

NATIONAL TRANSPORTATION SAFETY BOARD PILOT/OPERATOR AIRCRAFT ACCIDENT/INCIDENT REPORT

This form to be used for reporting civil and public aircraft accidents and incidents

BASIC INFORMATION

Accident/Incident Location

Nearest City/Place: Detroit State: MI

ZIP: 48234 Country: USA

Latitude: 42.41N Longitude: 83.01W

(Enter in decimal degrees or degrees:minutes:seconds)

Accident/Incident Date/Time

Date: 12/03/2019 Local Time: 0834
mm/dd/yyyy

Time Zone: Eastern

Collision with Other Aircraft: ☐ Midair ☐ On-ground ☒ None

AIRCRAFT INFORMATION

Registration Number: N469RJ

Manufacturer: British Aerospace

Model: BAE-125-800A

Serial Number: 258067

Year of Manufacture: 1986

Amateur-Built: ☐ Yes ☒ No If Yes: ☐ Kit/Plans ☐ Original Design Make: _____

- ☒ IFR-Equipped and Certified
☐ Commercial Space Flight
☐ Unmanned Aircraft

Maximum Gross Weight: 27,400 lbs

Weight at Time of Accident/Incident: 22,300 lbs

Number of Seats: 10 total Flight Crew Seats: 2

Cabin Crew Seats: 0 Passenger Seats: 8

Number of Engines: 2

Category of Aircraft

- ☒ Airplane
☐ Balloon
☐ Blimp/Dirigible
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift
☐ Rocket
☐ Ultralight
☐ Unknown

Type of Airworthiness Certificate

(Check all that apply)

Standard

- ☒ Normal
☐ Aerobatic
☐ Balloon
☐ Commuter
☐ Transport
☐ Utility

Special

- ☐ Restricted
☐ Limited
☐ Provisional
☐ Special Flight
☐ Experimental
☐ Special Light-Sport
☐ Experimental Light-Sport

- ☐ Certificate of Authorization or Waiver (COA)
☐ None ☐ Unknown

Landing Gear

(Check all that apply)

- ☒ Retractable

- ☒ Tricycle ☐ Tailwheel

- ☐ Amphibian ☐ High Skid
☐ Emergency Float ☐ Skid
☐ Float ☐ Ski
☐ Hull ☐ Ski/Wheel

- ☐ Other Launch/Recovery System

- ☐ None ☐ Unknown

Engine Type (Select one)

- ☐ Reciprocating ☐ Liquid Rocket
☐ Turbo Shaft ☐ Solid Rocket
☐ Turbo Prop ☐ Hybrid Rocket
☐ Turbo Jet ☐ None
☒ Turbo Fan ☐ Unknown
☐ Electric

Fuel System Type (Reciprocating)

- ☐ Carburetor ☐ Fuel-Injected

Engine	Engine Manufacturer	Engine Model/Series	Manufacturer's Serial Number	Date of Mfg. mm/dd/yyyy	Rated Power ☐ Horsepower or ☒ lbs of Thrust	Total Time (hours)	Time Since: Inspection (hours)	Overhaul (hours)
Eng. 1	Honeywell	TFE731-5R-1H	P-91448	08/20/1989	4300	8251.1	12.5	2147.3
Eng. 2	Honeywell	TFE731-5R-1H	P-91196	05/01/1985	4300	16262.0	184.1	2141.4
Eng. 3								
Eng. 4								

Last Inspection Type

- ☐ 100-Hour ☒ Continuous Airworthiness
☐ AAIP ☐ Conditional Inspection
☐ Annual ☐ Unknown

Date Last Inspection: 10/16/2019
mm/dd/yyyy

Airframe Total Time: 19,714 hrs

hours measured at (Select one)

- ☐ Last Inspection ☒ Time of Accident/Incident

Type of Maintenance Program (Select one)

- ☐ Annual
☐ Conditional (Amateur-built only)
☒ Manufacturer's Inspection Program
☐ Other Approved Inspection Program (AAIP)
☐ Continuous Airworthiness
☐ Other, specify: _____

Description of Fire Extinguishing System

- ☒ None
☐ Specify: _____

Propeller 1

- ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____

Model: _____

Propeller 2

- ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____

Model: _____

ELT Installed: ☒ Yes ☐ No

If Yes:

ELT Manufacturer: Artex

Model or Part No.: 453-5000-366

TSO No.: ☐ C91 (121.5 MHz) ☐ C91a (121.5 MHz)
☒ C126 (406 MHz)

Was ELT still mounted in aircraft? ☒ Yes ☐ No

Was ELT still connected to antenna? ☒ Yes ☐ No

Did ELT Activate? ☐ Yes ☒ No

If activated:

Did ELT Aid in Locating Aircraft: ☐ Yes ☐ No

If not activated:

- Indicate Reason: ☐ Impact Damage
☐ Fire Damage
☐ Battery Expired/Damaged
☒ Unknown

Additional Equipment (Check all that apply)

- ☐ ADS-B
☐ Airframe Parachute
☐ Angle of Attack Indicator
☒ Autopilot
☐ Data Recorder
☐ Electronic Flight Bag or Handheld Device
☒ Electronic Multifunction Display
☒ Electronic Primary Flight Display
☐ Handheld GPS
☐ Heads Up Display
☒ Onboard Weather
☐ Satellite Tracking Device
☒ Stall Warning System
☐ Video Recording Device
☐ Other, Specify: _____

