



## National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	WEST COLUMBIA, SC	<b>Accident Number:</b>	ATL88FA186
<b>Date &amp; Time:</b>	05/25/1988, 2106 EDT	<b>Registration:</b>	N8493A
<b>Aircraft:</b>	CESSNA 402B	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 135: Air Taxi & Commuter - Non-scheduled		

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### Analysis

THE AIRPLANE USED ABOUT 1/2 OF THE 8,602 FT RWY FOR THE T/O ROLL. AFTER T/O IT PITCHED NOSE-DOWN BRIEFLY OVER THE RWY DURING INIT CLIMB. THE PLT RADIOED THAT HE WAS HAVING A PROBLEM WITH THE ELEVATOR WHICH REQUIRED 'FULL BACK PRESSURE' TO KEEP THE NOSE UP, AND THAT HE WAS RETURNING TO LAND. AFTER MANEUVERING AROUND THE ARPT, THE ACFT PITCHED 70-80 DEG NOSE DN AND DOVE INTO TERRAIN OFF THE APPCH END OF THE RWY. THE WRECKAGE EXAM REVEALED THAT THE BOLT SECURING THE ELEVATOR TRIM TAB PUSHROD TO THE ACTUATOR WAS MISSING. THE ROD HAD BECOME WEDGED INSIDE THE ELEVATOR WHICH RESULTED IN AN EXTREME TAB UP (NOSE DN) CONDITION. THE ACFT UNDERWENT AN ANNUAL INSP 2 DAYS/5 FLT HRS EARLIER. THE IA MECH RPTD THAT NO MAINT WAS PERFORMED ON THE TAB SYS, AND THAT HE WAS CERTAIN THE BOLT WAS PROPERLY SAFETIED. ANOTHER PLT WHO FLEW THE ACFT THE DAY OF THE ACCIDENT RPTD THAT HE FOUND THE PUSHROD TO BE SECURE DURING HIS PREFLT INSP. THE 402B POH INDICATED THAT THE ACFT SHOULD HAVE REQ ABOUT 1,200 FT FOR THE T/O GROUND ROLL.

### Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

## Findings

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Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: TAKEOFF

### Findings

1. (C) FLT CONTROL SYST,ELEVATOR TRIM/TAB CONTROL - DISCONNECTED
  2. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND
  3. (C) FLIGHT CONTROL,ELEVATOR TAB - JAMMED
  4. (F) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND
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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: MANEUVERING

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

## Factual Information

### Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	23, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	10/27/1987
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>		
<b>Flight Time:</b>	1400 hours (Total, all aircraft), 160 hours (Total, this make and model), 1255 hours (Pilot In Command, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N8493A
<b>Model/Series:</b>	402B 402B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	402B0236
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	05/23/1988, Annual	<b>Certified Max Gross Wt.:</b>	6300 lbs
<b>Time Since Last Inspection:</b>	5 Hours	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	5672 Hours	<b>Engine Manufacturer:</b>	CONTINENTAL
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TSIO-520-E
<b>Registered Owner:</b>	SKYGO, INC	<b>Rated Power:</b>	300 hp
<b>Operator:</b>	NAPIER AIR SERVICE, INC.	<b>Operating Certificate(s) Held:</b>	On-demand Air Taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	EUUA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	CAE, 2 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	2112 EDT	Direction from Accident Site:	110°
Lowest Cloud Condition:	Scattered / 4000 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 7500 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	18° C / 16° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	ATLANTA, GA (ATL)	Type of Clearance:	IFR
Departure Time:	2103 EDT	Type of Airspace:	Class D

## Airport Information

Airport:	COLUMBIA METRO (CAE)	Runway Surface Type:	Asphalt
Airport Elevation:	236 ft	Runway Surface Condition:	Dry
Runway Used:	11	IFR Approach:	None
Runway Length/Width:	8602 ft / 150 ft	VFR Approach/Landing:	Traffic Pattern

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	SCOTT STRICKLAND	Report Date:	12/06/1989
Additional Participating Persons:	THOMAS CONWAY; WEST COLUMBIA, SC DAVID SEXTON; WEST COLUMBIA, SC JOHN MOELLER; MOBILE, AL STEVE ALSOBROOK		
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 <a href="mailto:pubinquiry@ntsb.gov">pubinquiry@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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