



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Safety Inspector

South Florida Flight Standards District Office 19

Miramar, FL 33027

Rick W. Beckstrom FAA IIC- Inspectors Statement – Accident Investigation

NTSB # ERA21LA111

ATQA No.: [REDACTED]

Registration: N266ND

SAS Activity ID: [REDACTED]

Make: Piper

Model: PA-28-161

Serial Number: 2842066

Annual Aircraft/Engine/Propeller Condition Inspection:

Most Recent Annual Inspection Dated 05/13/2020	Most Recent 100 Hour Inspections Dated 01/07/2021
Tach Time – 5,545.8 Hours Total Time Airframe – 15,769.1 Hours Total Time Engine – 7,439.5 Hours Total Time Propeller - UNK Total Time TBO – 1134.5 Hours	Tach Time – 6,143.6 Hours Total Time Airframe – 16,366.9 Hours Total Time Engine – 8037.3 Hours Total Time Propeller - UNK Total Time TBO – 1134.5

When: January 24, 2021 2000 EST

Where: Piper Aircraft PA-28-161, registration N266ND with one person on board flying, took off from Palm Beach County Airpark Lantana (LNA). Aircraft last track was at 0 feet on a heading of 060° over the Boynton Beach inlet, 4 miles South East of (LNA) Palm Beach County Park Airport Lantana, Florida. Aircraft was found on January 25, 2021 at around 0800 am at the following GPS coordinates N26°32.28.3, W-80°02.13.3.

What: Part 141/91 Operation, owned by Euro 2000 Inc, [REDACTED], Merritt Island, FL 32952. Aircraft N266ND is operated by Airborne Systems Inc (dba 2Fly Airborne, FAA Designator E7XS), a Part 141/61 Flight School. Airman operated a Piper Aircraft PA-28-161, registration N266ND. Aircraft was operating VFR departing Lantana and traveling to Merritt Island by Mr. Abhishek Patter who was piloting the aircraft and perished in the crash.

Who: Pilot in Command (PIC):

Abhishek Patter (Private Pilot Cert. No. [REDACTED])

[REDACTED]
VASCO 403801 INDIA

Medical Certificate First Class: Date of Examination 10/04/2019

Examination of the aircraft and crash site:

Aircraft last track was at 0 feet on a heading of 060° over the Boynton Beach inlet, 4 miles South East of (LNA) Palm Beach County Park Airport Lantana, Florida. Aircraft was found on January 25, 2021 at around 0800 am at the following GPS coordinates N26°32.28.3, W-80°02.13.3.

The aircraft took off from Palm Beach County Park Airport Lantana (LNA) flying southeast and turning to the northeast while speaking to Palm Beach Approach. 4 miles Southeast of Palm Beach County Park Airport Lantana (LNA) and crashed in the ocean at the following GPS Coordinates N26°32.28.3, W-80°02.13.3.

The aircraft was raised to the surface on 1/26/2021 and brought to a docking area in Fort Lauderdale at the following GPS Coordinates N26°03.21.2, W-80°06.46.5. On 01/27/2021, the FAA, a representative from Piper, and a representative from Lycoming examined the aircraft.

The following was noted from the representative from Piper with input from Lycoming in the engine section.

The right wing was impact separated from the fuselage. The aircraft exhibited damage consistent with saltwater immersion. Approximately 20 gallons of avgas was recovered from the aircraft.

Other Damage

None reported.

Accident/Incident History

None reported.

Airframe and Engine Logbooks

Not received.

Fuselage

The fuselage exhibited impact damage to the firewall area and damage consistent with saltwater immersion. All windows and windshields remained intact with the exception of the pilot's windshield which was fractured. The baggage door remained attached and was closed and latched with its lock assembly unlocked. The cabin door exhibited deformation and was noted unlatched in the open position. The nose gear was fractured and deformed aft. The engine cowlings were fragmented.

The seats and their respective 3-point restraints remained attached to their mounts. Field test of the seatbelts determined them to be functional. The pilot's seat was observed in the 5th notch back from its most forward position and the copilot's was in the 9th notch back.

