



Aviation Investigation Final Report

Location:	Watsonville, California	Accident Number:	WPR22FA309
Date & Time:	August 18, 2022, 14:55 Local	Registration:	N49931 (A2); N740WJ (A3)
Aircraft:	Cessna 152 (A2); Cessna 340A (A3)	Aircraft Damage:	Substantial (A2); Destroyed (A3)
Defining Event:	Midair collision	Injuries:	1 Fatal (A2); 2 Fatal (A3)
Flight Conducted Under:	Part 91: General aviation - Personal (A2); Part 91: General aviation - Personal (A3)		

Analysis

The pilot of the single-engine airplane was operating in the airport traffic pattern and had been making position reports on the airport's common traffic advisory frequency (CTAF). The pilot of the multi-engine airplane made an initial radio call on the CTAF 10 miles from the airport, announcing his intention to perform a straight-in approach for landing. Both pilots continued to make appropriate position reports, but did not communicate with each other until the multi-engine airplane was about one mile from the airport and the single-engine airplane had turned onto the base leg of the traffic pattern for landing. Realizing that the multi-engine airplane was converging upon him, the pilot of the single-engine airplane announced a go-around, and the airplanes collided on final approach for the runway about 150 ft above ground level (agl).

Examination of the airplanes revealed no evidence of mechanical malfunctions or anomalies that would have precluded normal operation. The multi-engine airplane's wing flaps and landing gear were both retracted at the accident site, consistent with the pilot's failure to configure the airplane for landing, and flight track information indicated that the pilot maintained a ground speed of about 180 knots throughout the approach until the collision occurred, which may have reduced the time available for him to see and avoid the single-engine airplane.

The toxicology report for the pilot of the single-engine airplane revealed THC, metabolites for THC, metabolites for cocaine, and ketamine; the low amounts of each drug were not considered causal to the accident. The toxicology report for the multi-engine airplane pilot revealed THC, and metabolites of THC; the low amounts of each drug were not considered causal to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The failure of the pilot of the multi-engine airplane to see and avoid the single-engine airplane while performing a straight-in approach for landing.

Findings

Not determined (A2)	(general) - Unknown/Not determined
Personnel issues (A3)	Lack of action - Pilot
Personnel issues (A3)	Aircraft control - Pilot
Personnel issues (A3)	Monitoring other aircraft - Pilot

Factual Information

History of Flight

Approach-VFR pattern final (A2)	Midair collision (Defining event)
Approach (A3)	Midair collision

On August 18, 2022, about 1455 Pacific daylight time, a Cessna 152, N49931, and a Cessna 340, N740WJ, were destroyed when they were involved in a midair collision near Watsonville, California. The pilot of N49931 and the pilot and passenger of N740WJ were fatally injured. Both airplanes were operated as a Title 14 *Code of Federal Regulations* Part 91 personal flights.

The pilot of the Cessna 152 was performing takeoffs and landings in the traffic pattern at Watsonville Municipal Airport (WVI). The WVI CTAF was recorded, and review of the recordings revealed that the pilot had been making position reports for most of the traffic pattern legs during his previous four traffic patterns.

The Cessna 340 pilot made his initial position report ten miles east of the airport at 4,500 ft feet mean sea level (msl), and reported that he would be descending for a straight-in approach to runway 20. Less than one minute later, the Cessna 152 pilot reported that he was crosswind for runway 20, and less than a minute after that call, he reported downwind for runway 20. The Cessna 340 pilot then reported that he was three miles from runway 20 on a straight-in approach. The Cessna 152 pilot then reported that he was turning left base for runway 20. About 19 seconds later, the Cessna 340 pilot reported that he was one mile from the airport and that he was looking for the traffic on left base. The Cessna 152 pilot stated that he did see the Cessna 340 and that the Cessna 340 was behind him. About 13 seconds later, the Cessna 152 pilot stated that he was, “going around, because you are coming at me pretty quick man.”

Recorded automatic dependent surveillance-broadcast (ADS-B) data provided by the Federal Aviation Administration (FAA) revealed that the Cessna 340 departed Turlock Airport (O15), Turlock, California, and proceeded west toward runway 20 at WVI. The Cessna 340 maintained about 180 knots ground speed until the collision. The data showed that the airplanes’ flight paths intersected about 1455:13, at an altitude about 225 to 300 ft msl, or about 150 ft agl, as seen in Figure 1.