OWNER/OPERATOR INFORMATION			
Registered Aircraft Owner Name: <u>Business Jet Managers, Inc.</u> Fractional Ownership Aircraft: ☐ Yes ☒ No		City: <u>Ypsilanti</u> State: <u>MI</u> ZIP: <u>48198</u> Country: <u>USA</u>	
Operator of Aircraft ☒ Same As Registered Owner Name: _____ Doing Business As: _____ Air Carrier/Operator Designator (4 Character Code): <u>U48A</u>		☒ Same Address as Registered Owner City: _____ State: _____ ZIP: _____ Country: _____	
Operating Certificates Held <i>(Check all that apply)</i> ☐ None ☐ Flag Carrier Operating Certificate (FAR 121) ☐ Supplemental ☐ Air Cargo ☐ Foreign Air Carriers (FAR 129) ☐ Rotorcraft External Load (FAR 133) ☐ Commuter Air Carrier (FAR 135) ☒ On-Demand Air Taxi (FAR 135) ☐ Commercial Air Tour (FAR 136) ☐ Agricultural Aircraft (FAR 137) ☐ Pilot School (FAR 141) ☐ Certificate of Authorization or Waiver (COA) ☐ Commercial Space Transportation Experimental Permit ☐ Commercial Space Transportation License ☐ Other Operator of Large Aircraft	Regulation Flight Conducted Under ☒ FAR 91 ☐ FAR 103 ☐ FAR 121 ☐ FAR 125 ☐ FAR 129 ☐ FAR 133 ☐ FAR 135 ☐ FAR 137 ☐ FAR 415 ☐ FAR 431 ☐ FAR 435 ☐ FAR 437 ☐ FAR 91 Special Flight ☐ Non-US, Commercial ☐ Non-US, Non-commercial ☐ Public Aircraft <i>(Select one)</i> ☐ Armed Forces ☐ Federal ☐ State ☐ Local ☐ Unknown	Revenue Operation for FAR 121, 125, 129, 135 <i>(Select one for each group)</i> ☐ Scheduled or Commuter ☐ Non-Scheduled or Air Taxi ☐ Domestic ☐ International ☐ Passenger ☐ Cargo ☐ Mail Contract Only	
Revenue Sightseeing Flight ☐ Yes ☒ No		Purpose of Flight for FAR 91, 103, 133, 137 <i>(Select one)</i> ☐ Aerial Application ☐ Aerial Observation ☐ Air Drop ☐ Air Race/Show ☐ Banner Tow ☐ Business ☐ Executive/Corporate ☐ External Load ☐ Ferry ☐ Firefighting ☐ Flight Test ☐ Glider Tow ☐ Instructional ☐ Other Work Use ☐ Personal ☒ Positioning ☐ Skydiving ☐ Unknown	
AIRPORT INFORMATION (Fill in if accident/incident occurred on approach, landing, takeoff, departure, or within 3 miles of an airport)			
Airport Name: <u>Coleman A Young Municipal</u> Airport Identifier: <u>KDET</u> Proximity to Airport: ☐ Off Airport/Airstrip ☒ On Airport/Airstrip ☐ N/A		Distance From Airport Center: _____ sm Direction From Airport: _____ degrees true Airport Elevation: <u>626</u> ft. msl	
Runway Information Runway ID: <u>33</u> (L/R/C) Length: <u>5090</u> ft Width: <u>100</u> ft		Condition of Runway/Landing Surface <i>(Check all that apply)</i> ☒ Dry ☐ Holes ☐ Ice Covered ☐ Rough ☐ Rubber Deposits ☐ Slush-Covered ☐ Snow-Compacted ☐ Snow-Crusted ☐ Snow-Dry ☐ Snow-Wet ☐ Soft ☐ Vegetation ☐ Water-Calm ☐ Water-Choppy ☐ Water-Glassy ☐ Wet ☐ Unknown	
Runway/Landing Surface <i>(Check all that apply)</i> ☒ Asphalt ☐ Concrete ☐ Dirt ☐ Grass/Turf ☐ Gravel ☐ Ice ☐ Macadam ☐ Metal/Wood ☐ Snow ☐ Water ☐ Unknown		Approach/Departure Segment <i>(Select one)</i> ☐ Taxi ☐ Takeoff ☐ Initial Climb ☐ VFR Departure ☐ IFR Departure Procedure/Clearance ☐ On Instrument Approach ☒ Landing ☐ Downwind ☐ Base ☐ Final ☐ Crosswind ☐ Low Approach ☐ Go Around ☐ Aborted Landing (after touchdown) ☐ Unknown	
IFR Approach <i>(Check all that apply)</i> ☐ None ☐ ADF/NDB ☐ SDF ☐ VOR/TVOR ☐ VOR/DME ☐ TACAN ☐ PAR ☐ Sidestep ☒ ILS ☐ Localizer Only ☐ LOC-back course ☐ RNAV ☐ MLS ☐ LDA ☐ ASR ☐ Visual ☐ Contact ☐ Circling ☐ Practice ☐ GPS ☐ Unknown		VFR Approach <i>(Check all that apply)</i> ☐ None ☐ Traffic Pattern ☐ Straight-In ☐ Valley/Terrain Following ☐ Go Around ☐ Full Stop ☐ Stop and Go ☐ Touch and Go ☐ Simulated Forced Landing ☐ Forced Landing ☐ Precautionary Landing ☐ Unknown	

