



National Transportation Safety Board Aviation Accident Final Report

Location:	SUPERIOR TWNHP, MI	Accident Number:	CHI95LA257
Date & Time:	08/02/1995, 1130 EDT	Registration:	N46YK
Aircraft:	Nanchang 18A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None

Flight Conducted Under: Part 91: General Aviation - Personal

Analysis

THE PILOT REPORTED THAT AFTER TAKEOFF, HE REMAINED AT A LOW ALTITUDE TO MANEUVER AROUND CLASS B AIRSPACE. ABOUT TEN MINUTES INTO THE FLIGHT, 'THE FUEL PRESSURE DROPPED TO ZERO' AND THE ENGINE LOST POWER. DURING THE FORCED LANDING, THE 'GEAR CAUGHT IN MUD,' COLLAPSED AND THE AIRPLANE NOSED OVER. IN HIS WRITTEN STATEMENT, THE PILOT REPORTED THAT 'PRIOR TO TAKEOFF, ON SEVERAL PREVIOUS FLIGHTS, FUEL SELECTOR WAS HARD TO MOVE.' EXAMINATION OF THE FUEL SYSTEM REVEALED NO EVIDENCE OF PREIMPACT MALFUNCTION. THE FUEL SELECTOR VALVE FUNCTIONED NORMALLY WHEN TESTED, HOWEVER, THE VALVE WAS VERY DIFFICULT TO OPERATE FROM THE PILOT'S SEAT. IT WAS POSITIONED NEAR THE FRONT LEFT CORNER OF THE SEAT, AND ACCORDING TO A FEDERAL AVIATION ADMINISTRATION INSPECTOR, WAS 'DIFFICULT TO MANIPULATE, AND IT WAS DIFFICULT TO DETERMINE WHICH TANK WAS SELECTED OR IF THE VALVE WAS IN THE PROPER POSITION.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's operation of the airplane with a known deficiency in the fuel selector, and his improper positioning of the fuel selector. A factor relating to the accident was: the fuel selector's restriction of movement.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: CRUISE

Findings

1. (F) FUEL SYSTEM,SELECTOR/VALVE - MOVEMENT RESTRICTED
2. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - PERFORMED - PILOT IN COMMAND
3. (C) FUEL TANK SELECTOR POSITION - IMPROPER - PILOT IN COMMAND

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: GEAR COLLAPSED

Phase of Operation: EMERGENCY LANDING

Findings

4. TERRAIN CONDITION - SOFT
5. TERRAIN CONDITION - WET

Factual Information

On August 2, 1995, at 1130 eastern daylight time, a Nanchang Yak 18A, operated by Rensselaer Learning Systems, Inc., sustained substantial damage during a forced landing in Superior Township, Michigan. The commercial pilot reported no injuries. The personal flight originated in Plymouth, Michigan a few minutes prior to the accident with a planned destination of Rochester, New York. The 14 CFR Part 91 flight was conducted in visual meteorological conditions and no flight plan was filed.

The pilot reported that he filled all three fuel tanks prior to takeoff. After takeoff, he remained at a low altitude to maneuver around class B airspace. About ten minutes into the flight, "the fuel pressure dropped to zero" and the engine lost power. He did not move the fuel selector because he thought he had selected the fuselage tank, the higher of the three. He extended the landing gear, "turned everything off except the ELT," and conducted a forced landing. During the landing, the "gear caught in mud," collapsed and the airplane nosed over.

In his written statement, the pilot reported that "prior to takeoff, on several previous flights, fuel selector was hard to move."

A Federal Aviation Administration (FAA) Inspector who examined the wreckage reported that all three fuel tanks were nearly full. Examination of the fuel system revealed no evidence of preimpact malfunction. Fuel supply lines from the tanks to the engine were intact and contained fuel. The fuel quantity in the 2.5 gallon header tank was not determined. The vent system was clear and the fuel pump operated when it was tested. He reported that the fuel selector valve position was indeterminate. The valve functioned normally when tested, however, the valve was very difficult to operate from the pilot's seat. It was positioned near the front left corner of the pilot's seat and was "difficult to manipulate and it was difficult to determine which tank was selected or if the valve was in the proper position."

Pilot Information

Certificate:	Commercial	Age:	62
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	02/15/1995
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2474 hours (Total, all aircraft), 175 hours (Total, this make and model), 2227 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Nanchang	Registration:	N46YK
Model/Series:	18A 18A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Experimental	Serial Number:	2751232
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	06/01/1995, Annual	Certified Max Gross Wt.:	3100 lbs
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:	4000 Hours	Engine Manufacturer:	VORONEZH
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	M-14P
Registered Owner:	RENSELAER LEARNING SYSTEMS	Rated Power:	360 hp
Operator:	RENSELAER LEARNING SYSTEMS	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	7 Miles
Lowest Ceiling:	Overcast / 2000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	21 °C
Precipitation and Obscuration:			
Departure Point:	PLYMOUTH, MI (1D2)	Type of Flight Plan Filed:	None
Destination:	BATAVIA, NY (3G8)	Type of Clearance:	VFR
Departure Time:	1120 EDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): WESLEY M ROBBINS **Report Date:** 03/21/1996

Additional Participating Persons: JUAN C THOMPSON; BELLEVILLE, MI

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).