ASRS Database Report Set

Global Positioning System (GPS) Reports

Report Set Description.................................................A variety of reports referencing use of Global Positioning System (GPS) devices.

Update Number........................................................30.0

Date of Update..........................................................August 31, 2018

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

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

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.
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. 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 amplified 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.

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: 1551024 (1 of 50)

Synopsis
A Piper Twin pilot reported that during a night landing, the aircraft came in contact with the tops of trees.

ACN: 1550762 (2 of 50)

Synopsis
MRY Controller reported needing to issue a turn and climb instructions to a C182 to avoid terrain.

ACN: 1546539 (3 of 50)

Synopsis
GA pilot reported a Class B airspace violation due to a loss of EFB GPS information.

ACN: 1546093 (4 of 50)

Synopsis
Flight crew reported they failed to level at the intermediate altitude between the FAF and MDA of the RNAV 23 approach into GON airport, prompting a low altitude warning from ATC.

ACN: 1545499 (5 of 50)

Synopsis
B737-700 Captain reported having several FMC malfunctions and questioned whether the GPS MEL used in this event fully covered all the FMC issues encountered during this flight.

ACN: 1544033 (6 of 50)

Synopsis
Light Transport Captain reported flying the GPS glideslope instead of the ILS glideslope.

ACN: 1542736 (7 of 50)

Synopsis
Pilot reported insufficient navigational signal coverage at the changeover point on V23, between EUG and BTG VORTACs, while at the MEA of 5,000 feet.

ACN: 1541602 (8 of 50)

Synopsis
DSM TRACON Controller reported using an emergency obstruction vector map to assist a disoriented pilot in IMC.
<table>
<thead>
<tr>
<th>ACN: 1540991 (9 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Cessna pilot and Approach Controller reported that the aircraft entered a live fire Restricted Area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1540727 (10 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air Taxi Captain reported descending below charted altitude on an RNAV approach to HYI airport when the crew failed to note an intermediate step-down altitude.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1539484 (11 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>GA Pilot reported diverting due to an open cabin door and a failed alternator landed at an Air Force Base instead of the intended nearby airport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1538625 (12 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>R-4202 pilot instructor reported they experienced a GPS anomaly, which caused an abrupt turn and GPS display failure.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1538587 (13 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air taxi Captain reported difficulty in activating runway lights at night that led to a poorly executed go-around.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1538338 (14 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>B777 Captain reported both the Left and Right ADS-B out failed near FIR North Korea. The GPS was normal at the top of descent after some troubleshooting was performed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1537086 (15 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>GA pilot reported landing at an abandoned strip 1/4 mile from the intended airport UT53. The lack of closed runway markings at the abandoned strip were cited as a contributing factor.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1536698 (16 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
</tbody>
</table>
Lear 55 Captain on approach to an non-towered airport reported an NMAC with a unidentified VFR aircraft.

**ACN: 1536684 (17 of 50)**

**Synopsis**
C182 pilot reported inadvertently descending below assigned altitude while monitoring traffic passing overhead.

**ACN: 1536230 (18 of 50)**

**Synopsis**
Air carrier Captain reported a miscommunication with Air Traffic Control during the final segment on the approach.

**ACN: 1536105 (19 of 50)**

**Synopsis**
CE551 pilot reported several low altitude alerts from the Tower after mistakenly flying based off the rate of descent icon instead of the glideslope indicator.

**ACN: 1535761 (20 of 50)**

**Synopsis**
An Embraer ERJ flight crew reported that while on the intercept for the final approach course the aircraft descended below the vectoring altitude.

**ACN: 1535633 (21 of 50)**

**Synopsis**
B737 Captain reported a potential terrain issue with a recent ATC clearance at MROC airport.

**ACN: 1534803 (22 of 50)**

**Synopsis**
LSA pilot reported returning to the departure airport following an electrical system malfunction.

**ACN: 1533123 (23 of 50)**

**Synopsis**
Air carrier flight crew reported a discrepancy between the ILS and their navigation display causing conflicting and confusing information.
Synopsis
C182 pilot reported an airspace incursion resulted when he inadvertently took off with carburetor heat on and was concerned with terrain clearance.

ACN: 1532610 (25 of 50)

Synopsis
CRJ-900 flight crew reported ATC issued a low altitude alert when they descended below charted altitude on the approach.

ACN: 1532085 (26 of 50)

Synopsis
GA pilot reported that he mistook a neighboring airport for his destination resulting in an airspace violation.

ACN: 1531989 (27 of 50)

Synopsis
G-IV flight crew reported that the BJC SPAZZ 3 SID on the Jeppesen Chart and aircraft's database are depicted differently from the FAA chart.

ACN: 1531650 (28 of 50)

Synopsis
Cessna 208 pilot reported loosing the "Glass Panel" during cruise flight and immediately requested VFR conditions from ATC.

ACN: 1529846 (29 of 50)

Synopsis
ZLA controller and PA-28 pilot reported the aircraft deviated off course entering a higher MEA while programming the GPS. The Controller inadvertently turned aircraft below MEA.

ACN: 1529244 (30 of 50)

Synopsis
PA-32R pilot reported a TFR airspace incursion resulted when he became distracted from his navigational duties.

ACN: 1527421 (31 of 50)

Synopsis
PA-28 student reported an electrical failure and fire during flight. A landing at the destination field was normal.
<table>
<thead>
<tr>
<th>ACN: 1525318 (32 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>C162 pilot reported diverting through ice and instrument conditions due to a rough running engine.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1525294 (33 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>RV-9 pilot reported the failure of the Garmin GNS480 WAAS GPS antenna caused the failure of the other GPS antennas in his aircraft. The issue was corrected when the pilot turned off the Garmin unit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1523583 (34 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>PA30 pilot reported the failure of the electrical system resulted in a diversion and manual gear extension.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1523316 (35 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>B757 Captain reported receiving a ground proximity alert while executing a 360-degree turn due to being too high on a GPS approach. Reporter recommended resetting the target descent altitude from MDA to FAF altitude when executing this maneuver.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1522381 (36 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Twin Cessna Captain reported reluctance to accept ATC instructions to separate from IFR traffic while operating VFR on an aerial mapping mission which resulted in the IFR aircraft taking evasive action.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1522355 (37 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>CE525B pilot reported improperly operating navigation equipment resulting in lining up with the wrong ILS approach.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1521658 (38 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>PA-60 pilot reported diverting after experiencing a loss of engine power.</td>
</tr>
</tbody>
</table>

<p>| ACN: 1520833 (39 of 50) |</p>
<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1520043 (40 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air carrier Captain reported continuing the visual approach to BTV Runway 33 after receiving a GPWS terrain warning because all terrain was in sight.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1519732 (41 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C172 pilot reported neglecting to close a flight plan following a stressful instrument flight.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1519166 (42 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE560XL pilot reported encountering a navigational error in the company's FMS database and recommend that the vendor providing FMS database be notified of the problem.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1519160 (43 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOI TRACON Controller and flight crew reported an aircraft descended below the issued altitude and below the MVA.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1519146 (44 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOI TRACON Controller working Bozeman Handoff reported that an aircraft clipped a higher MVA during a very busy traffic session.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1518874 (45 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C182 pilot reported landing on a taxiway parallel to the intended runway.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1518603 (46 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C208 pilot reported a loss of the HSI in IMC conditions resulting in a diversion.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th>ACN: 1518376 (47 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cessna 177RG pilot reported a failure of airspeed indications while in cruise.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synopsis</th>
<th></th>
</tr>
</thead>
</table>
B737-700 flight crew reported setting incorrect minimums for the approach to Runway 29 at MSY.

**ACN: 1518307 (48 of 50)**

**Synopsis**
SR22 pilot reported an issue with the avionics system design that induced an excursion from the cleared altitude on final approach to an altitude below the MVA.

**ACN: 1517959 (49 of 50)**

**Synopsis**
C182 pilot reported loss of all communication and navigation capability on a test flight after installing a new instrument suite.

**ACN: 1517956 (50 of 50)**

**Synopsis**
BE20 pilot reported descending below charted altitude on approach to M01, and attributed the deviation to an Autopilot failure.
Report Narratives
**ACN: 1551024**

**Time / Day**
- Date: 201806
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference.Airport: ZZZ.Airport
- State Reference: US
- Altitude.AGL.Single Value: 450

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

**Aircraft**
- Reference: X
- ATC / Advisory.Tower: 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: None
- Mission: Personal
- Flight Phase: Descent
- Route In Use: Visual Approach
- 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
- Qualification.Flight Crew: Flight Instructor
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Commercial
- Qualification.Flight Crew: Multiengine
- Experience.Flight Crew.Total: 1027
- Experience.Flight Crew.Last 90 Days: 64
- Experience.Flight Crew.Type: 65
- ASRS Report Number. Accession Number: 1551024
- Human Factors: Training / Qualification
- Human Factors: Confusion
- Human Factors: Situational Awareness

**Events**
Anomaly.Inflight Event / Encounter : Object
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
When Detected : Routine Inspection
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

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

Narrative: 1

I was to take a multi engine student on a cross-country night flight. This was to be my first student as I recently finished up (over last 6 months) my CFII, CFI, and MEI. I was not current with my night landings in the Twin Comanche, so I needed to make two more landings. I waited until after dark to fly the night landings, solo.

During the first takeoff, everything was going well [with] gear up [and] 25 squared on the initial climb after reaching 600 feet AGL. I was using the GPS to help keep situational awareness to the runway. While making my turn to downwind, I lost the runway on the GPS map. I then became distracted trying to zoom in and out on the display, but I still did not see the airport on the map during the turn. I conducted an initial CGUMPS check, backed the power down to 17 inches MP, and then lowered the gear. I could not identify the field visually at this time either. I then tried programming the GPS direct to ZZZ. I believe I programmed in the wrong airport because I remember the course line showed it pointing to a destination around [a] different state.

