



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	COLUMBUS, MS	<b>Accident Number:</b>	MIA92LA076
<b>Date &amp; Time:</b>	02/01/1992, 1429 CST	<b>Registration:</b>	3500Z
<b>Aircraft:</b>	AERO MERCANTIL S.A. GAVILAN 358 EL-1	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Ferry		

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## Analysis

WHILE DESCENDING TO LAND, THE ENG QUIT. ATTEMPTS TO RESTART WERE UNSUCCESSFUL. THE ACFT COLLIDED WITH TREES DURING THE LANDING ROLL FOLLOWING THE FORCED LANDING. THE ACFT WAS RECOVERED & TAKEN TO A FACILITY WHERE THE ENG WAS REMOVED FOR EXAMINATION. EXAMINATION OF THE ENGINE REVEALED THAT THE CRANKSHAFT FAILED NEAR THE REAR MAIN BEARING. ALSO, EVIDENCE INDICATES THAT THE REAR MAIN BEARING SPUN IN ITS SUPPORT AND WAS PARTIALLY EXTRUDED INTO THE ACCESSORY SECTION. EXAMINATION OF THE CRANKCASE HALVES ADJACENT TO THE REAR MAIN BEARING INDICATED FRETTING. THE ENG HAD ACCUMULATED 174 HRS SINCE NEW. METALLURGICAL EXAMINATION OF THE CRANKSHAFT REVEALED THAT IT FAILED DUE TO HIGH CYCLE FATIGUE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FATIGUE FAILURE OF THE CRANKSHAFT DUE TO IMPROPER ENGINE ASSEMBLY BY THE MANUFACTURER.

## Findings

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

### Findings

1. (C) ENGINE ASSEMBLY,CRANKSHAFT - FAILURE,TOTAL
2. (C) MAINTENANCE - IMPROPER - MANUFACTURER
3. (C) ENGINE ASSEMBLY,CRANKSHAFT - FATIGUE

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

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Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT  
Phase of Operation: LANDING - ROLL

### Findings

4. OBJECT - TREE(S)

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	46, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land; Single-engine Sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	04/02/1991
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	13000 hours (Total, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	AERO MERCANTIL S.A.	<b>Registration:</b>	3500Z
<b>Model/Series:</b>	GAVILAN 358 EL-1 GAVILAN 35	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Experimental	<b>Serial Number:</b>	LA-P-001
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	01/02/2000, Unknown	<b>Certified Max Gross Wt.:</b>	4500 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	174 Hours	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, activated	<b>Engine Model/Series:</b>	TIO-540-W2A
<b>Registered Owner:</b>	AERO MERCANTIL S.A.	<b>Rated Power:</b>	350 hp
<b>Operator:</b>	AERO MERCANTIL S.A.	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CBM, 214 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	1400 CST	Direction from Accident Site:	163°
Lowest Cloud Condition:	Thin Overcast / 23000 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	16° C / -2° C
Precipitation and Obscuration:			
Departure Point:	LOCK HAVEN, PA (LHV)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	
Departure Time:	1020 EST	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):	Timothy W Monville	Report Date:	06/30/1993
Additional Participating Persons:	GUSTAVO NIVIA; BOGOTA, OF THOMAS J DUDDY; WILLIAMSPORT, PA KENT PHILLIPS; JACKSON, MS		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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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](#).