



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Tampa, Florida	<b>Accident Number:</b>	ERA16FA133
<b>Date &amp; Time:</b>	March 18, 2016, 11:30 Local	<b>Registration:</b>	N6239X
<b>Aircraft:</b>	Cessna 340	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Abrupt maneuver	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The airline transport pilot and pilot-rated passenger were departing on an instrument flight rules (IFR) cross country flight from runway 4 in a Cessna 340A about the same time that a private pilot and pilot-rated passenger were departing on a visual flight rules repositioning flight from runway 36 in a Cessna 172M. Visual meteorological conditions prevailed at the airport. The runways at the nontowered airport converged and intersected near their departure ends.

According to a witness, both airplanes had announced their takeoff intentions on the airport's common traffic advisory frequency (CTAF), which was not recorded; the Cessna 340A pilot's transmission occurred about 10 to 15 seconds before the Cessna 172M pilot's transmission. However, the witness stated that the Cessna 172M pilot's transmission was not clear, but he was distracted at the time. Both occupants of the Cessna 172M later reported that they were constantly monitoring the CTAF but did not hear the transmission from the Cessna 340A pilot nor did they see any inbound or outbound aircraft.

Airport video that captured the takeoffs revealed that the Cessna 172M had just lifted off and was over runway 36 approaching the intersection with runway 4, when the Cessna 340A was just above runway 4 in a wings level attitude with the landing gear extended and approaching the intersection with runway 36. Almost immediately, the Cessna 340A then began a climbing left turn with an increasing bank angle while the Cessna 172M continued straight ahead. The Cessna 340A then rolled inverted and impacted the ground in a nose-low and left-wing-low attitude. The Cessna 172M, which was not damaged, continued to its destination and landed uneventfully.

The Cessna 340A was likely being flown at the published takeoff and climb speed of 93 knots indicated airspeed (KIAS). The published stall speed for the airplane in a 40° bank was 93 KIAS, and, when the airplane reached that bank angle, it likely exceeded the critical angle of attack and entered an aerodynamic stall.

Examination of the Cessna 340A wreckage did not reveal any preimpact mechanical malfunctions that would have precluded normal operation. Because of a postcrash fire, no determination could be made as to how the radios and audio panel were configured for transmitting and receiving or what frequencies

were selected. There were no reported discrepancies with the radios of the Cessna 172M, and there were no reported difficulties with the communication between the Cessna 340A and the Federal Aviation Administration facility that issued the airplane's IFR clearance. Additionally, there were no known issues related to the CTAF at the airport.

Toxicological testing detected unquantified amounts of atorvastatin, diphenhydramine, and naproxen in the Cessna 340A pilot's liver. The Cessna 340A pilot's use of atorvastatin or naproxen would not have impaired his ability to hear the radio announcements, see the other airplane taking off on the converging runway, or affected his performance once the threat had been detected. Without an available blood level of diphenhydramine, it could not be determined whether the drug was impairing or contributed to the circumstances of the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The intentional low altitude maneuvering during takeoff in response to a near-miss with an airplane departing from a converging runway, which resulted in an exceedance of the airplane's critical angle of attack and a subsequent aerodynamic stall.

### Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	(general) - Capability exceeded
Personnel issues	Aircraft control - Pilot
Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Not attained/maintained
Personnel issues	(general) - Pilot
Personnel issues	(general) - Pilot of other aircraft

# Factual Information

## History of Flight

<b>Takeoff</b>	Airport occurrence
<b>Initial climb</b>	Abrupt maneuver (Defining event)
<b>Initial climb</b>	Aerodynamic stall/spin
<b>Uncontrolled descent</b>	Collision with terr/obj (non-CFIT)
<b>Post-impact</b>	Fire/smoke (post-impact)