Then, I saw what I thought were the runway lights for Runway XXR which were at my 4 o'Clock position looking over my right shoulder. I then pulled the power back to 15 inches MP, lowered the flaps to half, and started to make my turn from downwind to base. The lights I saw disappeared as I continued my turn towards final while continually searching for the lights. I noticed I was flying in a "black hole" as ground lights disappeared. I immediately went to instruments and realized I was at an altitude of 450 feet MSL. I immediately went through the procedure of "power up," "pitch up," and "clean up." Note: this is where I must have clipped into the tops of the trees, although I did not think I ever hit anything at this point. After reaching approximately 900 feet, I called the Tower and stated I lost visual with the runway and asked for vectors. After turning to an assigned heading to the right about 20 degrees, I then plugged ZZZ into the GPS correctly. I was then given another heading to the left of about 10 degrees. While climbing back to 1,300 feet, I was then able to clearly make out the whole airport environment. I went through the CGRUMPS procedure, and the rest of the landing was uneventful.

After I taxied off the runway, I taxied back to the hold short line of Runway XXR. There were several aircraft landing so I had about 10 minutes to think about what happened. I made sure ZZZ was still plugged into the GPS and reminded myself to focus on headings and altitudes. The next trip in the pattern was uneventful.
After my second landing, I taxied up to the front of the terminal building and shut down to pick up my student. I felt I should walk around the plane before we departed. Then I noticed some leaves in the right main landing gear. A further check of the plane showed a few leaves in the right main gear, one or two in the nose gear and about 10 in the left main gear. Additionally, we found the propellers had a green color on them. I was shocked. I thought through if I could actually hit something in the air. There were no noticeable noises that got my attention while flying. Then, I thought I may have hit something while taxiing. I called the Tower and told them I may have run over some foreign debris on the runway. The student and I pushed the plane back to the tie down, and I grounded the plane.

After I got home, I cleared my head and reflected on what happened, multiple times. I came to the conclusion that the odds of me [hitting] a branch on the taxiway were very slim, and I had to have hit the trees while in the air. Thinking back, I may have heard light swoosh sound when I was low, but nothing caught my attention that I hit something while I was trying to find the airport and climbing back up to pattern altitude.

**Synopsis**

A Piper Twin pilot reported that during a night landing, the aircraft came in contact with the tops of trees.
Aircraft X was on the RNAV GPS Y Approach to Runway 28L. He was at 160 knots and asked on check-in if he could slow down. I told him that we need best practical forward speed due to an in-trail CRJ, but agreed that he could slow a bit as spacing was fine. I gave pilot the base which was at minimum from last PIREP. Minimum for this approach is
1,080 feet. I saw Aircraft X break out at about 1,000 feet. I watched him inbound and checked for wheels but saw that they were not down. I told pilot to check wheels down. I noticed that he appeared high and was approaching as if still on the approach even though he was out of the clouds. I asked if he was going around. Pilot said no, he is on the approach. I immediately told him that he needs to turn right heading 330, and climb and maintain 3,000 for terrain south of the airport. Pilot complied, and I handed him back to NORCAL Approach for a second approach attempt. I believe that the pilot was checking his wheels when I told him and he did not prepare to land satisfactorily. I was surprised that he did not appear to realize that he was out of the clouds for some time and that he was potentially heading towards terrain if I had not turned him. His speed requested may be an issue, but he had plenty of time to land after breaking out of the cloud layer.

**Synopsis**

MRY Controller reported needing to issue a turn and climb instructions to a C182 to avoid terrain.
Time / Day
Date: 201805
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: ORD.Airport
State Reference: IL
Altitude.MSL.Single Value: 4500

Environment
Flight Conditions: VMC
Weather Elements / Visibility: Visibility: 8
Light: Daylight
Ceiling: CLR
RVR.Single Value: 5280

Aircraft
Reference: X
ATC / Advisory.Center: ZAU
Aircraft Operator: Personal
Make Model Name: Small Aircraft
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: VFR
Mission: Personal
Flight Phase: Initial Climb
Route In Use: Direct
Airspace.Class B: ORD

Component
Aircraft Component: Electronic Flt Bag (EFB)
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
Experience.Flight Crew.Total: 220
Experience.Flight Crew.Last 90 Days: 30
Experience.Flight Crew.Type: 3
ASRS Report Number.Accession Number: 1546539
Human Factors: Situational Awareness
Human Factors: Training / Qualification
Human Factors: Human-Machine Interface
Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Procedural : FAR
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Miss Distance.Vertical : 500
When Detected : In-flight
Result.General : None Reported / Taken

Assessments
Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1
I departed from DPA, DuPage airport for a return flight home. First time flying into or out of Chicago Class B airspace. I requested flight following while on the ground at DuPage Ground and was denied the squawk code and told to ask for flight following once in the air from Chicago departure. DuPage tower gave me a right traffic clearance (southwest) and set up a gentle climb to 3,900 feet. (autopilot inop). During my climb my iPad screen went dead. Lost all Ipod visuals. At the time of the power loss, my screen showed my geo referenced mini airplane just approaching the Class B airspace ring. I was radioing in for my flight following squawk code and had just received it and was in the process of tuning in my code into the transponder. I was unnerved with the loss of my iPad and was trying to power up the unit when I got a call from the Chicago Center controller yelling at me, which did nothing but make the situation more tense. At that time I was most concerned with aviating due to thermals and choppy air during the climbout. There is no excuse for penetrating the 4,000 foot airspace ring. I made a mistake. I was rattled due to the loss of my VFR Direct iPad screen. I honestly thought I was beyond the Class B ring but evidently I was very wrong. I am a new private pilot and this was the first time flying in or out of Class B O'hare airspace, not that it should be any different or any harder than any other airspace. Rules are rules and I made a mistake. I was shaken by the loss of my iPad direct screen, and angry controller and choppy air during the climb out from DuPage. I am embarrassed and very sorry for making a mistake like that. I assure you I will not let it happen again.

Synopsis
GA pilot reported a Class B airspace violation due to a loss of EFB GPS information.
Time / Day
Date : 201805
Local Time Of Day : 1201-1800

Place
Locale Reference.Airport : GON.Airport
State Reference : CT
Altitude.MSL.Single Value : 560

Environment
Weather Elements / Visibility : Fog
Weather Elements / Visibility.Visibility : 1
Light : Daylight
Ceiling.Single Value : 200
RVR.Single Value : 6000

Aircraft
Reference : X
ATC / Advisory.Tower : GON
Aircraft Operator : Corporate
Make Model Name : Light Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Nav In Use : GPS
Flight Phase : Final Approach
Route In Use.Other
Airspace.Class D : GON

Person : 1
Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1546093
Human Factors : Confusion

Person : 2
Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function: Flight Crew: Pilot Not Flying
Qualification: Flight Crew: Multiengine
Qualification: Flight Crew: Instrument
Qualification: Flight Crew: Air Transport Pilot (ATP)
Experience: Flight Crew: Total: 25000
Experience: Flight Crew: Last 90 Days: 50
Experience: Flight Crew: Type: 160
ASRS Report Number: Accession Number: 1546556
Human Factors: Confusion

**Events**

- Anomaly. Deviation - Altitude: Overshoot
- Anomaly. Deviation - Procedural: Published Material / Policy
- Anomaly. Inflight Event / Encounter: CFTT / CFIT
- Detector. Person: Air Traffic Control
- When Detected: In-flight
- Result. Air Traffic Control: Issued Advisory / Alert

**Assessments**

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

**Narrative: 1**

During initial descent the Captain obtained the weather in GON and they were reporting 700 BKN and RNAV 23 was in use. We were on the RNAV RWY 23 going into GON and the FD and AP wasn't flying the approach properly so we disconnected the AP and I flew it raw data by hand. We briefed it prior but I was relying on the captain to advise me when I could descend for the next step-down fix. We reached HIRKA and advised GON tower. We descended out of 2000 for 800 until 2.0 NM to RW23. We are still in the descent and the captain says you can go down to MDA of 560 and selects it in the ALT select. We reach MDA of 560 and driving to the missed approach and GON tower comes on and says check alt immediately. We went missed and tried the ILS 05 and went missed again. We ended up diverting to PVD.

**Narrative: 2**

Flying the GPS approach to Runway 23. We descended to the published MDA of 560 after crossing BRRET. Tower advised us to check our altitude.

**Synopsis**

Flight crew reported they failed to level at the intermediate altitude between the FAF and MDA of the RNAV 23 approach into GON airport, prompting a low altitude warning from ATC.
ACN: 1545499 (5 of 50)

**Time / Day**
- Date: 201805
- Local Time Of Day: 0601-1200

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

**Environment**
- Light: Daylight

**Aircraft**
- Reference: X
- Aircraft Operator: Air Carrier
- Make Model Name: B737-700
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: FMS Or FMC
- Flight Phase: Parked
- Maintenance Status.Maintenance Deferred: Y
- Maintenance Status.Records Complete: Y
- Maintenance Status.Released For Service: Y
- Maintenance Status.Maintenance Items Involved: Installation

**Component : 1**
- Aircraft Component: FMS/FMC
- Aircraft Reference: X
- Problem: Malfunctioning

**Component : 2**
- Aircraft Component: INS / IRS / IRU
- Aircraft Reference: X

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Pilot Not Flying
- Function.Flight Crew: Captain
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Multiengine
- Qualification.Flight Crew: Instrument
- Experience.Flight Crew.Last 90 Days: 489
Events

Anomaly. Aircraft Equipment Problem: Less Severe
Anomaly. Deviation - Procedural: Published Material / Policy
Anomaly. Deviation - Procedural: MEL
Detector. Person: Maintenance
Detector. Person: Flight Crew
When Detected: In-flight
When Detected: Aircraft In Service At Gate
Result. General: Maintenance Action
Result. Flight Crew: FLC Overrode Automation
Result. Flight Crew: Overcame Equipment Problem

Assessments

Contributing Factors / Situations: Human Factors
Contributing Factors / Situations: Logbook Entry
Contributing Factors / Situations: Aircraft
Contributing Factors / Situations: MEL
Primary Problem: MEL

Narrative: 1

After initially powering up aircraft, the IRS (Inertia Reference System) position was blank. After aligning the IRUs, I checked the status of L/R IRUs and noted that the display page below was blank, no GPS status displayed. Maintenance was called and the GPS system was eventually MELed under 34-XX-XX with ancillary MELs for Terrain Awareness and Warning System 34-XX-X/X and Clocks 31-XX-X. We found out from Maintenance that the aircraft had been updated the night before.

