



National Transportation Safety Board Aviation Accident Final Report

Location:	Atlanta, GA	Accident Number:	CHI07LA035
Date & Time:	12/03/2006, 1114 EST	Registration:	N46PT
Aircraft:	Piper PA 46-350P	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that he heard a loud whistling noise while in level cruise at flight level (FL) 220 and noticed that the right side attitude indicator was "tilted." While he was leaning over adjusting the instrument, he realized that the airplane was in a dive. He leveled the wings and pulled out of the dive at FL 190. The autopilot (A/P) was re-engaged and the flight was completed to its intended destination without further incident. A visual examination after the descent revealed the left front baggage door open and buckled, and the left and right wings showed skin damage and wrinkling approximately 54 inches from the wing roots. When tested, the autopilot and flight director performed within test specifications with only "minor" deviations. Both vacuum pumps tested within test specifications. The right side attitude indicator continued to show a three degree turn even after a kink in the vacuum supply to the right side attitude indicator was removed. The "normal" static system leaked in excess of allowable limits; however, the valve was found to be in the "alternate" position before it was tested. An active noise-canceling set of headphones was found connected to the pilot's side of the cockpit. The A/P disconnect tone was found to be operating normally while the engine was at idle power. During the test, it was noted that the tone was difficult to hear while wearing the headset.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The exceedance of airplane design stress limits when the pilot did not maintain aircraft control after his attention was diverted to the right side attitude indicator during cruise flight. An additional cause was the aural detection for the autopilot disconnect was difficult to hear with the noise canceling headset. A contributing factor was the disengaged autopilot/flight director.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE

Findings

1. (F) AUTOPILOT/FLIGHT DIRECTOR - DISENGAGED
2. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. (C) DIVERTED ATTENTION - PILOT IN COMMAND
4. FLIGHT/NAV INSTRUMENTS, ATTITUDE INDICATOR - FAILURE, PARTIAL
5. (C) VISUAL/AURAL DETECTION - PILOT IN COMMAND
6. VACUUM SYSTEM - OBSTRUCTED

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: DESCENT - UNCONTROLLED

Findings

7. FUSELAGE - BENT
8. (C) DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - PILOT IN COMMAND
9. WING - BENT

Factual Information

On December 3, 2006, about 1114 eastern standard time, a Piper PA 46-350P, N46PT, owned and piloted by a private pilot, arrived with substantial damage at Indianapolis Metropolitan Airport (UMP), Indianapolis, Indiana. The pilot stated that the autopilot disengaged over Atlanta, Georgia, during cruise at flight level (FL) 220. The airplane then entered a "dive" from which he recovered at FL 190. The 14 CFR Part 91 personal flight was operating on an instrument rules flight plan. The private pilot and passenger were uninjured. The flight originated from Page Field Airport, Fort Myers, Florida, about 0823 and was en route to UMP.

The pilot stated that he heard a "loud whistling noise" and noticed that the right side attitude indicator horizon was "tilted". He was leaning over the right front pilot seat while "focusing" and "adjusting" the right side attitude indicator horizon. He "soon" noticed that the right side heading indicator was turning. He sat up and "discovered" the airplane was in a "dive." He leveled the wings and pulled out of the "dive" at FL 190. The pilot then requested a climb back up to FL 200, and the flight was completed to UMP without further incident. The pilot reported that he re-engaged the autopilot and it worked "fine" for the rest of the trip.

Upon a visual examination of the exterior of the airplane, the left forward baggage door was found open and buckled. Both wings had wrinkles and skin deformation in the upper skin surface approximately 54 inches from the wing roots. The damage to the left wing surface was more pronounced.

Bench testing of the autopilot (A/P) computer and the flight director (FD) was conducted. Both units performed properly with only minor deviations. The FD was slow to come on but did stabilize and performed correctly. Both vacuum pumps were tested on the airplane, and operation was found to be normal with 5.1 psi of suction. The right side attitude indicator showed a three degree turn. The vacuum supply hose for the right side attitude indicator was found kinked at the upper outboard instrument panel support. The kink was removed and the right side attitude indicator continued to show a three degree turn. The pitot-static system was tested. The static supply source valve was found in the "alternate" position when the attempt to test and verify the altimeter and A/P altitude hold mode was conducted. The "alternate" static system tested within limits, however the "normal" static system leaked in excess of allowable limits. The A/P altitude hold mode operation tested normal. When simulated flight at FL 220 was conducted, the A/P made correct pitch trim inputs to the stabilizer when 25 foot altitude excursions above and below FL 220 were simulated. An operational check of the A/P and instruments under aircraft power was normal.

An active noise-canceling set of headphones was found connected to the pilot's side of the cockpit. The A/P disconnect tone was found to be operating normally while the engine was at idle power. During the test, it was noted that the tone was difficult to hear while wearing the headset.

Pilot Information

Certificate:	Private	Age:	61, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	05/01/2006
Occupational Pilot:		Last Flight Review or Equivalent:	06/01/2006
Flight Time:	2700 hours (Total, all aircraft), 1000 hours (Total, this make and model), 2640 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N46PT
Model/Series:	PA 46-350P	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4622108
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	06/01/2006, Annual	Certified Max Gross Wt.:	4300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1925 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	TIO-540-A2A
Registered Owner:	On file	Rated Power:	350 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	
Lowest Ceiling:	Overcast / 19000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.92 inches Hg	Temperature/Dew Point:	6° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ft. Meyers, FL (FMY)	Type of Flight Plan Filed:	IFR
Destination:	Indianapolis, IN (UMP)	Type of Clearance:	IFR
Departure Time:	0823 EST	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Mitchell F Gallo	Report Date:	01/31/2008
Additional Participating Persons:	Steve E Tatro; Federal Aviation Administration; Indianapolis, IN George Hollingsworth; New Piper Aircraft, Inc.; Vero Beach, FL		
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/ .		

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