"FLIGHT CREWMEMBER 1" INFORMATION																																																																																																				
"Flight Crewmember 1" Responsibilities at the Time of Accident/Incident ☒ Pilot ☐ Co-Pilot ☐ Student Pilot ☐ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew																																																																																																				
"Flight Crewmember 1" was pilot flying ☐ Yes ☐ No																																																																																																				
"Flight Crewmember 1" Identification First Name: <u>Leo</u> Middle Initial: <u>E</u> Last Name: <u>Vernier</u> City of Residence: <u>Goshen</u> State: <u>KY</u> ZIP: <u>40026</u> Country: <u>USA</u> Age at time of Accident/Incident: <u>60</u> Date of Birth: [REDACTED] mm/dd/yyyy Certificate Number: [REDACTED]																																																																																																				
Degree of Injury ☒ None ☐ Fatal ☐ Minor ☐ Unknown ☐ Serious			Seat Occupied ☒ Left ☐ Front ☐ Unknown ☐ Right ☐ Rear ☐ Center ☐ Single			Restraint Type Available ☐ None ☐ Lap only ☐ 3-point ☐ 4-point ☒ 5-point ☐ Unknown Used ☐ None ☐ Lap only ☐ 3-point ☒ 4-point ☐ 5-point ☐ Unknown			Inflatable Restraints ☒ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown																																																																																											
Pilot Certificate(s) (Check all that apply) ☐ None ☒ Flight Instructor ☐ Private ☐ Recreational ☐ Student ☐ Sport ☐ Commercial ☐ US Military ☒ Airline Transport ☐ Foreign ☐ Flight Engineer						Medical Certificate Validity ☐ Without limitations/waivers ☐ Unknown ☒ With limitations/waivers ☐ N/A ☐ Special Issuance		Date of Last Medical <u>07/23/2019</u> mm/dd/yyyy																																																																																												
Principal Occupation ☒ Pilot ☐ Other ☐ Unknown																																																																																																				
Medical Certificate ☐ None ☐ Class 3 ☒ Class 1 ☐ Driver's License (Sport Pilot only) ☐ Class 2 ☐ Unknown																																																																																																				
Medical Certificate Limitations Holder shall possess glasses for near/intermediate vision																																																																																																				
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Date of Last Flight Review or Equivalent, Including FAR 121/135 Checks: <u>08/29/2019</u> mm/dd/yyyy						Flight Review Aircraft Make: <u>BAE-125 (simulator)</u> Model: <u>800A</u>																																																																																														
Airplane Rating(s) (Check all that apply) ☐ None ☒ Single-Engine Land ☒ Single-Engine Sea ☒ Multiengine Land ☐ Multiengine Sea			Other Aircraft Rating(s) (Check all that apply) ☒ None ☐ Airship ☐ Balloon ☐ Glider ☐ Gyroplane ☐ Helicopter ☐ Powered Lift			Instrument Rating(s) (Check all that apply) ☐ None ☒ Airplane ☐ Helicopter ☐ Powered Lift			Instructor Rating(s) (Check all that apply) ☐ None ☒ Airplane Single-Engine ☒ Airplane Multi-Engine ☐ Gyroplane ☐ Powered Lift ☒ Instrument Airplane ☐ Instrument Helicopter ☐ Helicopter ☐ Glider ☐ Sport																																																																																											
Type Ratings HS-125, LR-JET						Student Endorsements (Include dates)																																																																																														
<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="text-align: left; padding: 5px;">Flight Time (Enter appropriate number of hours in each box)</th> <th rowspan="2" style="padding: 5px;">All Aircraft</th> <th rowspan="2" style="padding: 5px;">This Make & Model</th> <th rowspan="2" style="padding: 5px;">Airplane Single Engine</th> <th rowspan="2" style="padding: 5px;">Airplane Multiengine</th> <th rowspan="2" style="padding: 5px;">Night</th> <th colspan="2" style="padding: 5px;">Instrument</th> <th rowspan="2" style="padding: 5px;">Rotorcraft</th> <th rowspan="2" style="padding: 5px;">Glider</th> <th rowspan="2" style="padding: 5px;">Lighter Than Air</th> </tr> <tr> <th style="padding: 5px;">Actual</th> <th style="padding: 5px;">Simulated</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 5px;">Total Time</td> <td style="padding: 5px;">18,500</td> <td style="padding: 5px;">7,000</td> <td style="padding: 5px;">1,600</td> <td style="padding: 5px;">16,900</td> <td style="padding: 5px;">1,900</td> <td style="padding: 5px;">1,700</td> <td style="padding: 5px;">200</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="text-align: left; padding: 5px;">Pilot in Command (PIC)</td> <td style="padding: 5px;">16,500</td> <td style="padding: 5px;">7,000</td> <td style="padding: 5px;">1,580</td> <td style="padding: 5px;">14,900</td> <td style="padding: 5px;">1,700</td> <td style="padding: 5px;">1,500</td> <td style="padding: 5px;">100</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="text-align: left; padding: 5px;">Time as Instructor</td> <td style="padding: 5px;">850</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">25</td> <td style="padding: 5px;">25</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="text-align: left; padding: 5px;">This Make/Model</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">700</td> <td style="padding: 5px;">700</td> <td style="padding: 5px;">100</td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="text-align: left; padding: 5px;">Last 90 Days</td> <td style="padding: 5px;">150</td> <td style="padding: 5px;">150</td> <td style="padding: 5px;">20</td> <td style="padding: 5px;">150</td> <td style="padding: 5px;">30</td> <td style="padding: 5px;">15</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="text-align: left; padding: 5px;">Last 30 Days</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">10</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">15</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="text-align: left; padding: 5px;">Last 24 Hours</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">0</td> </tr> </tbody> </table>											Flight Time (Enter appropriate number of hours in each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	18,500	7,000	1,600	16,900	1,900	1,700	200	0	0	0	Pilot in Command (PIC)	16,500	7,000	1,580	14,900	1,700	1,500	100	0	0	0	Time as Instructor	850	0	50	50	20	25	25	0	0	0	This Make/Model					700	700	100				Last 90 Days	150	150	20	150	30	15	0	0	0	0	Last 30 Days	50	50	10	50	15	5	0	0	0	0	Last 24 Hours	0	0	0	1	0	0	0	0	0	0
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Last 24 Hours	0	0	0	1	0	0	0	0	0	0																																																																																										

