



Aviation Investigation Final Report

Location:	DERMOTT, Arkansas	Accident Number:	DEN93LA081
Date & Time:	July 15, 1993, 15:00 Local	Registration:	N1009T
Aircraft:	AIR TRACTOR AT-401	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE PILOT HAD JUST FINISHED APPLYING FERTILIZER TO A RICE FIELD AND WAS BANKING TO RETURN TO HIS AIRSTRIP WHEN THE ENGINE SUDDENLY LOST POWER. A FORCED LANDING WAS MADE TO A FLOODED RICE FIELD. WHEN THE WHEELS TOUCHED, THE AIRPLANE SANK INTO THE WATER AND SOFT GROUND AND NOSED OVER. POST-ACCIDENT ENGINE DISASSEMBLY REVEALED EVIDENCE OF A PRE-EXISTING CRACK AND SUBSEQUENT TOTAL FAILURE OF THE MASTER ROD. AN ENGINE OVERHAUL WAS COMPLETED TWO WEEKS PRIOR TO THE ACCIDENT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: POWER LOSS DUE TO THE TOTAL FAILURE OF THE ENGINE'S MASTER ROD. FACTORS WERE AN IMPROPER ENGINE OVERHAUL AND THE LACK OF SUITABLE TERRAIN FOR A FORCED LANDING.

Findings

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

Findings

1. (C) ENGINE ASSEMBLY, MASTER ROD - FAILURE, TOTAL
2. (F) MAINTENANCE, OVERHAUL - IMPROPER - OTHER MAINTENANCE PERSONNEL

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

Occurrence #3: NOSE OVER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

- 3. (F) TERRAIN CONDITION - NONE SUITABLE
- 4. TERRAIN CONDITION - SOFT

Factual Information

On July 15, 1993, at approximately 1500 central daylight time, the pilot of an Air Tractor AT-401, N1009T, made a forced landing in a rice field approximately 4 miles north of Dermott, Arkansas. There were no injuries to the pilot, but the airplane was substantially damaged. Visual meteorological conditions prevailed at the time, and no flight plan was filed for the aerial application flight.

The following is based on the pilot's accident report. The pilot had been applying fertilizer to a rice field. He banked the airplane to return to his airstrip when the engine lost power and he was forced to land in a rice field which had been flooded. When the wheels touched the ground, the airplane sank in the water and soft ground and overturned.

According to the Federal Aviation Administration (FAA) inspector who supervised the engine inspection and disassembly, there was evidence that the master rod had failed. He also found evidence of a pre-existing crack. The nature of the crack could not be determined.

A review of the airplane's maintenance records disclosed the following pertinent entries:

August 18, 1989 - ENGINE MAJOR OVERHAUL

Tachometer - 557.0 hours Engine Total Time - 8,798 hours Remarks - Chrome cylinders installed.

February 5, 1990 - 100-HOUR/ANNUAL INSPECTION

Tachometer - 663.2 hours Engine Total Time - 8,904.2 hours Remarks - Oil drained from engine crankcase and rocker sumps. No metal contamination. Tachometer replaced.

July 27, 1990 - NO. 9 CYLINDER REPLACED WITH OVERHAULED CYLINDER.

Tachometer - 493.0 hours Engine Total Time - 9397.2 hours Remarks - Tachometer replaced.

December 10, 1990 - ENGINE REMOVED FOR OVERHAUL

Tachometer - 38.0 hours Engine Total Time - 9579.2 hours

July 1, 1993 - ENGINE INSTALLED ON N1009T

Tachometer - 0.0 hours Engine Total Time - 9579.2 hours

Pilot Information

Certificate:	Commercial	Age:	45, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Front
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:	February 4, 1993
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	11794 hours (Total, all aircraft), 2964 hours (Total, this make and model), 11630 hours (Pilot In Command, all aircraft), 273 hours (Last 90 days, all aircraft), 120 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AIR TRACTOR	Registration:	N1009T
Model/Series:	AT-401 AT-401	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Limited (Special)	Serial Number:	401-0707
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	September 11, 1992 Annual	Certified Max Gross Wt.:	6000 lbs
Time Since Last Inspection:	50 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2639 Hrs	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	R-1340-AN1
Registered Owner:	DEMAILLY, CHRISTIAN J.F.	Rated Power:	600 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	KOFG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	PBF ,206 ft msl	Distance from Accident Site:	49 Nautical Miles
Observation Time:	14:50 Local	Direction from Accident Site:	308°
Lowest Cloud Condition:	Unknown / 3500 ft AGL	Visibility	7 miles
Lowest Ceiling:	Broken / 3500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	36°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MCGEHEE , AR (NONE)	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:	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:	

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	EARL D NEWBERRY; LITTLE ROCK , AR
Original Publish Date:	September 13, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=11096

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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](#).