On March 18, 2016, at 1130 eastern daylight time, a Cessna 340A, N6239X, was destroyed during takeoff when it impacted terrain following a near-miss with a Cessna 172M, N61801, at Peter O. Knight Airport (TPF), Tampa, Florida. The airline transport pilot and the pilot-rated passenger of the Cessna 340A were fatally injured. The private pilot and the pilot-rated passenger of the Cessna 172M were not injured, and the Cessna 172M was not damaged. The Cessna 340A was registered to Ninerxray, Inc., and operated by the pilot. The Cessna 172M was registered to and operated by Tampa Aviation Club, Inc. Visual meteorological conditions prevailed. An instrument flight rules (IFR) flight plan had been filed and activated for the Title 14 Code of Federal Regulations (CFR) Part 91 personal flight of the Cessna 340A that was destined for Pensacola International Airport, Pensacola, Florida. No flight plan was filed for the 14 CFR Part 91 personal flight of the Cessna 172M that was destined for Tampa Executive Airport, Tampa, Florida.

At the time of the accident, a temporary flight restriction (TFR) Notice to Airmen was in effect at TPF due to an airshow at MacDill Air Force Base, which was located about 5 nautical miles southwest of TPF. The TFR specified that only departures from runways 4 and 36 were authorized.

Earlier that day, the pilot of the Cessna 172M had successfully completed the oral examination and flight test for his private pilot certificate at TPF. The Cessna 172M was departing for its home airport following the flight test. The pilot-rated passenger in the Cessna 172M was the president of the corporation that owned and operated the Cessna 172M.

The president of the corporation that owned the Cessna 340A, reported that, on the day of the accident, one of the principals of the corporation was scheduled to be flown by the accident pilot to Fort Lauderdale, Florida; however, the trip was cancelled. The president further reported that, "without consulting any of the Principals of Ninerxray, Inc., and without their knowledge or consent," the pilot initiated the accident flight.

TPF does not have an air traffic control tower (ATCT). According to a chronological summary of communications with the ATCT at Tampa International Airport (located about 6 nautical miles northwest of TPF), at 1126, an occupant of the Cessna 340A contacted the Tampa ATCT using the remote communications outlet (RCO) at TPF for an IFR departure from runway 4 and was given an IFR clearance, but was held for departure. About 2 minutes later, he was advised to contact Tampa approach control on 119.9 MHz and was released for departure. There was no further contact between the Cessna 340A and Tampa ATCT.

The pilot of the Cessna 172M stated that he and the pilot-rated passenger monitored TPF's common traffic advisory frequency (CTAF) of 122.725 MHz from their taxi start point in front of the fixed base operator (FBO) to runway 36. The pilot-rated passenger stated that the radio transmissions were made by the pilot using the No. 3 radio, which was a Garmin GPS/Com transceiver. The pilot indicated that he initially transmitted on the CTAF that he was taking off from runway 1 but then corrected that he was taking off from runway 36. In separate written statements, both occupants of the Cessna 172M stated that they did not hear any other airplane on the CTAF frequency, and they saw no incoming or departing traffic.

A pilot-rated employee of the FBO at TPF reported that he heard a radio call on the CTAF from an occupant of the Cessna 340A stating that they were taking off from runway 4. About 10 to 15 seconds later, while he was talking to another person, he heard another transmission on the CTAF that "wasn't clear and direct" but indicated that an airplane was departing from runway 1, then corrected to runway 36. The employee asked the person he was talking with if the second radio call was at TPF, to which the individual replied that he did not hear it and did not think so.

The pilot of the Cessna 172M stated that he performed a short field takeoff, and just after liftoff, he heard but did not see what he thought was a twin-engine airplane with full throttle "descending off the right [side] of the airplane." He then heard a crash and saw a fireball at the departure end of runway 36. The pilot-rated passenger stated that, as the Cessna 172M climbed through about 200 ft near the north end of the runway, he heard another airplane. He looked out the right window and saw the Cessna 340A almost directly below "stall and crash." Because the pilot felt it unsafe to return to TPF, he elected to continue to his planned destination.

