



National Transportation Safety Board Aviation Accident Final Report

Location:	Madras, OR	Accident Number:	WPR11LA068A
Date & Time:	12/01/2010, 1130 PST	Registration:	N23619
Aircraft:	TAYLORCRAFT BC-65	Aircraft Damage:	Minor
Defining Event:	Midair collision	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The propeller of a Taylorcraft airplane and the empennage of a Cessna airplane came in contact with each other while both aircraft were on final approach to the same runway. The pilot of the Cessna had completed a landing and performed a standard entry (left) onto the downwind leg of the traffic pattern. The pilot of the Taylorcraft was returning from a local area training flight and entered the downwind leg of the traffic pattern from a standard mid-field 45-degree entry. The Cessna pilot was announcing his position on the common traffic advisory frequency during each segment of the pattern; however, the pilot of the Taylorcraft could not hear the transmissions since his airplane was not equipped with a radio. Just prior to impact, the pilot of the Taylorcraft observed the empennage of the Cessna underneath the left wing of his airplane. The pilot of the Cessna never observed the Taylorcraft, but heard a loud bang come from the aft end of his airplane at impact. Both pilots were able to land their airplanes without further incident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of both pilots to see and avoid the other airplane while in the traffic pattern to land, which resulted in a midair collision.

Findings

Aircraft	VHF communication system - Not specified
Personnel issues	Monitoring other aircraft - Pilot (Cause) Monitoring other aircraft - Pilot of other aircraft (Cause)

Factual Information

On December 1, 2010, about 1130 Pacific standard time, the propeller of a Taylorcraft BC-65, N23619, and the aft portion of the empennage of a Cessna 185A, N1699Z, came in contact with each other while both aircraft were on a visual flight rules (VFR) final approach to runway 16 at Madras Municipal Airport, Madras, Oregon. The certified flight instructor (CFI) and his student in the Taylorcraft, which was not radio equipped, were not injured, but the airplane, which was owned and operated by Berg Air, sustained substantial damage to the forward part of its fuselage. The commercial pilot and his passenger in the Cessna were also uninjured, but the Cessna, which was owned and operated by the passenger, sustained substantial damage to its empennage and aft fuselage. The occupants of the Taylorcraft were on a 14 Code of Federal Regulation Part 91 local instructional flight, and the occupants of the Cessna were on a 14 Code of Federal Regulations personal pleasure flight. The pilot of the Cessna was on his second circuit of the VFR pattern to runway 16. The occupants of the Taylorcraft were on their first circuit of the VFR pattern to runway 16, after returning from a training flight in the local area and entering the pattern via a standard 45 degree entry to the downwind. Neither aircraft was on a flight plan.

According to the flight instructor in the Taylorcraft, who was flying the airplane at the time of the accident, neither occupant had seen the Cessna until the empennage of the Cessna suddenly appeared underneath and very close to the left wing of his airplane while he was on short final. He said that at the precise moment that he noticed the Cessna, it seemed to slow, and as it did, its nose lowered and its tail pitched up. The CFI therefore immediately tried to bank to the right to avoid contact, but the propeller of the Taylorcraft came in contact with the Cessna before he could gain separation. After impacting the Cessna, the Taylorcraft's propeller stopped turning, and therefore the CFI made a power-off landing in the extended 1,800-foot paved stop-way of the old military runway.

According to the pilot of the Cessna, who had announced his position on the common traffic advisory frequency (CTAF) on each segment of the traffic pattern, neither he nor his passenger ever saw the Taylorcraft, but while on short final he heard a loud bang come from the aft end of the airplane. Immediately after he heard the bang, the airplane pitched down and rolled to the right, but the pilot was able to regain control and continue flying straight ahead. Because he was unaware that the airplane had come in contact with another airplane, and because he thought the airplane had either impacted a large bird or experienced some sort of mechanical failure, he elected to climb straight ahead and land at the airplane's home airport, which was about 10 minutes away. It was not until after landing at the airplane's home airport and inspecting the airplane that the pilot of the Cessna realized there had been a mid-air collision.

Both pilots had flown standard VFR left hand patterns for runway 16. The pilot of the Cessna entered the downwind from the crosswind after completing his first touch-and-go landing. The pilot of the Taylorcraft entered the downwind near mid-field from a 45 degree entry leg. The pilot of the Cessna was making position/intention radio calls at each segment of the pattern. The Taylorcraft was not radio-equipped, nor was it required to be. Therefore the pilot of the Taylorcraft was unable to announce his position/intentions, nor was he able to hear the transitions of the pilot of the Cessna. Neither occupant of either airplane noticed that there was another airplane in the VFR pattern at the same time as they were.

At the time of the accident, there were broken clouds about 6,500 feet above ground level

(AGL), and a visibility of more than 10 miles.

Neither pilot reported any pre-impact anomalies or malfunctions associated with his airplane.

History of Flight

Approach-VFR pattern final Midair collision (Defining event)

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	40, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	08/23/2007
Occupational Pilot:	No	Last Flight Review or Equivalent:	03/11/2010
Flight Time:	612 hours (Total, all aircraft), 17 hours (Total, this make and model), 502 hours (Pilot In Command, all aircraft), 39 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	TAYLORCRAFT	Registration:	N23619
Model/Series:	BC-65	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1344
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	11/28/2010, 100 Hour	Certified Max Gross Wt.:	1100 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2588 Hours	Engine Manufacturer:	LYCOMING
ELT:	C91A installed, not activated	Engine Model/Series:	O-145B SERIES
Registered Owner:	Robert Berg	Rated Power:	65 hp
Operator:	Berg Air	Air Carrier Operating Certificate:	None
Operator Does Business As:	Berg air	Operator Designator Code:	

Meteorological Information and Flight Plan

Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	7°C / 2°C
Lowest Ceiling:	Broken / 6500 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	10 knots, 170°	Visibility (RVR):	
Altimeter Setting:		Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Madras, OR (S33)	Type of Flight Plan Filed:	None
Destination:	Madras, OR (S33)	Type of Clearance:	None
Departure Time:	1030 PST	Type of Airspace:	

Airport Information

Airport:	Madras Municipal Airport (S33)	Runway Surface Type:	Asphalt
Airport Elevation:	2428 ft	Runway Surface Condition:	Dry
Runway Used:	16	IFR Approach:	None
Runway Length/Width:	5089 ft / 75 ft	VFR Approach/Landing:	Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Minor
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None		

Administrative Information

Investigator In Charge (IIC):	Orrin K Anderson	Adopted Date:	04/12/2011
Additional Participating Persons:	Penny Ratliff; Portland FSDO; Hillsboro, OR		
Publish Date:	04/12/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=77917		

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