



Aviation Investigation Final Report

Location:	TUSAYAN, Arizona	Accident Number:	DCA95MA019
Date & Time:	February 13, 1995, 15:36 Local	Registration:	N27245
Aircraft:	PIPER PA-31-350	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	8 Fatal, 2 Serious
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

The charter flight was on a return tour trip after landing at the Grand Canyon National Park airport. No fueling or maintenance was performed on the airplane while it sat on the ground for three hours. Shortly after takeoff from runway 21, the pilot transmitted that he had a problem and was declaring an emergency. He then stated '...i'm single engine right now....' The airplane was observed to be 100-200 feet above the terrain at the time. It continued flying for about 6 minutes, turning onto a crosswind, downwind, and then a right base leg for runway 21 before colliding with trees about 2.5 miles northeast of the airport. The airport is located in terrain that slopes upward from south to north and west to east. Winds were gusting to 29 knots. The density altitude was 6,870 feet. Examination of the suspect left engine did not reveal any evidence of failures or malfunctions. The investigation revealed deficiencies in the Federal Aviation Administration's oversight of the airline's maintenance program, and in the airline's extension of the time-in-service interval of the engines. The airline's AAIP does not require a maximum rated power check of the engines as required by the engine manufacturer's service instruction. In addition, the TBO of the engines had been extended from 1,800 to 2,400 hours.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: a loss of power on one engine for an undetermined reason(s), and the pilot's improper decision to return to the departure airport for landing which necessitated maneuvering over increasingly higher terrain. Factors in the accident were: the high gusting wind, the high density altitude, the rising terrain, and the reduced single-engine performance capability of the airplane under these conditions.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. 1 ENGINE
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings

3. (F) WEATHER CONDITION - HIGH WIND
4. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
5. (F) TERRAIN CONDITION - RISING
6. (F) AIRCRAFT PERFORMANCE,ENGINE OUT CAPABILITY - DETERIORATED
7. MAINTENANCE,AAIP/PROGRESSIVE PROGRAM - INADEQUATE - COMPANY/OPERATOR MANAGEMENT
8. INADEQUATE SUBSTANTIATION PROCESS - FAA(ORGANIZATION)
9. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND

Factual Information

On February 13, 1995, at 1536 MST, a Piper PA-31-350, N27245, operated by Las Vegas Airlines as flight 45, was destroyed during a forced landing approach at Tusayan, Arizona. The pilot and seven passengers received fatal injuries. Two passengers received serious injuries. The airplane, operating under 14 CFR Part 135 as an on demand charter flight, crashed about 2.5 miles northeast of the Grand Canyon Airport (GCN), Tusayan, Arizona. The flight was enroute to Las Vegas, Nevada. The pilot declared an emergency during the initial climb phase of flight after departure from runway 21.

The aircraft departed GCN at 1429 on a VFR company flight plan for Las Vegas, Nevada, as a return tour flight. Visual meteorological conditions prevailed for the flight. Weather was reported as multiple ceiling layers with 7 miles visibility in rain showers, winds out of 200 degrees at 23 knots gusting to 29 knots, temperature 42 degrees and dew point 37 degrees. According to the ATC records, the airplane declared an emergency due to a loss of engine power. The airplane was not equipped with a CVR or FDR.

After the aircraft landed from its sightseeing flight into the Grand Canyon area, it sat on the ground for 3 hours. No fuel or maintenance was performed on the aircraft before it departed. The operator was on an FAA Approved Airplane Inspection Program (AAIP) and maintenance records revealed that, on February 12, 1995, the engines were inspected in accordance with event number 6 and cycle number 1 of an 8 event 4 cycle maintenance program.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	January 23, 1995
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5086 hours (Total, all aircraft), 480 hours (Total, this make and model), 196 hours (Last 90 days, all aircraft), 72 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N27245
Model/Series:	PA-31-350 PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	31-7752121
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	February 12, 1995 AAIP	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	1 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	13367 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TIO-540-J2BD
Registered Owner:		Rated Power:	350 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	LVAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	GCN ,6606 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	15:35 Local	Direction from Accident Site:	240°
Lowest Cloud Condition:	Scattered / 1800 ft AGL	Visibility	7 miles
Lowest Ceiling:	Broken / 2900 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	23 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	6°C / 3°C
Precipitation and Obscuration:	N/A - None - Rain		
Departure Point:	, AZ (GCN)	Type of Flight Plan Filed:	Company VFR
Destination:	LAS VEGAS , NV (VGT)	Type of Clearance:	VFR
Departure Time:	15:29 Local	Type of Airspace:	Airport advisory area;Class D

Airport Information

Airport:	GRAND CANYON NATL PARK GCN	Runway Surface Type:	Asphalt
Airport Elevation:	6606 ft msl	Runway Surface Condition:	Wet
Runway Used:	21	IFR Approach:	None
Runway Length/Width:	8999 ft / 150 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	7 Fatal, 2 Serious	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	8 Fatal, 2 Serious	Latitude, Longitude:	36.029632,-112.020294(est)

Administrative Information

Investigator In Charge (IIC):	Dickinson, Alfred
Additional Participating Persons:	
Original Publish Date:	December 16, 1996
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=10995

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