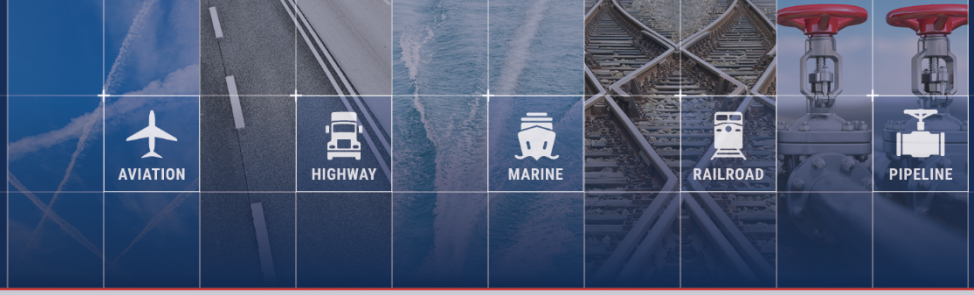

Aviation Investigation Final Report

Location:	Sebring, Florida	**Accident Number:**	ERA18LA268
Date & Time:	September 29, 2018, 12:40 Local	**Registration:**	N397JA
Aircraft:	Diamond DA20	**Aircraft Damage:**	Substantial
Defining Event:	Collision during takeoff/land	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The private pilot of the Piper airplane with a passenger on board was landing while the student pilot of the Diamond airplane with a flight instructor on board was performing touch-and-go landings on an intersecting runway in day visual meteorological conditions. Both airplanes were flying in left traffic patterns for their respective runways at the uncontrolled airport. The pilot of the Piper and the student pilot of the Diamond stated that they announced every leg of the traffic pattern on the airport's published common traffic advisory frequency (CTAF). The Diamond landed, and just when the student was adding power to initiate a takeoff, the left wing of the Piper, which was landing and flaring just a few feet above the runway, impacted the tail of the Diamond. The flight instructor in the Diamond said he was looking for the Piper after he saw it flying in the vicinity of the airport but that he never saw it in the airport traffic pattern, while the pilot of the Piper did not report seeing the Diamond until just before the collision. Recordings of the airport's CTAF showed that radio calls from the Diamond were heard for every leg of the airport traffic pattern on the published CTAF frequency before the collision, but only two garbled radio calls from the Piper were heard on the published CTAF frequency. Postaccident examination of the Piper's transceiver revealed that it was set to a different frequency. The Piper's transceiver was then set to the correct CTAF frequency, and the communication was clear. Therefore, it is likely that the pilot of the Piper failed to use the correct CTAF frequency when he announced his airplane's position in the airport traffic pattern.

Probable Cause and Findings

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

The inability of the pilot of the Piper and the student pilot and flight instructor of the Diamond to see and avoid the other airplane. Contributing to the collision was the Piper pilot's failure to use the correct common traffic advisory frequency to announce his airplane's position.

Findings

Personnel issues	Monitoring other aircraft - Pilot of other aircraft
Personnel issues	Monitoring other aircraft - Student/instructed pilot
Personnel issues	Monitoring other aircraft - Instructor/check pilot
Aircraft	VHF communication system - Incorrect use/operation
Personnel issues	Use of equip/system - Pilot of other aircraft

Factual Information

History of Flight

Landing	Collision during takeoff/land (Defining event)

On September 29, 2018, about 1240 eastern daylight time, a Diamond Aircraft Industries, Inc. (Diamond) DA20-C1, N397JA, owned and operated by Aamro Aviation Corporation, and a privately owned and operated Piper PA28R-180, N3907T, collided at the Sebring Regional Airport (SEF), Sebring, Florida. There were no injuries to the flight instructor aboard the Diamond or the private pilot and passenger aboard the Piper, while the student pilot aboard the Diamond sustained a minor injury. Both airplanes were substantially damaged. The Diamond and Piper airplanes were being operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as an instructional flight, and a personal flight, respectively. Visual meteorological conditions prevailed at the time and neither flight had filed a flight plan. The Diamond originated from SEF about 5 minutes earlier, while the Piper originated from the Peter O'Knight Airport (TPF), Tampa, Florida, about 1015.

The flight instructor of the Diamond reported that he and the student pilot were practicing touch and go landings on runway 14 at SEF, an uncontrolled airport, with the wind from the east. During the second traffic pattern while on the upwind leg of the airport traffic pattern, he noticed a Piper arriving from the west, heading east. As the student pilot turned onto the crosswind and downwind legs of the airport traffic pattern, they lost sight of the Piper, and at that point he did not know if the Piper was transitioning the area or intended to enter the airport traffic pattern. If the Piper was to remain in the airport traffic pattern, he assumed that the pilot would enter left traffic of the airport traffic pattern for runway 14 behind them. The student pilot announced the Diamond's position on every leg of the airport traffic pattern making left turns, but neither pilot heard the pilot of the Piper acknowledge. The Diamond turned onto the base and final legs of the airport traffic pattern, and although the flight instructor was looking for the Piper, he did not see it. After landing on runway 14, the Diamond was configured for takeoff, and just as the student pilot advanced the throttle to full, the tail was contacted by the Piper's left wing.

