

**ASRS Database Report Set**

**Commuter and GA Icing Incidents**

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Report Set Description.....A sampling of aircraft icing encounter reports from GA and Commuter flight crews.

Update Number.....34.0

Date of Update .....December 31, 2018

Number of Records in Report Set.....50

Number of New Records in Report Set .....16

Type of Records in Report Set.....For each update, new records received at ASRS will displace a like number of the oldest records in the Report Set, with the objective of providing the fifty most recent relevant ASRS Database records. Records within this Report Set have been screened to assure their relevance to the topic.

National Aeronautics and  
Space Administration

**Ames Research Center**  
Moffett Field, CA 94035-1000



TH: 262-7

**MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data**

**SUBJECT: Data Derived from ASRS Reports**

The attached material is furnished pursuant to a request for data from the NASA Aviation Safety Reporting System (ASRS). Recipients of this material are reminded when evaluating these data of the following points.

ASRS reports are submitted voluntarily. Such incidents are independently submitted and are not corroborated by NASA, the FAA or NTSB. The existence in the ASRS database of reports concerning a specific topic cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System.

Information contained in reports submitted to ASRS may be clarified by further contact with the individual who submitted them, but the information provided by the reporter is not investigated further. Such information represents the perspective of the specific individual who is describing their experience and perception of a safety related event.

After preliminary processing, all ASRS reports are de-identified and the identity of the individual who submitted the report is permanently eliminated. All ASRS report processing systems are designed to protect identifying information submitted by reporters; including names, company affiliations, and specific times of incident occurrence. After a report has been de-identified, any verification of information submitted to ASRS would be limited.

The National Aeronautics and Space Administration and its ASRS current contractor, Booz Allen Hamilton, specifically disclaim any responsibility for any interpretation which may be made by others of any material or data furnished by NASA in response to queries of the ASRS database and related materials.

A handwritten signature in cursive script that reads "B. Hooey".

Becky L. Hooey, Director  
NASA Aviation Safety Reporting System

## CAVEAT REGARDING USE OF ASRS DATA

Certain caveats apply to the use of ASRS data. All ASRS reports are voluntarily submitted, and thus cannot be considered a measured random sample of the full population of like events. For example, we receive several thousand altitude deviation reports each year. This number may comprise over half of all the altitude deviations that occur, or it may be just a small fraction of total occurrences.

Moreover, not all pilots, controllers, mechanics, flight attendants, dispatchers or other participants in the aviation system are equally aware of the ASRS or may be equally willing to report. Thus, the data can reflect **reporting biases**. These biases, which are not fully known or measurable, may influence ASRS information. A safety problem such as near midair collisions (NMACs) may appear to be more highly concentrated in area “A” than area “B” simply because the airmen who operate in area “A” are more aware of the ASRS program and more inclined to report should an NMAC occur. Any type of subjective, voluntary reporting will have these limitations related to quantitative statistical analysis.

One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the **lower measure** of the true number of such events that are occurring. For example, if ASRS receives 881 reports of track deviations in 2010 (this number is purely hypothetical), then it can be known with some certainty that at least 881 such events have occurred in 2010. With these statistical limitations in mind, we believe that the **real power** of ASRS data is the **qualitative information** contained in **report narratives**. The pilots, controllers, and others who report tell us about aviation safety incidents and situations in detail – explaining what happened, and more importantly, **why** it happened. Using report narratives effectively requires an extra measure of study, but the knowledge derived is well worth the added effort.

# Report Synopses

ACN: 1589528 *(1 of 50)*

#### Synopsis

C402 pilot reported propeller anti-ice system failed after entering icing conditions.

ACN: 1588096 *(2 of 50)*

#### Synopsis

PA28 instructor on a training flight with student reported having control difficulties possibly related to frost build-up on the wings.

ACN: 1584211 *(3 of 50)*

#### Synopsis

M20R pilot reported entering icing conditions without anti-deicing equipment.

ACN: 1568980 *(4 of 50)*

#### Synopsis

C150 pilot reported incorrectly diagnosing engine vibration due to carburetor icing.

ACN: 1565489 *(5 of 50)*

#### Synopsis

Ercoupe 415 pilot reported a throttle linkage failure, and subsequent loss of power, which resulted in a successful off field landing on a nearby highway.

ACN: 1565122 *(6 of 50)*

#### Synopsis

CL604 flight crew reported altitude and course deviations resulted from an encounter with severe turbulence associated with thunderstorm activity.

ACN: 1558329 *(7 of 50)*

#### Synopsis

Helicopter Pilot reported that multiple times aircraft were flown in known icing conditions even though the aircraft were not equipped for icing.

ACN: 1554154 *(8 of 50)*

#### Synopsis

C172 pilot reported a loss of engine power resulted in an off field landing.

ACN: 1546821 *(9 of 50)*

## Synopsis

Learjet 35 Captain reported stalling the aircraft at FL370 when his airspeed indicator began to read erroneously high with the failure of the L pitot heat.

ACN: 1545122 *(10 of 50)*

## Synopsis

PA32 pilot reported diverting to a nearby alternate after experiencing smoke in the cockpit that was later traced to a pitot heat circuit breaker that apparently overheated and failed to open.

ACN: 1544753 *(11 of 50)*

## Synopsis

MU2 pilot reported altimeter and airspeed indicator errors due to moisture in the pitot static system.

ACN: 1540358 *(12 of 50)*

## Synopsis

CE-550B flight crew reported a temporary loss of communications, autopilot, and an altitude loss due to severe turbulence.

ACN: 1538032 *(13 of 50)*

## Synopsis

Controllers and SR20 pilot reported the aircraft descended below the Minimum IFR Altitude due to icing conditions.

ACN: 1535872 *(14 of 50)*

## Synopsis

ZDC Center Controller reported inadvertently vectoring a priority aircraft into an area with a lower MVA.

ACN: 1535863 *(15 of 50)*

## Synopsis

DA40 Flight Instructor reported losing control of aircraft after entering a buildup at night.

ACN: 1535253 *(16 of 50)*

## Synopsis

Experimental aircraft pilot reported landing on a road after becoming trapped by approaching weather.

ACN: 1535221 *(17 of 50)*

### Synopsis

PA-30 pilot reported diverting and landing on a closed runway when the fuel system malfunctioned, causing a temporary starvation of both engines.

ACN: 1532800 *(18 of 50)*

### Synopsis

C182 pilot reported an airspace incursion resulted when he inadvertently took off with carburetor heat on and was concerned with terrain clearance.

ACN: 1531789 *(19 of 50)*

### Synopsis

Cessna 182 pilot reported operating VFR in IMC after being stuck above clouds with ATC assistance during the descent.

ACN: 1526213 *(20 of 50)*

### Synopsis

A commercial fixed wing pilot reported descending below the glideslope and coming within 1,271 feet of an obstacle while in IFR conditions.

ACN: 1525989 *(21 of 50)*

### Synopsis

Pilot reported descending below the glidepath on an RNAV approach in order to escape icing conditions.

ACN: 1525984 *(22 of 50)*

### Synopsis

M20 pilot reported accumulating ice at the minimum vectoring altitude and resorted to a descent to VFR conditions.

ACN: 1522688 *(23 of 50)*

### Synopsis

Tower Controller and GA pilot reported a taxiway landing after a circle to land approach.

ACN: 1522047 *(24 of 50)*

### Synopsis

C172 pilot reported flying VFR into IMC and encountering inflight icing due to hazardous attitudes.

ACN: 1520158 *(25 of 50)*

### Synopsis

BE36 pilot reported loss of directional control after landing due to strong winds and ice on the runway. Reporter stated the controlling Center and his onboard XM and ADSB weather gave him inaccurate field condition and weather information.

ACN: 1520020 *(26 of 50)*

### Synopsis

D328 Captain reported diverting to an alternate airport after experiencing failure of vertical and horizontal stabilizer deicing systems in icing conditions.

ACN: 1518874 *(27 of 50)*

### Synopsis

C208 pilot reported a loss of the HSI in IMC conditions resulting in a diversion.

ACN: 1518863 *(28 of 50)*

### Synopsis

C152 instructor pilot reported a precautionary landing with a student after experiencing a power loss possibly related to carburetor ice.

ACN: 1518603 *(29 of 50)*

### Synopsis

Cessna 177RG pilot reported a failure of airspeed indications while in cruise.

ACN: 1517991 *(30 of 50)*

### Synopsis

Falcon 10 Captain reported the loss of all flight instruments during cruise, possibly due to icing.

ACN: 1517127 *(31 of 50)*

### Synopsis

M20 pilot reported engine roughness that did not improve with carburetor heat. After diverting, the carburetor heat was found to not be functioning properly.

ACN: 1517026 *(32 of 50)*

### Synopsis

Twin Cessna Captain reported a window heat switch malfunction.



ACN: 1516513 *(33 of 50)*

### Synopsis

Beech 400 flight crew reported that a lack of runway condition reports from ATC contributed to an excursion from an icy runway into the EMAS overrun.

ACN: 1515436 *(34 of 50)*

### Synopsis

G650 First Officer reported confusion regarding altitude assignment related to QFE/QNH procedures departing UUWW.

ACN: 1514576 *(35 of 50)*

### Synopsis

Air taxi Captain reported several weather issues and lack of company support that led to a canceled flight.

ACN: 1514452 *(36 of 50)*

### Synopsis

CL-350 First Officer reported receiving warning messages for anti-ice and engine thrust while climbing through icing conditions.

ACN: 1514080 *(37 of 50)*

### Synopsis

A twin engine turboprop Captain reported finding out inflight they may have a taxiway light on taxi out for takeoff.

ACN: 1514071 *(38 of 50)*

### Synopsis

General aviation pilot reported entering IMC on a VFR clearance, and subsequently deviated from ATC vectors, which were attributed to the lack of familiarity with aircraft avionics and mental preparedness for IFR flight.

ACN: 1512360 *(39 of 50)*

### Synopsis

GA pilot reported landing at a closed airport due to adverse flight characteristics caused by icing.

ACN: 1511489 *(40 of 50)*

### Synopsis

GA pilot reported a gear up landing after experiencing electrical problems.

ACN: 1511481 *(41 of 50)*

### Synopsis

A Cessna Citation Captain reported that he was unable to land due to ILS being out of service. The reporter was unprepared for an RNAV approach.

ACN: 1508809 *(42 of 50)*

### Synopsis

Dassault Falcon 2000 flight crew reported a transient anomaly with the number 1 engine, including an RPM roll back. The engine automatically recovered, and the flight continued to the destination airport.

ACN: 1508603 *(43 of 50)*

### Synopsis

C206 pilot reported encountering lower than forecasted conditions while on a VFR flight, in non IFR equipped aircraft. The pilot diverted, and conducted the flight into IMC, as this was the best option, until reaching VMC.

ACN: 1502815 *(44 of 50)*

### Synopsis

PA34 pilot reported that supercooled liquid droplet icing conditions resulted in a loss of all flight instruments except for the standby attitude indicator and magnetic compass. Pilot exited icing conditions with ATC assistance and successfully diverted.

ACN: 1501127 *(45 of 50)*

### Synopsis

SR22 pilot reported losing most PFD functions. Reportedly, the problem may be related to updating the data cards using an Apple Mac computer.

ACN: 1498570 *(46 of 50)*

### Synopsis

C150 pilot reported an off field landing due to loss of engine power. After refueling, the following flight experienced radio problems that resulted in landing without a clearance.

ACN: 1497503 *(47 of 50)*

### Synopsis

Cessna Caravan pilot reported TKS fumes in the cockpit inhibiting the use of the cabin heater unless the oxygen mask is used.

ACN: 1495829 *(48 of 50)*

### Synopsis

Light sport aircraft pilot reported a loss of engine power led to an off-field landing, likely caused by carburetor icing.

ACN: 1494483 *(49 of 50)*

### Synopsis

Carbon Cub pilot reported an off airport landing due to fuel exhaustion.

ACN: 1493219 *(50 of 50)*

### Synopsis

A C172 pilot reported encountering rain, sleet, and icing enroute. He made some quick decisions that included diverting to exit the weather and a modified instrument approach to minimize his time in the icing.

# Report Narratives

## Time / Day

Date : 201810  
Local Time Of Day : 0001-0600

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC  
State Reference : US  
Altitude.MSL.Single Value : 9000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Rain  
Weather Elements / Visibility : Cloudy

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Air Taxi  
Make Model Name : Cessna 402/402C/B379 Businessliner/Utiliner  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Climb  
Airspace.Class E : ZZZ

## Component

Aircraft Component : Propeller Ice System  
Aircraft Reference : X  
Problem : Failed

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
ASRS Report Number.Accession Number : 1589528  
Human Factors : Troubleshooting  
Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Ambiguous

## Narrative: 1

Completed pre-flight and morning run-up all de-ice and anti-ice protection was functioning normally. Prior to departure I turned on prop anti-ice, stall heat, and pitot heat due to icing conditions aloft. On departure encountered heavy to moderate precipitation on departure, and continuous light chop with occasional moderate turbulence reported by [another aircraft] and myself. Upon climbing through 5,500 encountered trace icing. The icing grew in intensity through the climb through to 9,000 MSL, at which I requested a climb to 11,000 MSL. Center said they had the request and to wait for amplitude. During the cruise checklist I discovered the prop anti-ice switch breaker had tripped to the off position then reset it. After the completion of the checklist the switch breaker had deactivated the switch a second time. At this point in continuous light icing with moderate precipitation I [notified] ATC, advising them that I had a prop anti-ice protection failure and then reaffirmed that I was in icing conditions without anti-ice protection. I then requested a descent while activating the boots several times and increasing my available power in the descent [to] account for the degraded performance on the props. I descended to lower altitudes as advised by ATC and requested lowest available altitude do get out of the icing. When ATC assigned 5,300 MSL I left icing conditions into moderate precipitation, at about 5,400 icing stopped. Emergency vehicles were dispatched and standing by as well as followed us in to the gate. I advised all ATC, [Maintenance and Operations Control] about the situation. Post flight all passengers at gate were queried if they were ok and talked with ARFF (Airport Rescue and Fire Fighting) personnel, as well as discuss with [Operations Control and the Chief Pilot] and elected to end duty day due to IMSAFE checklist.

Successful "trip" of the PROP ANTI-ICE switch breaker to protect the electrical system from prop anti-ice failure.

## Synopsis

C402 pilot reported propeller anti-ice system failed after entering icing conditions.

## Time / Day

Date : 201810  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 1600

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Dawn  
Ceiling.Single Value : 12000

## Aircraft

Reference : X  
ATC / Advisory.Tower : ZZZ  
Aircraft Operator : FBO  
Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Training  
Flight Phase.Other  
Route In Use : None  
Airspace.Class D : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Instructor  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 300  
Experience.Flight Crew.Last 90 Days : 50  
Experience.Flight Crew.Type : 100  
ASRS Report Number.Accession Number : 1588096  
Human Factors : Situational Awareness

## Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

On downwind abeam the PAPI the aircraft began banking to the right. My student was at the controls, and I asked why she was banking. She said it wasn't her. I immediately took controls and began to try to bank the aircraft to the left. The controls were unresponsive. I increased left aileron and the plane banked to the left about 5-10 degrees. I tried to correct back right and the aircraft began banking left and right about 4-5 times. On base and final the aircraft responded normally. This event occurred on the second lap in the pattern. The previous lap was normal. There was no visible frost on the wings in flight. Originally, I did not think frost was the problem, but upon further reflection I believe that was the issue. I believe that frost built up on taxi and on the first lap in the pattern that was not visible from the cockpit due to the sun's glare on the wings. When we shut down I noticed a decent amount of frost that had built up on the wing on our taxi back.

## Synopsis

PA28 instructor on a training flight with student reported having control difficulties possibly related to frost build-up on the wings.



## Time / Day

Date : 201810  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 12000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight  
Ceiling.Single Value : 12000  
RVR.Single Value : 2000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Personal  
Make Model Name : M-20 R Ovation  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Private  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 700  
Experience.Flight Crew.Last 90 Days : 50  
Experience.Flight Crew.Type : 200  
ASRS Report Number.Accession Number : 1584211  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : FAR  
Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

I encountered icing conditions in my Mooney, which was not FIKI (Flight Into Known Icing) equipped. I had obtained a weather briefing via flightplan.com and knew of an icing airmet. I believed that I would be able to stay below the cloud layer until clear of clouds and then climb in VMC to an altitude where the temperatures were cold enough that icing would not occur. The clouds were lower and more pervasive than I realized from my weather briefing and I found myself picking up trace ice at around 10,000 MSL. I informed ATC and with their assistance determined that a climb to 16,000 MSL would likely get me out of icing conditions. I immediately began a climb and was soon in temperatures well below freezing and out of the icing conditions.

I think my flight into icing was caused by my misinterpreting the satellite weather depiction as being the only places where there were clouds or clouds with moisture significant enough to cause icing. That is clearly not the case.

I fault myself for misinterpreting the weather briefing and for not making a no-go decision solely on the basis of the icing airmet. That would have been the prudent thing to do.

I credit myself for immediately informing ATC and seeking their assistance to plan an escape from the icing conditions.

## Synopsis

M20R pilot reported entering icing conditions without anti-deicing equipment.

## Time / Day

Date : 201808  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 4500

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Cessna 150  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : None  
Airspace.Class E : ZZZ

## Component

Aircraft Component : Engine  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Experience.Flight Crew.Total : 2149  
Experience.Flight Crew.Last 90 Days : 18  
Experience.Flight Crew.Type : 1478  
ASRS Report Number.Accession Number : 1568980  
Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Manuals  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

I was proceeding, by pilotage, at 4,500 feet. Abeam and east of ZZZ, I had a sudden interruption of power, a surge, and a further interruption. At the time, I was receiving Flight Following from Approach. Since emergency landing sites are very poor in the area, I decided to head to ZZZ. I was able to retain intermittent power by pumping the throttle. I first enriched mixture, but did not apply carburetor heat until later in the glide when the engine was probably too cool to take effect. Approach turned me over to ZZZ Tower who cleared me to land on Runway XXR. I was able to make a right base approach and high final until I had the field made and performed a normal full flap landing. The engine was still running and I was able to clear the runway without interfering with other traffic.