Figure 1. View of the two airplanes' ADS-B flight track data.

A witness stated that he was flying over WVI at 1,300 ft msl when he heard the two pilots on the CTAF and realized that they were getting close to each other. He focused his attention on the final approach for runway 20 and observed the Cessna 340 moving much quicker than usual for landing. He saw the Cessna 152 turn final and heard the pilot call a go around. He then saw the Cessna 340 try to turn right and its wing hit the wing of the Cessna 152. He subsequently saw both airplanes descend to the ground.

A witness on the ground at WVI captured an image of the two airplanes before the collision, as seen in Figure 2.



Figure 2. Image captured before the collision.

Information provided by the FAA indicated that the pilot of the Cessna 340 received visual flight rules flight following services from O15 to WVI. When services were terminated, the pilot was advised to use caution due to other aircraft in the traffic pattern at WVI. The pilot of the Cessna 152 was not in communication with air traffic control.

Pilot Information (A2)

Certificate:	Private	Age:	32, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Unknown	Last FAA Medical Exam:	August 9, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	August 14, 2022
Flight Time:	111 hours (Total, all aircraft), 77 hours (Total, this make and model), 47.4 hours (Pilot In Command, all aircraft)		

Pilot Information (A3)

Certificate:	Private	Age:	75, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	May 1, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 1200 hours (Total, all aircraft), 744.9 hours (Total, this make and model)		

Passenger Information (A3)

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	
Instrument Rating(s):		Second Pilot Present:	
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information (A2)

Aircraft Make:	Cessna	Registration:	N49931
Model/Series:	152	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	15281402
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:		Certified Max Gross Wt.:	1675 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	0-235 SERIES
Registered Owner:	MONTEREY BAY AVIATION INC	Rated Power:	110 Horsepower
Operator:	United Flight Services	Operating Certificate(s) Held:	None

Aircraft and Owner/Operator Information (A3)

Aircraft Make:	Cessna	Registration:	N740WJ
Model/Series:	340A	Aircraft Category:	Airplane
Year of Manufacture:	1979	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	340A0740
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	TSIO-520-NB
Registered Owner:	ALM HOLDING LLC	Rated Power:	310 Horsepower
Operator:	ALM HOLDING LLC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KWVI, 162 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	14:53 Local	Direction from Accident Site:	248°
Lowest Cloud Condition:	Clear	Visibility:	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.96 inches Hg	Temperature/Dew Point:	21°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Watsonville, CA (A2); Turlock, CA (O15) (A3)	Type of Flight Plan Filed:	None (A2); None (A3)
Destination:	Watsonville, CA (A2); Watsonville, CA (WVI) (A3)	Type of Clearance:	None (A2); VFR flight following (A3)
Departure Time:	14:32 Local (A3)	Type of Airspace:	Class E (A2); Class E (A3)

Airport Information

Airport:	WATSONVILLE MUNI WVI	Runway Surface Type:	Asphalt
Airport Elevation:	163 ft msl	Runway Surface Condition:	Dry
Runway Used:	20	IFR Approach:	None
Runway Length/Width:	4501 ft / 149 ft	VFR Approach/Landing:	Go around;Straight-in;Traffic pattern

Wreckage and Impact Information (A2)

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	36.93648,-121.78904(est)

Wreckage and Impact Information (A3)

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-ground
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	36.93648,-121.78904(est)

The Cessna 152 came to rest on the airport property about 1,200 ft northeast of the approach end of runway 20. The left wing, from about the strut outboard, separated from the airplane and came to rest about 500 ft northeast of the main wreckage. The left horizontal stabilizer and elevator separated and came to rest about 380 ft northeast of the main wreckage. Two small sections of the Cessna 340's left tip tank were located near the Cessna 152 wreckage.

The Cessna 340 came to rest in a hangar storage room located on the southeast side of the airport. All major components of the Cessna 340 were located at the site. A postimpact fire ensued outside of the hangar. Examination of the wreckage revealed that the flap handle was in the up position, and that the landing gear were retracted.

