



Aviation Investigation Final Report

Location:	Fairbanks, Alaska	Accident Number:	ANC07LA081
Date & Time:	August 15, 2007, 16:30 Local	Registration:	N56568
Aircraft:	Maule M-7-235	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

A flight instructor (CFI) was giving a flight review to a private pilot, in the private pilot's airplane. The airplane had an annual inspection during which the elevator was removed and replaced, and this was the first flight since the repairs. The CFI said that during the takeoff roll, as soon as the private pilot moved the yoke aft, the airplane nosed over, and came to rest inverted. An FAA inspector did a postaccident inspection, revealing that the elevator cables were connected backwards, reversing the control yoke actions, and resulting in down elevator when the yoke was pulled aft. The CFI reported that he and the private pilot did a preflight inspection of the airplane, but failed to check for the correct travel of the airplane's elevator. In his written statement to the NTSB, the CFI wrote, in part: "The elevator is hard or impossible to see while being buckled in the aircraft, but [it] should have been discovered."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The reversal of the elevator control cables by maintenance personnel, and the inadequate preflight inspection by the flight instructor and dual student.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (C) FLT CONTROL SYST,ELEVATOR CONTROL CABLE/ROD - REVERSED
2. (C) MAINTENANCE,INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL
3. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - DUAL STUDENT
4. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND(CFI)

Occurrence #2: NOSE OVER

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

5. TERRAIN CONDITION - RUNWAY

Factual Information

On August 15, 2007, about 1630 Alaska daylight time, a Maule M-7-235 airplane, N56568, sustained substantial damage when it nosed over during takeoff from the Chena Marina Airport, Fairbanks, Alaska. The airplane was being operated as a visual flight rules (VFR) local area instructional flight under Title 14, CFR Part 91 when the accident occurred. The certificated flight instructor (CFI) sustained serious injuries, and the private pilot sustained minor injuries. Visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed.

A Federal Aviation Administration (FAA) airworthiness inspector from the Fairbanks Flight Standards District Office responded to the accident scene shortly after the accident, and examined the airplane prior to recovery efforts. The FAA inspector reported that rescue personnel who had talked to the pilot shortly after the accident, before he was transported to the hospital, said that the pilot told them that he was beginning his takeoff run, and as soon as the control yoke was pulled aft to fly off the runway, the airplane nosed over. The airplane came to rest inverted, sustaining substantial damage to the wings, vertical stabilizer, and both wing lift-struts.

The FAA inspector reported that a postaccident inspection revealed the elevator cables were connected backwards, reversing the control yoke actions, and resulting in down elevator when the yoke was pulled aft. He said that a review of the airplane's maintenance logs disclosed that the airplane's elevator cables had been replaced during a previous annual inspection.

In his written statement to the NTSB dated September 15, 2007, the CFI reported that at the time of the accident, he was giving a flight review to the airplane's owner, a private pilot. He said that the accident airplane had two annual inspections within the last two years, during which the elevator had been removed and replaced. The airplane had not been flown since either of the annual inspections. The most recent annual inspection was on August 9, 2007, 6 days before the accident. The CFI reported that he, along with the private pilot, did a preflight inspection of the airplane before the accident flight, but he said that he did not specifically check for the correct travel of the airplane's elevator. He wrote, in part: "The elevator is hard or impossible to see while buckled in the aircraft, but [it] should have been discovered."

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	58, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	February 1, 2007
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 1, 2006
Flight Time:	1103 hours (Total, all aircraft), 1 hours (Total, this make and model), 967 hours (Pilot In Command, all aircraft), 46 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	Age:	41, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	November 1, 2006
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 1, 2006
Flight Time:	375 hours (Total, all aircraft), 275 hours (Total, this make and model), 0 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Maule	Registration:	N56568
Model/Series:	M-7-235	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	4012C
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	August 1, 2007 Annual	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:	0 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1745.3 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	IO-540-W1A5D
Registered Owner:	Todd J. Summey	Rated Power:	235 Horsepower
Operator:	Richard F. Sterling	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	FAI,434 ft msl	Distance from Accident Site:	
Observation Time:	16:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Few / 1500 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 9000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.88 inches Hg	Temperature/Dew Point:	16°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fairbanks , AK (AK28)	Type of Flight Plan Filed:	None
Destination:	(AK28)	Type of Clearance:	None
Departure Time:	16:30 Local	Type of Airspace:	

Airport Information

Airport:	Chena Marina Airport AK28	Runway Surface Type:	Gravel
Airport Elevation:	427 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	4700 ft / 60 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor	Latitude, Longitude:	64.8138888888889,- 147.918333333333

Administrative Information

Investigator In Charge (IIC):	Johnson, Clinton
Additional Participating Persons:	Kenneth C Thomas ; Federal Aviation Administration; Fairbanks , AK
Original Publish Date:	April 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66452

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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](#).