Carburetor icing was undoubtedly the problem, but I misdiagnosed it due to the sudden reduction of power. Prior experiences with carburetor icing were a gradual reduction in power. Instead of applying carburetor heat immediately, I richened mixture thinking I had a fuel contamination or sticking valve problem. I had plenty of fuel on board and subsequent examination of the sumps were clear. A full power run-up confirmed my opinion.

In this case, I violated my personal rule to apply carburetor heat on first sensing an engine problem, having been misled by the sudden severe power reduction. Also, the Emergency Checklist was in the glovebox, but I decided not to fumble around for it because of the simplicity of the airplane and my familiarity with it. I intend to make up a separate Emergency Checklist and keep it on the glare shield for quick access. I also intend to drill myself on carburetor heat FIRST.

## Synopsis

C150 pilot reported incorrectly diagnosing engine vibration due to carburetor icing.

## Time / Day

Date : 201807  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Relative Position.Distance.Nautical Miles : 7  
Altitude.MSL.Single Value : 2000

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Ceiling.Single Value : 6000

## Aircraft

Reference : X  
ATC / Advisory.Tower : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Eurocopter AS 350/355/EC130 - Astar/Twinstar/Ecureuil  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class C : ZZZ

## Component

Aircraft Component : Throttle/Power Lever  
Aircraft Reference : X  
Problem : Failed

## Person

Reference : 1  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 2500  
Experience.Flight Crew.Last 90 Days : 76  
Experience.Flight Crew.Type : 100  
ASRS Report Number.Accession Number : 1565489  
Human Factors : Time Pressure  
Human Factors : Troubleshooting  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Ground Event / Encounter : Other / Unknown  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

I was PIC in an Ercoupe 415D. We departed and intended to travel down the shoreline below the Class B airspace. I noticed a decrease in engine power to 1500 RPM. I attempted to increase throttle and noticed there was no response to increased or decreased throttle movement. The RPM stayed at 1500RPM. I first suspected possible carburetor icing, but after applying carb heat, this was determined not to be a factor. At this point, the aircraft lost airspeed and began to lose altitude. I reduced speed to best glide and advised my copilot to find ZZZ Tower frequency. I made a mayday call to ZZZ Tower and he advised us to proceed direct ZZZ. I advised we were unable and would be landing somewhere along the shore. He advised us of [a nearby road] as an option. I began to glide toward [the road] for landing. Shortly before touchdown, my copilot advised me of a bridge ahead. Considering speed, altitude, and energy, I opted to fly under the bridge and touchdown just after the bridge. The left lane traffic opened up allowing us a clear landing area. I applied heavy braking and brought the aircraft to a stop. Both occupants of the aircraft were uninjured and there was no damage to the aircraft. [We] concluded the throttle cable had broken at the throttle arm on the carburetor. The engine was operating normally, but there was no way to control the throttle position which was near idle.

## Synopsis

Ercoupe 415 pilot reported a throttle linkage failure, and subsequent loss of power, which resulted in a successful off field landing on a nearby highway.

## Time / Day

Date : 201807

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZID.ARTCC

State Reference : IN

Altitude.MSL.Single Value : 34000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Thunderstorm

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZID

Aircraft Operator : Corporate

Make Model Name : Challenger CL604

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZID

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 14200

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 2200

ASRS Report Number.Accession Number : 1565122

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 1000  
Experience.Flight Crew.Last 90 Days : 120  
Experience.Flight Crew.Type : 130  
ASRS Report Number.Accession Number : 1565118

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Regained Aircraft Control  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Climbing out of FL330 we requested a deviation from Indianapolis Center right of course for a thunderstorm top. Denied deviation by Center until FL350. Entered tops of thunderstorm. Could not maintain directional control, course, or altitude, due to severe turbulence. ATC questioned us if we had deviated from course and told us to expedite climb to FL350 in 30 seconds or less. We informed unable to comply and reported out of FL340 at ATC request. After being handed to the next Center Controller, Indy Center asked us to contact them after landing.

## Narrative: 2

After breaking out of a cloud deck we noticed a thunderstorm build up in front of us. We requested a deviation from Indianapolis Center to the north for the weather but were denied. We informed them we would need a turn soon. They authorized a deviation left of course, however, we informed them that would put us deeper into the storm. We experienced severe turbulence and were unable to maintain altitude or heading control. ATC asked us if we were deviating and we informed them we were not as we attempted to control the aircraft through the turbulence. They asked us to expedite our climb to FL350 and reach it in 30 seconds or less and we told them we were unable. After clearing the weather the controller told us on frequency we couldn't deviate without their permission and we informed them that we hadn't, we were unable to maintain heading due to



turbulence. They gave us a number to talk to them about it after landing, which my Captain did.

## Synopsis

CL604 flight crew reported altitude and course deviations resulted from an encounter with severe turbulence associated with thunderstorm activity.

## Time / Day

Date : 201807

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Snow

Weather Elements / Visibility : Icing

## Aircraft : 1

Reference : X

Aircraft Operator : Corporate

Make Model Name : Robinson R44

Operating Under FAR Part : Part 91

Flight Plan : None

Mission.Other

Flight Phase : Parked

Route In Use : None

## Aircraft : 2

Reference : Y

Aircraft Operator : Air Taxi

Make Model Name : Sikorsky Helicopter Undifferentiated or Other Model

Operating Under FAR Part : Part 135

Flight Plan : None

Mission : Ambulance

Flight Phase : Parked

Route In Use : Direct

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 3160

ASRS Report Number.Accession Number : 1558329

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Other

Communication Breakdown.Party2 : Dispatch

## Events

Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
When Detected : Pre-flight  
Result.General : Release Refused / Aircraft Not Accepted

## Assessments

Contributing Factors / Situations : Company Policy  
Contributing Factors / Situations : Weather  
Primary Problem : Company Policy

## Narrative: 1

I am no longer an active helicopter pilot, and the following is part of the reason I have bowed out.

The regulations prohibit flight in known icing conditions in an aircraft that is not equipped for icing. The Rotorcraft Flight Manual (RFM) for each of the above aircraft (Robinson R44 and Sikorsky S76) also clearly state that flight in known icing conditions in their aircraft is prohibited. The SOPs for my last employer prohibited flight in known icing conditions (the employer before that had no SOPs). For both, my coworkers and I regularly flew in what would be considered by definition "icing conditions;" in one instance, I called my fellow pilot after he landed, and he explained that although they had indeed accumulated some ice on the airframe during the flight, he "knew it wouldn't accumulate too fast." (He has been flying this area for the last couple [of] decades.)

My training department had almost nothing to say on the subject. Everyone in both the R44 and S76 jobs (news gathering and EMS respectively) treated me as if I were being far, far too conservative, and "we would just never fly in the winter if we did it that way."

As far as I can tell, all published material from the FAA and otherwise concerning aircraft icing is exclusively applicable to airplanes. There is usually some disclaimer stating that no one actually knows how quickly ice may accumulate on a helicopter main rotor system (but it will definitely be bad when it does). It seemed to me at the time that I was flying these missions that we were dancing blindfolded in the vicinity of a canyon, and I was called a chicken for pointing it out (I was the most junior pilot in that program. My co-pilot, who was only my senior by about a year, was the only one who listened). That flight on which my fellow pilot experienced icing was a mission that my co-pilot and I had turned down.

There is a lack of knowledge concerning icing in helicopters in general, and in the two professions I was in (EMS and news), there seemed to be an across-the-board lack of respect for what that phenomenon can do. I know that NASA has been conducting tests of helicopter rotors in their icing tunnel...can those results be made public? Even if they aren't conclusive yet...if they will raise awareness, reach out to these industries, and maybe drum up a little more conservatism in our helicopter pilots, it might save a life or two.

## Synopsis

Helicopter Pilot reported that multiple times aircraft were flown in known icing conditions even though the aircraft were not equipped for icing.

## Time / Day

Date : 201806  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 7500

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight

## Aircraft

Reference : X  
Aircraft Operator : FBO  
Make Model Name : Skyhawk 172/Cutlass 172  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : VFR  
Mission : Training  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Component

Aircraft Component : Engine  
Aircraft Reference : X  
Problem : Failed

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Student  
Experience.Flight Crew.Total : 52  
Experience.Flight Crew.Last 90 Days : 15  
Experience.Flight Crew.Type : 52  
ASRS Report Number.Accession Number : 1554154  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Ground Event / Encounter : Other / Unknown

Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Landed in Emergency Condition

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Primary Problem : Ambiguous

## Narrative: 1

I encountered a power loss at 7,500 feet MSL. The engine dropped to 1,000 RPM at full throttle. I then followed through the emergency checklist to check the fuel selector, carburetor heat, and magnetos. None of which restarted the engine. I then proceeded to land on [a highway]. I landed the plane safely. No injuries and no damage to aircraft or property. The aircraft has been thoroughly inspected by certified mechanics and the two possibilities they have been able to come to are failure to switch fuel tanks, or carburetor ice. If I forgot to switch fuel tanks, that could've been prevented by being attentive when following checklists and throughout the flight by checking the fuel selector multiple times. Carburetor ice could've been prevented by being aware of carburetor icing conditions and turning carburetor heat on when noticing engine roughness and leaving it on until the engine is running smoothly and fully.

## Synopsis

C172 pilot reported a loss of engine power resulted in an off field landing.

## Time / Day

Date : 201805

Local Time Of Day : 0001-0600

## Place

Altitude.MSL.Single Value : 37000

## Environment

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Air Taxi

Make Model Name : Learjet 35

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

## Component

Aircraft Component : Pitot-Static System

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 3700

Experience.Flight Crew.Last 90 Days : 70

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 1546821

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Speed : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Became Reoriented  
Result.Flight Crew : Regained Aircraft Control

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Human Factors

## Narrative: 1

There was rain and thunderstorm activity at both the departure and arrival airport. During the initial climb out wing/stab, nacelle, windshield heat were turned on along with the igniters passing through 15,000 feet +10 degrees. After level off at 41,000 FT the autopilot was noticeably struggling to make smooth heading changes and was going up and down + or - 200 FT. I tried switching from yaw damp Number 1 to Number 2, ADC Number 1 to Number 2, I tried HDG mode, flying faster, I even was hand flying with a lot of difficulty while switching between the various modes. Left pitot heat Circuit Breaker (CB) was found popped and so I reset it. This did not help stabilize the airplane. I felt that perhaps we had airframe icing and were too heavy for FL410 and requested a descent to FL350. ATC cleared us to FL370 and once we leveled off there the airplane was flying noticeably smoother. I then asked for that as our final altitude and we continued the flight. For troubleshooting purposes we tried YD Number 1 again and found it to be unreliable. My ball kicked out approximately 1/2 ball and the airplane began to Dutch roll side to side and climb and descend 100 - 150 feet. YD Number 2 was selected again and I continued the flight thinking that we must be heavy due to airframe icing and that YD Number 1 needed to get written up.

There was a line of thunderstorms directly ahead of us. Both [the First Officer (FO)] and I were watching them as we approached and determined that we were above it. We were told to cross [an intersection] AT 13,000 FT. I told [the FO] and she told ATC that we would hold off on our descent until we passed a good size cell on our route. As we approached the cell I noticed we were too low and asked [the FO] to ask for a climb to FL390. I turned on the seat belt sign knowing things could be getting rough soon, along with all anti ice systems. This request was not immediately made with ATC and as a result we entered IMC. The clearance was given and I began a climb, it was very rough, lightning flashes were all around us with moderate turbulence. Then IT happened....

My airspeed was accelerating and we were shooting up like a rocket, faster and faster and my airspeed was increasing, I pulled off some power and pitched up even further, thinking we had a great updraft. [The FO] said: "SPEED" and so I reduced the thrust even more and pitched up even more, the second time she said "Speed" I went to idle and pitched up aggressively to over 30 degrees, I then looked over at her side and saw our airspeed now at 110 knots and just then the pusher activated as the aircraft stalled. I now pushed up power and tried to gently raise the nose but the pusher stopped helping me push and we were too slow and trimmed too nose up and a secondary stall happened. We were still in IMC and getting bumped around with several updrafts and downdrafts adding to the situation. I told [the FO] I was not sure what altitude we were now at and wanted to clear any airspace around us. As [the FO] was doing so I looked at her airspeed and altimeter

and I could see we had recovered and were in smooth descent through FL350. ATC asked her to say again. She did so and attended to the Passengers in the back, trying to calm them down who were obviously upset.

We exited the cell and within minutes my airspeed and altimeter came back as we were out of the ice. I looked around the T-handle and sure enough saw L pitot heat light glaring. I looked down and saw the CB popped again. I considered giving the flight controls to [the FO] but I was not sure of her state of mind. I was calm and happy to have figured out what had happened because it had come as a surprise for me. We were out of visible moisture and once the SAT was above 10 degrees I turned off all the anti-ice. We completed the ILS without any further issues.

## Synopsis

Learjet 35 Captain reported stalling the aircraft at FL370 when his airspeed indicator began to read erroneously high with the failure of the L pitot heat.



## Time / Day

Date : 201805  
Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Relative Position.Distance.Nautical Miles : 10  
Altitude.MSL.Single Value : 11500

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Night

## Aircraft

Reference : X  
Aircraft Operator.Other  
Make Model Name : PA-32 Cherokee Six/Lance/Saratoga/6X  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : VFR  
Mission.Other  
Flight Phase : Cruise  
Route In Use.Other

## Component

Aircraft Component : Pitot-Static System  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Contracted Service  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Commercial  
Experience.Flight Crew.Last 90 Days : 14  
Experience.Flight Crew.Type : 14  
ASRS Report Number.Accession Number : 1545122

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor  
Detector.Person : Flight Crew  
When Detected : In-flight

Result.General : Maintenance Action  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Diverted

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

We were at 11,500 feet MSL and the OAT was showing 37 degrees F. We put the pitot heat on just in case icing was possible. We continued to have the pitot heat on for about an hour. We had the instrument lights on, our avionics on, and the appropriate aircraft lights were also on. I saw the lights flicker before I hear a popping noise. The cockpit started to fill up with electrical smoke suddenly. I was sitting in the right seat flying so the other pilot in the left seat turned off all the lights immediately and opened up the storm window. I continued to fly the aircraft and we proceeded to run the electrical fire checklist. After a couple of minutes the cockpit started to clear up. I was already diverting to [a nearby alternate]. We landed the aircraft and had emergency personnel check out the aircraft. Everyone was safe and no one was hurt. The other pilot commented that the smoke seemed to be coming out of the pitot heat circuit breaker. The circuit breaker did not pop during the event. I think the emergency was run by the books and we successfully handled the emergency professionally.

## Synopsis

PA32 pilot reported diverting to a nearby alternate after experiencing smoke in the cockpit that was later traced to a pitot heat circuit breaker that apparently overheated and failed to open.

## Time / Day

Date : 201805  
Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.TRACON  
State Reference : US  
Altitude.MSL.Single Value : 20000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Light : Daylight  
Ceiling.Single Value : 19000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Personal  
Make Model Name : MU-2  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Nav In Use : GPS  
Flight Phase : Cruise  
Route In Use : Vectors  
Airspace.Class A : ZZZ

## Component

Aircraft Component : Pitot/Static Ice System  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Commercial  
Experience.Flight Crew.Total : 2000  
Experience.Flight Crew.Last 90 Days : 20  
Experience.Flight Crew.Type : 250  
ASRS Report Number.Accession Number : 1544753

Human Factors : Confusion  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Landed As Precaution  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

I climbed to my assigned altitude of FL200. All was fine. I then noticed that my altitude was decreasing very slowly on my G600 even though I had my autopilot on. All icing equipment was on. I tried to trim up to get back to FL200 but the plane's altimeter showed a slow descent. Around 19,700 ft, I contacted ATC and asked them what they were showing as my altitude. They confirmed that I was 300 ft low. I told them that my altimeter was not acting correctly. My airspeed was also fluctuating, at times showing 150 knots to 270 knots. The controller asked if I wanted 18,000 ft which I accepted. Once I got to 18,000 ft, the altimeter still showed I was descending and I was back in ice as well. I [advised ATC] because of the incorrect readings I was getting from the G600 and because I was in IMC. The controller gave me lower altitudes, all the way down to 12,000 ft at which point I finally got out of the IMC and the instruments began to give me correct indications. I cancelled the emergency and landed at ZZZ. The problems were caused by moisture in the Pitot Static system which froze at altitude.

## Synopsis

MU2 pilot reported altimeter and airspeed indicator errors due to moisture in the pitot static system.

## Time / Day

Date : 201805

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZHU.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 23000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 0

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZHU

Aircraft Operator : Personal

Make Model Name : Citation II S2/Bravo (C550)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use.STAR : CENTERPOINT TWO

Airspace.Class A : ZHU

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 2350

Experience.Flight Crew.Last 90 Days : 110

Experience.Flight Crew.Type : 160

ASRS Report Number.Accession Number : 1540358

Human Factors : Workload

Human Factors : Troubleshooting

## Person : 2

Reference : 2  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
ASRS Report Number.Accession Number : 1540372  
Human Factors : Troubleshooting  
Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Took Evasive Action  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

We were level at FL230 and cleared to deviate left or right of course for weather. We picked what looked to be the best course to cross the line, but upon penetrating the clouds we encountered severe turbulence. The turbulence caused the auto pilot and comm failure. Also due to the turbulence we had an altitude loss of 2,000 ft. After stabilizing the airplane and checking on the passengers and climbing back to our assigned altitude, we were able to reset the autopilot. It took approximately 10 minutes to reestablish radio communication. Due to the fact we were above a solid layer we started to a descent in accordance with lost comm procedures while trying to re-establish communication. After several resets we were able to contact guard 121.5 and advise of the situation, they gave us San Antonio approach's frequency. We advised them of our deviation and the cause and were able to land with no further incidents. Upon landing there were no injuries to passengers or crew and after a walk around of the plane no damage evident.

## Narrative: 2

During cruise at FL230 we deviated to avoid a large weather cell. We subsequently penetrated a smaller cell and encountered severe turbulence and icing. This resulted in an altitude loss of approximately two thousand feet. The autopilot failed as did radio communications. We climbed back to our assigned altitude and checked to make sure the passengers had not been injured. We reset the autopilot but were unable to initially regain radio communications.

Since we were above a solid cloud layer we started our descent toward our destination, SAT, in accordance with standard loss comm procedures. After approximately ten minutes we were able to establish communications with ATC on 121.5 and then San Antonio approach. We then proceeded with a normal approach and landing. There were no injuries or apparent damage to the aircraft.