In flight, several items were noted in FMC operation that were not functioning: Takeoff Reference Page 1/2 no INTERSECTION - - - / - - - , MCP ALT INTV function Inoperative, N1 did not set CLB [mode] at cruise altitude, the ABEAM prompt did not display on the LEGS page with a route amendment. These were the items that we noted.

At the destination, Maintenance was called to address the issues. Aircraft was removed from service. Last word received before going to another aircraft was the MMRs (Multimode Receivers) were sending bad data to the FMC and that caused the errors. If this can occur, my question is. Should the GPS MEL 34-XX-XX also address the potential FMC issues in the MEL procedure?

Separate issue same aircraft: We discovered Potable Water system did not work in flight (no water in sinks/coffee makers) and that the toilets flushed with vacuum only (no fluid). Hand sanitizer was placed in the lavatories and the Flight Attendants used canned water to keep the toilets sanitary inflight. I notified Dispatch of the issue and they concurred to continue to destination. I was also notified by Dispatch, as I already thought; the issue with the toilet fluid was a separate problem from the potable water issue (i.e. separate systems for the fluid). Maintenance at the destination stated that the toilet uses the water from the potable system and that this was the reason for no fluid and the vacuum flush only. What is the correct answer? If it uses water from the potable system, I think that most aviators misunderstand the system.
Suggestions: Need to possibly expand the GPS MEL to include the FMC, if the MMRs sending erroneous data to the FMC was the issue. Need to clarify to operations; if indeed, the potable water system supplies fluid to the toilet system.

Synopsis

B737-700 Captain reported having several FMC malfunctions and questioned whether the GPS MEL used in this event fully covered all the FMC issues encountered during this flight.
ACN: 1544033  (6 of 50)

**Time / Day**

Date: 201805
Local Time Of Day: 0601-1200

**Place**

Locale Reference.Airport: LZU.Airport
State Reference: GA
Relative Position.Distance.Nautical Miles: 15
Altitude.MSL.Single Value: 3000

**Environment**

Flight Conditions: IMC
Weather Elements / Visibility.Visibility: 10
Light: Daylight
Ceiling.Single Value: 1300

**Aircraft**

Reference: X
ATC / Advisory.TRACON: A80
Aircraft Operator: Corporate
Make Model Name: Light Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Ferry
Nav In Use: GPS
Nav In Use.Localizer/Glideslope/ILS: Runway 25
Flight Phase: Final Approach
Route In Use: Direct
Airspace.Class E: A80

**Person**

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: Flight Instructor
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
Experience.Flight Crew.Total: 9500
Experience.Flight Crew.Last 90 Days: 30
Experience.Flight Crew.Type: 3400
ASRS Report Number.Accession Number: 1544033
Human Factors: Situational Awareness
Human Factors: Human-Machine Interface
**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

**Assessments**

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

**Narrative: 1**

Cleared for the ILS 25 approach at LZU. SIC (Second in Command) armed the APPR (Approach) mode on the Proline 21 avionics. The localizer needle centered and started to receive a glideslope indication. Upon reaching 2,500 feet we determined that we were receiving a GPS glideslope and not the glideslope for the ILS. We climbed back to 3,000 feet and continued the approach without incident.

The error that we made was that we did not backup the information with the DME which would have informed us that the glideslope intercept was closer to the airport.

**Synopsis**

Light Transport Captain reported flying the GPS glideslope instead of the ILS glideslope.
ACN: 1542736 (7 of 50)

Time / Day
Date: 201805
Local Time Of Day: 0601-1200

Place
Locale Reference, ATC Facility: ZSE.ARTCC
State Reference: WA
Altitude, MSL, Single Value: 5000

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft
Reference: X
ATC / Advisory, Center: ZSE
Aircraft Operator: Air Taxi
Make Model Name: Small Aircraft
Crew Size, Number Of Crew: 1
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Cargo / Freight
Nav In Use, VOR / VORTAC: BTG
Flight Phase: Cruise
Route In Use, Airway: V23
Airspace, Class E: ZSE

Person
Reference: 1
Location Of Person, Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Taxi
Function, Flight Crew: Single Pilot
Function, Flight Crew: Pilot Flying
ASRS Report Number, Accession Number: 1542736

Events
Anomaly, ATC Issue: All Types
Anomaly, Deviation - Procedural: Published Material / Policy
Detector, Person: Flight Crew
When Detected: In-flight
Result, Flight Crew: Overcame Equipment Problem

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

Narrative: 1
Consistently while flying down V23 at 5,000 feet (MEA) between BTG and EUG VOR’s there is no navigation signal received from the EUG VORTAC at the charted VOR change over point (44 nm from BTG/57 nm from EUG). The DME and IDENT features are present, however no navigation signal. Navigation signal is received 3-10 nm south of the changeover point (generally around 7 nm south depending on Weather conditions). Observed NAV flags on both navigation instruments once I changed from BTG (116.60) to EUG (112.90) at the charted change over point. There is insufficient signal coverage from EUG VORTAC at the MEA at the charted change over point. I double-checked frequencies, checked the IDENT feature (which was present), reverted to BTG VOR frequency and cross-referenced my position with GPS to navigate the airway. Contacted ATC and reported the issue, providing details about the signal coverage from both the EUG and BTG VORs (when signal was received from EUG, and lost from BTG). Recommend a flight check to fly the airway at the MEA to verify this issue. Also, recommend a change to the position of the changeover point on the IFR low altitude chart to 51 nm from BTG/50 nm from EUG.

Synopsis

Pilot reported insufficient navigational signal coverage at the changeover point on V23, between EUG and BTG VORTACs, while at the MEA of 5,000 feet.
ACN: 1541602  (8 of 50)

**Time / Day**
- Date: 201805
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference, ATC Facility: DSM.TRACON
- State Reference: IA
- Altitude, MSL, Single Value: 3000

**Environment**
- Flight Conditions: IMC
- Light: Daylight
- Ceiling, Single Value: 2000

**Aircraft**
- Reference: X
- ATC / Advisory, TRACON: DSM
- Make Model Name: SR22
- Crew Size, Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: IFR
- Nav In Use: GPS
- Flight Phase: Cruise
- Route In Use: Vectors
- Airspace, Class E: DSM

**Person**
- Reference: 1
- Location Of Person, Facility: DSM.TRACON
- Reporter Organization: Government
- Function, Air Traffic Control: Departure
- Function, Air Traffic Control: Approach
- Qualification, Air Traffic Control: Fully Certified
- Experience, Air Traffic Control, Time Certified In Pos 1 (yrs): 1
- ASRS Report Number, Accession Number: 1541602
- Human Factors, Communication Breakdown
- Human Factors, Other / Unknown
- Communication Breakdown, Party 1: ATC
- Communication Breakdown, Party 2: Flight Crew

**Events**
- 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
- Anomaly, Inflight Event / Encounter: CFTT / CFIT
- Detector, Automation: Air Traffic Control
- Detector, Person: Air Traffic Control
When Detected: In-flight
Result: Flight Crew: Regained Aircraft Control
Result: Flight Crew: Became Reoriented
Result: Air Traffic Control: Issued New Clearance
Result: Air Traffic Control: Issued Advisory / Alert
Result: Air Traffic Control: Provided Assistance

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

Narrative: 1

Aircraft X departed VFR and asked for flight following to [the destination] airport. [Weather at the destination] was showing IMC conditions. I advised the aircraft and asked his intentions. He responded that he wanted to go IFR and I asked his approach request at [the destination airport]. I then cleared the pilot to [the destination airport] via IAF for the approach as he had requested.

Soon after being cleared the pilot began flying erratically and losing altitude. I asked him to verify direct [to the IAF] and got no response. At this point I began to suspect he had become disoriented and attempted to give him a heading. The pilot was still unable to maintain control of his aircraft and had descended into unsafe proximity with terrain triggering a low altitude alert which I then issued to the pilot. Finally the pilot got the aircraft relatively under control and I recommended a diversion to the nearest airport and issued him the weather.

He agreed and I began clearing him to [the nearest] airport via a radar vector. At this point he began losing control of the aircraft again. I suspected he was unable to program his GPS and maintain his instrument scan in IMC and immediately had him focus on leveling his aircraft to maintain straight and level flight without trying to navigate as well. Given the performance of the pilot, I had no confidence in the pilot to fly an instrument approach without becoming disoriented and losing control of the aircraft.

Looking at weather for all of the satellite airports in my airspace, I elected to try and take him to AMW [instead of the nearest airport], as they were showing the highest ceiling and visibility. Given the pilot's inability to fly an approach, I decided to give him no gyro vectors and to use an emergency MVA map to descend him below the MVA to attempt a visual approach. In the mean time I had the pilot maintain level flight to try and reorient himself and regain confidence. The pilot was still somewhat struggling with controlling the aircraft but was able to maintain relatively straight and level flight.