The following was noted:

- Mixture rich
- Throttle mid-travel
- Carburetor heat on
- Cabin heat and defrost off
- ELT panel mounted switch in arm position
- Flap lever stowed / 0°
- Stabilator trim between neutral and nose up
- Fuel selector positioned to right fuel tank. Determined to be functional during field test with low pressure air.
- Pilot and copilot control wheels attached to their respective shafts/T-bar
- Battery master on
- Alternator on
- Fuel pump on
- Navigation lights off
- Strobe lights on
- Landing light off
- Recognition lights off
- Pitot heat off
- Radio master on
- Magneto switch "Both" key remained in switch
- Analog ADF tuned to 1024
- Hobbs 803.8
- Tachometer hours 6,220.8
- Airspeed indicator static at 122 knots
- Vertical speed indicator static at about 800 foot per minute down
- Altimeter setting Unknown / unreadable
- Switch lights dimmer ¼ up
- Panel lights ¼ up
- Avionics lights full dim
- Day/night annunciator switch on night

The vacuum inop. annunciator was removed for examination. With the use of a multi-meter continuity was established through the 2 bulbs and with a 10 power glass no filament stretching was observed. The standby vacuum control switch was removed for examination. Continuity was established through the bulbs and no stretching was noted to their filaments when examined with previous methods.

The vacuum driven attitude indicator was removed for examination. Upon disassembly no rotation scoring was observed to its internal rotor or housing. The electric turn and bank indicator was removed and no rotational scoring was noted to its internal rotor.

The standby vacuum pump was disassembled. The pump's internal vanes and rotor were intact, and its motor was determined to be functional during field test with a 12volt battery. The vacuum manifold was determined to be functional during field test with low pressure vacuum.

The gascolator bowl was displaced from its receptacle. Its filter was clear of debris and the bowl contained sediment consistent with beach sand. The electric fuel pumps filter was clear of debris and liquid consistent in odor to that of aviation type gasoline was observed within the fuel pump. The fuel pump was determined to be functional during field test with a 12 volt power source.

The electric engine primer solenoid was removed for examination. The primer was determined to be functional during field test with a 12 volt power source.

The induction air filter was not observed within the recovered wreckage. The cowling was destroyed in this area. The induction heat box remained attached to carburetor and was crushed. Its control cable remained attached.

Left Wing

The left wing remained attached to the fuselage and exhibited impact damage. Red paint transfer marks observed to its leading edge area were consistent with color of the recovery vessel. The pitot mast remained attached to the wing and its static and pitot ports were clear of obstruction. The lift detector was separated from its mount with impact damage noted to this area of the wing. The fuel tank was intact and about 20 gallons was observed within the fuel tank. The fuel cap remained attached to its receptacle and the tank's vent was clear of obstruction. The main gear's oleo tube and wheel was separated from its trunnion and was not located within the recovered wreckage.

The flap remained attached to the wing and was noted in the "up/0°" position. Impact and or recovery damage was noted to the flap. The aileron remained attached to the wing with no visible damage observed. The aileron balance cable was separated at the fuselage centerboard area. The separated cable ends exhibited a splayed, broomstrawed appearance consistent with tension overload separation.

Aileron and flap control continuity was established and no anomalies were observed to the aileron's travel limit stops.

Right Wing

The right wing was separated from the fuselage and remained tethered by the right aileron drive cable and electrical harness. The wing's main spar fracture surface exhibited a rough flap grey appearance consistent with overload separation. The wing's forward attach point was pulled from the wing. Its aft attach point hardware remained intact with the wing fitting fractured. Leading edge impact damage and skin separations were noted at the wing's

outboard approximate 4' and inboard root area. Red transfer marks noted to the wing were consistent to the recovery vessel.

The main gear was partially separated from the wing and its oleo tube and wheel were not located within the recovered wreckage. The fuel tank was intact and about 3-4 gallons of blue liquid consistent in color and odor to that of 100LL aviation type gasoline was observed. The fuel cap remained attached to its receptacle and the tank's vent was clear of obstruction. The fuel line was fractured at the root area, and with low pressure air, the fuel pick-up tube was determined to be clear of obstruction.

The flap remained attached to the wing and was free to move about its hinges when facilitated by hand. The flap's control rod was fractured and the fuselage mounted control arm was in the forward position consistent with the flap set to the "up/0°" position. Impact or recovery damage was observed to the flap. The aileron remained attached to the wing with impact or recovery damage noted. The aileron control rod was fractured from the aileron's rod end bearing. The aileron control cables remained attached to the deformed bellcrank. The drive cable was continuous to the T-bar assembly and the balance cable was separated at the fuselage centerboard area. The separated cable ends exhibited a splayed, broomstrawed appearance consistent with tension overload separation. Aileron control continuity was established except where impact and overload separations exist.