The airport was equipped with a security camera that pointed to the intersection of runways 4/22 and 18/36. The security camera depicted the latter portion of the departures of both airplanes. Review of the recorded video revealed that it depicted the Cessna 172M becoming airborne before the runway intersection and continuing in a slow climb straight ahead over the runway until just before the intersection with runway 4. As the Cessna 172M approached the intersection, the Cessna 340A entered the left side of the video just above runway 4 in a wings level attitude with the landing gear extended. The Cessna 340A was observed in a climbing left turn while the Cessna 172M continued straight ahead. The Cessna 340A then continued in a climbing left turn, rolled inverted, and, while in a nose- and left-wing-low attitude, impacted the ground north of the intersection. A fireball occurred almost immediately after impact, and the Cessna 172M continued in a northerly direction out of view of the camera.

A camera at a berth on the opposite (eastern) side of the shipping channel adjacent to the airport also recorded the accident sequence. The left side of the video included part of the airport where runways 4 and 36 intersected. In the recording, the Cessna 172M was first seen coming into view airborne over runway 36 and climbing straight out over the runway. As it neared the intersection of runway 4/22, the Cessna 340A came into view, just lifting off from runway 4 and almost immediately entering a hard-left turn. The Cessna 340A continued the turn, passing behind the Cessna 172M while climbing and closing on the Cessna 172M's right side. The Cessna 340A almost reached the Cessna 172M's altitude, but continued the left turn to an inverted attitude, and descended into the ground. A fireball then erupted.

A witness who was on a boat in the shipping channel next to runway 36 stated that he heard a

"screaming engine noise," which caused him to look toward the two airplanes. He saw that a "twin engine plane was behind and below the single engine plane." The twin engine airplane was in a left turn; it then caught a wing and slammed into the ground with an "instantaneous" explosion. He also indicated that the airplanes were so close that he thought they would collide (The figure below shows the airport diagram and accident site location).