"FLIGHT CREWMEMBER 2" INFORMATION

"Flight Crewmember 2" Responsibilities at the Time of Accident/Incident

☐ Pilot
 ☒ Co-Pilot
 ☐ Student Pilot
 ☐ Flight Instructor
 ☐ Check Pilot
 ☐ Flight Engineer
 ☐ Other Flight Crew

"Flight Crewmember 2" was pilot flying ☐ Yes ☒ No

"Flight Crewmember 2" Identification

First Name: Leif City of Residence: Belleville
 Middle Initial: C State: MI ZIP: 48112
 Last Name: Brogren Country: USA
 Age at time of Accident/Incident: 65 Date of Birth: [REDACTED] mm/dd/yyyy
 Certificate Number: [REDACTED]

Degree of Injury ☒ None ☐ Fatal ☐ Minor ☐ Unknown ☐ Serious	Seat Occupied ☐ Left ☐ Front ☐ Unknown ☒ Right ☐ Rear ☐ Center ☐ Single	Restraint Type <table style="width: 100%;"> <tr> <th style="text-align: left;">Available</th> <th style="text-align: left;">Used</th> </tr> <tr> <td> ☐ None ☐ Lap only ☐ 3-point ☐ 4-point ☒ 5-point ☐ Unknown </td> <td> ☐ None ☐ Lap only ☐ 3-point ☐ 4-point ☒ 5-point ☐ Unknown </td> </tr> </table>	Available	Used	☐ None ☐ Lap only ☐ 3-point ☐ 4-point ☒ 5-point ☐ Unknown	☐ None ☐ Lap only ☐ 3-point ☐ 4-point ☒ 5-point ☐ Unknown	Inflatable Restraints ☒ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown								
Available	Used														
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Pilot Certificate(s) (Check all that apply) <table style="width: 100%;"> <tr> <td>☐ None</td> <td>☐ Flight Instructor</td> <td>☐ Commercial</td> <td>☐ US Military</td> </tr> <tr> <td>☐ Private</td> <td>☐ Recreational</td> <td>☒ Airline Transport</td> <td>☐ Foreign</td> </tr> <tr> <td>☐ Student</td> <td>☐ Sport</td> <td>☐ Flight Engineer</td> <td></td> </tr> </table>		☐ None	☐ Flight Instructor	☐ Commercial	☐ US Military	☐ Private	☐ Recreational	☒ Airline Transport	☐ Foreign	☐ Student	☐ Sport	☐ Flight Engineer		Medical Certificate Validity ☐ Without limitations/waivers ☐ Unknown ☐ With limitations/waivers ☐ N/A ☒ Special Issuance	
☐ None	☐ Flight Instructor	☐ Commercial	☐ US Military												
☐ Private	☐ Recreational	☒ Airline Transport	☐ Foreign												
☐ Student	☐ Sport	☐ Flight Engineer													
Principal Occupation ☒ Pilot ☐ Other ☐ Unknown	Medical Certificate ☐ None ☐ Class 3 ☒ Class 1 ☐ Driver's License (Sport Pilot only) ☐ Class 2 ☐ Unknown		Date of Last Medical <u>10/02/2019</u> mm/dd/yyyy												

Medical Certificate Limitations

Must wear corrective lenses, possess glasses for near/intermediate vision

Medical Certificate Special Issuance

Not valid for any class after 4/30/2020

Date of Last Flight Review or Equivalent, Including FAR 121/135 Checks:
08/29/2019
 mm/dd/yyyy

Flight Review Aircraft

Make: BAE-125 (simulator)