The pilot of the Piper reported that he approached SEF from the northwest quadrant, and the first radio call he made on the SEF common traffic advisory frequency (CTAF) was when the airplane was near the airport crossing midfield at 1,200 feet mean sea level (msl). He reported turning onto the downwind leg of the airport traffic pattern for runway 19, which he announced, then turned onto the base and final legs of the airport traffic pattern, which he also announced making left turns. He planned to touchdown at the 1,000-foot marker, and when flaring about 1 to 2 feet above runway 19, just before the collision, he noted a flash off his right wing. After the collision, he touched down, taxied onto taxiway A2, and secured the airplane.

Postaccident examination of the Diamond revealed the transceiver was set to 122.7 MHz (published CTAF); however, the transceiver of the Piper was set to 122.725 MHz. Operational testing of the transceiver in the Diamond revealed the transmissions were heard on a portable VHF transceiver, while

transmissions from the Piper on the as-found frequency could not be heard. After switching to the published CTAF frequency, the transmissions were heard.

NTSB review of recorded LiveATC.net audio for SEF for the period 1230 to 1300 revealed radio calls from the Diamond were heard for every leg of the airport traffic pattern prior to the collision; however, only 2 radio calls attributed to be from the Piper were heard. Both radio calls from the Piper were garbled and difficult to comprehend.

Student pilot Information

Certificate:	Student	**Age:**	31,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	April 5, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	40 hours (Total, all aircraft), 35 hours (Total, this make and model), 8 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft)		

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	May 21, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 6, 2018
Flight Time:	698 hours (Total, all aircraft), 40 hours (Total, this make and model), 467 hours (Pilot In Command, all aircraft), 10 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Diamond	**Registration:**	N397JA
Model/Series:	DA20 C1	**Aircraft Category:**	Airplane
Year of Manufacture:	2003	**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	C0212
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	May 1, 2018 Annual	**Certified Max Gross Wt.:**	1770 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2776.8 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	IO-240-B32B
Registered Owner:	Aamro Aviation Corporation	**Rated Power:**	125 Horsepower
Operator:	Aamro Aviation Corporation	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SEF,62 ft msl	**Distance from Accident Site:**	
Observation Time:	12:35 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 3600 ft AGL	**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	31°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sebring, FL (SEF)	**Type of Flight Plan Filed:**	None
Destination:	Sebring, FL (SEF)	**Type of Clearance:**	None
Departure Time:	12:35 Local	**Type of Airspace:**	

Airport Information

Airport:	Sebring Regional Airport SEF	**Runway Surface Type:**	Asphalt
Airport Elevation:	62 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	None
Runway Length/Width:	4990 ft / 100 ft	**VFR Approach/Landing:**	Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	27.45861,-81.343055(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Ronnie L Faulkner; FAA/FSDO; Orlando, FL Albert Gomez; FAA/FSDO; Orlando, FL
Original Publish Date:	November 19, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98382

Aviation Investigation Final Report

Location:	Sebring, Florida	**Accident Number:**	ERA18LA268
Date & Time:	September 29, 2018, 12:40 Local	**Registration:**	N3907T
Aircraft:	Piper PA28R	**Aircraft Damage:**	Substantial
Defining Event:	Collision during takeoff/land	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot of the Piper airplane with a passenger on board was landing while the student pilot of the Diamond airplane with a flight instructor on board was performing touch-and-go landings on an intersecting runway in day visual meteorological conditions. Both airplanes were flying in left traffic patterns for their respective runways at the uncontrolled airport. The pilot of the Piper and the student pilot of the Diamond stated that they announced every leg of the traffic pattern on the airport's published common traffic advisory frequency (CTAF). The Diamond landed, and just when the student was adding power to initiate a takeoff, the left wing of the Piper, which was landing and flaring just a few feet above the runway, impacted the tail of the Diamond. The flight instructor in the Diamond said he was looking for the Piper after he saw it flying in the vicinity of the airport but that he never saw it in the airport traffic pattern, while the pilot of the Piper did not report seeing the Diamond until just before the collision. Recordings of the airport's CTAF showed that radio calls from the Diamond were heard for every leg of the airport traffic pattern on the published CTAF frequency before the collision, but only two garbled radio calls from the Piper were heard on the published CTAF frequency. Postaccident examination of the Piper's transceiver revealed that it was set to a different frequency. The Piper's transceiver was then set to the correct CTAF frequency, and the communication was clear. Therefore, it is likely that the pilot of the Piper failed to use the correct CTAF frequency when he announced his airplane's position in the airport traffic pattern.

Probable Cause and Findings

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

The inability of the pilot of the Piper and the student pilot and flight instructor of the Diamond to see and avoid the other airplane. Contributing to the collision was the Piper pilot's failure to use the correct common traffic advisory frequency to announce his airplane's position.