## Synopsis

CE-550B flight crew reported a temporary loss of communications, autopilot, and an altitude loss due to severe turbulence.

## Time / Day

Date : 201804

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ALB.TRACON

State Reference : NY

Altitude.MSL.Single Value : 6000

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Rain

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZBW

ATC / Advisory.TRACON : ALB

Aircraft Operator : Personal

Make Model Name : SR20

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Descent

Route In Use : Direct

Airspace.Class E : ZBW

## Person : 1

Reference : 1

Location Of Person.Facility : ALB.TRACON

Reporter Organization : Government

Function.Air Traffic Control : Approach

Qualification.Air Traffic Control : Fully Certified

ASRS Report Number.Accession Number : 1538032

Human Factors : Situational Awareness

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 1500

Experience.Flight Crew.Last 90 Days : 71

Experience.Flight Crew.Type : 450



ASRS Report Number.Accession Number : 1539472  
Human Factors : Situational Awareness

### Person : 3

Reference : 3  
Location Of Person.Facility : ZBW.ARTCC  
Reporter Organization : Government  
Function.Air Traffic Control : Enroute  
Qualification.Air Traffic Control : Fully Certified  
Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 3  
ASRS Report Number.Accession Number : 1538033  
Human Factors : Situational Awareness

### Person : 4

Reference : 4  
Location Of Person.Facility : ZBW.ARTCC  
Reporter Organization : Government  
Function.Air Traffic Control : Enroute  
Function.Air Traffic Control : Supervisor / CIC  
Qualification.Air Traffic Control : Fully Certified  
Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 2.0  
ASRS Report Number.Accession Number : 1538041  
Human Factors : Situational Awareness

### Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

### Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

### Narrative: 1

I was working all radar positions combined. The aircraft departed. Before I took over the position, the previous controller cleared the aircraft to the first fix on his route and issued a climb to 8000 feet. When the aircraft was at approximately 5500 feet he asked me to make 6000 feet his final altitude. I cleared him to maintain 6000 feet. The handoff to the adjacent Center sector was normal. Approximately 3 to 5 minutes after I had switched the aircraft to the new sector's frequency, that sector called to request control of the aircraft. The aircraft had developed ice at 6000 feet and needed to descend. I gave control to the

adjacent controller. I observed the aircraft descend and begin to turn around. The Center controller called back to update the aircraft's status, letting me know the aircraft needed to turn around and asked what my lowest IFR altitude was in the area. I told [the other controller] 5000 feet. I observed the aircraft continuing to descend through 4500 feet. The Center controller called back and told me the aircraft needed to continue descending. I took radar contact and let the Controller in Charge know I was declaring [a serious situation] for the aircraft.

The aircraft checked in and told me he was descending. I gave him the altimeter and asked for his intentions. He told me he needed to keep descending. I told him the lowest safe IFR altitude in his area was 5000 feet and that approximately 4 miles ahead of his current track the lowest safe IFR altitude dropped to 3400 feet. He said roger. I observed the aircraft continuing to descend through 3500 feet and I asked for his flight conditions. He said he was below the clouds and VFR in light rain. I asked again for his intentions. He said he wanted to fly VFR eastbound. I verified he was cancelling IFR and he replied affirmative. Soon after his IFR cancellation I lost radar contact as he descended through 2500 feet. The aircraft continued VFR southbound along the river.

Looking back, I should have asked for the pilot's flight conditions after he leveled at 6000 feet. If I had known he was getting ice I could have started working the problem while the aircraft was in an area of lower terrain. A key part of this situation was the pilot's delay in alerting ATC of his situation. By the time he asked the Center sector for a lower altitude, he was in an area of higher terrain. Lastly, I should have verified the aircraft's distress status when coordinating with the Center controller. I found out later [the controller] had declared [a serious situation] for the pilot before I took radar contact.

## Narrative: 2

After checking the weather as I normally do, I departed VFR and flew to my destination. Enroute I was notified the weather had deteriorated to 800 broken. I contacted Flight Service half way through the trip to file an IFR flight plan. Flight Service could not be contacted, so I contacted Approach. Approach was kind enough to assist in filing an IFR flight plan. Subsequently, I was handed off to Approach for the RNAV approach. I asked Approach if there were any icing reports in the area and they advised me that there were none. My route of flight from was to the east of a mountain range and I never encountered any icing. I landed safely.

I was on the ground for possibly 20 minutes and decided to file a new flight plan back. I intentionally filed the return flight plan at a similar altitude and route as the one I flew inbound. The IFR flight plan was filed to ensure a safe instrument departure from the terminal area back south and to return to the VFR conditions that I had just flown. The latest weather briefing I received prior to departing confirmed VFR conditions were forecast to continue along that route of flight once out of the area.

Upon receiving my clearance, the flight plan routing was different than I had requested and was much farther west, over a mountain range, and two thousand feet higher. I took off and followed the new clearance. I began picking up some light rime at approximately 4,000 feet while talking to Departure Control. As I recall, the tops of the clouds were around 6,500-6,700 feet and at my current rate of climb I calculated I would be above the weather and out of the icing conditions almost immediately. Having a clearance to climb to 8,000 feet I was now with Center. The unexpected ice accumulation required immediate attention and I requested a level off at 6,000 feet and a 30 degree deviation left of course. Shortly thereafter, I requested an additional 90 degree deviation and an immediate descent. Center then cleared me to 5,100 feet and handed me back to Approach. I notified

Approach that I was able to descend below the clouds into VFR conditions at 3,000 feet and leveled off at 2,500 feet. I then canceled my IFR and received flight following until I was released farther south. I was told to contact Center for further VFR flight following advisories. The aircraft is equipped with terrain guidance and I always had situational awareness of my position in relation to the mountains below. There were never any separation issues with other aircraft nor were there any terrain warnings.

#### Narrative: 3

[Report narrative contained no additional information.]

#### Narrative: 4

[Report narrative contained no additional information.]

#### Synopsis

Controllers and SR20 pilot reported the aircraft descended below the Minimum IFR Altitude due to icing conditions.

## Time / Day

Date : 201804

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZDC.ARTCC

State Reference : VA

Altitude.MSL.Single Value : 6000

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Cloudy

Weather Elements / Visibility : Icing

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZDC

Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Flight Phase : Descent

Route In Use : Vectors

Route In Use : VFR Route

Airspace.Class E : ZDC

## Person

Reference : 1

Location Of Person.Facility : ZDC.ARTCC

Reporter Organization : Personal

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 6

ASRS Report Number.Accession Number : 1535872

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Distraction

## Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Air Traffic Control

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Became Reoriented

Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued Advisory / Alert  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Company Policy  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Company Policy

## Narrative: 1

I was working 4 combined sectors. Aircraft X was traveling through my airspace VFR at 9500 ft. The pilot informed me that he was seeing a few clouds and asked to descend to a lower altitude to maintain VFR. The aircraft slowly descended to 4500 ft. After a few minutes the pilot reported low visibility because of clouds and requested an IFR clearance. I informed the pilot the he was currently below IFR minimums and asked if he could climb to 6000 ft to maintain minimums. I then issued a clearance to maintain 6000 ft and proceed IFR. After a few minutes the pilot reported light icing and requested a lower altitude to get out of the icing. I informed the pilot that I couldn't descend him below because of IFR minimums. The pilot then asked if there were any airports close to him and I replied that there was one about 10 miles away. He then asked for vectors for that airport.

He asked if there were any larger airports around, I told him one was further south, however the closer airport had a 7000 ft hard surface. He then wanted to proceed to that airport. I realized at some point the the visibility was low and informed the pilot of the weather and that I would try and set him up for an ILS approach. I kept the pilot on a heading towards the airport to hopefully get him in the airspace where IFR minimums were only 5000 ft. At this point I was coordinating with my supervisor and with tower. I asked the pilot how he was doing and if he could maintain altitude and he said yes and that he was fine. As soon as he was in the airspace with IFR minimums of 5000 ft, I descended him to 5000 ft.

I then turned the aircraft to a heading of 240 to to set him up for the ILS approach. I figured that I had a minute to take care of my other aircraft, so I did. This is where the mistake happened. Either I accidentally said heading 140 instead of 240, or possibly the pilot misheard me. Either way, the pilot made a hard left turn to the southeast heading toward the airspace with IFR minimums of 6000 ft. When my scan came back I realized the direction the pilot was flying and instructed him to fly a heading of 270 I think. I just wanted him back into the airspace with minimums of 5000 ft as soon as possible. I realized that he had ventured a few miles into a 6000 ft Minimum Vectoring Altitude area, however I felt it was unsafe to climb him back up into potentially icy conditions at 6000 ft. After a few minutes he was back in 5000 ft minimums airspace. There is a small area of airspace that has minimums of 5100 ft so I climbed him above. I asked the pilot again how his aircraft was handling and he said fine however he wanted to remain as priority handling. My supervisor decided to split off one of the sectors from me so I could concentrate on my other aircraft. A few minutes after the sector split I was informed that the pilot was safely on the ground.

I'm not sure if I really have any recommendations but I know that I will take a lot away

from this event. I know that I had a lot going on around me, trying to coordinate with my supervisor, the tower, and scanning my other aircraft. I will definitely be paying more attention to hearback/readbacks from now on. I realize that many minutes were wasted in a potentially dangerous situation that could've easily been avoided.

## Synopsis

ZDC Center Controller reported inadvertently vectoring a priority aircraft into an area with a lower MVA.

## Time / Day

Date : 201804  
Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : BNA.TRACON  
State Reference : TN  
Altitude.MSL.Single Value : 8000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Turbulence  
Weather Elements / Visibility : Haze / Smoke  
Weather Elements / Visibility : Windshear  
Weather Elements / Visibility.Visibility : 6  
Light : Night  
Ceiling.Single Value : 4000

## Aircraft

Reference : X  
ATC / Advisory.TRACON : BNA  
Aircraft Operator : FBO  
Make Model Name : DA40 Diamond Star  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Training  
Flight Phase : Climb  
Route In Use : Direct  
Airspace.Class E : BNA

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Instructor  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 450  
Experience.Flight Crew.Last 90 Days : 160  
Experience.Flight Crew.Type : 380  
ASRS Report Number.Accession Number : 1535863  
Human Factors : Training / Qualification

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Returned To Departure Airport  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Regained Aircraft Control

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Flying direct to LEJCO, we entered a buildup that we could not see at night. Student requested to climb to 10000 ft. In the climb student could not control heading. While still in the climb student handed over the controls. Continuing the climb, I could not control heading, we were getting pushed and a gust of wind took over and put us in a sudden uncontrolled bank. Airplane immediately rolled over and pitched down. I regained control at 6500 ft, but turbulence caused us to re lose control. Attempted to gain control of the airplane and made 180 turns and descents. Regained control of the airplane around 3000 ft, and soon broke out of IMC. Flew back to [our departure airport] as normal in VFR. Called TRACON once we were on the ground, to let them know we were safe.

It had been clear but gusty all day. Did not see reports by larger aircraft of mod-sev turbulence in that area. I wanted my student to get some actual IMC experience, but did not realize the severity of the buildup. Learned a good lesson about the limits of the aircraft and how fast a build-up can get dangerous.

## Synopsis

DA40 Flight Instructor reported losing control of aircraft after entering a buildup at night.



## Time / Day

Date : 201804

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 20

Altitude.AGL.Single Value : 500

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Snow

Weather Elements / Visibility.Visibility : 2

Light : Daylight

Ceiling.Single Value : 500

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Amateur/Home Built/Experimental

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Flight Engineer / Second Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Engineer

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 12000

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 80

ASRS Report Number.Accession Number : 1535253

Human Factors : Situational Awareness

## Events

Anomaly.Ground Event / Encounter : Other / Unknown

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : VFR In IMC

Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Human Factors

## Narrative: 1

Departed ZZZ airport in VFR conditions. Snow showers visible southwest through west to north and approaching. Clear in southerly direction of flight. After departing airport, rapidly moving snow showers from the west cut off intended route of flight, nearest airports became IFR in snow showers and flight became surrounded by deteriorating visibility. Trapped in an area of 2 miles visibility with lesser visibility all quadrants pilot elected to land on lightly traveled paved road. Better decision would have been to not depart in the first place considering rate and direction of deteriorating weather. Decision to land on a good paved road was far superior to continuing flight likely into IFR conditions with icing and possible controlled flight into terrain. Landing and [then departing within one hour] in good weather were uneventful with no hazard to ground traffic.

## Synopsis

Experimental aircraft pilot reported landing on a road after becoming trapped by approaching weather.

## Time / Day

Date : 201804

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 24000

## Environment

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 3000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : PA-30 Twin Comanche

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Landing

Route In Use : Vectors

Airspace.Class E : ZZZ

## Component : 1

Aircraft Component : Engine

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Fuel Selector

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Private  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 1200  
Experience.Flight Crew.Last 90 Days : 30  
Experience.Flight Crew.Type : 120  
ASRS Report Number.Accession Number : 1535221  
Human Factors : Situational Awareness  
Human Factors : Time Pressure

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.ATC Issue : All Types  
Anomaly.Conflict : Ground Conflict, Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Anomaly.Inflight Event / Encounter : Fuel Issue  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Diverted  
Result.Air Traffic Control : Issued New Clearance  
Result.Aircraft : Equipment Problem Dissipated

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Airport  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Human Factors

## Narrative: 1

In transit between ZZZ and my home airport ZZZ1. There was severe turbulence and even though I had sumped my tanks in ZZZ, there appears to have collected some water in both valves which must have frozen at high altitude. I lost one engine and then the other at FL240 and found myself in the clouds in at least moderate turbulence. I was able to switch to the mains and both engines started but found myself, while still in my altitude block of FL220 to FL240, heading towards an active MOA which I did not enter. I informed Air Traffic Control during this that I was having engine trouble and he was only concerned that I was headed toward the MOA and not seemingly concerned regarding my safety. At this time I realized my auxiliary tanks were not usable and asked to divert to ZZZ2 as this reduced my fuel supply. I descended IFR and when under FL180, cancelled IFR in VMC conditions and proceeded to the airport. The wind was out of the west at 50 knots on my descent with moderate to severe turbulence and a clear area dictated a rapid descent directly over the airport. I did not do an IFR approach to avoid icing conditions. ATC and ASOS both informed me Runway 20 was closed so I and my passenger were watching for this. As I descended to the airport, there has a line of machinery and trucks working on a middle taxiway which caused me to identify the taxiway in error as the closed runway and the crosswind approaching 50 knots at altitude made it appear to me that I was lined up with the proper runway by my slaved compass. As I made a very difficult approach, it was

not apparent until I was crossing the threshold to land that there was yellow, dirty plastic ribbon in an X held down by rocks covering the number 20 which I could not see. I was in descent flaring to land and saw an open runway in good repair with nobody in the vicinity and felt it safest to complete my landing still uncertain if I had a good running airplane safe for a go around. I blame myself for situational awareness and even the frozen fuel lines as I should have pulled some fuel out of all the tanks before transitioning to IMC which I usually do. I put no workers in danger (only one car parked on an adjacent taxiway) and feel that once the mistake was made I acted as best I could for the safety of myself and passenger. The identification marks for the closed runway were poorly done, obscured by blowing dust, and covered the numbers making for a very late identification indeed.

## Synopsis

PA-30 pilot reported diverting and landing on a closed runway when the fuel system malfunctioned, causing a temporary starvation of both engines.

## Time / Day

Date : 201804

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : S56.TRACON

State Reference : UT

Altitude.MSL.Single Value : 5000

## Environment

Weather Elements / Visibility : Rain

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Skylane 182/RG Turbo Skylane/RG

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Initial Climb

Airspace.Class B : SLC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 220

Experience.Flight Crew.Type : 100

ASRS Report Number.Accession Number : 1532800

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Confusion

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Airspace Violation : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

### Narrative: 1

I did a thorough preflight inspection and engine run up at U42 using a checklist. I also calculated the weight and balance of the aircraft and the aircraft was within limits but closer to the max than I usually fly. I am also typically fly out of airports at lower elevations.

After completing run up I struggled a little bit to find the taxi ways to runway 34 which the winds were favoring. I tried to find an airport diagram for U42 in advance of the flight but none was available. This struggle had me a bit flustered as this was an unfamiliar airport to me with a more complex taxi system than I am used to.

I approached the runway, checked for traffic, made a radio call and took off. The aircraft struggled more than usual to take off which I attributed to the higher altitude and higher load than I normally carry. However, after takeoff the climb was extremely slow. Normally I climb out at 88 mph (approximately  $V_y$ ), but I was forced to climb out at about 80 mph (approximately  $V_x$ ) in order to gain altitude. And the altitude gains were maybe 1/5th the normal rate.

I started to panic and tried to determine what was wrong. Had I grossly miscalculated the load? Was the density altitude far too high than I am used to? Were my flaps mis-configured? Did my plane have the wrong type of fuel? Had the tanks been compromised with rain water that day? Where would I make an emergency landing if my engine was failing?

I remembered my training and focused on "flying the plane." I knew I needed to keep from stalling as this would likely be deadly this close to the ground. I had to keep my airspeed above  $V_x$  and fly the plane straight and level without turning. I remembered that trying to turn back to the runway in this situation is often fatal. I had to focus on flying the plane at the expense of navigation or other concerns while determining what was wrong.

My GPS started warning that I was nearing SLC Class B airspace. I believed this was the airspace above me and focused my attention on my airspeed and trying to gain altitude. Suddenly my GPS indicated that I had entered the SLC B airspace. I knew I didn't have permission and I realized what had happened. I was so focused on flying the plane that I hadn't turned left as I had planned and runway 34 was pointed directly at the SLC Class B airspace all the way to the ground.

I had gained enough altitude that I was comfortable with a careful turn to the left to get my plane out of the airspace as quickly as possible without stalling the plane.

Once clear of the B airspace, I continued to search my instruments and flight controls for the source of my engine's poor performance. Mixture was good, throttle was full, primer was in and locked. But carb heat was set to hot! I pushed the carb heat control to cold and my engine roared with new life. My airspeed and climb improved instantly and dramatically. I realized what must have happened. During my engine run up I make sure the engine would idle and turned on carb heat to prevent icing. But I had left the carb heat on by mistake and missed the check during the pre-take off checklist.

