Aviation Investigation Final Report

Location:	PEORIA, Illinois	**Accident Number:**	CHI98LA097
Date & Time:	February 23, 1998, 08:15 Local	**Registration:**	N54231
Aircraft:	Piper PA-23-250	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot said his left engine was overheating during a climb to cruise altitude at which time he determined that he left the cowl plugs in the engine's cowl opening. The pilot shut the engine down and returned to the airport. During the instrument approach the pilot attempted to extend the landing gear and flaps. While on a 1-mile final approach the tower advised the pilot to go- around because the landing gear wasn't fully extended. The pilot said the airplane was past mid-field before he applied power to go-around. He said the airplane continued to descend prior to entering a stall/mush. The airplane collided with a taxiway and slid onto a grass area. The on-scene investigation revealed no anomalies with the normal and emergency hydraulic systems. The CO2-operated emergency landing gear extension system was capable of functioning. It had not been used. The flaps were found in the full 'DOWN' position.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: an improper preflight inspection of the airplane by the pilot and the inadvertant stall/mush which was encountered. A factor associated with this accident was the pilot's decision to continue to use the emergency hydraulic hand pump rather than the CO2 bottle to extend the landing gear which resulted in the landing gear not fully extending.

Findings

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

Findings
1. 1 ENGINE
2. COOLING SYSTEM,COWLING - BLOCKED(TOTAL)
3. (C) AIRCRAFT PREFLIGHT - IMPROPER - PILOT IN COMMAND
4. POWERPLANT - OVERTEMPERATURE
5. ENGINE SHUTDOWN - INTENTIONAL - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: GO-AROUND (VFR)

Findings
6. (F) GEAR DOWN AND LOCKED - NOT OBTAINED - PILOT IN COMMAND
7. GO-AROUND - ATTEMPTED - PILOT IN COMMAND
8. (C) STALL/MUSH - ENCOUNTERED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

On February 23, 1998, at 0815 central standard time (cst), a Piper PA-23-250, N54231, operated as Prompt Air Flight 179, and piloted by a commercial pilot, was substantially damaged when it collided with the ground following a pilot-described stall/mush during a single-engine go-around maneuver. The 14 CFR Part 135 flight was operating on an IFR flight plan. Instrument meteorological conditions prevailed at the time of the accident. The pilot reported no injuries. The flight departed Peoria, Illinois, at 0748 cst.

According to the pilot's written statement, the airplane was climbing past "...4,000 feet, and at that point I noticed the left engine [temperature] go past the redline on the CHT [cylinder head temperature] gage. I realized the cowl plugs were in there." He said the company cowl plugs were gray with no ropes or streamers attached to them.

The pilot said he reduced the power to idle and eventually shut the engine down, feathering the propeller. He said he attempted to restart the engine "...several times while intercepting the localizer." The engine would not, and did not restart. The pilot said he attempted to extend the landing gear while on the localizer and realized it would not extend unless the flaps were partially extended. He said he selected "...the first notch of flaps..." and realized the landing gear did not extend. While on a 1-mile final approach to the landing runway, the pilot said, he was pumping the landing gear down. The pilot reported that while at the runway threshold the tower told him to go-around because the landing gear was not down. He stated he continued pumping.

The pilot said the airplane was past the midfield position when he, "...realized the gear still [wasn't] down... ." He said he applied full power to the right engine with the intention of going around. The pilot said the right engine "...wouldn't develop enough power to permit a go-around" and "... a gear up landing was necessary to avoid a loss of directional control." The pilot said the airplane continued to descend, ultimately entering a stall/mush and uncontrolled descent into a taxiway. The airplane slid onto the clearway grass.

According to the Piper PA-23-250 pilot's operating handbook (POH), the landing gear can be extended using 3 methods: Normal, and emergency system that has 2 procedures available to the pilot: An emergency hand pump and CO2 driven system. The landing flaps are extended only by the emergency hydraulic hand pump. The POH says that the landing gear or flaps can be extended by "...placing the pertinent selector handle in the down position and operating the manual pump... ." The Federal Aviation Administration Principal Maintenance Inspector who examined the airplane said that if the flap extension handle is placed into the "extend" position first, and the landing gear extension handle is placed into the "extend" position afterwards, the flaps will extend to the chosen setting before the landing gear begins to extend.

The investigation revealed that the landing gear horn functioned when the throttle was placed into the "Idle" position. The landing gear "Green" lights, showing landing gear fully extended and locked in the "Down" position, were illuminated for the left main landing gear. The nose gear assembly was partially out of its well, but jammed between the fuselage and trailer the airplane was resting on. The right main landing gear was broken free from the airframe. The wiring related to the gear "Down" light had separated from the wheel well attach points.

The main and emergency hydraulic systems did not have any leaks in them. The emergency hand pump and system operated to the airplane manufacturer's specifications. The flaps were found in the "full" down position.

According to the pilot's employer records, the pilot was hired on July 15, 1996. He received his 14 CFR Part 135 proficiency check in the Piper PA-23-250 on September 9, 1997, after a 1.8 hour flight test. Company records showed the pilot had received 15 hours of airplane transition training ground school that was completed on September 8, 1997. Flight training in the PA-23-250 occurred on September 2, 7, and 8, 1997, for a total of 5.3 hours.

Pilot Information

Certificate:	Commercial	**Age:**	31,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):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 11, 1997
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2700 hours (Total, all aircraft), 125 hours (Total, this make and model), 2620 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 65 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N54231
Model/Series:	PA-23-250 PA-23-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	27-7554025
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	December 20, 1997 100 hour	**Certified Max Gross Wt.:**	5200 lbs
Time Since Last Inspection:	81 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	6656 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	IO-540
Registered Owner:	GAIL FORCE, INC.	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	QGKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PIA ,660 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	07:54 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Clear	**Visibility**	2 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	1°C / 1°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	(PIA)	**Type of Flight Plan Filed:**	IFR
Destination:	(PIA)	**Type of Clearance:**	IFR
Departure Time:	07:48 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	GREATER PEORIA REG. PIA	**Runway Surface Type:**	Asphalt
Airport Elevation:	660 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	13	**IFR Approach:**	ILS
Runway Length/Width:	10000 ft / 150 ft	**VFR Approach/Landing:**	Full stop

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:**	40.630611,-89.689979(est)

Administrative Information

Investigator In Charge (IIC):	Gattolin, Frank
Additional Participating Persons:	ROBERT SCOTT; SPRINGFIELD , IL
Original Publish Date:	February 16, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=10831