Aviation Investigation Final Report

Location:	PANHANDLE, Texas	**Accident Number:**	FTW99LA168
Date & Time:	June 11, 1999, 06:30 Local	**Registration:**	N9659J
Aircraft:	Cessna T188C	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The agricultural airplane impacted terrain during a forced landing following a partial loss of engine power after takeoff. The airplane departed from the runway, reached an altitude of approximately 75 feet agl, and then began to 'settle to the ground.' The pilot performed an emergency chemical dump; however, the airplane continued to descend. During the ensuing forced landing in a wheat field, the left main landing gear failed, and the airplane groundlooped. Subsequently, the airplane slid 60 feet before coming to a stop upright. Examination of the engine revealed that the number 5 cylinder produced a compression of 34/80 (manufacturer's specifications state that the acceptable compression is 60/80). No other discrepancies with the engine were noted.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power as a result of the low compression in the number 5 cylinder. A factor was the lack of suitable terrain for the forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) ENGINE ASSEMBLY,CYLINDER - LOW COMPRESSION

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
2. TERRAIN CONDITION - CROP
3. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On June 11, 1999, at 0630 central daylight time, a Cessna T188C agricultural airplane, N9659J, was substantially damaged when it impacted terrain during a forced landing, following a partial loss of engine power during takeoff initial climb near Panhandle, Texas. The airplane was registered to and operated by Stamps Spraying Service Inc., of Panhandle, Texas. The commercial pilot, sole occupant of the airplane, was not injured. Visual meteorological conditions prevailed for the Title 14 Code of Federal Regulations Part 137 aerial application flight, and no flight plan was filed. The local flight was originating from the Stamps Field Airport, Panhandle, Texas, at the time of the accident.

According to the 2,333-hour pilot, the preflight inspection and before takeoff engine run-up revealed no discrepancies. The airplane departed from runway 17, reached an altitude of approximately 75 feet agl, and began to "settle to the ground." The pilot initiated an emergency dump of the airplane's chemical load. The airplane continued to settle, and the spray booms "started to drag in a wheat field," which "caused the airplane to be pulled down into the field." The pilot attempted "to maintain control and land;" however, the airplane contacted the ground with the left main landing gear, which separated 3 inches above the axle. Subsequently, the airplane groundlooped and slid 60 feet, coming to a stop upright.

An FAA inspector examined the airplane at the accident site and reported that the left wing, including the spars, was structurally damaged. He added that the propeller blades tips were bent back.

The 310-horsepower Continental TSIO-520-T1B engine, was examined by another FAA inspector. According to the inspector, the engine underwent its most recent annual inspection on May 23, 1999, and had accumulated a total of 1,440 hours at the time of the accident. The examination revealed that each spark plug produced a spark when tested and each electrode was free of sediment. Each of the magneto leads produced a spark when the impulse coupling was rotated. The oil filter was removed and observed free of contaminants. A compression check of each cylinder was performed. Compression was within manufacturer's specifications in each of the cylinders, except for the number 5 cylinder. The number 5 cylinder produced a compression of 34/80 (manufacturer's specifications state that the acceptable compression is 60/80). The airframe and engine were removed from the examination facility by the owner, without authorization by the FAA or NTSB, and no further examination was conducted.

Pilot Information

Certificate:	Commercial	**Age:**	26,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	March 29, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2333 hours (Total, all aircraft), 699 hours (Total, this make and model), 2234 hours (Pilot In Command, all aircraft), 215 hours (Last 90 days, all aircraft), 99 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9659J
Model/Series:	T188C T188C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	T18803833T
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	May 23, 1999 Annual	**Certified Max Gross Wt.:**	4400 lbs
Time Since Last Inspection:	40 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4551 Hrs	**Engine Manufacturer:**	Continental
ELT:	Not installed	**Engine Model/Series:**	TSIO-520-T1B
Registered Owner:	STAMPS SPRAYING SERVICE INC.	**Rated Power:**	310 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	SMNG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dawn
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	5 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	2 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(3E1)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	
Departure Time:	06:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	35.34098,-101.380943(est)

Administrative Information

Investigator In Charge (IIC):	Snyder, Georgia
Additional Participating Persons:	JUAN RIVERA; LUBBOCK , TX
Original Publish Date:	June 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46521