Empennage

The vertical stabilizer remained intact with no observed impact damage. The rudder remained attached to its mounts and exhibited impact or recovery damage. No damage was noted to the rudder's travel limit stops and its control cables were continuous to the rudder pedal assembly. The stabilator and its trim tab remained attached to their respective attaching points with no impact damage observed. No anomalies were noted to its travel limit stops or balance weight. The stabilator control cables were continuous to the T-bar assembly. About 9 threads / 1 1/4" of stabilator trim jackscrew protruded from the top of the assembly consistent with a partial "nose up" trim setting. Rudder and stabilator control continuity was established.

Engine

The engine remained attached to the engine mounts which was fractured and exhibited downward deformation. Oil was noted within the engine during examination. The oil filter media and oil pump suction screen were clear of debris. Fuel was observed within the engine driven fuel pump.

The carburetor remained attached to the engine and its bowl was cracked from impact forces. The mixture and throttle control cables remained attached to their respective attaching points. The engine driven vacuum pump remained attached to the engine and was removed for examination. The pump produced suction during hand rotation of its drive gear coupler. Disassembly of the vacuum pump revealed its internal vanes and rotor were intact.

The engine's exhaust system was impact damaged but remained attached to its respective cylinder attach points. No pre-impact anomalies were observed to the heat muff. Thumb compression and suction was achieved on all four cylinders during hand rotation of the attached propeller. Crankshaft continuity to the rear gears was also achieved during the compression check.

The powerplant is a four-cylinder, air cooled, direct drive, horizontally opposed, carbureted, naturally aspirated, internal combustion engine rated at 160 HP @ 2700 RPM. As first viewed, the engine appeared relatively undamaged and remained attached to the airframe. The engine mounts were broken, and the engine was angled in a nose down configuration. The propeller remained attached to the crankshaft flange. With the exception of the carburetor and the alternator, there was minimal impact damage to the engine. The engine rotated by hand by spinning the propeller. The engines valve covers were removed to facilitate further examination. The top and bottom plugs were removed to let water drain from the cylinders. The bottom plugs were reinstalled. Continuity was confirmed throughout the engine and valve movement was observed on all cylinders. Thumb compressions were established on all cylinders via the top spark plug holes. The engine cut free from the airframe mounts to continue the examination. The oil level gauge remained installed and undamaged. The intake pipes remained secured and undamaged to the cylinders and sump assembly. The exhaust stacks had minor impact damage and remained attached to their cylinder heads. The exhaust flanges had warped from impact away from the cylinder heads on cylinders 1 and 3, but they were still attached to the cylinders. The muffler had impact damage. The exhaust system was cut off for further examination. No signs of pre-impact exhaust leaks were noted during the investigation.

Propeller

The two bladed fixed pitch propeller remained attached to the engine. One blade was deformed aft about mid-span with no leading edge damage noted. No visible deformation or leading edge damage was observed to the other blade. The spinner remained attached to its mounts and exhibited leading edge damage.

Inside the aircraft, multiple electronic devices were found.

A dive recovery video from the Palm Beach Sheriff's Office was provided to The FAA Inspector. The video showed the Pilot unbuckled and the right door partially open, obstructed from fully opening by the right wing. Both aircraft wings were attached to the aircraft fuselage. The right wing did not appear to be subjected to rotational / torsional forces. The right wing damage at the dock appears to have been from the aircraft recovery effort from the ocean. Also in the dive video, a "selfie stick" was present but did not appear to be present upon aircraft recovery.

Airman Training

Upon review of the Airman's training history, he took 3 times to pass the Private Pilot Certification Practical Test. The first attempt was on 6/15/2020 in which he failed the oral portion of the practical test. The second attempt was on 10/05/2020. The airman failed the flight portion of the practical test. The airman passed on the third attempt on 10/24/2020.

It is also noted that he had a first time pass on the Instrument rating practical test while passing the written test with a 75 percent. The temporary Airman certificate was issued on 1/20/2021 by a Designated pilot Examiner from SO15.