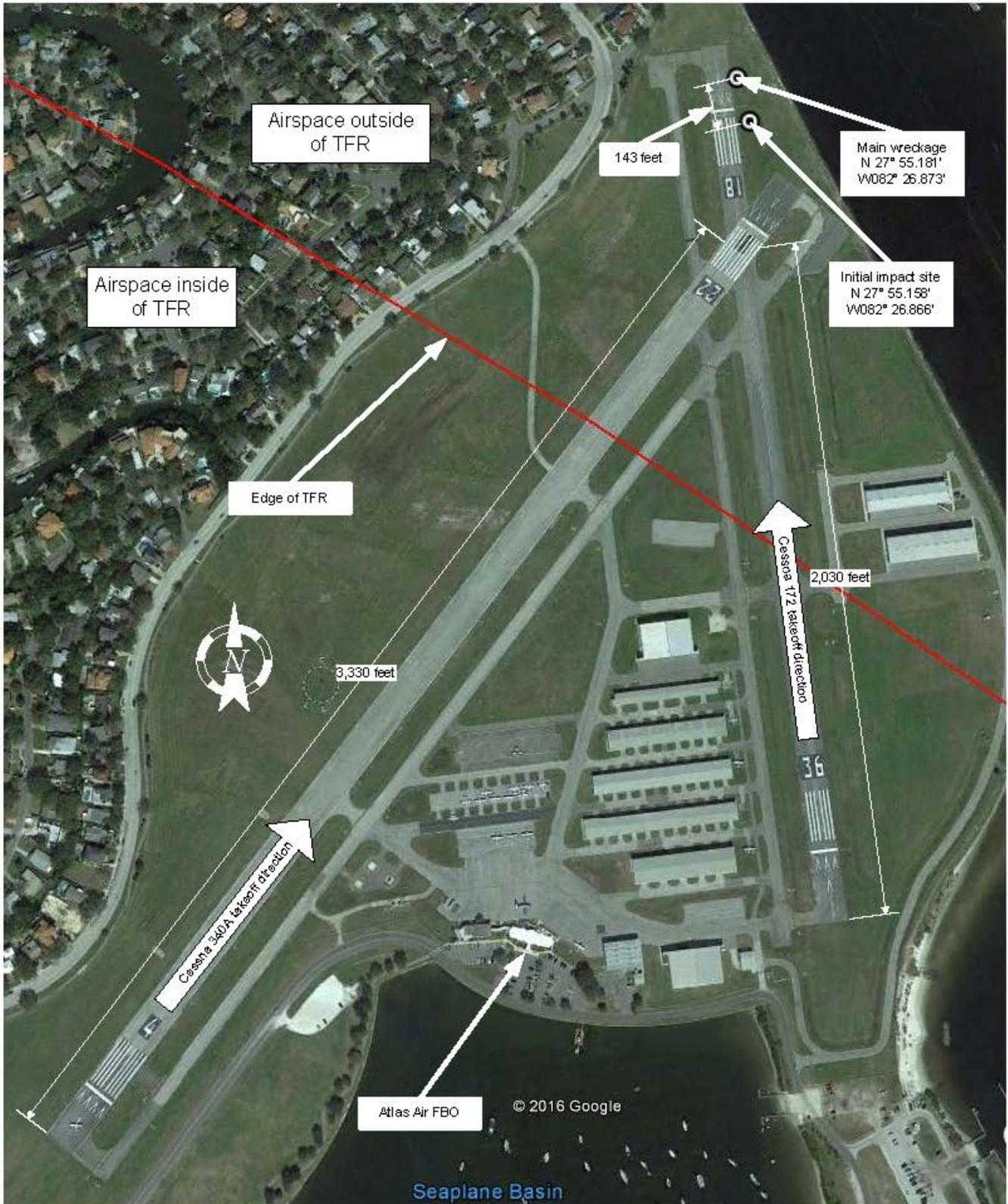


Figure - Airport and Accident Site Diagram

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	54, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane; Instrument helicopter	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 5, 2014
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	March 12, 2015
<b>Flight Time:</b>	5195 hours (Total, all aircraft), 25 hours (Last 90 days, all aircraft)		

### Pilot-rated passenger Information

<b>Certificate:</b>	Private	<b>Age:</b>	55, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 6, 2014
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 27, 2014
<b>Flight Time:</b>	375 hours (Total, all aircraft)		

According to Federal Aviation Administration (FAA) records, the pilot, who was seated in the left seat of the Cessna 340A, age 54, held an airline transport pilot certificate with an airplane multi-engine land rating. He also held commercial, flight instructor, and ground instructor certificates. At the commercial level, he held ratings for airplane single-engine land and sea, rotorcraft helicopter, and instrument helicopter, and, at the flight instructor level, he held ratings for airplane single- and multi-engine, rotorcraft helicopter, and instrument airplane and helicopter. His most recent FAA second-class medical certificate with no limitations was issued on June 5, 2014. As of October 2, 2015, the pilot reported a total time of 5,195 hours of which 284 hours were in multi-engine airplanes. His last flight review in

accordance with Title 14 CFR Part 61 section 56 was on March 12, 2015.

According to FAA records, the right seat occupant of the Cessna 340A, age 55, held a private pilot certificate with an airplane single-engine land rating. His most recent FAA second-class medical certificate with no limitations was issued on June 6, 2014. On the application for his last medical certificate, he listed a total flight time of 375 hours.

According to FAA records, the pilot, who was seated in the left seat of the Cessna 172M, age 30, held a private pilot certificate with airplane single-engine land rating issued earlier that day. His most recent FAA third-class medical certificate with no limitations was issued on December 7, 2015. On the FAA 8710-1 application form for his private pilot certificate, he listed a total flight time of 40 hours of which 21.4 hours were as instruction received and 18.6 hours were solo.

According to FAA records, the right seat occupant of the Cessna 172M, age 69, held airline transport, commercial, and flight instructor pilot certificates. At the airline transport pilot level, he held an airplane multi-engine land rating, and, at the commercial level, he held ratings for airplane single-engine land and sea. At the flight instructor level, he held ratings for airplane single- and multi-engine and instrument airplane. He reported a total flight time of 6,530 hours and about 3,000 hours in a Cessna 172.

