Aviation Investigation Final Report

Location:	SCOTTSDALE, Arizona	**Accident Number:**	LAX97FA050
Date & Time:	November 21, 1996, 20:26 Local	**Registration:**	N5766K
Aircraft:	Mooney M20J	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After a straight-in approach, the aircraft landed hard, bounced, banked sharply and veered off the runway. As the engine accelerated and the aircraft began to level off, the aircraft settled, touching down momentarily in a dirt area next to the runway. The aircraft then became airborne and clipped the tail of a parked single engine aircraft and continued until it struck the side of a parked corporate jet. The pilot did not report having monitored the ATIS frequency, nor had the tower operator advised him that the VASI lights were inoperative. The pilot's logbook revealed no entries for the last 2 years; however, associates and family members familiar with the pilot reported that he flew regularly, sometimes on a daily basis. The pilot's recent night experience was not determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot misjudged the landing flare and failed to maintain directional control after a hard bounced landing.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. LIGHT CONDITION - NIGHT

2. AIRPORT FACILITIES,VISUAL APCH SLOPE IND(VASI) - INOPERATIVE
3. (C) FLARE - MISJUDGED - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
4. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: COLLISION BETWEEN AIRCRAFT (OTHER THAN MIDAIR)
Phase of Operation: GO-AROUND (VFR)

Findings
5. OBJECT - AIRCRAFT PARKED/STANDING

Factual Information

HISTORY OF FLIGHT

On November 21, 1996, at 2026 hours mountain standard time, a Mooney M20J, N5766K, veered off the runway after a hard landing and collided with two other parked aircraft at the Scottsdale, Arizona, airport. The aircraft was destroyed and the commercial pilot and his two passengers received fatal injuries. The aircraft was operated as a personal flight by the pilot/owner when the accident occurred. The flight originated in Casa Grande, Arizona, about 2000. Visual meteorological conditions prevailed at the time and no flight plan was filed.

The tower controller reported that the pilot made about a 7-mile straight-in approach to runway 03. The pilot did not report having monitored to the ATIS frequency when he made his initial request for a landing clearance. Also, the controller did not advise the pilot that the VASI lights for the landing runway were inoperative. The controller observed the aircraft over the runway end identifier lights before he looked away. When he looked up again, he saw a cloud of dust near the end of the runway. The operator attempted to call the pilot and then picked up the crash phone to notify emergency personnel.

A witness about 100 yards from the scene reported seeing the aircraft in a 90-degree left bank over the runway. He stated that the aircraft began to level off, but temporarily dropped from view behind some parked aircraft. He reported hearing the aircraft engine accelerate and saw dust rising in the aircraft's vicinity. When the aircraft reappeared, it was in a near level attitude on an approximate heading of 330 degrees. It clipped the top of the vertical stabilizer of a parked Cessna 152, N67739, and then continued in near 20-degree wing low attitude until it struck the left engine and empennage of a parked Canadair CL-600-2B16, N800KC. The witness described the night as very dark. (A sun and moon illumination table is appended to this report.)

A postcrash fire ensued that was confined to the aircraft engine compartment.

PERSONNEL INFORMATION

According to the pilot's logbook, the pilot was issued a pilot certificate with a single engine land rating on September 9, 1945. His logbook also showed that he was issued a commercial pilot certificate on September 9, 1969. (The corresponding page from the pilot's logbook is appended to this report.)

A review of the pilot's logbook revealed that he had not been logging his flight time for about the past 2 years. The only entry during that period was a biennial flight review that was conducted on July 19, 1995. Friends of the pilot reported that he flew almost daily, however, it

is unknown if he had maintained the current experience required to carry passengers at night.

The pilot's medical certificate required the pilot to have glasses available for near vision. Personnel from the Medical Examiners Office reported that glasses were found around the pilot's neck on a thong.

AIRCRAFT INFORMATION

The aircraft, engine and propeller logbooks were reviewed by FAA airworthiness inspectors. It was their opinion that the aircraft was being maintained in an airworthy condition. The only discrepancy noted was an overdue ATC transponder test which is required to be accomplished every 24 months. The aircraft logbook showed the test had last been accomplished on October 1, 1992.

The aircraft was equipped with a King AP 100 two-axis auto pilot. The auto pilot does not control movement around the pitch axis.

AIRPORT INFORMATION

Runway 03 has a displaced threshold and is equipped with VASI lights. A NOTAM, dated August 15, 1996, issued by Prescott Flight Service was in effect, stating that the VASI lights for runway 03 was out of service until further notice. The tower was staffed with one person who was working all positions at the time of the accident.