When FAA Designated Pilot Examiner was interviewed on February 25, 2021, he stated that he was in the hospital with a COVID-19 diagnosis and was unable to talk. The questions that were going to be asked was how the applicant's eligibility was established for the Instrument Check ride on 01/20/2021 and what documents were utilized to establish eligibility. (Instrument rating cross county requirement was not logged in the applicant's logbook).

IACRA PRIVATE Vs INSTRUMENT FAA FORM 8710 (DATA)			
	PRIVATE 10/24/2020	INSTRUMENT 01/20/2021	DIFFERENCE PVT Vs IFR
TOTAL	62.2	176.60	114.4
DUAL RECEIVED	52.6	71.5	18.9
SOLO	9.6	60	50.4
PIC & SIC	9.6	121.8	112.2
X-COUNTRY DUAL	5.7	11	5.3
X-COUNTRY SOLO	6.1	53.6	47.5
X-COUNTRY PIC/SIC	6.1	70.70	64.6
INSTRUMENT	7.1	39.9	32.8
NIGHT DUAL	4.0	9.3	5.3
NIGHT T/O	12	21	9
NIGHT PIC/SIC	0	10.10	10.10
NIGHT T/O PIC/SIC	0	9	9
ATD	0	20	20

The FAA Form 8710 Airman Certificate Application used for the Instrument Rating practical test indicated in section II., the following:

- Total Airplane flight time of 176.6 hours
- Dual Received of 71.5 hours
- On Airplane class totals though 121 hours was listed (for Airplane Single Engine Land) and no other classes were filled out (for Airplane Multi Engine Land).
- ATD (Non flight) Time of 20 hours (All multiengine)
- Night Instruction of 9.3 hours
- Night PIC of 10.1 hours
- Night Take Off and Landings 21

Comparing the Private Pilot Satisfactory FAA Form 8710 Airman application to the Instrument application shows that since 10/24/2020, the applicant flew:

- 5.3 hours of night Instruction received (All in one flight with an instructor that took place on 1/13/2021 per flight school invoice, and was in a Cessna 172 N13986). This was not logged in the Airman's Logbook).
- 10.1 hours of Night PIC (everything post private)
- 4.8 hours of night solo (not dual instruction post private)

A review of the Airman's LOGBOOK indicated that his TOTAL night flight time was around 20 hours, 4 hours of which were from his Private Pilot training.

- 1.6 hours flight at night post private logged in logbook as "ferry flight" 10/25/2020 with 3 takeoffs and landings logged in a CESSNA C172 N4325R.
- 8.9 hours of night PIC flight was logged in the airman's logbook in December 2020. None of which were dual instruction received
- There appear to be discrepancies with the logbook coordinating with the times utilized for the Instrument FAA Form 8710 Airman application
- The airman had illegible entries in his logbook that make it difficult to distinguish the hours logged. He also did not tally logged flight hours at the total time entries in the logbook.
- The airman did not log make and model of aircraft in logbook and failed to log take offs and landings
- Only two flights on November 5, 2020, of 1.8 hours and 0.7 hours respectively, which appear to reflect dual instruction on the Piper PA-28 Warrior. The logbook remarks state that it was an aircraft "checkout" with 3 takeoffs and landings. All the remaining PA-28 time in the Airman's logbook are not dual instruction, and cannot be validated as a Solo flight.

A review of 2fly airborne billing records indicate that the Airman flew:

- 22 hours in the Cessna 172
- 101.8 hours in the Piper Warrior N211J and N271SG (Only two flights of 1.8 hours and 0.7 hours respectively which appear to reflect dual instruction), 5.3 hours of night flight / dual instruction in a C172 (IFR XC)
- Solo night flight billing entries appear to indicate that a Piper PA-28, N398H, on 12/08/2020, was utilized by the airman from KCOI to KCRG and back (2 legs of 2.0 hours each for a total of 4 hours of solo flight that night). On 12/09/2020, the airman utilized a Piper PA-28, N833TB, for a solo night flight from KCOI to KSRQ and back (2 legs of 1.2 hours each for a total of 2.4 hours that night).
- The solo night flight entries on December 8 and 9th appear to be the only solo time at night in a Piper PA-28 for a total of 6.4 hours.