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N6239X
<b>Model/Series:</b>	340 A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1977	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	340A0436
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	February 15, 2016 Annual	<b>Certified Max Gross Wt.:</b>	6390 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	3963.1 Hrs as of last inspection	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	C126 installed	<b>Engine Model/Series:</b>	TSIO-520-EBcN
<b>Registered Owner:</b>		<b>Rated Power:</b>	335 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

### Cessna 340A

The six-place, low-wing, retractable-gear Cessna 340A airplane, serial number 340A0436, was manufactured in 1977. It was powered by two 335-horsepower Continental Motors, Inc., TSIO-520-NB engines and equipped with Hartzell PHC-C3YF-2UF/FC7693DFB constant-speed propellers. The airplane was also equipped with RAM Option 3 vortex generators on both wings and tail that were installed in 1996 in accordance with Supplemental Type Certificate (STC) SA7975SW. The airplane's

maximum allowable gross weight was 6,390 pounds.

The airplane was equipped with a Garmin GNS-530W installed in the "pilots view position" that was the No. 1 communication and navigation transceiver. It was connected to the No. 1 position of the audio panel. A Garmin GNS 430 with navigation and communication capability was installed in the center instrument panel.

The maintenance records were reportedly in the airplane at the time of the accident. Review of copies of the Cessna 340A's maintenance record entries indicated that the airplane's last annual inspection was signed off as being completed on February 15, 2016. At that time, the airplane's total time was 3,963.10 hours.

The Cessna 340A's weight at the time of the accident was calculated using the empty weight when the airplane was modified in 1996 (about 4,478 pounds), the weights of the occupants from their most recent FAA medical examinations (208 and 207 pounds), and the weight of full usable fuel in each main fuel tank, each auxiliary fuel tank, and the locker fuel tank (1,098 pounds). The calculations indicated that the takeoff weight was about 5,991 pounds.

The Flight Manual Supplement associated with the 1996 modifications specified that the takeoff and climb speed to 50 ft was 93 knots indicated airspeed (KIAS) for weights between 5,990 and 6,390 pounds.

A review of the stall speed chart in the Flight Manual Supplement revealed that at 6,390 pounds, with flaps retracted and landing gear up, the stall speeds at 0°, 40°, and 60° of bank were 81, 93, and 115 KIAS, respectively. There were no published stall speeds for flaps retracted and landing gear down.

#### Cessna 172M

The four-place, high-wing, fixed-gear Cessna 172M airplane, serial number 17264811, was manufactured in 1975. It was equipped with three communication and navigation transceivers, which included a Garmin GNC-300XL GPS/Com system that was installed and interfaced to the existing audio system after the airplane was manufactured. According to the pilot-rated passenger, in November 2015, there had been static over the intercom, and the audio panel had been replaced. The pilot-rated passenger reported that all three radios were checked after the accident with no discrepancies reported.

Review of the Cessna 172M's maintenance records indicated that an annual inspection was completed on July 8, 2015, at an airplane total time of 9,412.4 hours. The next annual inspection was completed on August 10, 2016, at an airplane total time of 9,601.1 hours. There was no entry between the 2015 and 2016 annual inspection entries related to the airplane's radios.

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	TPF, 7 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	11:35 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	26 °C / 20 °C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tampa, FL (TPF )	Type of Flight Plan Filed:	IFR
Destination:	PENSACOLA, FL (PNS )	Type of Clearance:	IFR
Departure Time:	11:30 Local	Type of Airspace:	

The 1115 automated surface observation taken at TPF reported wind from 210°; at 9 knots, 10 statute miles visibility, and clear skies. The temperature and dew point were 27°C and 20°C, respectively, and the altimeter setting was 30.00 inches of mercury.

## Airport Information

Airport:	PETER O KNIGHT TPF	Runway Surface Type:	Asphalt
Airport Elevation:	7 ft msl	Runway Surface Condition:	Dry
Runway Used:	04	IFR Approach:	None
Runway Length/Width:	3580 ft / 100 ft	VFR Approach/Landing:	None

TPF had two runways, runway 4/22, which was 3,580 ft long and 100 ft wide, and runway 18/36, which was 2,687 ft long and 75 ft wide. The runways intersected near their northern ends. A shipping channel was located just east of and parallel to runway 18/36.