Model: 800A

Airplane Rating(s) (Check all that apply) ☐ None ☒ Single-Engine Land ☐ Single-Engine Sea ☒ Multiengine Land ☐ Multiengine Sea	Other Aircraft Rating(s) (Check all that apply) ☒ None ☐ Airship ☐ Balloon ☐ Glider ☐ Gyroplane ☐ Helicopter ☐ Powered Lift	Instrument Rating(s) (Check all that apply) ☐ None ☒ Airplane ☐ Helicopter ☐ Powered Lift	Instructor Rating(s) (Check all that apply) ☐ None ☐ Airplane Single-Engine ☐ Airplane Multi-Engine ☐ Gyroplane ☐ Powered Lift ☐ Instrument Airplane ☐ Instrument Helicopter ☐ Helicopter ☐ Glider ☐ Sport
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Type Ratings

B-727, B-737, CL-85, CV-600, CV-640, DC-9, G-200, HS-125

Student Endorsements (Include dates)

Flight Time (Enter appropriate number of hours in each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	15,895	2,136	1,664	14,231	4,522	1,059	164	0	0	0
Pilot in Command (PIC)	13,606	2,121	1,654	14,000	4,300	1,040	150	0	0	0
Time as Instructor	500	0	450	50	0	0	0	0	0	0
This Make/Model					550	250	45			
Last 90 Days	169	169	0	169	74	13	0	0	0	0
Last 30 Days	59	59	0	59	29	4	0	0	0	0
Last 24 Hours	0	0	0	0	0	0	0	0	0	0

ADDITIONAL FLIGHT CREWMEMBERS (Exclusive of cabin crew, complete the following information)						
Crew Name and Address			Seat Occupied		Injury	
First Name: _____ City of Residence: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____			☐ Left ☐ Front ☐ Center ☐ Rear ☐ Right ☐ Single ☐ Unknown		☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	
Pilot Certificate(s) (Check all that apply) ☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military ☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign ☐ Student ☐ Sport ☐ Flight Engineer			Restraint Type: Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		Inflatable Restraints ☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	
Type Rating/Endorsement for Accident/Incident Aircraft? ☐ Yes ☐ No		Total Flight Time at the Time of this Accident/Incident: _____ hrs				
Crew Name and Address			Seat Occupied		Injury	
First Name: _____ City of Residence: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____			☐ Left ☐ Front ☐ Center ☐ Rear ☐ Right ☐ Single ☐ Unknown		☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	
Pilot Certificate(s) (Check all that apply) ☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military ☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign ☐ Student ☐ Sport ☐ Flight Engineer			Restraint Type: Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		Inflatable Restraints ☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	
Type Rating/Endorsement for Accident/Incident Aircraft? ☐ Yes ☐ No		Total Flight Time at the Time of this Accident/Incident: _____ hrs				
PASSENGER(S) / OTHER PERSONNEL (Include cabin crew; continue on separate sheet if necessary)						
Name and Address		Seat	Injury	Restraint Type		Inflatable Restraints
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other		☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other		☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other		☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other		☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown		☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown

FLIGHT ITINERARY INFORMATION				
Last Departure Point Airport ID: <u>KYIP</u> City: <u>Ypsilanti</u> State: <u>MI</u> Country: <u>USA</u>		Time of Departure Time: <u>0819</u> Time Zone: <u>Eastern</u>		Destination Airport ID: <u>KDET</u> City: <u>Detroit</u> State: <u>MI</u> Country: <u>USA</u>
Type Flight Plan Filed ☐ None ☐ Company VFR ☐ Military VFR ☐ VFR ☐ VFR/IFR ☒ IFR ☐ Unknown Activated? ☒ Yes ☐ No ☐ Unknown				
Type of ATC Clearance/Service (Check all that apply) ☐ None ☐ VFR ☐ Special VFR ☒ IFR ☐ Special IFR ☐ VFR On Top ☐ VFR Flight Following ☐ Traffic Advisory ☐ Cruise ☐ Unknown / NA				
Airspace where the accident/incident occurred (Check all that apply) ☐ Class A ☐ Class B ☐ Class C ☒ Class D ☐ Class E ☐ Class G ☐ Demo Area ☐ Warning Area ☐ Prohibited Area ☐ Restricted Area ☐ Military Operations Area (MOA) ☐ Airport Advisory Area ☐ Jet Training Area ☐ TRSA ☐ FAR 93 ☐ Special ☐ Air Traffic Control Area ☐ Unknown				
Altitude of In-Flight Occurrence: _____ ft msl				
WEATHER INFORMATION AT THE ACCIDENT/INCIDENT SITE				
Source of Pilot Weather Information (Check all that apply) ☐ National Weather Service ☐ Flight Service Station ☒ TV/Radio ☒ Automated Report ☐ Commercial Weather Service (DUATS) ☐ On-Board Weather ☐ Company ☐ Military ☒ Internet ☐ None ☐ Unknown			Weather Observation Facility Facility ID: <u>KDET</u> Observation Time: <u>1253Z</u> Time Zone: <u>Eastern</u> Distance from Accident Site: _____ nm Direction from Accident Site: _____ degrees true	
Basic Conditions ☒ VMC ☐ IMC ☐ Unknown		Light Condition ☐ Dawn ☒ Day ☐ Dusk ☐ Night ☐ Dark Night ☐ Bright Night ☐ Unknown		
Sky/Lowest Cloud Condition ☐ Clear ☐ Few ☐ Partial Obscuration ☐ Scattered ☐ Thin Broken ☐ Thin Overcast ☐ Unknown		Ceiling ☐ None (Clear) ☐ Broken ☒ Overcast ☐ Obscured ☐ Indefinite ☐ Unknown		Temperature: <u>-2</u> (C) or _____ (F) Dew Point: <u>-3</u> (C) or _____ (F) Altimeter Setting: <u>29.86</u> in. Hg or _____ MB
Lowest Cloud Condition Height _____ ft agl		Ceiling Height <u>1000</u> ft agl		
Wind Direction ☐ Variable -or- Direction: <u>280</u> degrees true	Wind Speed ☐ Calm ☐ Light and Variable -or- Speed: <u>08</u> kts	Wind Gusts ☒ Not Gusting -or- Speed: _____ kts	Visibility <u>10</u> miles RVR: _____ feet RVV: _____ miles Density Altitude: _____ ft	
Intensity of Precipitation ☐ Light ☐ Moderate ☐ Heavy ☒ N/A ☐ Unknown		Type of Precipitation (Check all that apply) ☒ None ☐ Rain ☐ Snow ☐ Hail ☐ Rain Showers ☐ Drizzle ☐ Ice Pellets ☐ Snow Pellets ☐ Snow Grains ☐ Ice Crystals ☐ Freezing Rain ☐ Snow Shower ☐ Ice Pellets Shower ☐ Freezing Drizzle		Restriction to Visibility (Check all that apply) ☒ None ☐ Blowing Dust ☐ Blowing Sand ☐ Blowing Snow ☐ Blowing Spray ☐ Dust ☐ Fog ☐ Ground Fog ☐ Haze ☐ Ice Fog ☐ Smoke ☐ Unknown
Icing Forecast Amount ☐ None ☐ Trace ☐ Light ☒ Moderate ☐ Severe ☐ Unknown Type ☐ N/A ☒ Rime ☐ Clear ☐ Mixed ☐ Unknown		Icing Actual Amount ☐ None ☐ Trace ☐ Light ☒ Moderate ☐ Severe ☐ Unknown Type ☐ N/A ☒ Rime ☐ Clear ☐ Mixed ☐ Unknown		Turbulence Type (Check all that apply) ☒ None ☐ Clear Air ☐ Terrain-Induced ☐ Convective Turbulence Severity ☐ Light ☐ Moderate ☐ Severe ☐ Extreme
NOTAMs (D and FDC), AIRMETs, SIGMETs, PIREPs in effect at the time of the accident/incident: PIREP for rime ice reported by several aircraft landing KYIP - repored by ground controller in KYIP as we taxied out. Can't recall other NOTAMs, AIRMETs, SIGMETs.				

DAMAGE TO AIRCRAFT AND OTHER PROPERTY**Aircraft Damage**

- ☐ None ☒ Substantial
☐ Minor ☐ Destroyed
 ☐ Unknown

Aircraft Fire

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Fire at Unknown Time
☐ On-Ground ☐ Unknown

Aircraft Explosion

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Explosion at Unknown Time
☐ On-Ground ☐ Unknown

Description of Damage to Aircraft and Other Property *(Use additional sheet if necessary)*

Right wing tip struck runway; right wing bent, nose landing gear hard contact with runway and collapsed, aircraft slid off runway to the right. Nose cone and forward under fuselage area damaged. Flight crew was unable to shut down engines as fuel shutoff valves (High Pressure fuel valves and Low Pressure fuel valves) were closed, but engines continued to run. We suspected that the cables connecting the shutoff valves to the engines had been severed. Fire department was able to extinguish engines eventually, by directing high volume of water into them.

NARRATIVE HISTORY OF FLIGHT *(Please type or print in ink)*

Describe what occurred in chronological order, including circumstances leading to and nature of accident/incident. Describe terrain and include wreckage distribution sketch if pertinent. Attach extra sheets if needed. State departure time and location, services obtained, and intended destination. Provide as much detail as possible.

Flight crew arrived as planned in YIP at 0730 (local time) for planned 0830 departure, repositioning leg from KYIP to KDET. Pre-departure briefing included a look at the weather enroute and at KDET, which indicated to expect an instrument approach to runway 33, based on the METAR winds out of the west. Reported ceiling was overcast; crew anticipated to execute the ILS 33 approach. Flight crew discussed nature of the very short leg and pre-briefed / set up the avionics for the ILS 33 prior to departure.

Pre-departure destination METAR: KDET 031253Z 26008KT 10SM OVC011 M01/M03 A2987 RMK AO2 SLP121 T10111028.

Around 0810, aircraft taxied away from the ramp with approx. 7000 pounds of fuel, which would most likely be enough to fly the entire day's planned flights YIP-DET-BRY-DET-YIP. During taxi, flight crew acknowledged KYIP ground controller PIREP of "light to moderate rime ice" reported by recently arriving aircraft. Standard operating procedures call for the priming of the wing anti-ice TKS system, which was accomplished.

Aircraft departed with all anti-ice systems ON, including TKS, ignition and engine anti-ice. We were cleared to 3000 MSL, then 5000 MSL. Shortly after entering the overcast layer, flight crew observed ICE DET light as expected, and confirmed visually ice on the aircraft as well. Ceiling tops were around 3000 MSL and weather / visibility was clear above. Upon reaching 5000 MSL, SIC copied KDET ATIS and confirmed ILS RWY 33 was in use. Cockpit / avionics were re-confirmed to be set up / configured for that approach. Descent clearance was given, and aircraft re-entered the overcast layer around 3000 MSL. TKS system continued to run since takeoff, with max time re-selected on the timer. Vref of 128 kts was calculated based on landing weight of 22,300.