What contributed to the mistake was the lack of airport diagram for U42 and lack of familiarity with the airport which caused me to become flustered and miss a critical item on the check list. Also, I would have liked to connect with Flight Following from the ground but wasn't sure how to do this at U42. Was I supposed to call clearance? SLC Approach? SLC Center? Had I been on Flight Following a Controller might have warned me I was heading directly for [Class] B or I could have explained what was going on when I experienced engine trouble.

## Synopsis

C182 pilot reported an airspace incursion resulted when he inadvertently took off with carburetor heat on and was concerned with terrain clearance.



## Time / Day

Date : 201804  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 5500

## Environment

Flight Conditions : Mixed  
Weather Elements / Visibility : Cloudy  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight  
Ceiling.Single Value : 2000

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Skylane 182/RG Turbo Skylane/RG  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Personal  
Nav In Use : GPS  
Flight Phase : Descent  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class D : ZZZ  
Airspace.Class G : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 720  
Experience.Flight Crew.Last 90 Days : 5  
Experience.Flight Crew.Type : 400  
ASRS Report Number.Accession Number : 1531789  
Human Factors : Training / Qualification  
Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Procedural : FAR  
Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : VFR In IMC  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Landed in Emergency Condition  
Result.Air Traffic Control : Provided Assistance  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

We departed the Airport with full fuel (4-1/2 hours usable) beneath an overcast layer of approximately 4,000 feet MSL, on a heading of 008 degrees on my GPS. I set cruise at 3,300 MSL and contacted Approach to request Flight Following. They asked if I could climb to 5,500 MSL and I responded with 'negative until I can get above the cloud layer'. They advised that they could not pick me up on radar below 5,500 feet MSL, continue on VFR, and set transponder to VFR 1200, at present altitude of 3,300 feet MSL.

North of my position, clouds were scattered allowing me to climb to 5,500 feet MSL to benefit from Flight Following. I contacted Approach and requested Flight Following, and was instructed [with a] squawk. Enroute I was handed off to approach through a series of frequencies. By this time, the cloud layer had changed to complete overcast below us. I requested handoff, as I was going to need assistance in finding a hole in the clouds to transition through. I was then handed off to Next Controller. I advised of the need for assistance to get through the clouds and requested information on how far west could I go if necessary to find scattered clouds. The controller advised overcast with ceilings at 1,200 to 1,500 MSL and asked if I was IFR qualified and equipped, as they did not have radar capability to determine cloud coverage. My reply was 'negative' to both. At this point, I was directed to change my heading to 320 while we considered approach options. I was also asked how much fuel I had on board, to which I replied approximately 1-1/2 to two hours of usable. Momentarily, I was advised that they were turning me over to ZZZ and to tune to ZZZ Approach.

Upon contact with ZZZ Approach, I was asked what type of navigation equipment I had on board, fuel remaining, IFR experience and number of souls on board. I responded with having ForeFlight on my iPad and a Garmin 250XL, approximately 1-1/2 hours of usable fuel, IFR experience limited to flight review sessions and two souls on board. At that point, the controller advised he was identifying us as an emergency and would talk me through the set up for descent through the clouds and the approach. He advised of possible icing conditions and recommended the application of carb heat, to which I complied. We broke through the cloud layer at approximately 2,000 feet MSL and I advised that I could see the ground but had basically zero forward visibility. The controller instructed me through additional power reductions and the use of flaps after which I had the runway in sight. Touch down, landing and roll out were uneventful.

I was instructed to stay on the present frequency and follow the emergency response vehicle to the FBO for parking. I was then instructed to switch to ground control frequency

and to continue following the emergency response vehicle. Upon parking at the FBO, I asked ground control if they were through with me and they responded with 'yes'. We were then met at the plane by a fireman who asked if we were all Okay, to which we responded, 'yes'. He asked how high above the cloud layer I had been and I replied with 'from 1,000 to 1,500 feet'. I asked him if any report or paperwork needed to be filled out and was advised that the controller may be able to answer that question. We were then greeted by the controller who had stepped us through the process and said he was the one I had been talking to. He asked if we were Okay, to which we replied 'yes'. He then offered suggestions on how to be better prepared for this type of situation and was very cordial, polite, and professional. I asked if there were any reports I needed to file and he said he was not aware of any since no incident or damage had occurred. I then contacted my CFI and shared our experience with him. He suggested I file this report and we made arrangements to initiate IFR certification.

## Synopsis

Cessna 182 pilot reported operating VFR in IMC after being stuck above clouds with ATC assistance during the descent.

## Time / Day

Date : 201803  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ACV.Airport  
State Reference : CA  
Altitude.MSL.Single Value : 5000

## Environment

Flight Conditions : Mixed  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Rain  
Weather Elements / Visibility.Visibility : 10  
Light : Night  
Ceiling.Single Value : 3700

## Aircraft

Reference : X  
ATC / Advisory.Center : ZSE  
Aircraft Operator : Air Taxi  
Make Model Name : Small Transport  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Cargo / Freight  
Nav In Use.Localizer/Glideslope/ILS : Runway 32  
Flight Phase : Initial Approach  
Airspace.Class E : ZSE

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 8746  
Experience.Flight Crew.Last 90 Days : 132  
Experience.Flight Crew.Type : 176  
ASRS Report Number.Accession Number : 1526213  
Human Factors : Workload  
Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Overshoot  
Anomaly.Deviation - Altitude : Crossing Restriction Not Met  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Air Traffic Control  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

I had been descending from 14,000 ft. where the temperature was -18c down to cross YAGER intersection (the initial approach fix) for the ILS 32 into ACV as cleared at 7,000 ft. Onboard equipment had indicated an area of moderate precipitation along most of the approach. Thus I was concerned about potential for icing. Temperature at ACV was reported as 8c. My general tactic in these situations was to keep my speed up to present the minimum angle of attack in order to minimize icing potential. I was approaching at approximately 160 kts IAS. I was used to crossing YAGER at 7,000 ft. and seeing the glideslope come down on my instrumentation from above, slowly but surely. I had been in a habit of monitoring my minimum crossing altitude of 5,700 ft. before the next stepdown of VOMAC as I had flown [this route] many times. As is our usual policy, I was watching on the approach for a point where I was VMC and could cancel IFR and proceed to my ultimate destination of EKA. It was night still and during most of the descent I was IMC, so basically visibility was nil and it was raining most of the time. I was dividing my attention between monitoring my wing for icing with my icing light, looking for a VMC path to EKA, and flying the approach. I knew I was approximately 1/3 deflection below the glideslope but it had been moving down steadily so it did not concern me much, since I was still well outside (approximately 9.7nm) the FAF of VOLEW. It should be mentioned that usually I flew this approach at 120 kts or less but today was unusual in that I chose to fly it at 160 kts.

Then the Seattle Center Controller mentioned that I was low on the approach and that the crossing altitude at VOMAC was 5,700 MSL. I looked at my altimeter and noticed I was at approximately 5,000 ft. MSL. Obviously, I corrected immediately and was back at the proper altitude within a matter of seconds. Later, I noticed that the highest obstacle near VOMAC was 3729 MSL. Thus I had potentially come within 1,271 ft. of it.

After that, the approach went as normal; and I broke out under the ceiling, was in VMC, cancelled IFR, and had an uneventful flight to EKA, landing in the dark.

I think my failure to monitor the altitude at the step down fix was due to my familiarity with the approach which made me more relaxed about it than I was with being concerned about the icing potential and being able to peel off the approach at the most opportune moment for EKA. I think a contributing factor was the higher speed at which I flew the approach, giving me less time to monitor where I was along it while doing other tasks.

Essentially it was a case of mistaken priorities and the step down altitude had been

regulated to a lower priority subconsciously in my mind as I felt over-confident that the nearing glideslope indication would keep me safe. Obviously this was a false assumption that in the heat of the moment I had subconsciously made.

Thus I chose to write this report to help reemphasize in my mind the importance of step down fix altitudes on an ILS approach.

I found the InFO 11009 document published by the FAA on 3/28/2011 online and this helped a lot in helping me understand my error.

I am also thankful for the Seattle Center controller doing a good job of monitoring my approach.

## Synopsis

A commercial fixed wing pilot reported descending below the glideslope and coming within 1,271 feet of an obstacle while in IFR conditions.

## Time / Day

Date : 201803  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : 1H0.Airport  
State Reference : MO  
Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Rain  
Weather Elements / Visibility.Visibility : 8  
Light : Daylight  
Ceiling.Single Value : 1600

## Aircraft

Reference : X  
ATC / Advisory.TRACON : T75  
Aircraft Operator : Personal  
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Flight Phase : Descent  
Route In Use : Direct  
Airspace.Class B : STL

## Component

Aircraft Component : AHRS/ND  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 5000  
Experience.Flight Crew.Last 90 Days : 20  
Experience.Flight Crew.Type : 700  
ASRS Report Number.Accession Number : 1525989

Human Factors : Situational Awareness  
Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Became Reoriented  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

There was no mention in a briefing for ice. In fact, the departure from ZZZ was through IMC without incident. Upon reaching the 1H0 area I was offered direct ODUJY and the RNAV 34 into 1H0. At that time a Falcon Jet went into SUS and reported zero ice on the approach. About 10 miles from the fix I entered IMC as I descended through 4,000. Initially, the ice appeared to be light rime but almost immediately I encountered freezing rain and clear/rime mixed with jagged edges on my leading edges and a useless ice covered windscreen. The controller instructed to "maintain 2,200 MSL" then corrected himself to, "maintain 2,600 until ODUJY." The actual altitude for ODUJY is 2,800 and 2,200 at the FAF. I was hand flying the aircraft to avoid autopilot disconnect and un-commanded aerobatics. There seemed no alternative but continue as the ceiling was reported to be at about 2,000 MSL. Just after the FAF, the navigation displays partially malfunctioned, but since I had a heading from ODUJY to the FAF I continued the approach to VMC and the icing abated. I continued to just above circling minimums and after some mild excursions found the airport. As the aircraft shed the significant ice I was able to circle to land 34. I considered the missed approach, but given an unexpected response from the EFIS and heavy ice, I elected to stay VMC. No damage to anything but the pilot's nerves.

## Synopsis

Pilot reported descending below the glidepath on an RNAV approach in order to escape icing conditions.



## Time / Day

Date : 201803

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 6000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility.Visibility : 2

Light : Daylight

Ceiling.Single Value : 3000

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : M-20 J (201) / Allegro

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 2160

Experience.Flight Crew.Last 90 Days : 45

Experience.Flight Crew.Type : 1290

ASRS Report Number.Accession Number : 1525984

Human Factors : Troubleshooting

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

Icing forecast but all airports along route forecasting VFR. The first half of the trip was without incident but then at 8000 ft entered clouds. Initially no ice but after 20-30 minutes picked up slight rime ice. Initially descended but ice was worse at 6000 ft. Cleared to 10,000 ft and broke free of clouds at 9000 ft. Later started descent for approach. Held at 6000 ft as this was minimum vectoring altitude. Started picking up significant ice and ATC could not get me lower due to MVA. I knew there were VFR ceilings beneath me so I [advised ATC of conditions]. Descended to 5000 ft and remained clear of clouds to the field and an uneventful landing. The presence of VFR conditions kept me from filing an alternate, and the terrain following GPS assured clearance from mountains. In the future if icing is forecast I will likely arrange to fly to a different airfield to remain clear of the possibility of icing.

## Synopsis

M20 pilot reported accumulating ice at the minimum vectoring altitude and resorted to a descent to VFR conditions.

## Time / Day

Date : 201803

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Cloudy

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Light : Daylight

Ceiling.Single Value : 1500

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Small Transport

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Nav In Use : GPS

Flight Phase : Landing

Airspace.Class D : ZZZ

## Person : 1

Reference : 1

Location Of Person.Facility : ZZZ.Tower

Reporter Organization : Government

Function.Air Traffic Control : Ground

Function.Air Traffic Control : Flight Data / Clearance Delivery

Qualification.Air Traffic Control : Developmental

ASRS Report Number.Accession Number : 1522688

Human Factors : Distraction

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 6197

Experience.Flight Crew.Last 90 Days : 58

Experience.Flight Crew.Type : 1836

ASRS Report Number.Accession Number : 1522941  
Human Factors : Situational Awareness

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation - Procedural : Clearance  
Anomaly.Ground Incursion : Taxiway  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Airport  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Human Factors

## Narrative: 1

Aircraft X was inbound on a circling approach. The pilot reported circling east for the runway at which point the Local Controller who was also assigned Controller in Charge cleared the pilot to land and turned the runway lights on high. As the pilot was in the left downwind, the pilot provided a bases report of around 1380 ft. As Ground Control and Flight Data I began working on submitting the PIREP and cutting a Special weather observation. Due to our facilities lack of weather equipment we rely on PIREPs for more accurate information than the estimates we as a tower are able to provide. While I was recording the ATIS I heard the Local Controller say, "He just landed on [the taxiway]." I then observed Aircraft X on his landing roll on the taxiway. Looking out the window it is near impossible to tell if an aircraft was lined up for the runway or taxiway due to the close proximity of the surfaces and the vantage point from the tower. Also, it is rare that the facility is operating on the runway we were on during this event.

Having seen this occur more than once recently at this facility by both training and experienced pilots something must be done! Wrong surface landings were the topic of our FBO and Tower meeting this past month and a few recommendations were made including painting the word "TAXI" or the letter of the taxiway for the taxiway. Other more radical suggestions included changing of signage near the runway or removal of [the parallel] taxiway due to the close proximity.

## Narrative: 2

The METAR was 3sm BRRR BKN015 OVC050 13/12 A2986. On approach from altitude I picked up icing and significant turbulence. I reported Icing to Approach and that the icing stopped with little altitude depth. I also reported moderate turbulence to Approach with last response after told to contact tower and frequency. I was cleared for the RNAV approach, circle to land. I broke out on the approach with airport in sight at 1380 ft, and as requested, reported to Tower that I was starting the circle to land east of the airport. Tower cleared me to land.

I continued to a left downwind the east of the airport with airport in sight. I estimated weather at the time was broken at 1300 ft AGL and visibility east and north of the airport

worse than on the approach. Estimated was visibility at 1.5 miles but the airport was visible. I'm not sure why, but I lined up for the taxiway on turn to final rather than the runway. The approach to landing was not rough nor did it require maneuvering. I was lower on downwind than normal landing due to the weather at the airport, and the turn to final was lower than normal such that I added power to get back to glidepath. I landed incorrectly on the taxiway and recognized the error after touching down. I chose to complete the landing rather than take off. The landing was normal and there was no issue making the turn off at the end of the taxiway and taxi to parking.

I was given a number to call from Tower and called Tower after shutdown of the engine. Tower informed me of a possible pilot deviation. I provided my phone number, address and pilot Certificate number. During the discussion I told Tower of the somewhat lower visibility to the east/north of the field. This airport is my home airport and I use it often during the year. During rain or weather, the runways often switch to the southeast runways which were lit but at mid-day, the ambient light was relatively high so they were not prominent.

I was rested and no health issues, flight was approximately 2.5 hours. I want to review the sight picture for the runways to see if that could have contributed to my error. I'm told by Tower that this has happened more than they would like and are trying to understand solutions. I also want to see if the taxiway is marked, although it clearly doesn't have runway markings.

## Synopsis

Tower Controller and GA pilot reported a taxiway landing after a circle to land approach.

## Time / Day

Date : 201802

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : EUG.Airport

State Reference : OR

Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Cloudy

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Icing

Light : Daylight

Ceiling.Single Value : 2300

## Aircraft

Reference : X

ATC / Advisory.TRACON : EUG

Aircraft Operator : FBO

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Cruise

Airspace.Class E : EUG

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 220

ASRS Report Number.Accession Number : 1522047

Human Factors : Training / Qualification

Human Factors : Other / Unknown

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : VFR In IMC

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Diverted

Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

This event happened because of all my inexperience and greed and now I am confessing what I experienced. I am working on [a] commercial pilot course and the flight was for my long cross country from my home airport to RBG.

It was cold day and also clear sky. I picked this day a few days prior. However, right before I took off, METAR at RBG was MVFR. But the TAF said it will be VFR when I get there, so I took off. I was cruising around 7500 ft and after passing EUG, I was able to see thick cloud layer [in] front of me, but I kept going to RBG. At that moment, I should have done 180 degree [turn] and landed [at] EUG. I was too greedy and full of the hazardous attitudes. Also, I didn't want to waste my money for the flight since I rent the aircraft. Getting close to RBG, I wanted to descend and [do a] touch and go at RBG. At that moment I was barely able to see the earth and I made a decision to descend because I thought I wouldn't have any chance to see the ground unless I descend now. After descending altitude, I realized that I'm in trouble because actually I was between the thick cloud layer and the cloud was moving and it was hard to see the earth. And I was able to tell that after descending, [to] around 6000 ft, there were dark clouds on the side of RBG. I was somehow maintaining clear [of] cloud but hard to see the earth and ATC gave me terrain alerts. At that point, I was right between RBG and EUG, I wanted to complete this lesson, I didn't want to waste my money, so I had hard time making decision for what I have to do. Since it was really cold day, I absolutely expected I would get iced but I've never experienced, I've learned on the textbook only, so I didn't know how the icing would be serious. So I finally made a decision to request IFR clearance to go back EUG with RNAV Y 34L since RBG side was really dark. ATC cleared me direct cross IAF UJOKU with 4000 ft so I was descending from about 6000 ft to 4000 ft. On the direct and descending route, I had to encounter with clouds and I expected that the base of the cloud would be [higher] than 4000 ft so that I would be able to see the ground by that time. And since I've never experienced picking up ice on the aircraft, I expected I would be ok for descending with short period time. However, the reality was totally different with my expectation, the tire color turned to white and I was able to see the ice on the aircraft and even hear freezing sound on the windshield although I was wearing headsets. This situation got me panic but I tried to be relaxed. I tried. I finally descended to 4000 ft but still I was in the cloud, wasn't able to see anything with icing condition. My heart was beating like crazy and I asked to ATC for descending due to icing, but they said I can descend up to 2200 ft with emergency purpose only. So, I descended up to 2200 ft and finally I was able to see the ground, but it was very [rough] terrain area so I was really close to the ground and actually the cloud base was about 2300 ft. I kept continue maintain 2200 ft to IAF, and I made a safe landing at EUG. After landing and taxiing they wanted me to copy down the phone number and I contacted with them and I explained the situation as much as I could at that time. They were glad me to land safely and took care of me really much going fly back to home.