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	On-ground
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	27.919721,-82.447776

Examination of the accident site revealed that the Cessna 340A impacted flat terrain about 40 ft to the right of and 250 ft from the departure end of runway 36. The initial ground scars indicated a magnetic heading of about 10°. The wreckage came to rest upright, and both engines were separated from the wings. The right engine was located between the beginning of the wreckage path and the main wreckage, and the left engine was laying on the right wing.

A postcrash fire consumed the majority of fuselage from the nose of the airplane to the beginning of the empennage. Both wings were substantially consumed by fire. Remnants of all flight control surfaces were found at the scene. Flight control continuity could only be confirmed between the wings and the center cabin and between the tail and the center cabin due to the extensive fire damage. The hardware attaching the elevator trim pushrod assembly to the elevator trim actuator remained intact, and the elevator trim tab actuator was extended 1.4 inches, which equates to 5° tab trailing-edge-down. The rudder trim tab actuator was extended 1.0 inch, which equates to 5° tab trailing-edge-right. The aileron trim tab actuator was extended 1.7 inches, which equates to a neutral setting. Examination of the flap motor revealed the flap chain position correlated to flaps retracted.

The frequencies of the communication transceivers and the configuration of the audio control panel could not be determined due to the postcrash fire, which consumed the cockpit.

Engine crankshaft continuity and cylinder compression were confirmed on both engines. Significant thermal and impact damage were noted to both engines and their accessories. No preexisting anomalies were found that would have precluded normal operation.

Both propellers were separated from their respective engines, and both exhibited leading edge burnishing, bending, and twisting of the blades.

The Cessna 172M was examined the day of the accident by several FAA inspectors; no operational testing of the radios was performed. The pilot-rated passenger reported that subsequent testing of all three radios was satisfactory.

## Communications

TPF did not have a control tower, and the CTAF of 122.725 MHz was not recorded, nor was it required to be. Following the accident, equipment that recorded the CTAF was installed at TPF.

There were no reported communication difficulties with Tampa ATCT.

According to an individual who provided oversight for TPF, to their knowledge, there had been no formal or informal complaints about the CTAF pertaining to reception issues related to buildings and/or structures.

## Medical and Pathological Information

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The Hillsborough County Medical Examiner Department, Tampa, Florida, performed postmortem examinations of the Cessna 340A pilot and pilot-rated passenger, and also toxicological testing. The cause of death for both was listed as blunt impact to head and neck. Toxicology testing of liver specimens of the pilot and pilot-rated passenger revealed the results for both were negative for volatiles, drugs of abuse, comprehensive drug screen, and benzodiazepines.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma performed toxicological testing of specimens from the Cessna 340A pilot and pilot-rated passenger. The toxicology report for the pilot indicated no ethanol was detected in the submitted muscle and brain specimens. Unquantified amounts of atorvastatin, diphenhydramine, and naproxen were detected in the submitted liver specimen. Atorvastatin is a cholesterol lowering prescription medication commonly called Lipitor. Naproxen is an anti-inflammatory analgesic available over the counter and by prescription, often with the names Aleve and Naprosyn. Neither of these drugs are considered impairing. Diphenhydramine is a sedating antihistamine that has been shown to impair a driver's ability to safely operate a car. Testing for carbon monoxide and cyanide was not performed.

The toxicology report for the pilot-rated passenger indicated no ethanol was detected in the submitted muscle and brain specimens, and no tested drugs were detected in the submitted liver specimen. Testing for carbon monoxide and cyanide was not performed.

Drug and alcohol testing was not requested or performed for the occupants of the Cessna 172M.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Monville, Timothy
<b>Additional Participating Persons:</b>	Angel Figiola; FAA/FSDO; Tampa, FL Henry Soderlund; Textron Aviation; Wichita, KS Kurt Gibson; Continental Motors; Mobile, AL
<b>Original Publish Date:</b>	January 23, 2018
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=92856">https://data.nts.gov/Docket?ProjectID=92856</a>

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](#).