



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

Marcelo O. Martin
Aviation Safety Inspector

South Florida Flight Standards District Office 19

Miramar, FL [REDACTED]

Juan C. Garcia FAA, IIC
Inspectors Statement/Accident Investigation

Registration: N223AB
Make: Piper
Model: PA-25-235
Serial Number: 25-3995
PTRS: 202010189
ATQA No.: ASO1920067
NTSB No.: ERA20LA275
AFTT: 7891.5
Tach Time: 1437.7
TTE: 11573.7
TSMOH: 2585
Last 100/Annual - 05/22/20

When: 08/05/2020

Where: Miami Dade Water Treatment Plant Northern Area. Location on the facility
25°45'02 North 80°09'07 West.

What:

Pilot operating under Part 91 Banner Towing operating Piper PA-25-235, serial number 25-3995, registration N223AB from North Perry Airport (HWO) with one pilot on board. Piper N223AB, owner and operated by Aerial Banners, Inc., Pembroke Pines, Florida. Aircraft engine started to have extreme loss of power which caused an inability to maintain altitude, pilot attempting to land on access road inside Miami Dade Water Treatment Plant impacting fencing and crashing into fencing with right wing. Aircraft sustained substantial damage, pilot uninjured.

Who:

PIC Pilot:

Luke Maximilian Doldan
[REDACTED]

Boca Raton, FL [REDACTED]

CFI, FAA Certificate Number: [REDACTED]

Last FAA Medical Examination: 05/04/2020

Pilot e-mail statement:

Below are the events that transpired on 8/5/2020 at approximately 1325 just south of Fisher Island.

At approximately 1325 over Dodge Island, the aircraft began experiencing slight backfires through the exhaust. Carburetor heat was applied in an attempt to resolve the issue. What followed after about 15-30 seconds was an extreme loss of power which caused an inability to maintain altitude. The banner was dropped after verifying a safe location and the most suitable landing location was found. Various troubleshooting methods were attempted such as checking fuel, mixture, magnetos, and throttle. Attempts to recover power were attempted until about 50 feet agl., and then the aircraft was secured for landing (throttle to idle, mixture cut off, fuel shut off). Carburetor heat remained on from before the initial power loss until after the landing. Touchdown occurred about midway down the chosen landing road and braking was applied until the aircraft's right wing contacted a temporary construction fence, pulling the aircraft to the right and spinning it around.

Inspector Summary of Aircraft Damage and Engine Analysis:

Aircraft empennage tail was found twisted and separated from aft section of cockpit. Internal tubular structure had multiple tubes bent, twisted and a few welded section sheared and separated. Outside fabric found with multiple torn and ripped sections around empennage. The left horizontal stabilizer was found bent upward around the outer section. The left elevator was bent upward from the tip to midway of the elevator.

Left wing sustained substantial damage midsection to wing tip was torn off when left wing impacted fencing. The left flap sustained damage to inner sections and aileron sustained major damage with wing section torn pulling aileron from wing attachment points bending and twisting backwards.

The right wing sustained substantial damage with bending and twisting in multiple sections and areas. Flap was compressed inwards towards wing attachment points, aileron was found bent. Right wing strut attachment points to fuselage damaged fuselage attachment point.

Engine cowling sustained damage, oil cooler damaged from impact with fencing. Propeller and propeller cone damaged by impact. Fuel sample from fuel tank and fuel gasculator drain valve found to be clear and clean of any contamination. Cockpit fuel gauge indicated aircraft fuel tank was full. Engine started at crash site, engine started immediately with no hesitation ran at idle speed for approximately 10-15 seconds when the engine oil cooler started leaking oil and engine had to be shutdown to prevent any damage.

Carburetor icing calculation was performed using NOAA weather from Miami International Airport indicated temperature at 83° dewpoint at 77% and relative humidity at 82%. The Carburetor Icing-Probability Chart using NOAA weather data indicated N223AB was operating in Serious Icing conditions in descent power settings.

Inspection of Air Induction System small 1 inch tear in scat hose at intake connection point after of hose clamp no other issues or abnormalities, air filter found clean with no contamination. Cockpit carb heat lever moves in for closed and out for open, cockpit lever movement is 7/8 of an inch in and out found lever movement hard but smooth, found lever and flap inside air box mechanically functioning correctly with no issues. Air Induction Box had no damage found in good condition. Carburetor found with no damage cockpit lever

found functioning correctly with no issues with carburetor operating normal. Engine found with 8 quarts of oil, added 3 quarts of new to preform engine run with 11 quarts of oil. Fuel drained from gasculator found clean with no contamination of any type. Carburetor bowl fuel sample found clean with no contamination of any type measured an estimated 1 cup of fuel. Borescope inspection found cylinder 1 piston head coated with oil all remaining cylinder piston heads found with some carbon deposits indicating normal operating carbon deposits. Engine warm-up at idle for normal operating requirements magneto check at 1700 rpm with 50 rpm drop on both each on left and right sides. Magneto check preformed at 2200 rpm with a 25 rpm drop on each left and right side. Engine operated at 2200 rpm for 5 minutes with no issues. Carburetor heat applied at 2200 rpm with only 100 rpm drop, and at 1700 rpm with 25 rpm drop. Engine test operated normally with no operating issues. Perform differential compression test of each cylinder after the engine run and record readings.

Cylinder Differential Compression Test Engine Cold

1. 75 psi
3. 74 psi
5. 76 psi
2. 78 psi
4. 72 psi
6. 70 psi

Cylinder Differential Compression Test Engine Hot

1. 72 psi
3. 78 psi
5. 76 psi
2. 74 psi
4. 78 psi
6. 70 psi

Aerial Banner Inc., is in the process of converting Piper PA-25-235's fleet to fuel injected engine systems three aircraft have been converted with plans to convert the remaining 2 aircraft operating at the North Perry Airport location. Company is also working with an STC holder to install carburetor icing detectors in all aircraft operating in South Florida. Company held a meeting instructing all pilots regarding operating in carburetor icing conditions.



Juan C. Garcia
Aviation Safety Inspector