I really appreciate for the fact that I survived, actually I was really scared and panic so I thought I would die with icing condition. Now I am looking back and thinking that it was really meaningful lesson for my future, I learned a lot from that day, that day [made me] change myself regarding flight. Even though I wasn't able to finish my long cross country, I spent lots of money for renting and have to try one more time, I am so glad I survived and learned a lot.

## Synopsis

C172 pilot reported flying VFR into IMC and encountering inflight icing due to hazardous attitudes.



## Time / Day

Date : 201802

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Ceiling.Single Value : 700

## Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Bonanza 36

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Landing

Route In Use : Direct

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 3300

Experience.Flight Crew.Last 90 Days : 300

Experience.Flight Crew.Type : 1300

ASRS Report Number.Accession Number : 1520158

Human Factors : Situational Awareness

Analyst Callback : Attempted

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Ground Excursion : Runway

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Airport  
Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Clearance was obtained before departing and I was in contact through all phases of flight. During the flight some icing was encountered. Center was made aware. Center asked if I had the weather at [destination]. I told them yes, but I asked Center to provide me what they had for weather. They provided winds light and variable and 700 ft ceilings. They also provided the NOTAMS. This aircraft is equipped with both XM Weather and ADSB Weather. The onboard equipment reported light and variable on the windows with a 700 ft ceiling. Center provided the same weather. I requested and was cleared by Center for [the approach] so I proceed to the initial approach. More ice was encountered so I requested lower and then higher. Center asked about the ice and if I wanted a different direction of flight. I indicated that if cleared I would fly the approach. The approach proceeded without incident and I touched down.

While on the rollout the aircraft was spun to the right and exited the runway. The plane came to rest with its tail back towards the runway. I exited the plane. As soon as I opened the door (facing north) I was hit with gusts of wind that made it difficult to open the door. When I got on the ground it was apparent that the field conditions were 0/0 (solid ice). Talking with the FBO Manager and the City Manager it was determined the weather reporting equipment on the field was reporting inaccurate information.

## Synopsis

BE36 pilot reported loss of directional control after landing due to strong winds and ice on the runway. Reporter stated the controlling Center and his onboard XM and ADSB weather gave him inaccurate field condition and weather information.

## Time / Day

Date : 201802  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 26000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility.Visibility : 0  
Light : Dusk  
Ceiling.Single Value : 16000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Make Model Name : Do 328 TP (Turboprop)  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Training  
Nav In Use : FMS Or FMC  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class A : ZZZ

## Component

Aircraft Component : Aerofoil Ice System  
Aircraft Reference : X  
Problem : Failed

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 2500  
Experience.Flight Crew.Last 90 Days : 60  
Experience.Flight Crew.Type : 250  
ASRS Report Number.Accession Number : 1520020

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

Upon reaching FL260, aircraft encountered moderate to heavy-moderate clear/rime icing and experienced a failure in the vertical and horizontal stabilizer de-icing boots. Crew attempted to mitigate icing conditions by climbing to FL280, then to FL300. Any deviations from cleared altitude [were] to avoid icing conditions for safety of flight considerations. Unable to avoid icing by climbing, the crew requested Center to provide information on areas clear of clouds for descent below cloud deck. Center approved course deviation and descent towards [a nearby airport]. During descent, the aircraft had an Environmental Control System (ECS) pack fail above FL260, which then resulted in an uncommanded cabin depressurization. The crew went on oxygen and stated to ATC of an in-flight emergency. After requesting the location of the nearest airfield with at least 3000 feet of runway length, Center approved the crew to divert to [the nearest appropriate airport]. The crew landed safely with no physiological incidents and with no indications of aircraft damage.

The crew operated the aircraft within all approved standard operating procedures and operating limits, so it is unknown caused this issues. To prevent future occurrence, crew should immediately request courses/altitudes clear of icing conditions.

## Synopsis

D328 Captain reported diverting to an alternate airport after experiencing failure of vertical and horizontal stabilizer deicing systems in icing conditions.

## Time / Day

Date : 201802  
Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC  
State Reference : US  
Altitude.MSL.Single Value : 9000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Fog  
Weather Elements / Visibility : Snow  
Weather Elements / Visibility : Turbulence  
Weather Elements / Visibility.Visibility : 1  
Light : Night  
Ceiling.Single Value : 700

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Air Carrier  
Make Model Name : Caravan Undifferentiated  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Initial Approach  
Airspace.Class E : ZZZ

## Component

Aircraft Component : Navigational Equipment and Processing  
Aircraft Reference : X  
Problem : Failed

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 3795  
Experience.Flight Crew.Last 90 Days : 300

Experience.Flight Crew.Type : 2000  
ASRS Report Number.Accession Number : 1518874  
Human Factors : Situational Awareness  
Human Factors : Human-Machine Interface  
Human Factors : Confusion

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Equipment / Tooling  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Equipment / Tooling

## Narrative: 1

I was the Pilot in Command (PIC) and Pilot Flying (PF) for Aircraft X. This was the last scheduled flight for myself and my First Officer (FO). We had been scheduled to swap aircraft by leaving the one in which we had been operating all day Aircraft Y with the present Aircraft X. This was our first flight of the day in Aircraft X. We completed a thorough preflight upon aircraft acceptance and discovered that the previous crew neglected to note a severely bald tire when they had accepted the aircraft from a 100 hour inspection. This caused us concern, as we were unsure how thorough the acceptance preflight had been.

Weather was marginal in the area throughout the day, but legal at the time of departure and the intended time of arrival. As we approached ZZZ, however, visibility on the AWOS dropped precipitously. Upon our arrival, weather was below the required minimums to initiate an approach. I obtained a holding clearance and held at 9000 feet over the ZZZ VOR, as published. After approximately 30 minutes, a jet aircraft departed from ZZZ and reported that conditions were still deteriorating on the field.

We prepared to initiate a diversion to our filed alternate. As we began to set up for this maneuver and before we requested clearance, I noted that that the lubber line of the needle of my HSI was fluctuating back and forth rapidly. I had my First Officer confirm this observation. I confirmed that the instrument was set to "GPS" on the Garmin 530 and that a distant "direct to" point was selected. I also had my First Officer confirm this. The Number 2 VOR omni was set identically and not having the same faulty indications. We discussed the situation and determined together that the HSI instrument could not be relied upon safely.

Because we were in actual IMC and on an instrument flight plan at this time, I directed my First Officer to notify Center of the loss of instrumentation, per FAR 91.183(c) and 91.187.

Before discovering this loss of instrumentation, my copilot and I noted conditions at surrounding airports had deteriorated to low visibilities and that conditions were optimal for icing (+/- 5 degrees and periods of visible moisture). In fact, during the hold, we had developed approximately ?? inch of rime ice on the wings. Although I knew it was warmer below us, we had slowly been adding power to maintain a constant airspeed. Based on the information available from our onboard weather, ZZZ1 was reporting 7-mile visibility and was close. All other reasonably nearby airports were now reporting?? Mile visibility or below.

I instructed my First Officer to simultaneously [advise ATC of our situation] based upon the need for urgency and to notify ATC that we intended to now land at ZZZ1. Factors were combining to produce a situation that was not immediately dangerous but which could result in a catastrophic event if not properly addressed.

We proceeded to ZZZ1 as vectored for the RNAV (GPS) Runway 25, which we could still execute on our Number 2 VOR (which is connected to an instrument-approved Garmin 430). The Number 2 VOR omni has a glideslope as well. Although I removed the HSI from my scan, I did direct my FO to activate the localizer on that instrument so I could determine if that part of it was working. At the same time, I had him pull the RNAV (GPS) Runway 25 on the Garmin 530 screen for situational awareness. We confirmed more faulty indications on the HSI when set to "VLOC" and tuned into the localizer. The HSI directed us far left of the RNAV (GPS) 25 centerline and significantly short of the actual runway and RNAV (GPS) 25 glideslope on VOR Number 2. It is also possible that the HSI directional compass card was processing, even though it is an electrical instrument. At any rate, the HSI was entirely not reliable and classically misleading so it had to be faulty.

We were able to fully and safely execute the RNAV (GPS) Runway 25 approach on the VOR Number 2 indications, substituting the Second in Command's directional gyro for the HSI altogether, utilizing the 430 and 530 screens, and working together with effective CRM. Together, we were capable of completing the flight from the discovery of the problem to ZZZ1 without violating ATC assigned altitudes or limits.

We notified ATC of our safe arrival, asked them for a contact number so we could reach them after this event and taxied to the ramp. After shutdown, we immediately contacted our operations and began making alternate travel arrangements for our passenger, who was unaware of the circumstances surrounding incident.

As after action, I continue to press our ops department not to dispatch new aircraft to crews on the last flight of the day. While my crew and I preflighted the aircraft as good as possible, it is not possible to locate all faults prior to flight. Fatigue from being on the completion end of a [long] duty period as well as constant operations by my crew and I over the last several days also played a clear factor. Icing, although manageable, further complicated the options on the table. In retrospect, this was probably handled to the best capability of the crew under the operational circumstances present.

## Synopsis

C208 pilot reported a loss of the HSI in IMC conditions resulting in a diversion.

## Time / Day

Date : 201802  
Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 4200

## Environment

Flight Conditions : Mixed  
Weather Elements / Visibility.Visibility : 5  
Light : Night  
Ceiling.Single Value : 6000

## Aircraft

Reference : X  
ATC / Advisory.FSS : ZZZ  
Aircraft Operator : FBO  
Make Model Name : Cessna 152  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Training  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Instructor  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 1000  
Experience.Flight Crew.Last 90 Days : 100  
ASRS Report Number.Accession Number : 1518863  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew



When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Landed As Precaution

Result.Flight Crew : Diverted

Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Aircraft

## Narrative: 1

A student, working on his Commercial license, and I were conducting a night cross country of 100 miles point to point. We had an extremely slow [ground speed] due to high winds. There were intermittent clouds at our altitude.

I contacted Flight Service to show the student how to use the service to receive updated weather information. We were cruising at 4,200 ft MSL with an airspeed of approx 80 knots. I then noticed that the altitude was below 4,000 ft and descending. I asked the student about this and he replied that he didn't know why we were descending. The descent continued and I took control of the aircraft. I applied full power, full mixture and carburetor heat. I radioed that we had a problem and that I was switching back to Approach. Approach had apparently noticed our descent and called us on the radio. I informed them that we could not hold altitude and asked for vectors to the nearest airport. We were vectored to [an airport] approximately 9 miles away. The aircraft continued to descend as we made a 180 degree turn back towards [the airport]. The airplane stopped descending at approximately 3,000 ft and we were able to slowly climb back up to 4,000 ft. As the aircraft stabilized at 4,000 ft, I handed the controls back to the student. We maintained 4,000 ft until we were over [the airport]. We performed a spiraling descent and landed.

On the ground, we checked the aircraft and found no indication of airframe icing or any other obvious problems. We believe that the descent was probably caused by carburetor ice.

## Synopsis

C152 instructor pilot reported a precautionary landing with a student after experiencing a power loss possibly related to carburetor ice.

## Time / Day

Date : 201802  
Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC  
State Reference : US  
Altitude.MSL.Single Value : 19000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility.Visibility : .1  
Ceiling.Single Value : 21000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Cardinal 177/177RG  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class A : ZZZ

## Component

Aircraft Component : Pitot/Static Ice System  
Aircraft Reference : X  
Problem : Failed  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 730  
Experience.Flight Crew.Last 90 Days : 14  
Experience.Flight Crew.Type : 680  
ASRS Report Number.Accession Number : 1518603  
Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Other / Unknown  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Landed As Precaution  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

While on an IFR flight plan level in cruise at FL190 near the cloud tops in IMC, negative ice, -28C, all is normal. Approximately one hour earlier I entered IMC and had turned on the pitot heat. Suddenly, I noticed the air speed readouts on the Aspen PFD 1000 began degrading. I immediately check the pitot heat was on, cross checked to the backup Sandia 340 Quattro on the other side of the panel and both confirmed the airspeed slowly bleeding off from 140 KIAS (eventually reaching 0 KIAS). I distinctly recalled thinking about the analysis of [a similar] accident about pitot tube icing and immediately began cross checking the airframe for ice (which there was none) but I was in cloud. I then began checking instrumentation for changes in pitch attitude (straight and level indicated), altitude (no change from FL190), VSI (zero indication), then the JPI 900 for engine performance (all parameters normal) and finally crosschecked the Aspen and Avidyne IFD 540/440 GPS Nav/coms (all indicating GPS ground speed of around 175KT). To validate the autopilot wasn't changing pitch attitude to hold altitude, as the ASIs fell thru 83KIAS, I clicked off the autopilot altitude hold (STEC 30 with altitude hold) with GPS Nav1 engaged, pulled power back to 19.5" MP to test for any sudden changes in pitch which there were none. I then re-applied power, re-engaged the autopilot altitude hold and pulled out one of my in-ear radio/com headphones and closely listened for any changes to the air flow over the airframe and noted no changes. At that point confused, I just could not figure out how or if the pitot tube had iced up with the pitot heat on and no airframe icing present. Eventually I began suspecting the pitot tube heater had somehow failed since I was in cloud and even a little moisture present it had slowly iced up although no visible signs were present.

I called Center and advised them of the situation and asked for a climb to FL210 in the hopes of getting on top VFR to further assess the situation. I was immediately cleared to FL210 and began the climb carefully monitoring the Aspen VSI and altimeter. Since this aircraft was turbo normal, I was able to climb to FL210 with no issue. At FL210 however, I was still in and out of the cloud tops, negative ice, but clear above. About a minute at FL210 the Aspen's primary AI and HSI failed completely displaying the large red X's thru those display features with warning boxes enunciating 'ATTITUDE FAIL CHECK PITOT HEAT' and 'DIRECTION INDICATOR FAIL'. I could not comprehend why the Aspen was failing instruments that are not connected to airspeed so I contacted Center and [notified them of the situation]. The reason I did this is I was now partial panel and late in the day I wanted all the help I could get not knowing what the next thing that was about to fail. I did not want to attempt a decent into ZZZ in the dark, in IMC, partial panel. The good news is the backup AI was still online, the Aspen was still displaying baro altitude, VSI and more importantly still receiving and feeding GPS heading information from the

Avidyne 540 to the autopilot so I still had the ability to navigate via GPS and descend thru cloud with a functional autopilot.

I then asked Center to check for the best solution for the nearest airport with the best weather options for an immediate decent to land hopefully VFR. I could hear them asking other aircraft for conditions etc. and they came back and advised ZZZ was clear below 12,000 but unknown above that. In the mean time I was checking my onboard Avidyne based ADSB weather and noted ZZZ was closer only about 50nm away and reporting clear below (best I recall) 10,000 feet I suspected overcast above 12,000 so I advised Center that ZZZ was likely my best closest option. I was promptly cleared to ZZZ and reprogrammed the Avidyne 540 with the Autopilot still engaged and receiving GPS commands I began a controlled decent in IMC to ZZZ.

Descending and passing thru 15,000 feet, surprisingly the airspeed began to slowly coming back on line confirmed by both the Aspen PFD the Sandia backup. About 45 seconds later the Aspen's primary ASI and HSI came back on line and full functionality returned to normal. I advised Center that my primary flight instruments had come back on line and upon exiting the cloud bases and having the airport in sight advised Center that I was requested switching over to VFR. They granted the request but asked me to stay on my squawk code and call them when on the ground. I landed without incident and promptly called FSS and asked them to relay the message Center since I was never provided a phone number. Center subsequently called the FBO and verified I was there which the confirmed. Not sure about the delay in message relay between FSS and Center.

On the ground, after shut down, I immediately checked the pitot heat and the probe was hot to the touch. I then went into the FBO and conversed with the local on-site A&P mechanic and he could not recall ever having any issues with and intermittent pitot tube behavior like I described. He thought perhaps water could have somehow formed in the line and froze between the heated pitot tube probe and the cockpit or more likely the pitot tube heating element had gone intermittent. I then returned to the plane and after letting it cool down for 30 minutes and I tested the pitot heat and it behaved normally warming to the touch in about 1 minute. With the weather reporting VFR I fueled and proceeded to my final destination without further issue.

## Synopsis

Cessna 177RG pilot reported a failure of airspeed indications while in cruise.

## Time / Day

Date : 201802  
Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 37000

## Environment

Weather Elements / Visibility : Icing  
Light : Night

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Air Taxi  
Make Model Name : Falcon 10/100  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class A : ZZZ

## Component

Aircraft Component : Pitot/Static Ice System  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Total : 4500  
Experience.Flight Crew.Last 90 Days : 100  
Experience.Flight Crew.Type : 550  
ASRS Report Number.Accession Number : 1517991  
Human Factors : Human-Machine Interface  
Human Factors : Situational Awareness  
Analyst Callback : Completed

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

On a flight to ZZZ we were in cruise flight at FL370. I was the pilot in command. FO was the pilot flying on that leg. About 1 hour out from ZZZ [very early] in the morning, we started losing the airspeed indicator on the pilot side and eventually went to 0. Then we lost the altimeter and the altitude preselects on the pilot side and the auto pilot stopped working. FO proceeded to hand fly it off of his instruments. Then the copilot side instruments were starting to read unreliable so we were using the standby altimeter. I decided to [advise ATC of our situation] and they helped us get into ZZZ. It was VFR weather on our time of arrival and we landed with no problem. Maintenance determined it was possible icing in the pitot static system.

## Callback: 1

The reporter stated that the airspeed indicator, altimeter and flight director all flagged on the Captain's side. The reporter stated that the airspeed indicator on the First Officer's side became unreliable. The reporter also stated that during descent the instruments started coming back. The reporter also stated that Maintenance was unable to find any faults in the system, they suspected moisture in the pitot system that froze. The reporter stated that all the pitot/static heaters were tested on the ground and operated just fine.

## Synopsis

Falcon 10 Captain reported the loss of all flight instruments during cruise, possibly due to icing.

