



Aviation Investigation Final Report

Location:	Bakersfield, California	Incident Number:	LAX01IA241
Date & Time:	June 27, 2001, 10:10 Local	Registration:	N808NH
Aircraft:	Beech A36	Aircraft Damage:	None
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

During the landing approach on an instructional flight, the certified flight instructor (CFI) initiated a go-around and experienced restricted elevator control movement. The elevator control became partially jammed in a nose low and then a nose high position. Roll and yaw control was not affected. Using considerable force, the CFI maintained airplane control and landed without additional incident. Thereafter, the airplane was inspected. Evidence of mechanical binding to the elevator pitch control cables was noted. Specifically, a screwdriver was found wedged between the nose gear actuator retract rod and the elevator control cables beneath the forward spar cover, between and under the pilots' seats. When the nose gear retracted, the nose gear actuator retract rod moved the screwdriver against the elevator control cable resulting in binding. Upon removal of the screwdriver, the elevator operation was normal. Two days prior to the incident, a contract mechanic had performed maintenance on the airplane. The maintenance required taking off the forward spar cover to allow removal and installation of a flap motor gearbox assembly and flap flex drives. Since this maintenance, the airplane had been operated 5.8 flight hours.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: During landing approach, mechanical binding of the elevator control cable occurred due to a contract mechanic's improper maintenance.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: GO-AROUND (VFR)

Findings

1. (C) FLT CONTROL SYST,ELEVATOR CONTROL CABLE/ROD - BINDING(MECHANICAL)
2. (C) MAINTENANCE,SERVICE OF AIRCRAFT/EQUIPMENT - IMPROPER - OTHER MAINTENANCE PERSONNEL

Factual Information

On June 27, 2001, at 1010 Pacific daylight time, a Beech A36, N808NH, experienced restricted elevator control movement while performing a go-around at Meadows Field, Bakersfield, California. International Flight Training Academy was operating the airplane under the provisions of 14 CFR Part 91. The certified flight instructor (CFI), dual student, and two passengers were not injured. The local instructional flight departed Bakersfield at 0921. Visual meteorological conditions prevailed, and no flight plan had been filed.

According to the CFI, during the incident flight the student was performing an approach to Meadows Field when air traffic control tower personnel instructed the airplane pilot to go around. Due to the student's delayed response, the CFI stated that he assumed control of the airplane and initiated the go-around. While reconfiguring the airplane, the nose came up too high, and holding forward pressure on the control wheel and pitch trim reduction seemed ineffective. The CFI indicated that he applied additional force to the elevator control, the controls freed, and the nose abruptly pitched down and became jammed in a nose low attitude. The CFI again pulled back with great force, the elevator control freed, and the nose came up to an excessively nose-up pitch attitude. The oscillation continued for about three to four cycles. Roll and yaw controls were not affected. The CFI indicated that he successfully maintained control of the airplane and landed in a flaps up configuration.

A post-incident inspection of the airplane revealed no pitch trim abnormalities. However, the elevator exhibited evidence of mechanical binding. A more detailed inspection revealed that a screwdriver had been left under the airplane's floor in proximity to control cables. Specifically, a 10-inch-long screwdriver was found wedged between the nose gear actuator retract rod and the elevator control cables beneath the forward spar cover, between and under the pilots' seats. As the nose gear retracted, the nose gear actuator retract rod moved the screwdriver against the elevator control cable resulting in binding. When the screwdriver was removed, the elevator operation was normal.

A record review revealed that on June 25, 2001, a contract mechanic had performed maintenance on the airplane. The maintenance required taking off the forward spar cover to allow removal and installation of a flap motor gearbox assembly and flap flex drives. Since this maintenance, the airplane had been operated 5.8 flight hours.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	26, Male
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:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	May 15, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 16, 2001
Flight Time:	1164 hours (Total, all aircraft), 51 hours (Total, this make and model), 1045 hours (Pilot In Command, all aircraft), 92 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	26, Male
Airplane Rating(s):	None	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 None	Last FAA Medical Exam:	March 12, 2001
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	15 hours (Total, all aircraft), 15 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N808NH
Model/Series:	A36	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	E-2817
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	June 25, 2001 Continuous airworthiness	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:	6 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3999 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-550B-6F
Registered Owner:	ANA Trading Corp.	Rated Power:	300 Horsepower
Operator:	International Flight Training Academy, Inc.	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	I8FV

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	BFL, 507 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	09:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.04 inches Hg	Temperature/Dew Point:	25°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BAKERSFIELD, CA (BFL)	Type of Flight Plan Filed:	None
Destination:	Bakersfield, CA (BFL)	Type of Clearance:	VFR
Departure Time:	09:21 Local	Type of Airspace:	Class D

Airport Information

Airport:	Meadows Field BFL	Runway Surface Type:	Asphalt
Airport Elevation:	507 ft msl	Runway Surface Condition:	Dry
Runway Used:	30L	IFR Approach:	None
Runway Length/Width:	3700 ft / 75 ft	VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	None
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	35.433612,-119.056945

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	David Lehman; FAA Flight Standards Dist Office; Fresno, CA
Original Publish Date:	February 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this incident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=52692

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