Medical and Pathological Information

Cessna 152 Pilot

Toxicology testing performed for the county coroner on the pilot's chest cavity blood detected the primary major psychoactive compound of cannabis, delta-9-tetrahydrocannabinol (THC), at 1.1 nanograms per milliliter (ng/mL) and THC's inactive metabolite, carboxy-delta-9-tetrahydrocannabinol (THC-COOH), at 8.4 ng/mL.

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected THC in the pilot's cavity blood at 1.1 ng/mL, THC-COOH in his cavity blood at 10.6 ng/mL, and THC-COOH in his urine at 139.7 ng/mL. Benzoylecgonine, an inactive cocaine metabolite, was detected in his cavity blood and in his urine at 438 ng/mL. Ecgonine methyl ester, a minor inactive metabolite of cocaine, was detected in the pilot's urine. The anesthetic ketamine was detected in his cavity blood and in his urine at 34 ng/mL. The active metabolite of ketamine, norketamine, was detected in his cavity blood at 25 ng/mL and in his urine at 208 ng/mL. The non-sedating pain and fever reducing over-the-counter medication salicylic acid, commonly known as aspirin, was detected in the pilot's cavity blood and urine.

Cessna 340 Pilot

Toxicology testing performed for the county coroner was negative for ethanol and tested-for drugs in the pilot's abdominal blood. Toxicology testing performed by the FAA Forensic Sciences Laboratory detected THC in the pilot's cavity blood at 0.8 ng/mL. THC's short-lived psychoactive metabolite, 11-hydroxy-delta-9-THC (11-OH-THC) was detected in his urine at 5.9 ng/mL, but not in his blood. THC-COOH was detected in his cavity blood at 1 ng/mL and in his urine at 36.3 ng/mL. The high blood pressure medication atenolol and the enlarged prostate treatment medication tamsulosin were detected in his cavity blood and urine. Desloratadine, the metabolite of the non-impairing antihistamine loratadine, was detected in his cavity blood but inconclusive in his urine. Atenolol, tamsulosin, and desloratadine are generally considered non-impairing.

Additional Information

The Aeronautical Information Manual stated in part,

4-3-3 Traffic Patterns. NOTE- Pilots are encouraged to use the standard traffic pattern. However, those pilots who choose to execute a straight-in approach, maneuvering for and execution of the approach should not disrupt the flow of arriving and departing traffic. Likewise, pilots operating in the traffic pattern should be alert at all times for aircraft executing straight-in approaches.

FAA Advisory Circular (AC) 90-66B, "Non-Towered Airport Flight Operations," stated in part,
The FAA does not regulate traffic pattern entry, only traffic pattern flow.

Traffic pattern entry information is advisory...

Collision avoidance. The pilot in command's (PIC) primary responsibility is to see and avoid other aircraft and the help then see and avoid his or her aircraft." "The FAA encourages pilots to use the standard traffic pattern when arriving or departing a non-towered airport or a part-time-towered airport when the control tower is not operating, particularly when other traffic is observed or when operating from an unfamiliar airport. However, there may be occasions where a pilot can choose to execute a straight-in approach for landing when not intending to enter the traffic pattern, such as a visual approach executed as part of the termination of an instrument approach. Pilots should clearly communicate on the CTAF and coordinate maneuvering for and execution of the landing with other traffic so as not to disrupt the flow of other aircraft. Therefore, pilots operating in the traffic pattern should be alert at all times to aircraft executing straight-in landings, particularly when flying base leg prior to turning final.

The FAA Pilot's Handbook of Aeronautical Knowledge stated in part,

In either case, it is vital to announce your intentions, and remember to scan outside. Before joining the downwind leg, adjust your course or speed to blend into the traffic. Adjust power on the downwind leg, or sooner, to fit into the flow of traffic. Avoid flying too fast or too slow. Speeds recommended by the airplane manufacturer should be used. They will generally fall between 70 to 80 knots for fixed-gear singles and 80 to 90 knots for high-performance retractable.

Administrative Information

Investigator In Charge (IIC): Salazar, Fabian

Additional Participating Persons: Peter Basilli; Textron Aviation Int.; Wichita, KS
Michael Schaad; Federal Aviation Administration; San Jose, CA
Drew Connely; Federal Aviation Administration; San Jose, CA
Rayvon Williams; Airport Director Watsonville

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Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=105763>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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