Because of his proximity to the highest obstruction in our airspace (obstacle at ~3000 ft) I had the pilot start a shallow climb to 4000 ft in case he inadvertently maneuvered into the MVA over the obstruction. I reissued the AMW weather to the pilot and cleared him via radar vectors. I told him my plan was to give him no gyro vectors towards the airport and then to descend him below the MVA to attempt the visual. AMW was reporting a ceiling of OVC 2000 ft and he agreed to my plan.

Once he was north of the obstruction I descended him to 3000 ft which was the MVA he was in hoping he might see the field without descending below the MVA. I used the RTR (Remote Transmitter Receiver) frequency to turn the pilot controlled lighting to the highest
intensity to avoid having the pilot change frequencies. The pilot was unable to see the field at this altitude and I reiterated that I would be using an emergency MVA map to descend him below the overcast layer with which he again agreed. I descended him to 2500 ft. Shortly after he began the descent below 3000 ft he called the field in sight.

Once the pilot called the field in sight I cleared him for the visual approach, changed him to advisory frequency and asked him to report on the ground via the AMW RTR. About 2 minutes later the pilot called on the ground and I cancelled his IFR and made sure the pilot and aircraft were okay.

Controllers should not assume all aircraft requesting an IFR clearance are capable of IFR flight and monitor all clearances given to ensure the pilot appears capable of controlling the aircraft in IMC. Special attention should be given to general aviation pilots who show signs of not being able to handle a complex aircraft in IMC such as poor read backs and erratic flying. Controllers should also be briefed on the dangers of VFR flight into IMC and low time, inexperienced pilots attempting IFR flight on LIFR days with few options in the event of a missed approach. FSDO should follow up on situations such as these to ensure the pilot was operating the aircraft legally and not endangering others with reckless operation of an aircraft. The FAA should continue to make pilots aware of the dangers of IMC flight to VFR pilots, low time IFR pilots, and pilots who are not current flying IFR approached to minimums.

**Synopsis**

DSM TRACON Controller reported using an emergency obstruction vector map to assist a disoriented pilot in IMC.
ACN: 1540991 (9 of 50)

Time / Day
Date: 201805
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.MSL.Single Value: 11000

Environment
Flight Conditions: VMC
Weather Elements / Visibility: Visibility: 20
Light: Daylight
Ceiling.Single Value: 22000

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
Make Model Name: Cessna 402/402C/B379 Businessliner/Utiliner
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: VFR
Mission: Utility
Flight Phase: Cruise
Airspace.Class E: ZZZ
Airspace.Special Use: ZZZ

Person: 1
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Function.Flight Crew: Single Pilot
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Total: 3000
Experience.Flight Crew.Last 90 Days: 10
Experience.Flight Crew.Type: 700
ASRS Report Number.Accession Number: 1540991
Human Factors: Situational Awareness

Person: 2
Reference: 2
Location Of Person.Facility: ZZZ.TRACON
Reporter Organization: Government
Function.Air Traffic Control: Approach
Qualification.Air Traffic Control: Fully Certified
Experience.Air Traffic Control.Radar: 10
ASRS Report Number.Accession Number: 1543454
Human Factors: Communication Breakdown
Communication Breakdown. Party1 : ATC
Communication Breakdown. Party2 : Flight Crew

Events
Anomaly. Airspace Violation : All Types
Anomaly. Deviation - Track / Heading : All Types
Anomaly. Deviation - Procedural : FAR
Anomaly. Deviation - Procedural : Published Material / Policy
Detector. Person : Air Traffic Control
When Detected : In-flight
Result. Flight Crew : Became Reoriented
Result. Flight Crew : Returned To Clearance
Result. Flight Crew : Exited Penetrated Airspace
Result. Air Traffic Control : Issued Advisory / Alert
Result. Air Traffic Control : Provided Assistance

Assessments
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1
I was conducting a LIDAR equipment calibration by circling the airport at approximately 5 mile radius at approximately 11,000 feet MSL. There is a GPS Continuously Operational Resource (CR) station located on [the] airport used for our GPS LIDAR calibrations. After conducting the calibration, I departed [the] airport area on a northeasterly heading without consulting my sectional chart. This course placed me directly inside Restricted Area RZZZZ A/B. At that time RZZZZ was hot with actual live fire operation in effect (I learned later). Approximately 3-5 miles inside RZZZZ [ATC] notified me I was inside a Restricted Area with live fire operations. I immediately turned east to depart RZZZZ by the shortest possible route.

ATC issued me a warning and explained to me (several times) that live fire operations had been suspended when I intruded into the Restricted airspace. ATC did not ask me to call them or identify myself after the intrusion. I suspended aerial surveillance operations immediately and returned to [departure airport] where we ceased operations for the remainder of the day. I reviewed my conduct and realized I had intruded into the Restricted Area due to my lack of situational awareness, first day on the job, new to the area, and just general stupidity on my part.

Narrative: 2
Aircraft X was a picture taker aircraft operating in the vicinity of ZZZ. The relief briefing included information to this regard. After circling in the vicinity he was observed leaving his circle pattern and entering RZZZZ. I advised Aircraft X that he had entered Restricted Area RZZZZ, to which he responded "alright, we are headed back out." Because the coordination I had received was that Aircraft X was doing picture taking in the vicinity, I incorrectly assumed that "alright, we are headed back out" meant that he would be making a hard 180 degree turn to exit the airspace back to the west. Therefore, I did not question how he was going to exit. I observed that Aircraft X did not change his course, so I queried him regarding his survey work, if he was done and returning to ZZZ1. He apologized profusely for being in the Restricted Area, said that he was exiting the Restricted Area "ASAP" and that he still had one more 4 mile segment to do. At this point,
I felt that Aircraft X was far enough into the Restricted Area that a specific instruction to turn him around would be counterproductive. Once you're halfway through something, the shortest distance out is to keep going through.

Shortly thereafter, ZZZ1 called to ask if I was talking to Aircraft X and to inform me that live rounds were being fired in the Restricted Area, but that ZZZ2 had called a cease fire. I informed Aircraft X that live fire rounds had been used, but that a cease fire had been called on his behalf, and I reminded him that operating in a Restricted Area was dangerous. He again apologized profusely. Because the coordination I had received was that Aircraft X was doing picture taking in the vicinity of ZZZ, I incorrectly assumed that he would be returning to my airspace, so when he exited the Restricted Area in ZZZ1 airspace, I called ZZZ1 for a point out. I called traffic to Aircraft X for a VFR target south of his position, and he informed me that he would be "turning northbound now." I asked him how far north his next area was and came to understand that his next area was well within ZZZ1 airspace. I instructed Aircraft X to remain eastbound for traffic and called ZZZ1 again to effect a handoff.

When the aircraft was first observed entering the Restricted Area, I would recommend a specific control instruction to the aircraft to help him exit the area most expeditiously. Do not assume that informing the pilot is enough, as he may then need to go look up information about the Restricted Area to know how best to exit it, which is time spent travelling deeper into the area. Also, I would recommend getting a better understanding of what exactly the picture taker aircraft is doing. Because I did not have any paperwork in front of me regarding his route of flight, I should have questioned the pilot regarding his proposed route of flight. Had I known his next area was north and east of his position, I likely wouldn't have assumed he would be turning around to exit the airspace.

**Synopsis**

Cessna pilot and Approach Controller reported that the aircraft entered a live fire Restricted Area.
ACN: 1540727

Time / Day
Date: 201805
Local Time Of Day: 1801-2400

Place
Locale Reference.Airport: HYI.Airport
State Reference: TX
Relative Position.Distance.Nautical Miles: 3
Altitude.MSL.Single Value: 1200

Environment
Flight Conditions: Mixed
Weather Elements / Visibility: Rain
Weather Elements / Visibility. Visibility: 10
Light: Daylight
Ceiling. Single Value: 800

Aircraft
Reference: X
ATC / Advisory.Tower: HYI
Aircraft Operator: Air Taxi
Make Model Name: Commercial Fixed Wing
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Flight Phase: Final Approach
Route In Use. Other
Airspace. Class D: HYI

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: Multiengine
Qualification. Flight Crew: Air Transport Pilot (ATP)
Experience. Flight Crew. Total: 2300
Experience. Flight Crew. Last 90 Days: 200
Experience. Flight Crew. Type: 650
ASRS Report Number. Accession Number: 1540727
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: Unstabilized Approach
Anomaly. Inflight Event / Encounter: CFTT / CFIT
Detector. Automation: Aircraft Terrain Warning
Detector. Person: Flight Crew
Miss Distance. Vertical: 600
When Detected: In-flight
Result. Flight Crew: Returned To Clearance
Result. Flight Crew: Became Reoriented
Result. Flight Crew: Took Evasive Action

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

Narrative: 1
While conducting the RNAV (GPS) LNAV Approach to Runway 08 at HYI, the descent was initiated from 2,400 feet MSL at KEDCE (Final Approach Fix). The descent was continued down to 1,120 feet MSL which is the published Minimum Descent Altitude for the approach until the Missed Approach Point. The crew failed to note that the next Minimum Altitude was actually 1,620 feet MSL at NUHOS which is located between the FAF and the MAP. The airplane broke out of the broken cloud layer at about 800 feet AGL and the Captain (Pilot Not Flying) called the runway in sight. The First Officer (Pilot Flying) verbalized that it "did not look right" and that the airplane seemed "too low on the glide path" given the distance from the runway (about 3 miles). The Captain agreed and, after again quickly glancing at the Instrument Approach Procedure chart, realized the airplane was descended too early below the Minimum Altitude of 1,260 feet before NUHOS. A climb was immediately initiated back up to the safe altitude.