## Time / Day

Date : 201801

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 9000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : M-20 Series Undifferentiated or Other Model

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use : Direct

Airspace.Class E : ZZZ

## Component : 1

Aircraft Component : Engine

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Carburetor Heat Control

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 1010  
Experience.Flight Crew.Last 90 Days : 100  
Experience.Flight Crew.Type : 10  
ASRS Report Number.Accession Number : 1517127  
Human Factors : Troubleshooting  
Human Factors : Time Pressure  
Human Factors : Distraction

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

I was enroute in a Mooney M20 with one passenger when my engine began running rough. I had descended to 4,000 feet as my passenger had indicated he needed to use a restroom and we were discussing where to land. I requested with ATC Center to deviate and land and they cleared the request and asked the reason. They gave me an altitude of 3,000. When I reduced power to begin my descent is when the first indication of roughness began. My final destination was ZZZ, but we had deviated toward ZZZ1 due to a band of IMC conditions moving across [area]. We were on an IFR flight plan but I planned my route to stay in VMC conditions in order to eliminate any structural icing concerns. When the engine began running rough I performed the emergency checklist which includes items like carb heat on, electric fuel boost on, switch fuel tanks, mixture rich, etc. The checklist showed that if engine roughness did not improve to turn carb heat off after one minute.

I followed the checklist and the engine improved momentarily, then began losing power again. I continued to try carb heat and diagnose the issue. I lost some power again and was unsure if I would be able to hold altitude. The nearest airport was ZZZ2. After the second time that the engine lost power I called ATC Center and [advised them of situation]. I did so because I was unsure if the aircraft would completely lose power and I was outside of glide distance of an airport. From my training safety comes first and I have read and learned that hesitating to [advise ATC] can lead to increasing risks. I also reviewed the checklists for an emergency landing.

The engine continued to run and regained most of its power. It seemed to be running at approximately 40-80 percent power at different times. I was able to make ZZZ2 and had altitude to fly over and then turn and land safely. After landing the engine seemed to lose its roughness. After taxiing to the ramp I called flight service to cancel IFR and advise we



were down safely. I did a run up on the ramp and the airplane appeared to run normally again. After shutting down we called a mechanic and conferred on what to do. We also spoke with airport staff and located a heated hangar to place the aircraft in. The weather deteriorated and we waited until evening for it to improve and plan what to do. My passenger and I looked at the airplane and could see through the cowl that the butterfly valve was not moving when the carb heat was applied. I called a mechanic again and they stated it should shut completely when carb heat is on. We moved the control back and forth and were able to free up the butterfly valve and now the carb heat was working properly. Now that the carburetor heat was fully operational and the plane had over 6 hours to warm up, I did several full power run ups and several normal run ups. The carb heat produced more of an RPM drop than earlier in the day. We checked again that it was working properly and noted the position of the control lever when the carb heat was fully on. Conditions were now VFR and we flew home. The airplane flew normally and had no further issues.

In hindsight I think staying calm and working through the checklist as well as letting ATC know help calm my passengers worries and helped me focus on the task at hand rather than worry about the situation or let fear take over. During my run up at the beginning of the day I noticed an RPM drop while using carb heat but it was not as much of a drop as after the carb heat was working fully. If I had realized that was an issue I would have had a mechanic inspect the plane prior to departure. I learned from this experience and will be more attentive to the symptoms of carb ice and also to possible mechanical issues that may not be immediately obvious.

## Synopsis

M20 pilot reported engine roughness that did not improve with carburetor heat. After diverting, the carburetor heat was found to not be functioning properly.

## Time / Day

Date : 201802

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Cessna Twin Piston Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff

Airspace.Class C : ZZZ

## Component

Aircraft Component : Window Ice/Rain System

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1517026

Human Factors : Confusion

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

## Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

## Narrative: 1

Immediately after takeoff I noticed the windshield light came on in the annunciator panel. My initial thought to this was that I must have flipped on the wrong switch. I thought I had flipped on the windshield heater during takeoff instead of the prop anti-ice, however, upon looking down at the switch I realized I had never flipped the windshield heat switch. The windshield heat was on even though the switch was off. I now began to wonder how long the light had been on. Did it come on during the takeoff roll or before rolling onto the runway. I was worried about the 20 second limitation on the windshield heat. After that initial 3 second thought, I began to flip the windshield heat switch on and off in an attempt to shut off the windshield heat. The windshield heat stayed on. I paused for a second to think about what was going on before giving the switch another try. This time when I flipped the switch to the off position, the light on the annunciator panel finally went out. From this point on, I was unable to get the windshield heat to work. It did not look like a circuit breaker popped. After giving the switch a couple more tries in an attempt to see if the windshield heat would come back again, I finally turned the switch off and kept it off, thinking the switch may have failed or that there may have been an electrical short. There was no icing, and the weather had improved so I decided to complete the flight.

## Synopsis

Twin Cessna Captain reported a window heat switch malfunction.

## Time / Day

Date : 201802

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : Marginal

Light : Dusk

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Airspace.Class D : ZZZ

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

ASRS Report Number.Accession Number : 1516513

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

ASRS Report Number.Accession Number : 1516514

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Ground Excursion : Runway  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected.Other  
Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Airport  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Prior to departing we had acceptable time to plan and execute our preflight planning, evaluation and clearances. The planning included information on meteorological conditions at the time of arrival being marginal VFR, runway NOTAMs with a FICON (Field Condition) of 5/5/5, and the ILS approach would be our planned approach with runway analysis done to calculate the landing distance if wet and dry. Enroute there was no occurrences other than light chop. In the descent the PM received the weather and we determined we would do the ILS 24R to a full stop because the winds were straight down the runway with limited marginal cloud coverage. Around 4,000 ft ATC advises us that the winds have shifted and we will be circling north for the landing. We received the weather and there was a significant change to 340 at 10 kts with gusts. We concluded we would try the circling approach. We received very close vectors essentially directly onto the FAF 600 ft high, this is where we first encountered icing. At a safe airspeed, I the PF, descended until the airport became visible at 1800 ft MSL. Both the PM and I, PF, concluded we could circle by flying north of the airport and agreed if PF lost sight of the airport that PF would transfer controls to Capt., the PM.

At this time we had not received any runway braking or status reports from the Tower. We circled north and concluded we were too low and too close to the downtown area around the airport due to the northern winds and the snow and upon reaching our base to final turn concluded that we would be unable to maneuver onto the Final Approach Path safely and we executed a missed approach. Tower gave us a heading of 360 up to 3000 ft MSL and transferred control to Approach. Approach asked us our intentions and we requested the straight-in ILS to 24R due to the winds being a crosswind at both runways and the inability to safely circle to the non-approach equipped runway. Anticipating that we would once again receive vectors to the FAF rather closely and I was slowed to approach speed with 30 degrees flaps in prior to the FAF. The approach was accomplished with the autopilot to minimums, although the airport was in sight at 1700-1800 ft MSL.

During the approach Tower cleared us to land on runway 24R and gave sporadic wind check warnings throughout the descent, none of which included raining, icing reports, runway analysis or braking action. The autopilot was flown to minimums of 200 ft AGL. At that time I turned off the autopilot and yaw damp and started my final segment of the approach. Above the threshold the winds died down and I landed the aircraft on the centerline and in the touchdown zone. PF began applying breaks gradually then forcefully when PF noticed it wasn't sufficient enough and Capt., PM, assisted. The anti-skid

attempted to kick on but the aircraft simply wasn't slowing down due to no traction from the layer of ice between the wheels and runway. Around the 1500 ft markers Captain, PM and I, PF, tried our best to stop the aircraft with what was left and began swerving moderately and slid into the EMAS. The aircraft rolled to a stop and settled. Captain took control and I began exiting the aircraft with the passengers.

## Narrative: 2

Fire department upon arrival apologized for delay due to icy taxiways and the trucks inability to maintain safe control.

Upon exiting, the EMAS and runway were covered in ice causing the passengers, pilots, and authorities to almost fall several times. From observation the ice was smooth and approximately 1/8 inch thick.

## Synopsis

Beech 400 flight crew reported that a lack of runway condition reports from ATC contributed to an excursion from an icy runway into the EMAS overrun.

## Time / Day

Date : 201801

Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : UUWW.Airport

State Reference : FO

Altitude.MSL.Single Value : 3600

## Environment

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Snow

Weather Elements / Visibility.Visibility : 1

Light : Night

Ceiling.Single Value : 300

RVR.Single Value : 6000

## Aircraft

Reference : X

Aircraft Operator : Corporate

Make Model Name : Medium Large Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry

Flight Phase : Initial Climb

Route In Use.SID : UM 1D

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 11800

Experience.Flight Crew.Last 90 Days : 80

Experience.Flight Crew.Type : 50

ASRS Report Number.Accession Number : 1515436

Human Factors : Situational Awareness

Human Factors : Fatigue

Human Factors : Confusion

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Procedural : Published Material / Policy  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

The departure clearance included "climb via the Ivanovskoye 1D (UM 1D) SID except maintain 900 Meters". Crew briefed the use of QNH for departure and noted that 900 Meters was 3640 ft QNH. 3600 ft was set in the altitude window along with LNAV. After takeoff, the FP (Flying Pilot) climbed to 3600 ft but noted that the Metric Altitude altimeter function was also selected and displayed on the left PFD. The PM (Pilot Monitoring) noted the 1100 meter indication and set the Altitude preselect to 3000 ft and I, the flying pilot, was momentarily confused and started a descent using vertical speed of approximately 200 ft/min. Before we could descend to the incorrect altitude of 3000 ft (which would have been about correct for 900 meters QFE, we received normal, further climb instructions.

This was an interesting human factors event because the last time I flew into Moscow, QFE was the standard altimetry in use so all of my previous experience was in QFE in this location. Since Russia is switching to QNH ops, issuing climb altitudes in meters can cause pilots that usually fly with feet to second guess the clearance, even though the "ALT/HEIGHT CONVERSION" table is readily displayed on Jeppesen charts. This subtle communications issue, coupled with fatigue and other operations such as dealing with tight slot times, de-icing/anti-icing, and flight planning due to destination weather below forecast minimums (as was the case in this operation) all contributed to this momentary altitude deviation.

ATC did not note the deviation and no separation issues occurred as a result of this event.

## Summary

Pilots operating in QFE/QNH environments should not use the metric altitude feature of advanced cockpit avionics if conducting QNH operations due to the conflicting data displayed, in this case QFE meters is 1100 which corresponded to 900 Meters QFE (field elevation at UUWW is 686 ft MSL). Contributing factors in this event included fatigue, recency of operations in QFE/QNH airspace, and the departure altitude clearance limit being conveyed in QFE Meters when Moscow and other large cities in Russia have reportedly switched to QNH ops.

## Synopsis

G650 First Officer reported confusion regarding altitude assignment related to QFE/QNH procedures departing UUWW.



## Time / Day

Date : 201801

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 15000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Snow

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 4

Light : Daylight

Ceiling.Single Value : 6000

## Aircraft

Reference : X

Aircraft Operator : Air Taxi

Make Model Name : PC-12

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use : Direct

Route In Use : Visual Approach

Route In Use : Vectors

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1360

Experience.Flight Crew.Last 90 Days : 125

Experience.Flight Crew.Type : 293

ASRS Report Number.Accession Number : 1514576

Human Factors : Communication Breakdown

Human Factors : Distraction

Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Other

## Events

Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : Y  
When Detected : In-flight  
Result.General : Flight Cancelled / Delayed

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Ambiguous

## Narrative: 1

During this flight we encountered conditions that were worse than forecast. Pireps were reporting light icing in the area, and convective activity was not present. After departure we encountered moderate icing, and cells with moderate precipitation started to build. We broke out on top at approximately 16,500 ft. I had filed 17,000 ft and ended up climbing to FL210 as final altitude due to convective activity. During climb out we also encountered degraded climb performance due to icing conditions. The weather at [the destination airport] was reported as 5000 ft overcast, which would mean we would break out at around 11000 ft, we broke out at about 12000 ft. We were VFR at this point and continued to land.

The reasons I [chose] to remain on the ground was as follows. Approximately 15 minutes after landing the field when IFR with ceilings down to 100 ft obscured, and down to 1/4th mile visibility, line of convective activity. Moderate to severe icing reports, updated forecast for super cooled water droplets. There was also issues with the GPS where the FO (First Officer) and I were not on the same page on what was going on. He was concerned with ATC instructions, and I was trying to slow down and get everything in order. I became frustrated that we were being rushed, and did not get my point across effectively that we needed to slow down and ask for more time. This experience was frustrating for me, and I was not in a mindset to fly, the FO was also not in a mindset to fly. We did not feel this way until after shutdown and the passenger was inside the terminal we kept our composure while flying and in front of the passenger. These reasons for not flying are due to my belief that they compromised safety of flight.

After landing the company decided that they were going to communicate to us through the FO, instead of myself. He was insistent on wanting to drive instead of fly, and at the time I was also not wanting to fly and stated such. After following [the First Officer's] advice of going to sit down and eat I did feel better, and would probably have felt ok to fly after some rest, the storm did remain in the area until after midnight. After returning to the airport we were informed that we would drive the crew car back to [the departure airport]. I feel that it's also important to note that we were delayed for our flight over 16 hours, and were supposed to fly the overnight the day before. We refused the aircraft due to safety concerns. My FO and I were already stressed due to this issue.

## Synopsis

Air taxi Captain reported several weather issues and lack of company support that led to a canceled flight.

## Time / Day

Date : 201712

Local Time Of Day : 0001-0600

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Make Model Name : Challenger 350

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Climb

## Component

Aircraft Component : Ice/Rain Protection System

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1514452

## Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed As Precaution

Result.Flight Crew : Diverted

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Aircraft

## Narrative: 1

After Departure, while climbing in icing conditions and climb or takeoff thrust selected, we received a "WING ANTI ICE LEAK" red EICAS message with associated Master Warning and triple chimes. I was flying pilot and assumed radio communications, while the captain began running the checklist. During this time, the warning message disappeared and was replaced by "R WING ANTI-ICE FAIL, L WING ANTI-ICE FAIL, R ENG THRUST FAULT, and L ENG THRUST FAULT". The original checklist allowed us to turn the anti-ice back on at some point and it continued to work fault free. We elected to divert and wrote up the aircraft.

After landing and while writing up the aircraft, the Captain relayed a conversation with the Bombardier representative that receiving this message is a known issue with the engines at high power settings due to the volume of bleed air available. I heard the word "normal" used but don't want to put words in anyone's mouth.

This is an issue that needs to be worked out. A master warning should NEVER stem from a known issue. We were flying an obstacle Departure in icing conditions relying on a system that failed due to a design fault. While we did not notify ATC of an emergency, that fact exists because ATC was informed of the situation and assigned a higher altitude out of icing conditions. A successful outcome was further enhanced by a crew that was able to automatically assign and communicate task assignments immediately upon digestion of the situation. Both of us were relatively new to the aircraft but have extensive experience in other aircraft as well as airline experience. It is still a major problem that a known issue throws us a potential emergency during a high workload phase of flight. This known issue could easily result in an undesirable outcome if replayed by a fatigued or more inexperienced crew.

## Synopsis

CL-350 First Officer reported receiving warning messages for anti-ice and engine thrust while climbing through icing conditions.

## Time / Day

Date : 201801

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : HTS.Airport

State Reference : WV

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Visibility : 7

Light : Night

Ceiling.Single Value : 4500

## Aircraft

Reference : X

ATC / Advisory.Tower : HTS

Aircraft Operator : Government

Make Model Name : Light Transport, Low Wing, 2 Turboprop Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

## Component

Aircraft Component : Propeller Blade

Aircraft Reference : X

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Government

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 9000

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 500

ASRS Report Number.Accession Number : 1514080

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Ground Excursion : Taxiway  
Anomaly.Ground Event / Encounter : Object  
Detector.Person : Ground Personnel  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Landed As Precaution  
Result.Air Traffic Control : Provided Assistance  
Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Airport  
Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings  
Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

While flying from HTS at FL180 we were notified by Center that HTS Operations was concerned we may have damage to the aircraft from hitting a taxiway light. They asked if we had any issues or known damage. We advised ATC that we were not experiencing any problems and didn't believe we hit a taxiway light but would inspect and report after landing. The copilot and I then reviewed our taxi route charts and were unable to determine where we may have hit a light. We again reviewed the taxi diagram (as we had during our before taxi brief) with emphasis on Hot Spot 2 and the remarks and comments.

Reconstruction of events leading to Propeller Strike. This is based on a review of charts and satellite imagery of the HTS Airport. I was performing the duties of Captain. We were scheduled to fly three legs. The first legs were uneventful and we were on time as scheduled. As we had a long layover at HTS we ate a late lunch/early dinner and returned to the airport. We then relaxed in the pilot lounge and I napped. The passengers informed me they would arrive early and I adjusted my IFR flight plan.

The weather had been lousy at HTS with a mixture of frozen precipitation, so we had the airplane placed in a heated hangar. When the passengers arrived, we loaded them into the airplane in the hangar and we were towed out. The copilot had obtained the ATIS and Clearance prior to the passengers' arrival. After starting engines, we completed the after engine start and before taxi checklist. We then obtained instructions to taxi to Runway 30 via taxiway Foxtrot and Alpha. Prior to taxi we reviewed the taxi diagram, completed our takeoff and departure brief, and I informed the copilot that I was turning on the "Hot 5" prior to taxi. We would take off with engine anti ice on in anticipation of climbing through icing conditions.

We then began our taxi. It was a little tight on taxiway F as we passed by service vehicles on the left side of Foxtrot. We monitored closely as we passed. We then turned left onto A and continued towards Runway 30. Prior to taxi we noted Hot Spot 2, which focused on the area between the runway and a service road adjacent to taxiway B. The remarks indicated that taxiway B had been relocated southeast and the old taxiway B was being used for service vehicles. There was also a wingspan restriction of 127 feet, which we were well within limits with a wingspan of 58 feet. No reason was given for the restriction. We later learned it was due to a building located between taxiway A and Runway 30. That building is not depicted on the Airport Diagram. Additionally, Hot Spot Circle 2 is drawn

exclusive of taxiway Alpha and there were no remarks or comments or graphic of a jog in the taxiway or that a handful of taxi lights were located on the paved surface on what I presume was the original taxiway. I did not anticipate any anomalies that would affect us after reviewing available information. As we passed taxiway C the copilot informed the controller we would be ready for takeoff upon reaching (Runway 30). The controller then cleared us for takeoff. As the takeoff clearance was being given, I saw the ILS hold short sign ahead and was focusing on the taxiway after that area which was again a straight line from my vantage point at that time. Throughout the taxi I was following the yellow line, however, I believe as we passed the area just after taxiway C I was focusing on the taxiway farther ahead and not directly in front of the aircraft.

