

Aviation Investigation Final Report

Location: CASA GRANDE, Arizona Accident Number: LAX00LA196

Date & Time: May 13, 2000, 13:00 Local Registration: N4148R

Aircraft: Piper PA-32R Aircraft Damage: Substantial

Defining Event: 2 None

Flight Conducted Under: Part 91: General aviation - Instructional

Analysis

The pilot was on a practice instrument approach to the airport and completing the landing checklist procedure. Part of this procedure was to switch to the tank with the most fuel. The student switched the fuel selector to the "off" position inadvertently. The engine lost power and the instructor directed the student to then read off the emergency checklist. Engine power did not return because the student omitted the checklist item to place the fuel selector in the fullest tank, having already switched to the fullest tank. A forced landing off the airport ensued and the fuel selector remained off. The investigation revealed a bend in the fuel selector stop arm, which allowed the selector to travel to the off position.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's inadvertant movement of the fuel selector to the "off" positon when selecting the alternate tank, and the flight instructor's lack of verification that the fuel selector was in the proper position during the emergency procedure checklist. A factor was the worn fuel selector "off" detent that allowed inadvertent movement of the fuel selector to the "off" position.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: APPROACH

Findings

1. (C) FUEL SYSTEM, SELECTOR/VALVE - WORN

2. (C) FUEL TANK SELECTOR POSITION - IMPROPER - PILOT IN COMMAND(CFI)

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

3. (C) CHECKLIST - NOT FOLLOWED - PILOT IN COMMAND(CFI)

4. (C) FUEL TANK SELECTOR POSITION - NOT VERIFIED - PILOT IN COMMAND(CFI)

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: EMERGENCY LANDING

Findings

5. (C) TERRAIN CONDITION - ROADWAY/HIGHWAY

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Factual Information

On May 13, 2000, at 1300 hours mountain standard time, a Piper PA-32R, N4148R, lost engine power and made a forced landing on a highway near Casa Grande, Arizona. The aircraft sustained substantial damage; however, the certified flight instructor and student were not injured. The aircraft was being operated as an instructional flight by Sabena Airline Training Center, Inc., under 14 CFR Part 91 when the accident occurred. The flight originated from Scottsdale airport in Scottsdale, Arizona, about 1145. Visual meteorological conditions prevailed at the time and no flight plan was filed.

In a telephone interview, the flight instructor said that the student, who was under the hood, was preparing to execute an approach to Casa Grande Municipal Airport. Part of the landing checklist included switching the fuel selector to the fullest tank; however, the student inadvertently switched the selector to the "off" position. When the engine quit, the student verbalized the emergency checklist items sequentially to the instructor who performed the required actions. The student omitted the first item (switch to fullest tank) because of having already switched.

The instructor was unable to restart the engine within the time and altitude remaining and executed a forced landing on Highway 84 near the intersection with Bianca Road. During the landing, the right flap struck a cement bridge stanchion and the left wing struck a tree.

Once on the ground, the instructor identified the fuel selector as having been in the "off" position.

A recommendation for accident prevention was prepared by the Federal Aviation Administration (FAA) Flight Standards Division Manager in Arizona. According to the FAA report, the fuel selector stop is mounted on a plastic center fuel panel on the floor between the pilot and co-pilot seats. Upon removal of the panel, it was found that the stop for the steel spring arm was bent, allowing the selector to travel to the "off" position. No action to press it down as a separate and distinct action resulted. The bend was not evident while the panel was mounted in place. The design of the fuel selector, part number 69654-22, for the Piper Saratoga and all like components were to be evaluated. The current design provided a positive stop, but was not designed to prevent improper use and eventual wear.

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Pilot Information

Certificate:	Commercial; Flight instructor	Age:	24,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medicalno waivers/lim.	Last FAA Medical Exam:	November 2, 1999
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	830 hours (Total, all aircraft), 69 hours (Total, this make and model), 711 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 70 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	Age:	Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medicalw/ waivers/lim	Last FAA Medical Exam:	April 7, 2000
Occupational Pilot:	No	Last Flight Review or Equivalent:	March 26, 2000
Flight Time:	116 hours (Total, all aircraft), 17 hou Command, all aircraft)	urs (Total, this make and model), 50 ho	ours (Pilot In

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Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N4148R
Model/Series:	PA-32R PA-32R	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	Continuous airworthiness	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:		Engine Model/Series:	10-540-KIG-5
Registered Owner:	SABENA	Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:	SABENA AIRLINE TRAINING CENTER	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CGZ	Distance from Accident Site:	
Observation Time:	12:55 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.92 inches Hg	Temperature/Dew Point:	31°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SCOTTSDALE, AZ (SDL)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	11:45 Local	Type of Airspace:	Class G

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Airport Information

Airport:	Scottsdale SDL	Runway Surface Type:	Asphalt
Airport Elevation:	1510 ft msl	Runway Surface Condition:	Dry
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

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Administrative Information

Investigator In Charge (IIC):	Crispin, Robert
Additional Participating Persons:	LAWRENCE M JONES; FAA FSDO; SCOTTSDALE, AZ
Original Publish Date:	December 6, 2002
Last Revision Date:	
Investigation Class:	<u>Class</u>
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49191

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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.

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