



Aviation Investigation Final Report

Location:	McKinleyville, California	Accident Number:	LAX04CA181
Date & Time:	April 7, 2004, 18:15 Local	Registration:	N2609F
Aircraft:	Piper PA-38-112	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The airplane experienced a total loss of engine power and made a forced landing in a field. The pilot departed with full fuel in both tanks (30 gallons), which she thought would be equivalent to 5 hours 13 minutes of flight. The purpose of the 340 nautical mile flight was for the pilot to fulfill the solo cross-country requirements for the commercial pilot certificate. The flight instructor thought that in an effort to satisfy the requirements, the pilot would need to perform a nonstop cross-country leg that was a minimum of 250 nautical miles. During the flight over the mountains terrain, the winds were strong and turbulent. While en route she realized that she had been off course for about 10 minutes, and maneuvered to get the airplane back on course, which took about 20-25 minutes. After getting back on course, about 4 hours en route, the fuel gauges inside the cockpit indicated about 3 gallons of fuel in each tank. After the pilot obtained visual contact with the airport, about 8,500 feet above ground level (agl), the airplane's engine lost power due to fuel exhaustion in the right tank. She configured the airplane for best glide and switched to the left tank in an effort to regain power. The engine started and ran for about 30 seconds, before the power loss recurred again. During the descent, she followed the emergency checklist and glided down for about 5 to 10 minutes. About 1,000 feet agl, she realized that the airplane would not be able to make it to the runway, due to the dense trees in the glide path. She opted to land in a field, and, about 30 feet agl, the engine started again. The airplane climbed to about 40 to 50 feet agl and drifted to the right. The airplane collided with a tree and spun to the ground, landing in an upright position. The total time on the Hobbs meter indicated 4.1 hours for the duration of the flight. The pilot reported no preimpact mechanical malfunctions or failures with the airplane. Title 14 CFR Part 61.129 states that one of the requirements for the commercial license are, "One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: a loss of engine power due fuel exhaustion, which was caused by the pilot's inadequate in-flight planning/decision, inadequate in-flight fuel consumption calculations, and failure to divert to an alternate airport before the fuel situation became critical. Factors in the accident were the pilot becoming lost and disoriented during the flight and the flight instructor's incorrect interpretation of regulations, resulting in inadequate preflight planning.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE

Findings

1. (C) FLUID,FUEL - EXHAUSTION
2. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - FLIGHT INSTRUCTOR(ON GROUND)
3. (F) INTERPRETATION OF INSTRUCTIONS - INCORRECT - FLIGHT INSTRUCTOR(ON GROUND)
4. (F) BECAME LOST/DISORIENTED - INADVERTENT - PILOT IN COMMAND
5. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
6. (C) FUEL CONSUMPTION CALCULATIONS - INADEQUATE - PILOT IN COMMAND
7. (C) FLIGHT TO ALTERNATE DESTINATION - NOT PERFORMED - PILOT IN COMMAND

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings

8. OBJECT - TREE(S)

Factual Information

On April 8, 2004, about 1815 Pacific daylight time, a Piper PA-38-112, N2609F, experienced a total loss of engine power and made a forced landing in field near McKinleyville, California. Golden Eagle Enterprises, Inc., was operating the airplane under the provisions of 14 CFR Part 91. The private pilot, the sole occupant, was not injured; the airplane sustained substantial damage. The instructional cross-country flight departed Fresno Yosemite International Airport, Fresno, California, about 1415, with a planned destination of Arcata Airport (ACV), Arcata/Eureka, California. Visual meteorological conditions prevailed, and a visual flight rules flight plan had been filed.

In a written statement, the pilot reported that she departed Fresno with full fuel in both tanks, which she thought would be equivalent to 5 hours 13 minutes of flight. About 4 hours en route, between Garberville, California, and Arcata, the fuel gauges inside the cockpit indicated about 3 gallons of fuel in each tank. Becoming concerned with her low fuel situation, she requested that Seattle Center give her vectors to the nearest airport. The radio reception was poor, and after several attempts to communicate, she only understood the instructions to proceed to ACV. While receiving vectors, about 10 miles from the airport, she reported having the airport in sight.

After the pilot obtained visual contact with the airport, about 8,500 feet above ground level (agl), the airplane's engine quit due to fuel exhaustion in the right tank. She configured the airplane for best glide and switched to the left tank in an effort to regain power. The engine started and ran for about 30 seconds, before quitting again. During the decent, she followed the emergency checklist and glided down for about 5 to 10 minutes. About 1,000 feet agl, she realized that the airplane would not be able to make it to the runway, due to the dense trees surrounding the airport. She turned the airplane left toward an open sod field, and pitched the nose down, in an effort to make it to the field without colliding with nearby houses and fences.

While approaching the surface, with the airspeed indicating about 100 knots, the pilot thought she would overshoot the field. She maneuvered the airplane to an adjacent field, and, about 30 feet agl, the engine started again. The airplane climbed to about 40 to 50 feet agl and drifted to the right. The airplane collided with a tree and spun to the ground, landing in an upright position. The pilot reported no preimpact mechanical malfunctions or failures with the airplane.

In a telephone conversation with the Safety Board, the pilot reported that during the flight she flew over mountainous terrain where the winds were strong and turbulent. While en route she realized that she had been off course for about 10 minutes, and maneuvered to get the airplane back on course, which took about 20-25 minutes.

In a telephone conversation with the Safety Board, the pilot's certified flight instructor reported that the purpose of the flight was for the pilot to fulfill the solo cross-country requirements for the commercial pilot certificate. He thought that in an effort to satisfy the requirements, the pilot would need to perform a nonstop cross-country leg that was a minimum of 250 nautical miles. The airplane departed with 30 gallons of usable fuel and was destined for Arcata, which was an estimated 340 nautical miles away. He also noted that after the accident, the pilot had called him. The pilot stated that she had become lost during the flight. She estimated that she was off course about 10 nautical miles. The total time on the Hobbs meter indicated 4.1 hours for the duration of the flight.

Title 14 CFR Part 61.129 states that one of the requirements for the commercial license are, "One cross-country flight, if the training is being performed in a State other than Hawaii, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles." It does not state that this leg must be nonstop.

Pilot Information

Certificate:	Private	Age:	27,Female
Airplane Rating(s):	Single-engine land	Seat Occupied:	
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1	Last FAA Medical Exam:	November 13, 2003
Occupational Pilot:		Last Flight Review or Equivalent:	March 6, 2004
Flight Time:	86 hours (Total, all aircraft), 86 hours (Total, this make and model), 69 hours (Last 90 days, all aircraft), 28 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N2609F
Model/Series:	PA-38-112	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	38-79A0194
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:		Engine Model/Series:	O-235 L2C
Registered Owner:	Golden Eagle Enterprises, Inc	Rated Power:	
Operator:		Operating Certificate(s) Held:	None

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:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Fresno, CA (FAT)	Type of Flight Plan Filed:	VFR
Destination:	Arcata, CA (ACV)	Type of Clearance:	VFR flight following
Departure Time:	14:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	Arcata Airport ACV	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Unknown
Runway Used:		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:	
Total Injuries:	1 None	Latitude, Longitude:	40.966667,-124.099998

Administrative Information

Investigator In Charge (IIC):	Rich, Jefferey
Additional Participating Persons:	Denny Pollard; Federal Aviation Administration; Fresno, CA
Original Publish Date:	June 30, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=59023

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