When talking with the operations folks at HTS, I was informed the taxiway doglegs left and then back right at the location near B. I was also told that [the] taxi lights we struck also jog to the left and are on the asphalt, not on the grass. I did not see that deviation on the Airport Diagram nor did I visually notice the jog as I taxied. Therefore, I continued straight ahead on the asphalt instead, making the short arcing turn to the left and then back to the right. Also, I did not see any blue taxiway lights that [were] in my path at this time. I also didn't see anything on the taxi diagram that made me think that the taxiway would arc left then back to the right. There is a bump out on the taxiway to the left at this point, making it look as if the taxiway is only wider, not jogging left. I assumed this was possibly a run-up area. Also, on the taxi diagram, the right side of taxiway A (as you taxi towards Runway 30) appears to be on the same line (no deviations nor bump jogging left is indicated) that would have given me cause to look for a "dogleg" in the taxiway. Reviewing daytime overhead satellite imagery, the jog is apparent. However, the taxiway visual while taxiing on Alpha to Runway 30 remains quite straight. Also the building which is the cause of the wing restriction is not depicted on the taxi chart either. Throughout the taxi, neither myself nor the copilot recall any unusual noises. In hind sight, I believe that was in the general area of taxiway B. There was nothing that indicated to me we had struck an object. At this time, my taxi and landing lights were on. It is possible that those lights, along with the farther down the taxiway were washing out the few blue taxi lights that were supposed to signal the dogleg. Neither myself nor my copilot saw those lights.

Not realizing anything unusual had happened, we took the runway and the subsequent takeoff and climb out were completely normal. It wasn't until we were more than halfway to ZZZ that ATC advised us that they were concerned we may have unknowingly struck a taxiway light and may have damage. I informed them we didn't have any indication of doing so and that everything was normal. We began to discuss possible damage if we had hit a light. We reviewed the chart again and were at a loss for how that could have happened. ATC requested we contact HTS operations upon arrival and let them know if we had any visible evidence on the airplane.

As a precaution, on the approach into ZZZ we requested CFR be standing by and requested a little more space on the ILS XXR to ensure the landing gear would extend and lock normally. The landing and touch down roll were uneventful. Upon post flight examination we discovered leading edge damage to two of the four propeller blades on the right engine, consistent with a taxiway light strike. The damage consisted of a few large dings on the blades and some yellow paint, but no metal was missing. Throughout the flight, all indications were that both propellers and engines were performing normally. On the approach, the landing gear extended normally and an inflight test of the brakes indicated we had brake pressure. Additionally, the passengers were briefed on the situation and potential emergency procedures prior to initiating our approach.

I believe the jog in taxiway Alpha adjacent to taxiway B is a poor design and difficult to



see at night. This was my first time on taxiway A. I also believe the Hot Spot 2 depiction, notes and comments are inadequate. The actual HS2 circle doesn't even overlay on taxiway A. I believe the blue taxiway lights on the pavement that are there to show the dogleg should be flush with the ground to prevent the possibility of damaging an aircraft. Lastly, the airport taxiway diagram should clearly identify the rather drastic turn in the road.

## Synopsis

A twin engine turboprop Captain reported finding out inflight they may have a taxiway light on taxi out for takeoff.

## Time / Day

Date : 201801

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : MRY.Airport

State Reference : CA

Relative Position.Distance.Nautical Miles : 10

Altitude.MSL.Single Value : 5000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility.Visibility : 6

Light : Daylight

Ceiling.Single Value : 5000

## Aircraft

Reference : X

ATC / Advisory.TRACON : NCT

Aircraft Operator : Personal

Make Model Name : Bonanza 36

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Nav In Use : GPS

Nav In Use.VOR / VORTAC : SNS

Flight Phase : Climb

Route In Use : Direct

Airspace.Class C : MRY

## Component : 1

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Improperly Operated

## Component : 2

Aircraft Component : Flight Director

Aircraft Reference : X

Problem : Improperly Operated

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 3200  
Experience.Flight Crew.Last 90 Days : 45  
Experience.Flight Crew.Type : 600  
ASRS Report Number.Accession Number : 1514071  
Human Factors : Situational Awareness  
Human Factors : Workload  
Human Factors : Human-Machine Interface

## Events

Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Anomaly.Inflight Event / Encounter : VFR In IMC  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Human Factors

## Narrative: 1

Departed MRY in VMC. Reported weather was 2,300 scattered/6,000 overcast. Blue sky visible to west and south. On climbout, realized I would be unable to maintain VFR, and advised TRACON. TRACON said unable altitude at current position. A short time later, I entered IMC and notified ATC. TRACON then gave me clearance to SNS VOR and descent to 5,000 ft.

I am IFR certified, current, with a recent instrument competency check and BFR as part of annual flight training in another aircraft. I had not recently flown the plane I was in, and was not prepared for instrument flight. After entering IMC, I had issues engaging the flight director and autopilot. On two occasions, I thought the autopilot was engaged, and turned my attention to setting up navigation and squawk codes (were changed twice during this period). I had substantial variation in heading from assigned heading, and delay in reaching assigned altitude. I estimate this period at 3 or 4 minutes before solving autopilot issues.

I have been a licensed pilot for more than 40 years, and have never before entered IMC during a VFR flight. I departed this day VFR for two reasons: I was concerned about icing at altitudes required to file IFR (airplane was not certified for flight into known icing), and had departed from same airport numerous times, in what appeared to be similar conditions. When I entered IMC, I was not mentally prepared. I did not have navigation set up, and did not have flight director or autopilot engaged. In addition, I had not flown this airplane recently. The avionics and autopilot are significantly different than other planes I fly. I learned the stress of these factors diminished my ability to scan and fly the airplane while simultaneously dealing with TRACON, setting up navigation, and changing

squawk codes. In the future, when departing VFR under marginal conditions, I will be prepared, both the airplane and mentally, for unforeseen conditions.

## Synopsis

General aviation pilot reported entering IMC on a VFR clearance, and subsequently deviated from ATC vectors, which were attributed to the lack of familiarity with aircraft avionics and mental preparedness for IFR flight.

## Time / Day

Date : 201801  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Fog  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Snow  
Light : Daylight  
Ceiling.Single Value : 2000

## Aircraft

Reference : X  
ATC / Advisory.Center : ZZZ  
Aircraft Operator : Personal  
Make Model Name : PA-28R Cherokee Arrow All Series  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Flight Phase : Initial Approach  
Route In Use : Vectors  
Airspace.Class E : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 2500  
Experience.Flight Crew.Last 90 Days : 30  
Experience.Flight Crew.Type : 1500  
ASRS Report Number.Accession Number : 1512360  
Human Factors : Workload  
Human Factors : Situational Awareness  
Human Factors : Time Pressure

## Events

Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR

Anomaly.Ground Incursion : Runway  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Diverted  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

While on IFR Flight Plan to I encountered unforecast icing conditions just north of ZZZ while on vector to the ILS. I immediately requested a 180 turn-out due to icing, toward my departure airport, which was also my filed alternate. Within a couple minutes, there was significant ice accumulation such that there were significant unfavorable flight characteristics. No longer able to maintain altitude, I requested a vector to the nearest airport. A vector was given to ZZZ1. Although ATC did not advise the airport was closed, I already knew it was because I saw the NOTAM previously when I had considered this an alternate airport for my flight plan.

I made an emergency landing at the closed airport. I had no alternative but to use the long, plowed runway. I had no time to tune to CTAF or contact UNICOM, so I landed in the blind. Only activity was a plow truck at the far end of the runway, but I had no time or other options. I closed my IFR flight plan with Center when crossing the numbers and safe landing was assured. After landing, I contacted UNICOM.

## Synopsis

GA pilot reported landing at a closed airport due to adverse flight characteristics caused by icing.

## Time / Day

Date : 201801

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility.Visibility : 10

Light : Night

Ceiling.Single Value : 6000

## Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Landing

Route In Use : Visual Approach

Route In Use : Direct

Airspace.Class E : ZZZ

## Component

Aircraft Component : Electrical Power

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 1962

Experience.Flight Crew.Last 90 Days : 24

Experience.Flight Crew.Type : 1400

ASRS Report Number.Accession Number : 1511489

Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Ground Event / Encounter : Gear Up Landing  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Primary Problem : Aircraft

## Narrative: 1

Flying on an IFR clearance. Let down through cloud cover by center. Advised of reported rime icing in clouds. Activated all de-icing equipment. Handed off to approach. Upon exiting the cloud layer at 6000 ft, airport in sight, cancelled IFR. Attempted to lower landing gear. The two 80 amp main bus breakers popped due to electrical overload. Turned off all de-icing equipment and successfully reset left circuit breaker. The right circuit breaker would not reset. After 5 failed attempts to reset the breaker, initiated emergency gear extension per checklist. Could not determine if the gear was down due to gear indicator lights being inoperative. Attempted a landing, which resulted in a gear up landing.

No injuries to anyone nor damage to any property other than the aircraft. Fire and police departments were on the scene.

## Synopsis

GA pilot reported a gear up landing after experiencing electrical problems.



## Time / Day

Date : 201801

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 7000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Snow

Weather Elements / Visibility.Visibility : 1

Light : Daylight

Ceiling.Single Value : 400

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Citationjet (C525/C526) - CJ I / II / III / IV

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry

Route In Use.Other

Airspace.Class D : ZZZ

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Flight Engineer

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1511481

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Executed Go Around / Missed Approach

Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

Cleared for the RNAV approach to in lieu of ILS which was Out of Service (OTS). At MAP and MDA there was no runway environment and aircraft icing up with all deicing operative. Executed published miss and in climb out continued through 5500 up to 7000 to be above clouds and icing. Advised approach of altitude and reason for being there. Requested clearance to alternate ZZZ1.

This was poorly handled by myself:

Should have prepared for the RNAV vs ILS which I failed to see it had been notamed OTS.

Should have had deice on earlier and perhaps used spoilers to have more thrust for heat.

Should have been more familiar with missed approach procedures using the FMS.

Should have been more skeptical of ASOS which was indicating above minimums but with variable ceiling.

## Synopsis

A Cessna Citation Captain reported that he was unable to land due to ILS being out of service. The reporter was unprepared for an RNAV approach.

## Time / Day

Date : 201801

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 40000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : Falcon 2000

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use : Visual Approach

Airspace.Class A : ZZZ

## Component

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1508809

Human Factors : Distraction

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Not Flying  
ASRS Report Number.Accession Number : 1508810  
Human Factors : Distraction

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

When we started out of altitude (FL400), descending to destination, the auto-throttles disconnected and we noticed the number 1 engine rolling back. The engine automatically started a re-light. The engine came back with some notice of vibration. We monitored the engine parameters for the remainder of the trip. We declared PIC authority under FAR 91.3 with ATC and asked to land at an alternate airport. The controller came back and advised us that the alternate airport was closed. The controller the suggested we use another airport, which we then asked current weather there, which was freezing rain. Since we seemed to have control of the engine, we opted to continue to original destination with priority handling. The number 1 engine vibrations were higher than normal and I made slow power adjustments as needed. We landed in normal configuration with no events. We cancelled our status after we cleared the runway.

## Narrative: 2

Left Engine [had an] un-commanded Rollback during Normal Descent. I was the Second In Command (SIC) and Pilot Not Flying (PNF). The Flight conditions at the time were VMC. The autopilot and autothrottle were engaged. We were level at FL400 and Center cleared us to descend and maintain FL380. Upon the initial power reduction for the descent, the Captain and I felt a vibration. We looked and the engine gauges and the Left engine began to roll back less than that of the right engine. The autothrottle disengaged and the left engine Amber Ignition light came on, indicating that the auto ignition was on attempting to relight the engine. The engine did relight with more vibrations and then appeared to function normally.

As a precaution, we advised Center of the nature of the problem, and asked for Direct to a suitable alternate. Center then advised us that the alternate was closed and suggested that we go to a different airport. We then asked for Direct [there] and they cleared us to do so. I then asked Center for the current weather at the airport and the current conditions indicated Light Freezing Rain. Due to the icing conditions, we requested Direct a third alternate Airport. Center gave us direct.

During our descent, we evaluated the operation of the left engine and it appeared to be responding normally, but with higher than normal Vibration indications, but no felt vibrations. The Captain and I discussed continuing on into our initial destination since the

engine response was normal and kept the third airport as an alternate if the vibration returned or if it were necessary to shut down the engine. We asked for Direct to initial destination with priority handling. Center gave us Direct and we complied with all altitude and speed assignments. Airport conditions were day, VFR conditions. Approach cleared us for a visual to 36R, and we landed without incident and we canceled our status upon landing.

## Synopsis

Dassault Falcon 2000 flight crew reported a transient anomaly with the number 1 engine, including an RPM roll back. The engine automatically recovered, and the flight continued to the destination airport.

## Time / Day

Date : 201701

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : GAL.Airport

State Reference : AK

Altitude.MSL.Single Value : 1400

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Snow

Weather Elements / Visibility : Icing

Weather Elements / Visibility.Visibility : 1

Light : Daylight

Ceiling.Single Value : 4000

## Aircraft

Reference : X

ATC / Advisory.CTAF : GAL

Aircraft Operator : Government

Make Model Name : Cessna Stationair/Turbo Stationair 6

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Flight Phase : Cruise

Route In Use : Visual Approach

Route In Use : VFR Route

Route In Use : Direct

Airspace.Class G : GAL

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Government

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 747

Experience.Flight Crew.Last 90 Days : 31

Experience.Flight Crew.Type : 582

ASRS Report Number.Accession Number : 1508603

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : VFR In IMC

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Diverted

## Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

Flight to KAL, forecast conditions in area at time of arrival called for visibility greater than 6SM, with showers in the vicinity. At one hour after arrival, weather was forecast to be visibility 6SM, with light snow, mist (based on TAF for GAL). Approximately 20NM from KAL, decision was made to turn back due to weather conditions (deteriorating visibility and light icing encountered). Visibility was observed to have also since deteriorated. Approximately 7NM west of GAL visibility dropped to approximately 1SM (snow) and decision was made to divert Northwest towards favorable weather.

Attempted fly to KYU, but weather appeared to be marginal/mixed VMC (no weather reporting at this location). A second attempt was made to fly to GAL. AWOS at the time was reporting 5SM visibility. Approximately 10NM west of GAL visibility dropped to approximately 1SM, and again decision was made to divert Northwest. Conditions over KYU had not improved, and the next nearest field (HLA) was 60NM to the north. Conditions between present position and HLA were marginal VMC with possible IMC. A PIREP was obtained from a flight that had just landed at GAL. The PIREP said conditions in vicinity of airport appeared to be good, but snow squalls could be observed to north, west, and south. VFR flight did not appear possible from present position to any airfield. Aircraft was equipped with attitude and heading indicators, but not certified for IFR. Decision was made to fly to GAL due to known favorable conditions in the area.

Approximately 8NM west of GAL visibility dropped to approximately 1/4SM, before rapidly improving. Flight continued on to FAI without further incident. Decision to fly through IMC was based on what appeared to be a lack of suitable alternatives. Diverting to HLA appeared to have a high probability of encountering IMC. A climb into IMC to contact ATC for clearance was considered, but [this] would have required climbing into icing conditions. A lack of radar coverage would also limit ATC assistance. Aircraft was being flown single pilot, without an autopilot. Weather radar, ADS-B ground station coverage, and/or ATC radar coverage could aid in preventing a recurrence.

## Synopsis

C206 pilot reported encountering lower than forecasted conditions while on a VFR flight, in non IFR equipped aircraft. The pilot diverted, and conducted the flight into IMC, as this was the best option, until reaching VMC.

## Time / Day

Date : 201712  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 7000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Rain  
Weather Elements / Visibility : Icing  
Weather Elements / Visibility : Snow  
Weather Elements / Visibility : Turbulence  
Weather Elements / Visibility.Visibility : 10  
Light : Night  
Ceiling.Single Value : 4500

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Corporate  
Make Model Name : PA-34-220T Turbo Seneca III  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Descent  
Route In Use : Direct  
Airspace.Class B : ZZZ  
Airspace.Class E : ZZZ

## Component

Aircraft Component : Valve/Oil System  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Corporate  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 1400



Experience.Flight Crew.Last 90 Days : 45  
Experience.Flight Crew.Type : 1050  
ASRS Report Number.Accession Number : 1502815

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Issued Advisory / Alert  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

I encountered Supercooled Large Droplets (SLD) icing conditions in my known ice certified Piper Seneca III. I began the flight on a direct route at 11,000 feet MSL. I noticed abnormally high oil temperature and lower than normal oil pressure on the right engine. After monitoring the engine instruments, the problem persisted and I made the decision to divert. I advised ATC of my situation and ATC cleared me direct ZZZ. I remained at 11,000 MSL as it was -24 degrees C and was helping keep the oil temperatures from exceeding the green arc on the gauge. As I neared ZZZ, the oil temperatures remained where they were, and I decided to continue on to ZZZZ as it was closer to my final destination and I knew they had appropriate maintenance facilities on the field. There was a spotty band of light snow north of ZZZZ that I observed on my XM weather radar, but ATC advised no reports of icing upon my inquiry.

As I was approaching the class B airspace, ATC advised they would have to give me vectors around the departure corridor and instructed me to descend to 6,000 MSL. While descending, I entered IMC conditions and noted snow present in the clouds. Prior to encountering SLD conditions, only a trace of rime icing was noted on the leading edge of the de-ice boots. Approximately 5 minutes after entering IMC conditions, ATC advised he observed moderate precipitation at my 12 o'clock, about 6 miles in diameter, however no other aircraft had deviated, and no aircraft had reported any issues in the area. I assumed, as the OAT was -22 degrees C, that any precipitation would be snow and not cause an issue. As I descended below 8,000 MSL, I began encountering light turbulence. This turbulence for reasons unknown, fixed the abnormally high oil temperatures. Oil temperatures and pressures returned to normal and closely mirrored the left engine. Passing below 7,000 MSL, I heard heavy rain striking the windshield. It sounded as if I was flying through moderate-heavy precipitation in the spring or summer. I looked at the OAT gauge and it read -21 degrees centigrade. I immediately initiated a 30 degree turn to the left, continued my descent, and advised ATC of my deviation.