Summary of Airman's Experience

- Inconstancies were present comparing School billing records, to the airman's logbook and the FAA form 8710 application for an Instrument rating.
- The only dual flights in a Piper PA-28 Cherokee appears to be the initial checkout on 11/04/2020 (logbook date illegible) as indicated by school boiling. The airman's logbook did not reflect dual instruction on the flights for 11/04/2020. The 1.8 entry in the airman's logbook states "PA-28 checkout" in the airman's logbook for a flight from KCOI KVRB and indicated 2 landings. The next flight on 11/05/2020 was a .7 hours in the PA-28 and in the remarks indicated cross wind landing, with one landing annotated.
- If the FAA Form 8710 is utilized for the airman's experience, the Airman had 10.1 hours of Night PIC. 6.9 of which were in a Cessna C-172. Of the 6.9 hours, 5.3 hours were dual instruction and covered the Instrument Cross country on January 13, 2021. The 1.6 of night flight logged as PIC post private on 10/25/2020, the Airman appeared to establish night currency while the last night flight before establishing currency was 01/28/2020 within his Private Pilot Training. Of the remaining 10.1 hours, the 3.2 hours appear to have been in a Piper PA-28 at night, logged as PIC, no dual instruction received.
- The Airman's logbook only reflected 4 entries of solo night flight, the solo night flight entries on December 8 and 9th appear to be the only solo time at night in a Piper PA-28 for a total of 6.4 hours.
- If the airman's logbook is utilized, then his total night time post private would indicate 15.8 hours of night PIC. Of the 15.8 hours, at least 6.9 hours of those night PIC hours were in a Cessna 172.
- The airman logged 18.9 hours of dual instruction post private for the Instrument rating.

A review of ADSB data for N266ND showed the following in Zulu Time:

	ADS-B DATA	PILOT	ATC	
TIME	ALT	TRANSPONDER	TRANPONDER	INSTRUCTIONS
00:57:17	800	1200		ALTITUDE SHOWS 009 FT
00:57:26	900	READ BACK - 0212	ATC XCODE – 0212	ALTIMETER 30.11
00:57:33	975	XCODE: 212 Wrong Code		
00:58:07	975			ATC RADAR CONTACT
00:58:37	875			@ OR BELOW 500 FT
00:59:13	350		NEW CODE 1437	
00:59:17	325	READ BACK - 1437		
00:59:21	275			
00:59:22	250	XCODE: 1436 Wrong Code		
00:59:38	0			
00:59:59				ACT CORRECTED THE XCODE 1437 / SHOWS 001 FT / NO RESPONSE

A review of Air Traffic Control data indicated N266ND departed the Palm Beach County Park Airport Lantana (LNA) and was destined for Merritt Island Airport (KCOI) and requested flight following. N266ND was radar identified, instructed to maintain VFR, and experienced a simultaneous loss of radar and communications.

ATC data indicated that N266ND made contact with Palm Beach Approach after departing Palm Beach County Airport Lantana (LNA) at 00:57:17Z (19:57 EST). The airman contacted Palm Beach Approach. Palm Beach Approach gave a squawk code of 1212 for the transponder at 00:57:28Z. Radar contact was made with N266ND at 00:58:07Z and asks how he could help N266ND, the aircraft shows an altitude of approximately 975 feet. The Airman responded that he would like flight following to KCOI along the shoreline. At 00:58:37Z Palm Beach Approach stated to N266ND to proceed Northbound at or along the shoreline at 500 feet or below while N266ND showed an altitude of approximately 900 feet. The Airman repeated the assigned ATC instruction correctly. At 00:59:00Z, N266ND while turning from a South Easterly heading to a easterly heading descended from 900 feet to approximately 600 feet. At 00:59:13Z Palm Beach Approach instructed N266ND to reset transponder code to 1437 while N266ND appeared to continue a descent to approximately

500 feet. The Airman repeated the correct newly assigned transponder code to Palm Beach Approach at 00:59:19Z and indicated an approximate altitude of 400 feet. As N266ND continued the turn from easterly to northeasterly over the water, the approximate altitude was 100 Feet at 00:59:43Z. Palm Beach Approach contacts N266ND at 01:00:00Z to assign a transponder squawk code of 1437. Subsequent Palm Beach Approach communications to N266ND at 01:00:30Z do not indicate any further responses from N266ND.

Summary of Transponder and ATC review:

Piper PA-28, N266ND departed Lantana at night and the flight lasted approximately 5 minutes. A review of the transponder data indicated that multiple incorrect transponder codes were input by the airman. [REDACTED]

Final Summary

[REDACTED]

Rick W. Beckstrom
Aviation Safety Inspector