As the climb was initiated, the Ground Proximity Warning System activated with an obstruction warning followed by a terrain warning. The obstacle warning was activated by the 859 foot tower published on the IAP chart near NUHOS. At this time the airplane was still in Visual Meteorological Conditions and visual contact with the runway, terrain, and obstructions was maintained until the airplane was climbed back up to a normal glide path with the runway. Visibility was good with 10 miles in light rain and the previously encountered cloud layer was nonexistent within 2 miles of the airport. The approach was continued normally and the airplane was landed safely. The local Tower Controller never mentioned any low altitude warning or anything else abnormal as the airplane cleared the runway and taxied to parking.

Crews should continue to be vigilant in adhering to minimum altitudes published for step-down fixes on non-precision instrument approaches. All fixes and their respective altitudes should be included in the approach briefing prior to initiating any kind of approach. I recommend that the classic "dive and drive" style of descending on a non-precision approach should be avoided and a constant descent rate or angle should instead be computed and flown when LPV or VNAV is not available. This would help to ensure a safe descent path to the runway even if, in error, a minimum altitude at a fix is missed. Luckily in this case, the airplane broke out of the clouds and the crew realized it "did not look right" visually before any GPWS activation. However, if the ceiling or visibility had been less, this could have become more of an issue especially in mountainous terrain. A human factor in this situation was complacency that can exist while operating in and out of an airport that is used regularly.

Synopsis
Air Taxi Captain reported descending below charted altitude on an RNAV approach to HYI airport when the crew failed to note an intermediate step-down altitude.
ACN: 1539484 (11 of 50)

**Time / Day**

Date: 201805
Local Time Of Day: 0601-1200

**Place**

Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.MSL.Single Value: 6800

**Environment**

Flight Conditions: VMC
Weather Elements / Visibility: Visibility: 10
Light: Daylight
Ceiling.Single Value: 20000

**Aircraft**

Reference: X
ATC / Advisory.Center: ZZZ
ATC / Advisory.Tower: ZZZ
Aircraft Operator: Personal
Make Model Name: Bonanza 36
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Flight Phase: Descent
Route In Use: Visual Approach
Route In Use: Direct
Airspace.Class D: ZZZ
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: 2472
Experience.Flight Crew.Last 90 Days: 6
Experience.Flight Crew.Type: 2355
ASRS Report Number.Accession Number: 1539484
Human Factors: Human-Machine Interface
Human Factors: Situational Awareness
Human Factors: Distraction

**Events**
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Procedural : Landing Without Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Became Reoriented

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

Narrative: 1

My friend and I were flying a plane I had just purchased. We were about 25 minutes into the first leg of our trip level at 12,000 feet. As speed built the cabin door popped open. There was much confusion in the cockpit. The wind noise made it impossible to communicate with my passenger. It was very cold. I could barely hear ATC. After stabilizing the aircraft and gaining composure I advised ATC what happened, and that we would be slowing the airplane to try to close the door. During this time all the alarms and warnings were going off in my headset from the electronic avionic instruments (which I had just learned how to use). Unable to close the door, we requested to go to the nearest airport. I identified the airport on the multi-function display screen and initiated a GPS course direct.

During the descent I got an additional warning that alternator No. 1 failed with a loud annunciator. It was then I knew we had to get down right away. I checked my iPad, which was difficult to see and manipulate, but confirmed the straight-in runway. I could see the airport and it concurred with my GPS and iPad. I never saw the intended airport but was in fact seeing a nearby Air Force Base. As I approached the airport, I cancelled my IFR when asked. I was sure I could make the runway as we needed to land immediately. As I approached, I saw a runway which concurred with my iPad. I began to make announcements over the UNICOM. On short final I noticed something looked wrong, but at that point I made the decision to land as I considered this an emergency. I landed and pulled off the runway. As I looked down at my iPad, it changed from my intended airport to the Air Force Base. I called ground and held position until they met me on the ramp. I explained to them that this was a situation and landing.

I should have declared it while in the air but in all the confusion, and sure I would make the runway, I didn't declare it until on the ground. If I had done that that would have given me priority handling. I should have not cancelled my IFR flight plan, but I wanted to make sure I could make announcements to other traffic at the airport (I know I could cancel on the ground but I wasn't focused on that) and when asked if I wanted to cancel I responded in the affirmative. I should have noticed the different airport identifiers but only the last letter was different and in all the confusion I didn't notice the difference. The Air Force Base safety officers who interviewed us concurred that this has created problems before. Similar airport IDs and the close proximity to the Muni. If they were totally different, I think I would have never inputted it wrong or would have noticed the wrong airport ID.

Synopsis
GA Pilot reported diverting due to an open cabin door and a failed alternator landed at an Air Force Base instead of the intended nearby airport.
ACN: 1538625 (12 of 50)

**Time / Day**
- Date: 201804
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: TVC.Airport
- State Reference: MI
- Relative Position.Distance.Nautical Miles: 25
- Altitude.MSL.Single Value: 5000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility.Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 10000

**Aircraft**
- Reference: X
- ATC / Advisory.Center: ZMP
- 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: Training
- Flight Phase: Cruise
- Route In Use: Direct
- Airspace.Class E: ZMP

**Component**
- Aircraft Component: GPS & Other Satellite Navigation
- 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 Not Flying
- Function.Flight Crew: Instructor
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Commercial
- Qualification.Flight Crew: Flight Instructor
- Experience.Flight Crew.Total: 1300
- Experience.Flight Crew.Last 90 Days: 40
- Experience.Flight Crew.Type: 10
- ASRS Report Number.Accession Number: 1538625
Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Track / Heading : All Types
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Clearance
Result.Aircraft : Equipment Problem Dissipated

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

Narrative: 1
Autopilot was using IFR certified GPS on a track direct to PLN VOR and at this location, aircraft abruptly changed heading and display displayed garbage. I took controls and put us back on course. Event resolved within 3-10 seconds.

I am reporting as a fellow instructor experienced something similar in this area with a different aircraft. I have a ForeFlight based ground track I can supply and I was on an IFR flight plan, but since it resolved almost instantly, I did not report to ATC.

Callback: 1
Pilot reported that while instructing in the vicinity of LADIN intersection, northeast bound towards PLN, Pellston VOR, experienced a GPS anomaly. The GPS displayed scrambled characters that were indiscernible. This event lasted approximately 10 seconds then cleared up. The pilot believed this to be associated with the proximity southwest of R-4202 area since it is the second occurrence known. The M-20 was equipped with a Garmin GX55. The second, he was aware of, was a C172 with a Garmin 650 in which the event lasted about a minute. Pilot, reported R-4202 as an active ARMY artillery area.

Synopsis
R-4202 pilot instructor reported they experienced a GPS anomaly, which caused an abrupt turn and GPS display failure.
ACN: 1538587 (13 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1801-2400

Place
Locale Reference. ATC Facility: SCT.TRACON
State Reference: CA
Altitude.MSL.Single Value: 3000

Environment
Flight Conditions: VMC
Weather Elements / Visibility. Visibility: 7
Light: Night

Aircraft
Reference: X
ATC / Advisory. TRACON: SCT
Aircraft Operator: Air Taxi
Make Model Name: Light Transport
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Passenger
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace. Class D: SDM

Person
Reference: 1
Location Of Person. Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Taxi
Function. Flight Crew: Captain
Qualification. Flight Crew: Instrument
Qualification. Flight Crew: Air Transport Pilot (ATP)
Qualification. Flight Crew: Multiengine
Experience. Flight Crew. Total: 18500
Experience. Flight Crew. Last 90 Days: 120
Experience. Flight Crew. Type: 925
ASRS Report Number. Accession Number: 1538587
Human Factors: Training / Qualification

Events
Anomaly. Flight Deck / Cabin / Aircraft Event: Other / Unknown
Anomaly. Deviation - Altitude: Overshoot
Anomaly. Deviation - Procedural: Clearance
Detector. Person: Flight Crew
When Detected: In-flight
Result. Flight Crew: Executed Go Around / Missed Approach
**Narrative: 1**

[We] departed on a normal routine flight to SDM. Upon arrival, the weather was VFR with 7 miles visibility but being night, we elected to accept the GPS Runway 8 approach to the field. All systems and conditions were normal but numerous attempts to activate the runway lights were unsuccessful. The area was well lighted from all the surrounding lights on the ground, but the runway lights simply would not activate. On the go around, we were instructed to "turn left" due to terrain. There was no heading assigned so I simply rapidly spun the FO's (First Officer) heading bug to the left to comply with the left turn, knowing we would soon receive an assigned heading. I then proceeded to clean the aircraft up. We were also assigned 5,000 feet. [He] was climbing rapidly, and I advised him of such. In an attempt to catch our altitude, I told him I had the aircraft. He repeatedly stated, "I've got it". I finally told him he clearly did NOT have it and to let go. I was pushing on the yoke and continuing to climb. I am still not certain as to whether he was pulling on the yoke or if the aircraft was totally out of trim, but I pushed the trim forward and we started back down. We had momentarily reached an altitude of 5,500 [ft]. I informed ATC we could not activate the lights and she asked a helicopter in the area if he would fly over and activate the lights as she could not do it remotely. He was successful in that effort and I asked ATC for an extended vector for another approach. Upon our inbound turn, the airport was clearly visible with excellent lighting. We landed without incident. On deplaning, I apologized to the passengers for the delay in going around and they were not even aware that we had. We were NEVER without sight to the ground as there was no visibility problem.