Findings

Personnel issues	Monitoring other aircraft - Pilot
Personnel issues	Monitoring other aircraft - Student/instructed pilot
Personnel issues	Monitoring other aircraft - Instructor/check pilot
Aircraft	VHF communication system - Incorrect use/operation
Personnel issues	Use of equip/system - Pilot

Factual Information

History of Flight

Landing-flare/touchdown	Collision during takeoff/land

On September 29, 2018, about 1240 eastern daylight time, a Diamond Aircraft Industries, Inc. (Diamond) DA20-C1, N397JA, owned and operated by Aamro Aviation Corporation, and a privately owned and operated Piper PA28R-180, N3907T, collided at the Sebring Regional Airport (SEF), Sebring, Florida. There were no injuries to the flight instructor aboard the Diamond or the private pilot and passenger aboard the Piper, while the student pilot aboard the Diamond sustained a minor injury. Both airplanes were substantially damaged. The Diamond and Piper airplanes were being operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as an instructional flight, and a personal flight, respectively. Visual meteorological conditions prevailed at the time and neither flight had filed a flight plan. The Diamond originated from SEF about 5 minutes earlier, while the Piper originated from the Peter O'Knight Airport (TPF), Tampa, Florida, about 1015.

The flight instructor of the Diamond reported that he and the student pilot were practicing touch and go landings on runway 14 at SEF, an uncontrolled airport, with the wind from the east. During the second traffic pattern while on the upwind leg of the airport traffic pattern, he noticed a Piper arriving from the west, heading east. As the student pilot turned onto the crosswind and downwind legs of the airport traffic pattern, they lost sight of the Piper, and at that point he did not know if the Piper was transitioning the area or intended to enter the airport traffic pattern. If the Piper was to remain in the airport traffic pattern, he assumed that the pilot would enter left traffic of the airport traffic pattern for runway 14 behind them. The student pilot announced the Diamond's position on every leg of the airport traffic pattern making left turns, but neither pilot heard the pilot of the Piper acknowledge. The Diamond turned onto the base and final legs of the airport traffic pattern, and although the flight instructor was looking for the Piper, he did not see it. After landing on runway 14, the Diamond was configured for takeoff, and just as the student pilot advanced the throttle to full, the tail was contacted by the Piper's left wing.

The pilot of the Piper reported that he approached SEF from the northwest quadrant, and the first radio call he made on the SEF common traffic advisory frequency (CTAF) was when the airplane was near the airport crossing midfield at 1,200 feet mean sea level (msl). He reported turning onto the downwind leg of the airport traffic pattern for runway 19, which he announced, then turned onto the base and final legs of the airport traffic pattern, which he also announced making left turns. He planned to touchdown at the 1,000-foot marker, and when flaring about 1 to 2 feet above runway 19, just before the collision, he noted a flash off his right wing. After the collision, he touched down, taxied onto taxiway A2, and secured the airplane.

Postaccident examination of the Diamond revealed the transceiver was set to 122.7 MHz (published CTAF); however, the transceiver of the Piper was set to 122.725 MHz. Operational testing of the transceiver in the Diamond revealed the transmissions were heard on a portable VHF transceiver, while

transmissions from the Piper on the as-found frequency could not be heard. After switching to the published CTAF frequency, the transmissions were heard.

NTSB review of recorded LiveATC.net audio for SEF for the period 1230 to 1300 revealed radio calls from the Diamond were heard for every leg of the airport traffic pattern prior to the collision; however, only 2 radio calls attributed to be from the Piper were heard. Both radio calls from the Piper were garbled and difficult to comprehend.

Pilot Information

Certificate:	Private	**Age:**	79,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 31, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 1, 2017
Flight Time:	1323 hours (Total, all aircraft), 1173 hours (Total, this make and model), 1246 hours (Pilot In Command, all aircraft), 13 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N3907T
Model/Series:	PA28R 180	**Aircraft Category:**	Airplane
Year of Manufacture:	1967	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28R-30241
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 22, 2018 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:	12 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3817 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-360-B1E
Registered Owner:	On file	**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SEF,62 ft msl	**Distance from Accident Site:**	
Observation Time:	12:35 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 3600 ft AGL	**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	31°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tampa, FL (TPF)	**Type of Flight Plan Filed:**	None
Destination:	Sebring, FL (SEF)	**Type of Clearance:**	None
Departure Time:	10:15 Local	**Type of Airspace:**	

Airport Information

Airport:	Sebring Regional Airport SEF	**Runway Surface Type:**	Asphalt
Airport Elevation:	62 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	None
Runway Length/Width:	4990 ft / 100 ft	**VFR Approach/Landing:**	Touch and go;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	27.45861,-81.343055(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Ronnie L Faulkner; FAA/FSDO; Orlando, FL Albert Gomez; FAA/FSDO; Orlando, FL
Original Publish Date:	November 19, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98382