



National Transportation Safety Board Aviation Accident Data Summary

Location:	TOMS RIVER, NJ	Accident Number:	NYC89FA093
Date & Time:	03/01/1989, 1951 EST	Registration:	N40978
Aircraft:	PIPER PA-31-350	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation -		

Analysis

THE ACFT WAS CRUISING AT 8500 FT WHEN IT EXPERIENCED AN INFLT LOSS OF CONTROL. THE PLT SAID THE AUTOPILOT PITCH TRIM RAN AWAY NOSE DOWN & HE WAS UNABLE TO DISCONNECT THE AUTOPILOT PRIOR TO THE LOSS OF CONTROL. EXAM OF THE ACFT SHOWED THE LEFT ELEVATOR HORN WAS BENT DOWN & THE RIGHT ELEVATOR HORN WAS BROKEN OFF. THE AUTOPILOT WAS EXAMINED & ALL DISCONNECTS EXCEPT FOR THE ACCELEROMETER TEST FUNCTIONED PROPERLY. THE PITCH TRIM BOARD WAS FOUND IMPROPERLY INSTALLED IN THE AUTO PILOT & DID NOT MAKE CONNECTION. WITH THE ALTITUDE HOLD ENGAGED, THE AUTOPILOT WOULD HOLD THE ELEVATOR POSITION AT TIME OF ENGAGEMENT & TRIM TO KEEP THE FORCES NEUTRAL. IF THE AIRCRAFT SLOWED, IT WOULD LOSE ALTITUDE & TRIM NOSE UP. RADAR DATA SHOWED THE ACFT STARTED TO SLOW, THEN DESCENDED FROM 8500 TO 8300 FT, THEN CLIMBED TO 8900 FT. THE ACFT THEN CAME DOWN VERY RAPIDLY TO 1700 FT PRIOR TO A RECOVERY. RPRTDLY, THE PLT DID NOT TEST THE AUTOPLT BEFORE TAKEOFF.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE PILOT TO MAINTAIN AIRSPEED AND CONTROL OF THE AIRCRAFT, AND HIS EXCEEDING THE DESIGN STRESS LIMITS OF THE AIRCRAFT. FACTORS RELATED TO THE ACCIDENT WERE: AUTOPLT MALFUNCTION DUE TO IMPROPER INSTALLATION BY MAINTENANCE PERSONNEL AND THE PILOT'S FAILURE TO PREFLIGHT THE AUTOPILOT BEFORE USING IT IN FLIGHT.

Findings

Occurrence #1: ALTITUDE DEVIATION, UNCONTROLLED
Phase of Operation: CRUISE

Findings

1. (F) AUTOPILOT/FLIGHT DIRECTOR - ERRATIC
2. (F) MAINTENANCE, INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL
3. (F) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND
4. (F) AUTOPILOT - IMPROPER USE OF - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE

Findings

- 5. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
- 6. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
 Phase of Operation: MANEUVERING

Findings

- 7. FLIGHT CONTROL,ELEVATOR - OVERLOAD
- 8. (C) DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - PILOT IN COMMAND

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	26
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	2300 hours (Total, all aircraft), 300 hours (Total, this make and model), 2000 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N40978
Model/Series:	PA-31-350 PA-31-350	Engines:	2 Reciprocating
Operator:	FALCON FLIGHT CENTER	Engine Manufacturer:	LYCOMING
Operating Certificate(s) Held:	On-demand Air Taxi (135)	Engine Model/Series:	IO-540-J2B2
Flight Conducted Under:	Part 91: General Aviation -		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	, 0 ft msl	Weather Information Source:	Pilot
Lowest Ceiling:	None / 0 ft agl	Wind Speed/Gusts, Direction:	/ ,
Temperature:		Visibility	20 Miles
Precipitation and Obscuration:			
Departure Point:	HARTFORD, CT (HFD)	Destination:	ATLANTIC CITY, NJ (ACY)

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
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC):	ROBERT L HANCOCK	Adopted Date:	09/30/1991
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/ .		

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