**Synopsis**

Air taxi Captain reported difficulty in activating runway lights at night that led to a poorly executed go-around.
ACN: 1538338 (14 of 50)

Time / Day
Date: 201804
Local Time Of Day: 0001-0600

Place
Locale Reference.ATC Facility: ZYSH.ARTCC
State Reference: FO

Aircraft
Reference: X
ATC / Advisory.Center: ZYSH
Aircraft Operator: Air Carrier
Make Model Name: B777-200
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Nav In Use: GPS
Nav In Use: FMS Or FMC
Flight Phase: Cruise

Component
Aircraft Component: Flight Dynamics Navigation and Safety
Aircraft Reference: X
Problem: Failed
Problem: Malfunctioning

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1538338
Human Factors: Communication Breakdown
Human Factors: Troubleshooting
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

Events
Anomaly.Aircraft Equipment Problem: Less Severe
Anomaly.Inflight Event / Encounter: Other / Unknown
Detector.Automation: Aircraft Other Automation
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Requested ATC Assistance / Clarification
Result.Flight Crew: FLC complied w / Automation / Advisory
Result.Flight Crew: FLC Overrode Automation
Result. Air Traffic Control: Provided Assistance
Result. Aircraft: Equipment Problem Dissipated

Assessments
Contributing Factors / Situations: Aircraft
Contributing Factors / Situations: ATC Equipment / Nav Facility / Buildings
Primary Problem: Ambiguous

**Narrative: 1**

We received an EICAS message, ADS-B L out. A few minutes later we got an ADS-B L out. I wrote them both up and we then started discussing if this was a GPS jamming event since we were just north of North Korea. The FO and I referenced the B777 GPS Jamming update and our situation was the first example listed. We notified Dispatch as required. A few minutes later we lost the GPS indication at the bottom of the ND [Navigational Display]. It indicated inertial, but would momentarily go back to GPS. We again notified Dispatch. I then gave Dispatch a quick call on SATCOM because our controller had tried to call us repeatedly and she received a message that we were unavailable. I got through on my first attempt. Chinese ATC then asked us if we were 5 miles right of course, and we became concerned there was a navigational error. After determining we were still on course, I believe they were asking us if we were offset 5 miles right of course. We were not and this was a communication issue probably. GPS was back up by the time we started our descent. Things got busy as we approached top of descent and we signed off with Dispatch. RKSI control asked us if we needed assistance and to fly our filed plan as it seemed Chinese ATC had forwarded our GPS event to them.

**Synopsis**

B777 Captain reported both the Left and Right ADS-B out failed near FIR North Korea. The GPS was normal at the top of descent after some troubleshooting was performed.
ACN: 1537086 (15 of 50)

Time / Day
Date: 201804
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: UT53.Airport
State Reference: UT

Environment
Flight Conditions: VMC
Weather Elements / Visibility: Visibility: 10
Light: Daylight
Ceiling: Single Value: 8000

Aircraft
Reference: X
Aircraft Operator: Personal
Make Model Name: Small Aircraft
Crew Size: Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: VFR
Mission: Personal
Flight Phase: Landing
Route In Use: Direct
Route In Use: Visual Approach

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: Commercial
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
Experience.Flight Crew: Total: 2300
Experience.Flight Crew: Last 90 Days: 11
Experience.Flight Crew: Type: 320
ASRS Report Number: Accession Number: 1537086
Human Factors: Confusion
Human Factors: Situational Awareness

Events
Anomaly.Deviation - Track / Heading: All Types
Anomaly.Deviation - Procedural: Published Material / Policy
Anomaly.Ground Event / Encounter: Other / Unknown
Detector.Person: Flight Crew
When Detected: Taxi
Assessments
Contributing Factors / Situations : Airport
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1
I received permission to land at private airport UT53 (Sky Ranch, near Moab, Utah). I researched the airport using a sectional, and reviewed the location relative to the valley and surrounding mountains in advance. I used a sectional, and my WAAS GPS (GNS480), which both verified the location. I flew over the valley to scope out the airport and crossed over the field into a left downwind for runway 30. Although I did not see a windsock, I had checked the winds via ASOS at nearby Moab (CNY). As I rolled out on the runway, it was a lot rougher than the newly surfaced runway that the manager had mentioned on the phone when I received approval to land there. I turned off on to what appeared to be a taxiway, which was also loose gravel. I shut down but did not see the manager who was to meet me there so I called him. He mentioned that he had seen me flying over but did not land at his strip. He suspected correctly that I had landed at an abandoned (county?) strip very close (1/4 mile) away from the UT53. I then took off (soft field technique to avoid the rough runway), flew 1/4 mile to the northeast, overflew the correct UT53, then landed safely.

Since the event, I have done a lot of research to see what could have gone wrong. I have verified that the A/FD and all sectional data that I can find shows the location as the old abandoned airport (Lat/Lon N 38deg29.266' x W 109deg26.922'). And, neither airstrip shows the airport name nor runway markings but more importantly the abandoned strip has no "X" on the runway at all to show that it is no longer in service. In fact, ironically, the "new" correct UT53 has small "X's" on each end of the runway to dissuade cars from driving on the runway.

All worked out fine but I thought that it would be useful to report this in hopes of at least getting the old abandoned airstrip marked with large "X's" on the runway. The manager of the new airstrip mentioned that many people have landed at this wrong abandoned strip, so much so that someone had removed a barbwire fence that had been erected across the runway that one of the errant planes had run into in the past. I am very thankful that the abandoned runway was at least clear of obstacles (which I had checked on my overfly).

Synopsis
GA pilot reported landing at an abandoned strip 1/4 mile from the intended airport UT53. The lack of closed runway markings at the abandoned strip were cited as a contributing factor.
ACN: 1536698 (16 of 50)

**Time / Day**

Date: 201804
Local Time Of Day: 0001-0600

**Place**

Locale Reference.ATC Facility: SCT.TRACON
State Reference: CA
Altitude.MSL.Single Value: 3500

**Environment**

Light: Daylight

**Aircraft : 1**

Reference: X
ATC / Advisory.CTAF: TRM
Aircraft Operator: Corporate
Make Model Name: Learjet 55
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Passenger
Nav In Use: GPS
Flight Phase: Initial Approach
Airspace.Class E: TRM

**Aircraft : 2**

Reference: Y
ATC / Advisory.CTAF: TRM
Make Model Name: Baron 55/Cochise
Flight Phase: Final Approach
Airspace.Class E: TRM

**Person**

Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Corporate
Function.Flight Crew: Captain
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Flight Instructor
Experience.Flight Crew.Total: 4350
Experience.Flight Crew.Last 90 Days: 18
Experience.Flight Crew.Type: 2700
ASRS Report Number.Accession Number: 1536698
Human Factors: Situational Awareness
Human Factors: Communication Breakdown
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2 : Flight Crew
Communication Breakdown.Party2 : ATC

Events
Anomaly.Conflict : NMAC
Detector.Automation : Aircraft TA
Detector.Person : Flight Crew
Miss Distance.Horizontal : 500
Miss Distance.Vertical : 300
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

Assessments
Contributing Factors / Situations : Airport
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Airspace Structure

Narrative: 1
There was a high volume entertainment event nearby. There were multiple light aircraft in area with multiple business jet traffic arriving IFR to an uncontrolled airport. The weather was Ceiling and Visibility Unrestricted. I was monitoring CTAF/UNICOM upon terminal arrival, informed crew of the runway in use. We continued to monitor and transmit on CTAF throughout the approach and landing. In light of the unusual amount of activity around the airport, the crew planned to remain IFR as long as practical and fly the RNAV GPS approach. Approach initiated vectors for the downwind (east of airport) to get us established for the approach.

Approach asked if we could accept vectors to intercept the final approach course. We were cleared for the approach, and issued descent from 4,000 to 3,000 feet. Once established the aircraft can descend to the published altitude of 2,500 feet. As we were intercepting the course and beginning the descent, we received a traffic alert. We were unable to visually acquire the threat, but noted a target approaching from the left and slightly low on our TCAS display. I elected to gently arrest the descent and climb, and slightly away from the threat aircrafts' assumed path. At this point we noted a Beech Baron crossing the final approach path of RNAV/GPS inside of the initial Approach Fix, at an estimated altitude of between 3,000 and 3,500 feet heading to the east/southeast. We were not informed of another IFR aircraft flying another approach to the field that would cross our path or lead to a conflict, nor did we hear any transmissions of aircraft requesting a practice approach, or a transmission of an aircraft at our relative position on CTAF.

Within minutes after the event, we heard the aircraft transmit on CTAF that they would be flying a straight in approach to an intersecting runway. We can only assume that the pilot of that aircraft was completely unaware of multiple arriving IFR aircraft to our runway, and that our aircraft was flying the RNAV/GPS approach, and that they had crossed our approach corridor at a position and altitude that could cause a conflict. We assume the aircraft was on a VFR flight plan, and was perhaps visually flying using some form of guidance. Perhaps setting up for a left base to final and not monitoring or receiving traffic advisories from Approach. Our aircraft landed without any further conflicts.

Synopsis
Lear 55 Captain on approach to an non-towered airport reported an NMAC with a unidentified VFR aircraft.
ACN: 1536684 (17 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1201-1800

Place
Locale Reference.ATC Facility: ZZZ.TRACON
State Reference: US
Altitude.MSL.Single Value: 4000

Environment
Flight Conditions: VMC
Light: Daylight

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: IFR
Mission: Personal
Flight Phase: Cruise
Route In Use: Vectors
Airspace.Class B: 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: Instrument
Qualification.Flight Crew: Private
Experience.Flight Crew.Total: 690
Experience.Flight Crew.Last 90 Days: 70
Experience.Flight Crew.Type: 120
ASRS Report Number.Accession Number: 1536684

Events
Anomaly.Conflict: Airborne Conflict
Anomaly.Deviation - Altitude: Excursion From Assigned Altitude
Anomaly.Deviation - Procedural: Published Material / Policy
Detector.Person: Air Traffic Control
Miss Distance.Vertical: 400
Were Passengers Involved In Event: N
When Detected: In-flight
Result.Flight Crew: Became Reoriented
Result: Flight Crew: Returned To Clearance  
Result: Air Traffic Control: Issued Advisory / Alert

Assessments

Contributing Factors / Situations: Procedure  
Primary Problem: Procedure

Narrative: 1

I had just departed...after receiving my IFR clearance. I was given radar vectors after takeoff from...tower. I was initially assigned instructions to climb and maintain 2,000 feet and was given a vector heading to the east. I complied. I was then advised to contact Departure on their assigned frequency. After contact was made with Departure, I was instructed to climb and maintain 3000ft and was given a radar vector to the north. I complied. Shortly after that I was then given a vectors to the west and instructed to maintain 4,000 feet. I complied. I had activated my aircraft's autopilot during this climb out portion of the flight.

