



National Transportation Safety Board Aviation Accident Final Report

Location:	ORLANDO, FL	Accident Number:	MIA99LA073
Date & Time:	02/02/1999, 2210 EST	Registration:	N5528J
Aircraft:	Piper PA-32-260	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

The pilot stated that while climbing after takeoff the engine lost power. He turned back to the departure airport. Witnesses observed the aircraft descending rapidly in a left turn and impact the runway with the left wing and nose area of the aircraft. The aircraft caught fire, slid down the runway inverted, and came to rest. The pilot and passenger exited the aircraft through the main door. Post crash examination of the engine showed 9 of 12 cam followers were broken due to overstress. No foreign objects were found in the engine and no other evidence of failure or malfunction in the engine were found. Weight and balance calculations showed the aircraft was about 396 pounds over the maximum allowable takeoff weight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to an engine assembly overload for undetermined reasons. A related factor was the pilot exceeded the airplane's maximum allowable weight.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CLIMB - TO CRUISE

Findings

1. ENGINE ASSEMBLY, OTHER - OVERLOAD
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: DESCENT - EMERGENCY

Findings

3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (F) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - RUNWAY

Factual Information

On February 2, 1999, about 2210 eastern standard time, a Piper PA-32-260, N5528J, registered to an individual, crashed while returning to land at Orlando International Airport, Orlando, Florida, while on a Title 14 CFR Part 91 business flight. Visual meteorological conditions prevailed at the time and no flight plan was filed for the flight to Fort Lauderdale, Florida. The aircraft was destroyed and the private-rated pilot and one passenger received serious injuries. The flight originated from Orlando, Florida, the same day, about 2200.

The pilot stated he was carrying newspapers and that he is not paid for the flights. He picked up the newspapers, which he estimated weighed 750 pounds, at Orlando International Airport, and departed for Fort Lauderdale Executive Airport, Fort Lauderdale, Florida. After takeoff from Orlando International, he turned to a 090 degree heading. While climbing through 500 feet, he reduced engine power. After this, the engine did not sound right. He switched fuel tanks and checked the magnetos. He then noticed the rpm was dropping. He called the control tower and declared an emergency. He tried to make an emergency landing. The aircraft hit the ground hard and he hit his head on the instrument panel. He lost control of the aircraft and could hear the sound of scrapping metal. When the aircraft came to a stop, he opened his eyes and noticed the aircraft was upside down. He and the passenger noticed a fire had erupted and they exited through the main cabin door. He stated he weighed 130 pounds at the time of the accident and his passenger weighed 160 pounds. (See pilot statement)

The passenger stated they had departed Fort Lauderdale Executive Airport and flown to Orlando International. The flight to Orlando was fine. On departure from Orlando International, on the return leg to Fort Lauderdale, while climbing, the engine stuttered and made a loud bang. He was making the radio transmissions, and he told the departure controllers that they had lost the engine. The pilot then switched to the control tower frequency and informed the controller of their problem. They were cleared to land on any runway. The aircraft was falling and he could see the runway. Just before impact with the runway, he closed his eyes. The aircraft hit the runway hard and when it came to rest he and the pilot exited the aircraft. (See record of telephone conversation with passenger)

A witness, who was located in another aircraft which was taxiing at Orlando International Airport, stated he observed the accident aircraft on a low, estimated 300-400 feet, downwind to base leg turn for runway 17. He estimated the aircraft was in a 30-40 degree left bank and the nose was pitched down about 10-15 degrees. As the aircraft passed abeam his position in its descending turn, the bank angle, pitch angle, and descent rate all smoothly increased. The aircraft was less than 100 feet in the air at this time. The aircraft impacted on runway 17 in the left descending turn. The nose and left wing impacted simultaneously. Upon impact a fireball blossomed and a crunching thud sound was heard. The aircraft appeared to roll over as it slid down the runway for about 100 meters. A trail of burning fuel connected the impact point with the final resting point of the aircraft. (See witness statement)

Postcrash examination of the engine and propeller was performed by an FAA inspector and a representative of Lycoming Engines. The propeller had damage consistent with rotation at the time of ground impact. One blade tip was curled forward followed by aft bending of the blade at the mid span. The forward face of the blade had deep scoring. The opposite blade was missing the tip and the blade was bent aft. All external oil lines were attached. A crack was present on the top of the crankcase between Nos. 3 and 4 cylinders. The engine was rotated

360 degrees and continuity of the crankshaft, camshaft and accessory drives was established. Each cylinder produced compression and all pistons moved. Disassembly of the engine showed the engine contained metal debris and 9 of 12 cam followers were broken. The oil suction screen was free of debris. The crankshaft bearings showed no excessive damage, wear, or heat distress. No foreign objects were located within the engine assembly. (See Lycoming Engines Report)

Examination of the broken cam followers and metal debris from the engine of N5528J was performed by the NTSB Materials Laboratory, Washington, D.C. The broken 9 cam followers had fracture features consistent with overstress separation. The debris consisted of material from the cam followers and engine case. (See NTSB Materials Laboratory Report)

The last weight and balance data for the aircraft was dated 01/23/86. This data showed the aircraft had an empty weight of 1,817.85 pounds, and a useful load of 1,582.15 pounds. At the time of the accident, records indicated the aircraft carried 43 bundles of newspapers. FAA inspectors weighed similar bundles and determined a bundle weighs on the average about 32 pounds. This would indicate the newspapers carried on the aircraft at the time of the accident weighed 1,376 pounds. FAA records showed the pilot weighed 143 pounds and the passenger was reported to weigh 160 pounds. The pilot reported the aircraft contained 50 gallons of fuel at the time of the accident, which weighed about 300 pounds. Using these numbers, the aircraft was estimated to weigh about 3,796 pounds at the time of the accident. The maximum allowable takeoff weight for the aircraft is 3,400 pounds. (See FAA Inspector Statement, Load Sheet, and Aircraft Weight and Balance)

Pilot Information

Certificate:	Private	Age:	27, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	05/19/1997
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	645 hours (Total, all aircraft), 525 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N5528J
Model/Series:	PA-32-260 PA-32-260	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	32-989
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	07/10/1998, Annual	Certified Max Gross Wt.:	3400 lbs
Time Since Last Inspection:	107 Hours	Engines:	1 Reciprocating
Airframe Total Time:	4236 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-540-E4B5
Registered Owner:	THEODORE E. BRADSHAW, JR.	Rated Power:	260 hp
Operator:	TROPICAL AIRCRAFT	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	MCO, 96 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	2210 EST	Direction from Accident Site:	180°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	8 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	19° C / 19° C
Precipitation and Obscuration:			
Departure Point:	(MCO)	Type of Flight Plan Filed:	None
Destination:	FORT LAUDERDALE, FL (FXE)	Type of Clearance:	VFR
Departure Time:	2207 EST	Type of Airspace:	Class D

Airport Information

Airport:	ORLANDO INTERNATIONAL (MCO)	Runway Surface Type:	Concrete
Airport Elevation:	96 ft	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	
Runway Length/Width:	10000 ft / 150 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Serious	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	JEFFREY L KENNEDY	Report Date:	08/03/2000
Additional Participating Persons:	IKE GRAY; ORLANDO, FL EDWARD ROGALSKI; BELLEVIEW, FL MARGARET NAPOLITAN; VERO BEACH, FL DEREK NASH; WASHINGTON, DC		
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/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).