Approximately 30 seconds passed when I noticed an alarming amount of ice accretion on unprotected areas of the aircraft, including aft of the de-ice boots, and the side windows were beginning to freeze over. The sound of rain continued, and I continued my turn further to the left to attempt to fly out of what I realized was heavy freezing rain. At this time I noticed my airspeed beginning to rapidly decay. I pushed the nose down to 15 degrees in an attempt to increase my airspeed, but the airspeed continued to decay. Once the airspeed reached under 60 knots, I realized my pitot static system had frozen over. I confirmed that pitot heat was indeed on, (I turned pitot heat on prior to departing) as well as all other de-ice/anti-ice equipment. After I lost the airspeed indicator, The G500 began displaying red X's on the airspeed, heading, altitude, and attitude display. The only functioning instruments left were the standby attitude indicator, standby altimeter, and the whiskey compass. I engaged the alternate static source and [told] ATC. I told the controller I needed altitude readouts as quickly as he could get them to me, as I was flying blind in IMC in heavy freezing rain. The controller stated he showed me at 6,400 MSL level. I rolled in nose down trim and confirmed with the standby attitude indicator that I was in a descent. I checked the standby altimeter, and it was showing 6,400 MSL, but was not moving. I assumed it was unreliable and focused navigating by attitude and whiskey compass.

I asked the Controllers for the ceiling in the area and he stated 4-5000 feet. I asked again for altitude readout and he stated 6,000 in a descent. I checked the leading edge of the wing for ice accretion and noticed a large ridge of ice forming behind the de-ice boots, but the boots themselves had significantly less ice accretion than other surfaces of the wing. There was run back ice on the top of the wing to the middle row of rivets on the wing. I continued my descent until around 4,500 MSL (estimated), where I exited the bottom of the clouds in a wings level, slightly nose down attitude. I informed the controller that I was in VMC conditions and no longer needed altitude readouts. The OAT outside of bottom of the clouds was -12 degrees centigrade and there was no precipitation present.

Approximately one minute after exiting the clouds, the airspeed indicator came back alive and displayed a speed of 185 KIAS. Shortly thereafter, one by one all red X's on the G500 PFD went away and returned to normal operation. I descended to 4,000 MSL and confirmed the altitude with ATC. I continued operating the de-ice boots until the leading edges were free of the majority of ice contamination. The ice behind the protected surfaces was flying off the aircraft and I was maintaining altitude and airspeed normally. I accepted a heading turn from ATC, and advised I would like to stay on a heading, straight and level for some time to ensure the aircraft was performing normally. Once I had re-run the cruise and encountering severe ice checklists, the aircraft was operating normally, with no abnormal readings, including the right engine oil temperature and pressure. I told ATC that I would not advise them to have any traffic enter the clouds in the vicinity of the heavy freezing rain that I had encountered. As I still had some ice on the aircraft, I flew the approach at a higher than normal speed, with no flap extension. I completed the landing with no issue, and terminated the flight.

I had learned of SLD icing from a video presentation, and was able to more readily identify those conditions and take corrective action. In hindsight, I should not have assumed that the precipitation reported by ATC was snow, just because I had been flying in snow and was not picking up any more than a trace of ice with an OAT of -21 degrees centigrade. Just because I was outside the "normal" temperature window of icing conditions, does not mean that SLD conditions cannot be present. The next morning my mechanic and I tested the pitot and stall warning heat for proper operation. All components operated as

designed, reaching a temperature of 205 degrees Fahrenheit. The aircraft has been grounded until the new oil control valve is installed.

## Synopsis

PA34 pilot reported that supercooled liquid droplet icing conditions resulted in a loss of all flight instruments except for the standby attitude indicator and magnetic compass. Pilot exited icing conditions with ATC assistance and successfully diverted.

## Time / Day

Date : 201710  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.MSL.Single Value : 9000

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Rain  
Weather Elements / Visibility.Visibility : 3  
Light : Daylight  
Ceiling.Single Value : 800

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Personal  
Make Model Name : SR22  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Component

Aircraft Component : PFD  
Aircraft Reference : X  
Problem : Malfunctioning

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 1200  
Experience.Flight Crew.Last 90 Days : 25  
Experience.Flight Crew.Type : 250  
ASRS Report Number.Accession Number : 1501127  
Human Factors : Troubleshooting  
Analyst Callback : Attempted

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Procedural : Other / Unknown  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed As Precaution  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Procedure  
Primary Problem : Aircraft

## Narrative: 1

In cruise while I was IMC on the edge of icing conditions most functions on my PFD failed. I had no comms for 3-4 min., no transponder, etc. All functions had an "X" through it on the PFD. Shortly thereafter I lost the moving map on the MFD of the G1000. My autopilot continued to operate and I initiated a 180 degree turn back to [a suitable airport]. My COMM came back up and I was able to take vectors to the field. Warning sounds continued throughout all of this. I continued toward [the airport] where the ceiling was approximately 800 ft. I loaded the ILS approach and it seemed to load as I got a glide slope and perspective seemed to be working. I still didn't have a map on the MFD. The terrain awareness system started going off as I was on the approach telling me to pull up. I landed safely.

I used a Mac to do a recent update. I may have some corrupt files as a result of using a Mac to update the data cards. In looking at the cards there were indeed two corrupt files on the cards that essentially caused the G1000 to overload and come close to locking up which is why I lost the functions I lost. It was trying to "fix" the corrupt files. I have been flying the Cirrus for 2 years and had a Columbia 400 with a G1000 for 5 years prior and had never heard of the of the potential issue of using a Mac and the resulting corrupt files. I have two other friends who had been doing the same thing. It seems that Garmin, Cirrus or Jeppesen should issue some type of warning to pilots to prevent someone from getting hurt. This is totally avoidable. A lot of pilots I know use Mac based laptops etc. I hope by making this report it can help someone not get in the bad situation I found myself in.

## Synopsis

SR22 pilot reported losing most PFD functions. Reportedly, the problem may be related to updating the data cards using an Apple Mac computer.

## Time / Day

Date : 201711

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 800

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Visibility : 5

Light : Daylight

Ceiling.Single Value : 1000

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Personal

Make Model Name : Cessna 150

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Ferry

Flight Phase : Initial Approach

Route In Use : Direct

Airspace.Class E : ZZZ

## Component : 1

Aircraft Component : Engine

Aircraft Reference : X

Problem : Malfunctioning

## Component : 2

Aircraft Component : Air/Ground Communication

Aircraft Reference : X

Problem : Malfunctioning

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Rotorcraft

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1750

Experience.Flight Crew.Last 90 Days : 50  
Experience.Flight Crew.Type : 75  
ASRS Report Number.Accession Number : 1498570  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : ATC

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Procedural : Landing Without Clearance  
Anomaly.Inflight Event / Encounter : Fuel Issue  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Landed in Emergency Condition  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Environment - Non Weather Related  
Primary Problem : Aircraft

## Narrative: 1

I was the sole person on board. I had just purchased this aircraft and was not familiar with its unique flying characteristics. I conducted a full pre-flight inspection. In so doing, I verified that the aircraft had full fuel, which is about four hours of flying time, and found that its VHF radio was operative. The takeoff went as expected, with no issues. I [departed] VFR. After about 3 hours and fifteen minutes of flying, while on approach to ZZZ, my engine began to sputter. I immediately suspected induction icing due to temperature and visible moisture, but after an inflight check of my systems, I was unable to get the engine to run smoothly. Eventually the engine, completely died, and I was unable to restart it. After the engine died, I stabilized the airplane at the best rate of glide. I was not near any airports and was not flying very high. I spotted a hard surface roadway and landed the Cessna 150 without any incident or damage to the airplane. It was decided that the aircraft should be towed to the nearest airport for mechanical assessment. I was not cited or arrested for landing on the highway. I believe that the cause of the engine failure was carburetor icing and low fuel. I had just purchased this Cessna 150, and this was my first time flying [it] cross country. I verified that it had full fuel on board before departing and it should have been able to fly four hours on the full fuel, according to the POH.

Later that day, the airplane was refueled, and I elected to depart and fly on to ZZZ. While I was enroute to ZZZ, I noticed that the ATC approach controllers were not responding to any of my radio ATC transmissions, but I could hear them speaking to me. I attempted to get the Cessna's panel installed radio to work, but it would not. I had a handheld backup radio on board, but it also did not enable me to talk to ATC. Since I had previously experienced the issue with having the less than four hours of fuel available on full tanks, and I had been flying for over three hours by that time, I elected to land at ZZZ1. After landing, I was instructed to call the ATC tower, which I did once the airplane was safely on

the ground. I was told that the ATC personnel believe I had committed a pilot deviation, however, I was taking reasonable steps to ensure the safety of my aircraft and myself as the sole occupant. Once at ZZZ, the airplane was taken to the FBO. It remains there now, awaiting repairs. I am a safe pilot, and the issues that I encountered presented challenges to my safety, which I correctly handled.

## Synopsis

C150 pilot reported an off field landing due to loss of engine power. After refueling, the following flight experienced radio problems that resulted in landing without a clearance.



## Time / Day

Date : 201711  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : IMC  
Weather Elements / Visibility : Icing  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.TRACON : ZZZ  
Aircraft Operator : Air Taxi  
Make Model Name : Caravan 208B  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Cargo / Freight  
Flight Phase : Climb  
Airspace.Class C : ZZZ

## Component

Aircraft Component : Ice/Rain Protection System  
Aircraft Reference : X  
Problem : Design

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Taxi  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1497503

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

Prior to aircraft loading I performed a Cold Weather preflight including ground test of the TKS system. Ground temp at Ramp departure was +02C with a ceiling of 600 ft overcast. I departed the Ramp with the aircraft's cargo compartment completely full from floor to ceiling. I turned the TKS system ON Hi during my taxi to the departure runway so that the wing would be "wetted" prior to entering the clouds after takeoff. After takeoff while climbing to 5000 ft MSL with the TKS system now ON Normal I turned on the Cabin Heat /Defrost and immediately smelled the telltale TKS alcohol odor. Wanting to avoid the throat and eye irritation that I have experienced in the past from TKS fumes in the cockpit I promptly turned OFF the cabin heat while leaving the TKS system ON until I topped the cloud layer. After exiting the clouds I turned the TKS system OFF and tried the cabin heat again. Once again, I immediately smelled the alcohol smell. When I turned OFF the cabin heat the alcohol odor was no longer present. To avoid breathing the TKS fumes while using the cabin heat I donned my mask and breathed O2 for the next 30 minutes until the alcohol smell was no longer detectable with cabin heat. TKS system total AM run time with ground test plus taxi out to topping the cloud layer was less than 10 minutes.

It is my opinion that TKS fluid mist shed by the prop slinger was being drawn into the cockpit from the air stream surrounding the aircraft nacelle via the aircraft bleed air system. I believe that the fact that the alcohol odor in the cockpit dissipated each time that I turned the cabin heat OFF while the TKS system was in use and later, after the TKS system had been turned OFF, until the prop slinger supply lines had sufficiently drained down in flight supports my position. This episode is a reminder of the necessity for pilots to have available and, when needed, to use supplemental O2 any time that the TKS system is used in flight when the Cabin Heat/Defrost is also used. This action will minimize the potential for pilot physical symptoms and/or possible mental impairment. As of yet there is no effective way to prevent TKS fumes from entering the cockpit under this and similar flight in icing scenarios.

## Synopsis

Cessna Caravan pilot reported TKS fumes in the cockpit inhibiting the use of the cabin heater unless the oxygen mask is used.

## Time / Day

Date : 201711

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1750

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Ceiling : CLR

## Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Personal

Make Model Name : Ultralight

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Initial Approach

Airspace.Class G : ZZZ

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Sea

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1140

Experience.Flight Crew.Last 90 Days : 20

Experience.Flight Crew.Type : 227

ASRS Report Number.Accession Number : 1495829

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Critical

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Diverted

Result.Flight Crew : Landed in Emergency Condition

Result.Air Traffic Control : Provided Assistance  
Result.Aircraft : Equipment Problem Dissipated

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Carburetor icing. Clear, cold day with visibility unlimited temps were 0 C and dew point - 10 C, Alt. set. 3049. Pleasure flight began at ZZZ and meandered toward ZZZ1 at around 2300 ft MSL. Within five miles of ZZZ1, I descended to pattern altitude and I called in my position and intention to land there. A pilot was calling his pattern at ZZZ1 at the time. The ground under me was higher than at ZZZ so my AGL was less than a 1000 ft.

All of a sudden my engine ran rough and quickly deteriorated into a shaking roughness even though I applied carburetor heat instantly. I lost altitude and made the decision to land off airport. I shut off the engine, shut off the fuel supply. I called the traffic landing at ZZZ1 and explained my situation and said "mayday". I described my plane's color and my approximate location from ZZZ1. The pilot answered and communicated back with me. Then I concentrated on landing safely on a harvested bean field close by. The landing was uneventful, the surface remarkably smooth (better than some grass field airports).

I am a LSRM (Light Sport Repairman) so I troubleshot my engine. In the end it became obvious that it was a simple matter of carburetor ice on my Rotax 912 S engine. I waited about 20 minutes then restarted the engine. It started back without hesitation and ran smoothly. A thorough run-up verified that all was OK.

I took off again and flew to ZZZ1: it was the closest airport. The flight was uneventful, the pattern also. After taxiing and doing one more run-up I was ready to fly back to my home airport. A pilot flying over relayed my information to Approach who was concerned because of my "mayday". When in the air again, I contacted Approach and communicated with them. They asked me to call them on the phone when I landed at my home airport. I flew there directly, remaining in contact with Approach. The flight was uneventful and so was the arrival at ZZZ.

Once on the ground, I called Approach on the phone and we debriefed together. They were very helpful and friendly. It seems that everybody around: the pilot I spoke with at the beginning, the FBO at ZZZ1 who picked up a radio and began driving in my general direction then the pilot above and finally the ATC were very professional, helpful and capable. All in all it was an experience without trauma and I am grateful. When it is this cold, in the future I will fly with the carburetor heat at all times.

## Synopsis

Light sport aircraft pilot reported a loss of engine power led to an off-field landing, likely caused by carburetor icing.

## Time / Day

Date : 201711  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Relative Position.Angle.Radial : 340  
Relative Position.Distance.Nautical Miles : 12  
Altitude.AGL.Single Value : 1000

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight  
Ceiling.Single Value : 5000

## Aircraft

Reference : X  
ATC / Advisory.Tower : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Light Sport Aircraft  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Personal  
Flight Phase : Initial Approach  
Route In Use : Visual Approach  
Route In Use : Direct  
Airspace.Class E : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 305  
Experience.Flight Crew.Last 90 Days : 15  
Experience.Flight Crew.Type : 79  
ASRS Report Number.Accession Number : 1494483  
Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Inflight Event / Encounter : Fuel Issue  
Detector.Person : Flight Crew  
When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Human Factors

## Narrative: 1

After filling my fuel tanks to max capacity (24 gallons usable) I departed VFR [for a three leg flight]. Total distance is 203 miles and I determined while planning that it would take 2 hours total flight time. After landing uneventfully at ZZZ1 and attending [a local exhibit], I departed for what I determined would be an approximately 30 minute flight to ZZZ. I looked at the sight gauges for the wing fuel tanks, and it appeared to over 1/3 tank and by my estimation, I should have more than 1 hr of fuel. After departing ZZZ, I was approximately 20 miles to the NW of ZZZ my engine sputtered and then ran smooth. I at first thought maybe the carburetor had iced and applied carb-heat. The engine smoothed out and then started to die and then start running again. By this time I was approx 12 miles to the NW of ZZZ, and had the tower frequency there already on my active radio. I called the tower and informed them that my engine had stopped and I was going to land next to the interstate. I landed on an empty highway that was just finished with construction and had not opened yet for public use. It was approx 5 lanes wide and completely clear of people, vehicles, overhead power lines, cables and any debris. I landed uneventfully, uninjured, with no damage to property or plane. After landing, upon inspection, it appeared that the sight gauges for the fuel tanks both showed completely empty. My fuel computer/analyzer showed there to still be 5.2 Gallons remaining, which if were true would equate into approx 40 minutes remaining. To prevent this from happening I will not rely on flight-fuel computer or sight gauges. I will also use a 'fuel-dipstick' that will visually verify the actual remaining fuel quantity.

## Synopsis

Carbon Cub pilot reported an off airport landing due to fuel exhaustion.

## Time / Day

Date : 201710

Local Time Of Day : 0001-0600

## Place

Locale Reference.ATC Facility : ZKC.ARTCC

State Reference : KS

Altitude.MSL.Single Value : 6000

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Snow

Weather Elements / Visibility.Visibility : 10

Light : Night

Ceiling.Single Value : 20000

## Aircraft

Reference : X

ATC / Advisory.Center : ZKC

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Nav In Use : GPS

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZKC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 580

Experience.Flight Crew.Last 90 Days : 160

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 1493219

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Diverted  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Landed As Precaution  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

I was on a solo flight and the temperatures were near freezing (2C). I was flying at 6000 ft. The conditions were VFR BKN 20,000 so good visibility. I was on an IFR flight plan so I was in contact with KC Center. Everything was smooth. I looked off to the left and noticed the strobe lights reflecting some precipitation. I turned on my landing light and saw rain/sleet/flurries coming at me. So I called ATC and asked for lower. I went down to 4000 ft. The precipitation was still coming and I asked for lower again, so I went down to 3000 ft. At this point ATC LOST RADAR CONTACT because I was too low. The precip was still there and I wasn't going to go any lower. So I started thinking about either turning around or diverting. Fortunately Effingham's city lights were right in front of me.

I definitely had to make some quick decisions. I called up ATC, requested a diversion. Moments later after I requested to divert the precip intensified and it felt like I was in a blizzard. The visibility dropped rapidly from like 10nm to 3nm and the precip increased. In retrospect I believe I hit a small cell. But anyways the precip was increasing and the visibility decreasing, I asked ATC for vectors but they couldn't give any because of the size of the airport so I ended up doing the GPS 11 approach. The ATC controller wanted me to do the full procedure, but in that situation I didn't have time to stay out and accumulate icing, so I turned for the FAF (final approach fix) and told the controller. The controller cleared me for the approach and then I had a normal landing.

## Synopsis

A C172 pilot reported encountering rain, sleet, and icing enroute. He made some quick decisions that included diverting to exit the weather and a modified instrument approach to minimize his time in the icing.