As I leveled at 4,000 feet I was instructed that I was cleared direct [destination]. I then began entering that instruction into my GPS system when ATC advised that I had traffic 2 o'clock and more additional traffic (I can't remember for sure) at possibly my 10 o'clock. I replied that I was looking for traffic and that I had contacts on my traffic screen. Shortly after I advised ATC that I had the 2 o'clock traffic in sight. ATC was talking to other aircraft at that time and I believed he acknowledged me shortly after. I observed the 2 o'clock traffic as an [air carrier] aircraft that "appeared" to be descending from my right to my left directly across what I felt was my flight path. I continued to watch that traffic as it became closer and at the same time scanning for the secondary traffic that I was told to look for. I then decided to deactivate my autopilot and fly the plane manually in case I needed to make any sudden changes in heading or altitude for traffic, and to prepare for any wake turbulence from the crossing jet that I had in sight in front of me.

At this time I was listening to ATC give traffic alerts to a couple of other planes in my vicinity as I continued scanning the sky looking for the secondary traffic ATC advised me of. I was also waiting for ATC to finish speaking so that I could ask where the second aircraft was from my position if I couldn't locate it soon. As I was scanning I watched the [air carrier] aircraft pass over me from right to left and I inadvertently applied forward pressure to the yoke as I kept separation from it. I was then called up by ATC and asked what my altitude was. It was then that I noticed that I had descended below my assigned 4000ft and called back my altitude that I believe was between 3400-3600ft. I climbed back to 4000ft immediately. ATC then stated that he did not tell me to descend and that he had traffic above my position and below my position. ATC then asked me why I descended. I told him that I was watching the closing traffic in front of me crossing over me and I apologized for accidentally descending. I then heard ATC ask a pilot if he had to deviate his altitude to avoid me and he replied that he did not. I later reactivated my autopilot and continued my flight. I was given a phone number to call ATC upon lading.

I take full responsibility for the incident. I am a new instrument rated pilot. During this situation I remembered from my training that during IFR flights in VMC conditions, the PIC is responsible for maintaining visual separation between other aircraft. In this situation, I observed the [air carrier] traffic in front of me and could hear ATC talking to other pilots about traffic and I instinctively applied too much forward pressure to the yoke as I had my eyes looking outside the plane for that traffic.

Synopsis
C182 pilot reported inadvertently descending below assigned altitude while monitoring traffic passing overhead.
ACN: 1536230 (18 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1201-1800

Place
Locale Reference.ATC Facility: PHL.TRACON
State Reference: PA
Altitude.MSL.Single Value: 3000

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft
Reference: X
ATC / Advisory.TRACON: PHL
Aircraft Operator: Air Carrier
Make Model Name: Medium Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Flight Phase: Initial Approach
Airspace.Class B: PHL

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Air Traffic Control: Approach
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Instrument
Experience.Flight Crew.Total: 5300
Experience.Flight Crew.Last 90 Days: 120
Experience.Flight Crew.Type: 500
ASRS Report Number.Accession Number: 1536230
Human Factors: Communication Breakdown
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

Events
Anomaly.ATC Issue: All Types
Detector.Person: Flight Crew
When Detected: In-flight
Assessments

Contributing Factors / Situations: Procedure
Primary Problem: Procedure

Narrative: 1

PHL Approach issued a descent to 3,000 [feet] and heading 040 for the visual approach to Runway 35. At that altitude and heading, I had the airport and runway in sight. Our position was southwest of the JEPUG intersection on the RNAV (GPS) Runway 35 approach. I asked the First Officer to advise that we had the airport in sight. The FO (First Officer) transmitted that we had the field. The PHL Approach Controller said, standby, I will issue an approach clearance shortly. We continued at the same altitude and heading and flew through the extended centerline of Runway 35. After passing through the centerline for approximately less than a minute, PHL Approach asked if we were direct to the airport. We advised that we were still on a heading of 040 degrees. The Approach Controller replied that she had previously cleared us for the approach. We advised that we did not receive that clearance and the last instruction was heading 040. She issued a turn and vectored us back to the final approach course. The visual approach and landing were uneventful.

Synopsis

Air carrier Captain reported a miscommunication with Air Traffic Control during the final segment on the approach.
ACN: 1536105 (19 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: GYY.Airport
State Reference: IN
Altitude.AGL.Single Value: 500

Environment
Flight Conditions: Mixed
Weather Elements / Visibility: Visibility: 6
Light: Daylight
Ceiling.Single Value: 600
RVR.Single Value: 10000

Aircraft
Reference: X
ATC / Advisory.Tower: GYY
Aircraft Operator: Personal
Make Model Name: Citation II/SP (C551)
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Nav In Use: GPS
Flight Phase: Initial Approach
Airspace.Class D: GYY

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: 6300
Experience.Flight Crew.Last 90 Days: 30
Experience.Flight Crew.Type: 3346
ASRS Report Number.Accession Number: 1536105
Human Factors: Human-Machine Interface
Human Factors: Training / Qualification

Events
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: Overcame Equipment Problem
Result: Flight Crew: Executed Go Around / Missed Approach
Result: Flight Crew: Became Reoriented

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

Narrative: 1
On 1st attempt to execute the RNAV GPS (Y) 12 approach, the AP (Autopilot) would not arm and we flew through the final course. Tower advised us of same which we were monitoring on our navigation screen. Tower gave us a new altitude and vectored us around for another approach. During calm moments while being vectored we discovered we only loaded the approach but not armed it. We armed the approach and when cleared for the approach, the AP steered us onto the final inbound course. We were set for a LNAV guidance, but I misread the GS indicator (confused it with the standard default rate of descent icon, which is at bottom of screen, below the GS indicator). Accordingly I assessed that we were above the GS (in fact it had not yet become alive) and started a descent. This resulted in the Tower issuing a low altitude alert, which I corrected. I also disconnected the AP and began hand flying. Again, I misread the GS indicator and was temporarily fixated on the standard rate of descent icon, again, and this resulted in the second Tower low altitude alert. At this time we were in VMC and at no time were unsafe as relating to terrain. Seconds later we had the runway in sight and were completely VFR with unlimited visibility (about 1.3 miles from runway. Rest of the approach and landing were uneventful.

In retrospect, 2 things need more training by me. 1) Reliance on a final approach checklist to confirm the approach procedure is not only loaded in NAV but also ARMED! 2) Follow the approach plate procedures and if the GS is not alive at the appointed distance and altitude, declare a missed, reconfigure and do it again. 3) Do not fixate on one indicator.

Synopsis
CE551 pilot reported several low altitude alerts from the Tower after mistakenly flying based off the rate of descent icon instead of the glideslope indicator.
ACN: 1535761 (20 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1201-1800

Place
Locale Reference.ATC Facility: BTV.TRACON
State Reference: VT

Aircraft
Reference: X
ATC / Advisory.TRACON: BTV
Aircraft Operator: Air Carrier
Make Model Name: Embraer Jet Undifferentiated or Other Model
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Mission: Passenger
Nav In Use: FMS Or FMC
Nav In Use: GPS
Nav In Use.Localizer/Glideslope/ILS: Runway 33
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace.Class E: BTV

Person: 1
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Function.Flight Crew: Other / Unknown
ASRS Report Number.Accession Number: 1535761
Human Factors: Time Pressure
Human Factors: Situational Awareness

Person: 2
Reference: 2
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1535763
Human Factors: Situational Awareness
Human Factors: Time Pressure

Events
Anomaly.Deviation - Altitude: Excursion From Assigned Altitude
Anomaly.Deviation - Procedural: Clearance
Anomaly.Inflight Event / Encounter: Unstabilized Approach
Anomaly.Inflight Event / Encounter: CFTT / CFIT
Occurrences:
Detector.Automation : Aircraft Terrain Warning
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Provided Assistance

Assessments
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings
Contributing Factors / Situations : Environment - Non Weather Related
Primary Problem : ATC Equipment / Nav Facility / Buildings

Narrative: 1
When preparing for departure the ATIS is not available via ACARS or through a recorded phone line, so the recent METAR was obtained through the app. The wind information and current NOTAMs (RWY 33 GS OTS) steered us toward expecting the LOC 33 upon arrival into BTV. We were expecting a quick and compressed descent into BTV so we started our approach preparation duties early, the arrival ATIS again was not obtainable during this time because we were too far out to listen on the radio. So again, I obtained the latest METAR from the app. Still expecting the LOC 33. Upon hand off to BTV approach we were given the choice of either the GPS Y or the GPS Z to 33. The captain responded that we would like something other than the RNAV. The controller did not respond. After a period of time we told the controller the GPS Z. We briefed and set up for the RNAV Z. The controller gave us a vector and a clearance for GPS Z. While on the intercept for the final approach course the aircraft started descending below the vectoring altitude. Noticing this error we decided to break off the approach and started a climb back to the vectoring altitude. Upon starting this we received a "Caution Terrain" annunciation. Since we were already adjusting our flight path up to vectoring altitude the terrain annunciation quickly ceased. We requested vectors for the LOC 33 and finally given that, continued and landed normally. A quick change of the expected approach contributed to task saturation near the approach phase of flight and pushed the crew from Green to yellow on the TEM, leading to an altitude deviation. The first and foremost lesson is that a few minutes is certainly not enough time to set up and brief a GPS approach adequately. We should have simply stated that we did not expect this approach and will need extra time to set up for it and requested delaying vectors. This would have been the biggest barrier we could have used in this situation. Second lesson learned is when flying into an airport without digital ATIS services is to get approach information directly from ATC, that way everyone is in the loop and nothing is unexpected.

