Aviation Investigation Final Report

Location:	RAYVILLE, Louisiana	**Accident Number:**	FTW00LA074
Date & Time:	January 25, 2000, 10:20 Local	**Registration:**	N91968
Aircraft:	Air Tractor AT-401	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The airplane's engine was started and allowed to operate for 45 minutes due to the cold weather (temperature 36 degrees F). The pilot taxied the airplane out to the taxiway and performed engine run-up and magneto checks. All checks were 'okay,' and the airplane was taxied to the loading area where 325 gallons of chemical were loaded. The pilot taxied the airplane to the runway and performed another engine run-up. The magneto check was 'okay,' and the oil temperature was in the green. The pilot stated that he started the takeoff roll by 'power[ing] up' to 36 inches manifold pressure and 2,250 rpm. After liftoff from the runway, during a turn, at about 150 feet agl, the engine lost power. The pilot dumped the load of chemical and initiated a forced landing to a 'fresh rowed cotton field.' The airplane touched down perpendicular to the rows, and during the landing roll, the main landing gear 'sunk' into the soft ground, and the aircraft nosed over coming to rest inverted. An examination of the aircraft's engine by an FAA inspector revealed that 'the #6 cylinder had a preexisting crack.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to a crack in the #6 cylinder. A factor was the lack of suitable terrain for the forced landing.

Findings

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

Findings
1. (C) ENGINE ASSEMBLY,CYLINDER - CRACKED

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

Occurrence #3: NOSE OVER
Phase of Operation: LANDING - ROLL

Findings
2. (F) TERRAIN CONDITION - NONE SUITABLE
3. TERRAIN CONDITION - PLOWED/FURROWED

Factual Information

On January 25, 2000, at 1020 central standard time, an Air Tractor AT-401 agricultural airplane, N91968, was substantially damaged during a forced landing following a loss of engine power on takeoff from the John H. Hooks Memorial Airport near Rayville, Louisiana. The aircraft was registered to and operated by Bulldog Flying Service, Inc., of Oak Ridge, Louisiana. The commercial pilot, sole occupant of the aircraft, was not injured. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 137 aerial application flight. The flight was originating at the time of the accident.

According to the pilot, this was the airplane's first flight of the day. The airplane's engine was started and allowed to operate for 45 minutes due to the cold weather (temperature 36 degrees F). The pilot taxied the airplane out to the taxiway and performed engine run-up and magneto checks. All checks were "okay," and the airplane was taxied to the loading area where 325 gallons of 24D chemical were loaded. The pilot taxied the airplane to the runway and performed another engine run-up. The magneto check was "okay," and the oil temperature was in the green. The pilot stated that he started the takeoff roll by "power[ing] up" to 36 inches manifold pressure and 2,250 rpm. After liftoff from runway 36, during a turn, at about 150 feet agl, the engine lost power. The pilot dumped the load of chemical and initiated a forced landing to a "fresh rowed cotton field." The airplane touched down perpendicular to the rows, and during the landing roll, the main landing gear "sunk" into the soft ground, and the aircraft nosed over coming to rest inverted.

Examination of the aircraft by an FAA inspector revealed that the vertical stabilizer was partially separated, and the fuselage was damaged in the cockpit area. An examination of the aircraft's engine by the inspector revealed that "the #6 cylinder had a preexisting crack."

Pilot Information

Certificate:	Commercial	**Age:**	35,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:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	April 27, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	6317 hours (Total, all aircraft), 2500 hours (Total, this make and model), 6256 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Air Tractor	**Registration:**	N91968
Model/Series:	AT-401 AT-401	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	401-0942
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	August 25, 1999 100 hour	**Certified Max Gross Wt.:**	7860 lbs
Time Since Last Inspection:	100 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3517 Hrs	**Engine Manufacturer:**	P&W
ELT:		**Engine Model/Series:**	R-1340
Registered Owner:	BULLDOG FLYING SERVICE, INC.	**Rated Power:**	600 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	SJDG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(M79)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	
Departure Time:	10:19 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:**	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:**	32.470825,-91.75045(est)

Administrative Information

Investigator In Charge (IIC):	Wigington, Douglas
Additional Participating Persons:	RONALD G FOLKS; BATON ROUGE , LA
Original Publish Date:	April 6, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49432