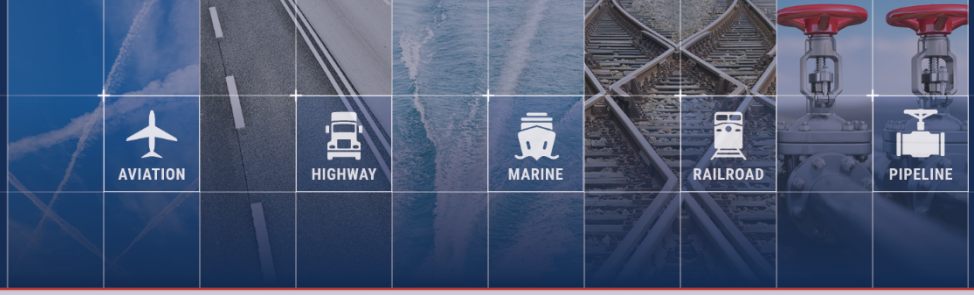

Aviation Investigation Final Report

Location:	TALKEETNA, Alaska	**Accident Number:**	ANC99LA083
Date & Time:	June 29, 1999, 16:30 Local	**Registration:**	N126KT
Aircraft:	Cessna TU206	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	5 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

In cruise flight, about 2,000 feet above ground level, the pilot noticed fuel flow fluctuations, followed by a total loss of engine power. He switched fuel tanks, and placed the mixture control to the FULL RICH position. The pilot kept the electric fuel pump activated, alternately placing the fuel boost pump switch in the HIGH position, and then the LOW position. The pilot described the engine as alternately running for a few seconds, then losing power. He determined the airplane would not reach the airport, so he performed a forced landing on an off airport gravel bar. Postaccident inspection revealed the right fuel tank was empty, and the left fuel tank contained about 25 gallons of fuel. The engine was started and operated normally. The Cessna U206 pilot operating manual states: 'To ensure a prompt engine restart in-flight after running a fuel tank dry, immediately switch to the tank containing fuel at the first indication of fuel pressure fluctuation and/or power loss. Then place the right half of the auxiliary fuel pump switch in the ON position momentarily (3 to 5 seconds) with the throttle at least 1/2 open. Excessive use of the ON position at high altitude and full rich mixture can cause flooding of the engine as indicated by a short (1 to 2 seconds) period of power followed by a loss of power. This can be detected by a fuel flow indication accompanied by a lack of power. If flooding does occur, turn off the auxiliary fuel pump switch, and normal propeller windmilling should start the engine in 1 to 2 seconds.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot not following emergency procedures, and improper use of the electric fuel boost pump, while attempting to restart the engine in flight. A factor associated with this accident was the inadequate fuel consumption calculations by the pilot.

Findings

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

Findings
1. (F) FUEL CONSUMPTION CALCULATIONS - INADEQUATE - PILOT IN COMMAND
2. (C) FUEL BOOST PUMP SELECTOR POSITION - IMPROPER USE OF - PILOT IN COMMAND
3. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND

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

Findings
4. TERRAIN CONDITION - SAND BAR

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
5. TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT

Factual Information

On June 29, 1999, about 1630 Alaska daylight time, a Cessna TU206 airplane, N126KT, sustained substantial damage during a forced landing about four miles northwest of the Talkeetna Airport, Talkeetna, Alaska. The commercial pilot and the four passengers aboard were not injured. The airplane was being operated by K2 Adventures, Inc., of Talkeetna, under 14 CFR Part 135, as a local air tour flight. The flight departed Talkeetna at 1505. Visual meteorological conditions prevailed at the time of the accident, and a company VFR flight plan was filed.

The pilot told the NTSB investigator-in-charge (IIC) during a telephone interview on June 29, that the flight was about 14 miles northwest of the airport, in cruise flight at 2,000 feet above ground level. The pilot said he noticed fuel flow fluctuations, followed by a total loss of engine power. He stated that he switched the fuel selector valve handle to the left fuel tank position, and turned on the electric fuel boost pump. He said that he kept the electric fuel pump activated, alternately placing the fuel boost pump in the HIGH position, then the LOW position. The pilot indicated that he kept the mixture control in the FULL RICH position, and did not turn the electric boost pump switch to the OFF position. He described the engine as alternately running for a few seconds, and then losing power. The pilot determined he would not reach the airport, and selected an off airport gravel bar for a forced landing. The airplane touched down on the gravel, and came to rest on the river bank, damaging the underside of the fuselage.

The airplane was airlifted to the Talkeetna Airport on June 30, where it was inspected by a company mechanic and an FAA airworthiness inspector. The fuel selector valve handle was found selected to the left fuel tank position. The right fuel tank was empty, and the left fuel tank contained about 25 gallons of fuel. The engine was started and operated normally. The fuel boost pump operated in both the HIGH and LOW position. The fuel system was pressurized by the electric fuel boost pump with the engine not operating, and no fuel leaks were observed.

The Cessna U206G Pilot Operating Handbook, section 7, page 7-26, contains the following statement: "To ensure a prompt engine restart in-flight after running a fuel tank dry, immediately switch to the tank containing fuel at the first indication of fuel pressure fluctuation and/or power loss. Then place the right half of the auxiliary fuel pump switch in the ON position momentarily (3 to 5 seconds) with the throttle at least 1/2 open. Excessive use of the ON position at high altitude and full rich mixture can cause flooding of the engine as indicated by a short (1 to 2 seconds) period of power followed by a loss of power. This can be detected by a fuel flow indication accompanied by a lack of power. If flooding does occur, turn off the auxiliary fuel pump switch, and normal propeller windmilling should start the engine in 1 to 2 seconds."

Pilot Information

Certificate:	Commercial	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 28, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2763 hours (Total, all aircraft), 139 hours (Total, this make and model), 2708 hours (Pilot In Command, all aircraft), 179 hours (Last 90 days, all aircraft), 104 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N126KT
Model/Series:	TU206 TU206	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	U20604967
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 7, 1999 100 hour	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	73 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4460 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-520-M7
Registered Owner:	RUST AIR, INC.	**Rated Power:**	310 Horsepower
Operator:	K2 ADVENTURES, INC.	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	K2IC

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TKA ,358 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	15:53 Local	**Direction from Accident Site:**	140°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	18°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	, AK (TKA)	**Type of Flight Plan Filed:**	Company VFR
Destination:	(TKA)	**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	4 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	5 None	**Latitude, Longitude:**	62.449684,-149.790542(est)

Administrative Information

Investigator In Charge (IIC):	Thomas, Matthew
Additional Participating Persons:	GRANT W CHAPMAN(FAA FSDO); ANCHORAGE , AK
Original Publish Date:	June 23, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46712