, sole occupant of the airplane, was fatally injured. Visual meteorological conditions prevailed and no flight plan was filed for the Title 14 CFR Part 137 aerial application flight. The flight originated from the Panhandle-Carson County Airport, Panhandle, Texas.

The operator reported that the airplane was dispensing altrazine, a broad leaf weed killing chemical, onto a milo field. A power transmission line ran from north to south along the western edge of the field that the airplane was spraying. According to a report by local authorities, "the pilot was exiting the field westbound crossing county road F. To get the field covered the pilot was exiting the field under power lines. During the exit the upper tail section caught the power lines causing the aircraft to crash into a field."

PERSONNEL INFORMATION

According to FAA records, the pilot was issued a commercial pilot certificate on July 11, 1991, and an airframe and powerplant mechanic certificate on July 17, 1986. According to the pilot's most recent application for an aviation medical certificate, dated September 3, 1997, he had accumulated a total of 2,000 flight hours, of which 275 hours were in the previous six months. The operator reported that the pilot had accumulated 2,000 hours of agricultural flying. The last entry in the pilot's flight logbook indicated that he completed a biennial flight review on July 26, 1997. The last page of the logbook indicated that he had accumulated a total of 2,187 flight hours.

AIRCRAFT INFORMATION

The blue and white, tailwheel-equipped, 1980 Cessna model A188B, serial number 18803675, underwent an annual inspection on October 27, 1997, and had accumulated a total of 2,509 hours at that time. The last entry in the airframe logbook, dated June 16, 1998, indicated that the airplane had accumulated a total of 2,522 hours. The restricted category airplane was equipped with a 300-horsepower Continental IO-520-D engine, serial number 282985R. The engine had accumulated a total of 902 hours since major overhaul as of June 16, 1998. A review of the available airframe and engine maintenance records, conducted by the NTSB investigator-in-charge, revealed no evidence of any uncorrected maintenance defects.

METEOROLOGICAL INFORMATION

At 1156, the nearest weather observation facility, located 18 miles southwest of the accident site at the Amarillo International Airport, reported clear skies, visibility 10 miles, and calm wind.

WRECKAGE AND IMPACT INFORMATION

A global positioning satellite (GPS) receiver located the accident site at 35 degrees 23.00 minutes north latitude and 101 degrees 31.50 minutes west longitude. The airplane came to rest 354 feet east of the power transmission line. The lowest wire of the line was 19 feet above ground level, and a three-foot-tall barbed wire fence, that was not damaged, was located directly beneath the transmission line. The entire wreckage area, including ground impressions and debris, measured 354 feet long and 150 feet wide. The centerline of the energy path was oriented on a measured heading of 262 degrees magnetic. The airplane came to rest on a magnetic heading of approximately 220 degrees.

The first debris located along the energy path (354 feet east of the main wreckage) were sections of two separated power transmission wires. The diameter of the separated wires was 0.398 inches. Blue paint transfers were noted on the wires in several areas. The fracture surfaces of the individual separated strands of the wires exhibited smooth shear zones with 45 degree shear edges.

The first major airplane component located along the energy path (294 feet east of the main wreckage) was a section of vertical stabilizer skin. The second components (252 feet east of the wreckage) were a shattered red lens from the anti-collision light that was located on the top of the vertical stabilizer and the wire cutter that was mounted on the upper portion of the leading edge of the vertical stabilizer. The initial ground impact point was 196 feet east of the main wreckage, where a section of disbursement tubing was found embedded in the ground.

All major structural components of the airplane and all control surfaces were identified at the site. The left and right wings were separated from the fuselage, but remained intact and sustained extensive fire damage. The main cabin area was consumed by fire and could be identified by the steel frame only. All cockpit instrumentation and switches were destroyed. The fire did not consume a section of the empennage, approximately 5 feet in length. The right elevator was separated from the horizontal stabilizer and the left elevator remained attached to the stabilizer. The left and right main landing gear assemblies were separated from the fuselage.

The aileron and flap control cables for the left wing were separated at the wing root. The individual strands of wire that composed the cables were frayed and uneven in length. Continuity of the aileron and flap control cables for the right wing was established to beneath the pilot's seat, where the cables were melted into the wreckage. Continuity of the rudder and elevator control cables was confirmed to beneath the pilot's seat, where the cables were melted into the wreckage. The flaps were determined to be in the retracted position.

The engine separated from the engine mount, and the propeller separated from the engine. The bolts that attached the propeller hub to the engine crankshaft were sheared. The engine remained intact and all engine accessories remained attached to the engine. Both propeller blades were loose in the hub and exhibited "S" bending.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy and toxicological tests were ordered and performed. The autopsy was performed at the Lubbock County Medical Examiner's Office in Lubbock, Texas, on July 1, 1998. Toxicological tests were negative.

FIRE

A postimpact fire consumed the airplane and according to local authorities, burned approximately 320 acres of the surrounding grassland.

SURVIVAL ASPECTS

In addition to wire cutters on the vertical stabilizer, main landing gear legs, and windshield center post, the airplane was equipped with a cable deflector that extended from the top of the windshield to the top of the vertical stabilizer. According to data provided by Cessna Aircraft Company, the deflector, which was fabricated from stainless steel cable, was 0.125 inches in diameter. The cable was severed approximately 8.75 inches forward of the vertical stabilizer.

ADDITIONAL DATA

The wreckage was released to the owner on July 1, 1998, following completion of the on scene investigation.

Pilot Information

Certificate:	Commercial	**Age:**	33,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 3, 1997
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2187 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N3845J
Model/Series:	A188B A188B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	18803675
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	October 27, 1997 Annual	**Certified Max Gross Wt.:**	4000 lbs
Time Since Last Inspection:	13 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2522 Hrs	**Engine Manufacturer:**	Continental
ELT:		**Engine Model/Series:**	IO-520-D
Registered Owner:	LEWIS ASHBY	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:	LEWIS SPRAYING SERVICE	**Operator Designator Code:**	TMSG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	AMA ,3605 ft msl	**Distance from Accident Site:**	18 Nautical Miles
Observation Time:	11:56 Local	**Direction from Accident Site:**	230°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	90°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	34°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(T45)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	00:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**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:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.340518,-101.379089(est)

Administrative Information

Investigator In Charge (IIC):	Snyder, Georgia
Additional Participating Persons:	CHARLES L CLARK; LUBBOCK , TX ANDREW HALL; WICHITA , KS
Original Publish Date:	January 28, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=20432