Vectors to the ILS approach course were given, heading to intercept the localizer, followed by approach clearance. During the approach, airspeed was observed by flight crew at 140-145 KIAS. We broke out of the ceiling at around 1500 MSL and made that report to DET tower. At that point, aircraft was about 900 feet AGL and flight crew had ample time to transition from the ILS / IMC conditions to VMC / visual conditions. Weather was as expected; 10 miles visibility and clear below the layer with no precipitation. Runway was clear and appeared to be dry and clean. At some point during the approach / landing phase, KDET tower may have issued a wind check (can't recall) and flight crew does not remember if that wind check included a gust factor. Throughout the approach, flight crew did not observe fluctuating airspeed typically associated with gusty winds.

When landing was assured, speed was reduced to cross the threshold at the target Vref of 128 KIAS and as aircraft was approaching the "flare" the PIC felt the right wing starting to drop. Realizing that it was stalling, PIC immediately applied power, but right wing continued to drop. Power was cut to idle as right wing contacted the ground in a nose-low attitude. Aircraft departed runway to the right, sliding through the infield grass and across the parallel taxiway into another grassy area. It should be noted that, prior to the wing dropping until the wing hit the runway, the stick shaker did not activate.

Aircraft came to rest. Airport personnel arrived quickly. PIC spend some time trying to shut down the engines which were still running after fuel shutoff valves were all closed. Realizing there was no other means of shutting down the engines, flight crew departed aircraft via normal entry door, leaving engines running.

Upon departing the aircraft, PIC noted ice built up on left wing in "seam areas" between the TKS panels (see diagram). Flight crew did not remain near aircraft for very long time as responders were moving us away from it as a safety precaution. Flight crew was asked for pilot and drivers licenses by airport personnel (fire dept / police), then we were told to enter ambulance. We were driven to terminal building while our vital signs were being checked. Flight crew was uninjured and declined further preventive care and/or hospitalization.

RECOMMENDATION (How could this accident/incident have been prevented?)

Operator/Owner Safety Recommendation

Although flight crew selected the correct Vref speed for the aircraft weight, they failed to add 10 kts for the "operation in icing conditions" statement, per the aircraft checklist. Vref should have been calculated at 138 KIAS with a minimum approach speed of 148 KIAS.

MECHANICAL MALFUNCTION/FAILURE (If more space is needed, continue on separate sheet)Was there Mechanical Malfunction/Failure? ☐ Yes ☒ No

(If yes, list the name of the part, manufacturer, part no., serial no., and describe the failure.)

Total Time/Cycles
On Part

_____ Hours

_____ Cycles

Time Since This Part
Inspected/Overhauled

_____ Hours

FUEL & SERVICES INFORMATION

Fuel on Board at Last Takeoff

(Convert from pounds, as necessary)

1040 _____ Gallons

Fuel Type

☐ 80/87☐ 100 Low Lead☐ 100/130☐ 115/145☒ Jet A☐ Jet A-1☐ Jet B☐ JP8☐ Automotive☐ Other, specify _____

Other Services, if Any, Prior to Departure

EVACUATION OF AIRCRAFTWas an emergency evacuation of the aircraft performed? ☐ Yes ☒ No

Method of Exit – Describe how the occupants exited and how many occupants evacuated each location

Crew exited aircraft through normal entry door.

OTHER AIRCRAFT – COLLISION (If air or ground collision occurred, complete this section for *other* aircraft)

Aircraft Registration Number

Manufacturer: _____

Model: _____

Damage to Other Aircraft

☐ Destroyed☐ Substantial☐ Minor☐ None

Registered Owner of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

Pilot of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

ADDITIONAL INFORMATION (Please type or print in ink)

Use this space if additional space is needed for any answers.

Page 3 - Additional Equipment. "Onboard Weather" was selected, to include aircraft weather radar and Foreflight installed on pilot's electronic flight bags, although the Foreflight weather does not update until the aircraft WIFI is available above 10,000 feet MSL and the top altitude flown this leg was only 5000 feet MSL.

Page 8 - Source of Pilot Weather Information. Prior to boarding aircraft for departure, flight crew used both Fltplan.com and Foreflight to obtain weather and NOTAMs (hence, the "internet" option was selected). In flight, the flight crew used the aircraft radios to listen to KYIP and KDET ATIS ("TV/radio" and "Automated Report" options selected).

Page 8 - Wind Guts. "Not Gusting" was selected, however KDET Tower may have given a wind check that may have included a gust factor (flight crew cannot recall).

Page 8 - Icing Forecast. Unsure (can't recall) if Light or Moderate Rime ice was forecast.

Page 8 - Icing Actual. Flight crew observed light to moderate icing inflight, which was in agreement with the PIREP.