The aircraft struck two other aircraft that were parked in designated spaces on the airport ramp. The first aircraft that was struck was about 342 feet from the runway centerline, while the second was about 431 feet away. The FAA has authorized Scottsdale airport to operate as a D-II category airport that requires a 400-foot clearance standard from the runway centerline to the nearest obstruction. The D-II authorized deviation permits this clearance to be reduced to 325 feet. The accident aircraft required an A-I category airport with a clearance standard of 200 feet. The airport exceeds the A-I requirement with an actual clearance of 342 feet.

WRECKAGE AND IMPACT INFORMATION

The right main gear door was found several feet off the north side near the approach end of runway 03. The location of the gear door preceded a series of three parallel tracks that were found in the dirt between the runway and taxiway Alpha. The tracks began and ended entirely within the open area with no evidence that they originated from the edge of the paved runway or continued on to the edge of the paved taxiway. The tracks were longitudinally oriented toward the main wreckage. Farther left and north of the tracks was a single gouge in the dirt that also began and ended in the same open area.

The left gear door was open and exhibited vertical crushing upward from its lower edge. The bottom surface of the left wing tip exhibited fore to aft scrape marks. Matching yellow paint

transfers from the Cessna's vertical stabilizer were found on the bottom surface of the Mooney's left wing. There was also a tear in the lower surface of the wing. The right wing showed leading edge damage and spanwise upward bending.

The aircraft was found with its nose impaled in the left engine nacelle of a Canadair Challenger. The nose was pitched up about 30 degrees, while the tail rested on the ground. The aircraft's final heading was about 330 degrees. An inventory of the aircraft structure revealed that all structural components were present except for the right main landing gear door. Control continuity was established for all aircraft flight control surfaces and all control surfaces remained in place. The flaps were extended about 14 degrees. The elevator trim actuator had 9 threads exposed. According to the manufacturer this corresponds to 1.5 units nose up, which is in the takeoff range.

The engine was examined by a Safety Board investigator and a representative of the engine manufacturer after the aircraft was recovered. Fuel was found in the fuel pump, fuel injection servo, flow divider, and fuel lines. The forward lower right portion of the engine crankcase exhibited evidence of crushing. The alternator and the single drive, dual magneto exhibited evidence of displacement and crushing. The magneto produced a spark at all leads when rotated by hand. There were no mechanical discrepancies identified.

Each blade of the Hartzell 3-bladed propeller exhibited impact damage. The blade marked as No. 1 displayed chordwise scoring, gouging, and leading edge damage. Blade No. 2 was bent opposite the direction of rotation and exhibited scarring on the tip. The No. 3 blade was broken from the hub and was located under the left wing of the Canadair. The fractured section displayed "S" bending.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by the Maricopa County Medical Examiner on November 22, 1996. The medical examiner forwarded toxicological specimens to the FAA Civil Aeromedical Institute (CAMI) for screening. The results of the screening were negative.

FIRE

Rural Metro firefighters reported extinguishing a fire that was confined to the engine compartment. They reported that the fire had been fed by aviation fuel leaking from the aircraft fuel system.

SURVIVAL ASPECTS

The Rural Metro firefighters reported that neither from seat occupant had been wearing a shoulder harness, although they were installed and available in the aircraft. The cabin floor exhibited buckling and the forward cabin area showed aft crushing and compacting.

ADDITIONAL INFORMATION

The aircraft was recovered by Air Transport and taken to their storage facility in Phoenix, Arizona. The aircraft was released to a representative of the registered owner on December 17, 1996.

Pilot Information

Certificate:	Commercial	**Age:**	71,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 19, 1995
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N5766K
Model/Series:	M20J M20J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-1626
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 4, 1996 Annual	**Certified Max Gross Wt.:**	2740 lbs
Time Since Last Inspection:	15 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1453 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-360-A3B6D
Registered Owner:	ROBERT EDWARD ABSEY	**Rated Power:**	200 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	SDL ,1508 ft msl	**Distance from Accident Site:**	
Observation Time:	20:29 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Unknown	**Visibility**	15 miles
Lowest Ceiling:	Broken / 20000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	7°C / -11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CASA GRANDE , AZ (CGZ)	**Type of Flight Plan Filed:**	None
Destination:	(SDL)	**Type of Clearance:**	VFR
Departure Time:	20:00 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	SCOTTSDALE SDL	**Runway Surface Type:**	Asphalt
Airport Elevation:	1508 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	3	**IFR Approach:**	None
Runway Length/Width:	8251 ft / 75 ft	**VFR Approach/Landing:**	Full stop;Touch and go

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.609355,-111.889556(est)

Administrative Information

Investigator In Charge (IIC):	Crispin, Robert
Additional Participating Persons:	GEORGE F DEMARTINI; SCOTTSDALE , AZ MARK W PLATT; VAN NUYS , CA
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Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29593