Page 9 - Narrative History of Flight. Upon exiting the aircraft, PIC specifically looked at leading edge of the left wing to see if TKS panels were clear and they were. The ice build ups were evident in the seam areas between the TKS panels. PIC did not get a close-up look at the left wing root or left wing tip (non-protected wing areas). See diagram of ice build up areas seen on left wing. As flight crew was being escorted away from aircraft by responding personnel, PIC looked at right wing, which was covered with mud.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Date of this Report

12/12/2019

mm/dd/yyyy

Name of Pilot/Operator: Leo, E Vernier

Signature: [REDACTED]

-- or --

☐ Check here to electronically sign this document

If a Person Other than Pilot/Operator is Filing Report

Name: _____

Title: _____

Signature: _____

-- or --

☐ Check here to electronically sign this document

FOR NTSB USE ONLY

NTSB Accident/Incident No.

CEN20LA028

Reviewed by NTSB Regional Office

Denver, CO

Name of Investigator

Edward Malinowski

Date Report Received

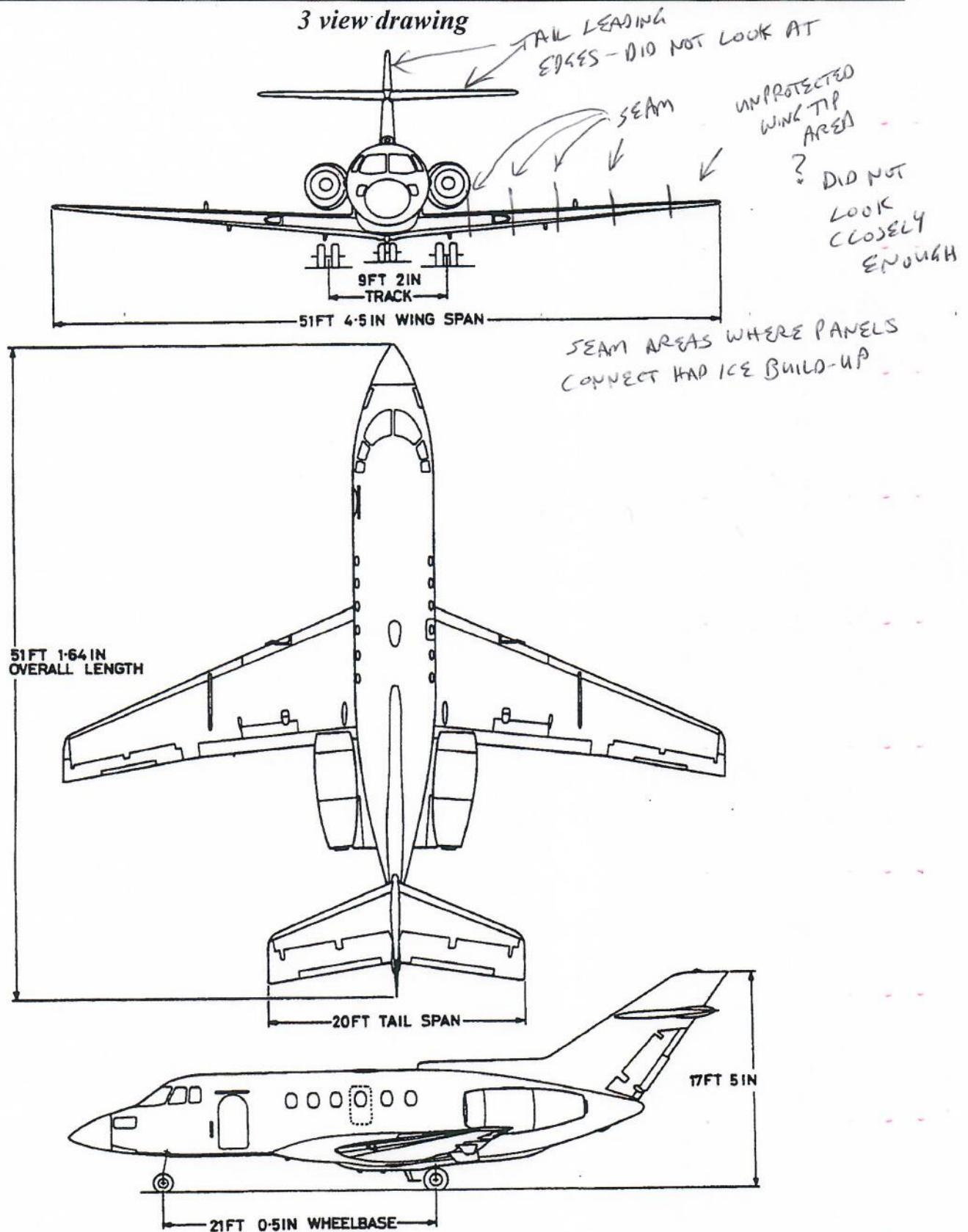
12/13/2019

Texron Aviation Proprietary Information - For Reference Only

Year: 1986 Model: BAe.125 Series 800A

Model name: None

Charge #: E-BEECP100



Reg. NTSB report N469RJ.

There are 2 things that I'd like to add to the report.

Right after I felt the right wing dip I said "what happened", PIC says "stall".

After we had come to a full stop in the grass and we started to evacuate the aircraft I leaned forward in the cockpit to pick up my phone from the floor. At that point my arm touched the control column and I could feel that the stick shaker was activated/shaking and I believe the control column was all the way back.


Leif Brogren

12-13-19
Date