Narrative: 2
We initiated a climb to correct the deviation and it was at this point we decided not to continue the approach. I transmitted to ATC, "UNABLE RNAV REQUEST VECTORS"! During the altitude correction CAUTION TERRAIN annunciated! ATC cleared us to fly a heading and altitude and would we like vectors for the LOC33 to which I replied affirmatively. Flight concluded by successfully following this subsequent approach.

Task saturation due to ATC approach clearance which was different from what we were expecting and set up for. Elements of time compression led to a compromise in crew coordination and quickly moved us away from GREEN and into YELLOW prompting us to quickly develop a strategy to establish barriers against impending threats. CA first flight
into BVT and FO had not flown into BVT for many years past.

When time compression issues arise quickly establish a plan to create more time to effectively deal with the situation.

**Synopsis**

An Embraer ERJ flight crew reported that while on the intercept for the final approach course the aircraft descended below the vectoring altitude.
ACN: 1535633 (21 of 50)

Time / Day
Date: 201804

Place
Locale Reference. Airport: MROC.Airport
State Reference: FO

Environment
Flight Conditions: VMC

Aircraft
Reference: X
ATC / Advisory.Center: MHTG
ATC / Advisory.Tower: MROC
Aircraft Operator: Air Carrier
Make Model Name: B737 Undifferentiated or Other Model
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Nav In Use: FMS Or FMC
Flight Phase: Initial Climb
Flight Phase: Climb
Route In Use: Vectors

Person
Reference: 1
Location Of Person. Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function. Air Traffic Control: Flight Data / Clearance Delivery
Function. Flight Crew: Captain
Qualification. Flight Crew: Multiengine
Qualification. Flight Crew: Air Transport Pilot (ATP)
Qualification. Flight Crew: Instrument
Experience. Flight Crew. Total: 8903
ASRS Report Number. Accession Number: 1535633
Human Factors: Situational Awareness
Human Factors: Communication Breakdown
Communication Breakdown. Party1: Flight Crew
Communication Breakdown. Party2: ATC

Events
Anomaly. ATC Issue: All Types
Detector. Person: Flight Crew
When Detected: Pre-flight
Result. General: None Reported / Taken

Assessments
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

Wanted to alert you to a potential terrain issue as I see it with a recent clearance I received out of MROC. I have flown into/out of MROC periodically throughout the years and as I recall [I] have never been given anything but a SID when departing runway 07. Yesterday we were given the following from ATC clearance. "Climb runway heading until passing 7,000 feet. then turn right to heading 290".

The problem I see is that the turn is based on height, not distance and with rapidly rising terrain to the east, a heavy aircraft could potentially be put into a CFIT escape maneuver. The 10-7 safety box does give guidance on making a turn at 4-DME regardless of altitude and references to disregard 5,500 feet. and also states that the 5,500 feet restriction is not terrain critical. Unfortunately, this could be confusing to pilots with my issued clearance because the 5,500 feet statement would be ambiguous at best. It isn't until you look at the SIDs that turn to the south that the "4-DME and 5,500 feet" statement then starts to make sense, as to why it's in the safety box. In that case, if issued one of those SIDs (POAS4 for example) it would then correlate the 10-7 statement to disregard the altitude with the 5,500 feet restriction on the POAS4 SID. In my case, a pilot would have to research SIDs that were not issued by clearance delivery to then ponder if the 10-7 safety box alert applies to a non-SID departure, or is perhaps outdated information.

This clearance I was given could be because the TIO VOR is NOTAMmed out of service (at least that is what I believe as the NOTAM states, "EL COCO VOR/DME TIO FREQ 115.7 MHZ CH104X OUT OF SERVICE." Is the VOR out of service or the channel 104X portion, whatever that is? Although with GPS capable aircraft I believe, we can use the GPS to identify VORs regardless of operational status.

After discussion with multiple other Line Check Airmen, they were as confused and concerned as I was. Also, the 10-7 states to not arm VNAV on the ground, but to arm it once inbound to TIO. SABER pushes an NADP1 or 2 (Noise Abutment Departure Procedure) as warranted, in which case the question becomes do we then call for "level change set clean maneuvering speed" as allowed if not using VNAV for departure and if so why not use VNAV off the ground with the proper takeoff page 2 entries? (The engine out cleanup is not predicated on a turn). One would assume that the statement to not use VNAV until inbound to TIO is to maintain V2+20 until completion of the turn, to help with radius of turn, and to stay inside the 113-degree radial of TIO as referenced on the SIDs. Once again, as in my clearance, unless a pilot went looking at SIDs that he wasn't issued, at no time would they find it.

I was generated a flaps 1 reduced thrust takeoff off of runway 07. Looking at the Radar ASR runway 7 plate, there is 7,514 feet terrain at approximately 8 miles from the departure end of the runway. Given my clearance, with a SABER generated flaps 1 reduced thrust takeoff and an approximate ground speed of 200 knots at V2+20 a pilot would have 2.4 minutes until over this terrain. Airport elevation is approximately 3,000 feet MSL. A turn at 7,000 feet as in my clearance, I would have needed to average a climb of 1,875 FPM to avoid (by 1 foot) the terrain if I didn't turn until 7,500 feet, or if turning right at 7,000 feet would have turned inside the terrain and missed it by a little over a mile. Less climb rate obviously would put this terrain into play and a heavy aircraft I would doubt could average 1,875 FPM.
Synopsis

B737 Captain reported a potential terrain issue with a recent ATC clearance at MROC airport.
**ACN: 1534803** (22 of 50)

**Time / Day**
- Date: 201804
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: ZZZ.Airport
- State Reference: US
- Altitude.MSL.Single Value: 1900

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility: Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 12000

**Aircraft: 1**
- Reference: X
- ATC / Advisory.CTAF: 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 Climb
- Airspace.Class G: ZZZ

**Aircraft: 2**
- Reference: Y
- Make Model Name: Light Transport, Low Wing, 2 Turbojet Eng
- Flight Phase: Landing

**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: Private
- Experience.Flight Crew.Total: 500
- Experience.Flight Crew.Last 90 Days: 10
Experience
Flight Crew.Type : 375
ASRS Report Number.Accession Number : 1534803

Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed As Precaution

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

Narrative: 1
I just had ADS-B installed and was climbing out from ZZZ to return to home base. Suddenly developed High voltage alarm, followed soon after by low voltage alarm. As I assessed the situation, further alarms sounded and I decided to return to ZZZ. I changed com frequency back to ZZZ, and transmitted 5 miles south for landing. An extremely garbled transmission reply from other traffic was my first realization I would be out of communication. I knew there was traffic, but I didn't know where it was. I tried to reset transponder to "can't talk", but entered 7,500 by mistake. By then glass panel items started shutting down- I didn't have time to correct. Instruments showed no voltage being generated. I shed some load trying to restore power-didn't work. Hand held transceiver didn't work. GPS TIS-A showed something on straight in approach, which I visually identified as a jet who was already doing a go around (not a near miss). I turned base and landed hot. As I expected would have been the case, the engine kept running. On the ground, battery was too weak to even restart the engine to show the [maintenance technician]. Some sort of catastrophic failure. I punched in wrong transponder code and didn't have time to change to 7600 or 7700. Except for that error, I think I did pretty good. In high gust conditions I needed to get on the ground before the airspeed indicator shut down. I bounced the high speed no (electric) flaps landing pretty bad. I do check the hand held batteries regularly, but they were dead. Need to check before each flight. I had someone apologize to the jet, but he said he never saw me, even though I had a just installed ADS-B OUT. He was notified by someone on the ground.

Synopsis
LSA pilot reported returning to the departure airport following an electrical system malfunction.
ACN: 1533123 (23 of 50)

**Time / Day**
- Date: 201804
- Local Time Of Day: 0001-0600

**Place**
- Locale Reference.Airport: SMF.Airport
- State Reference: CA

**Environment**
- Flight Conditions: IMC
- Light: Night

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: NCT
- Aircraft Operator: Air Carrier
- Make Model Name: Widebody, Low Wing, 2 Turbojet Eng
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Plan: IFR
- Mission: Cargo / Freight
- Nav In Use: FMS Or FMC
- Nav In Use.Localizer/Glideslope/ILS: Runway 16L
- Flight Phase: Initial Approach
- Route In Use.STAR: SLMMR 1
- Airspace.Class E: NCT

**Component**
- Aircraft Component: Navigational Equipment and Processing
- Aircraft Reference: X
- Problem: Malfunctioning

**Person: 1**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Captain
- Function.Flight Crew: Pilot Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- ASRS Report Number.Accession Number: 1533123
- Human Factors: Situational Awareness
- Human Factors: Troubleshooting
- Human Factors: Confusion
- Human Factors: Human-Machine Interface

**Person: 2**
Reference: 2
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: First Officer
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1533124
Human Factors: Troubleshooting
Human Factors: Human-Machine Interface
Human Factors: Confusion
Human Factors: Situational Awareness

Events
Anomaly.Aircraft Equipment Problem: Less Severe
Anomaly.ATC Issue: All Types
Anomaly.Deviation - Track / Heading: All Types
Anomaly.Deviation - Procedural: Clearance
Detector.Automation: Air Traffic Control
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Overcame Equipment Problem
Result.Flight Crew: Executed Go Around / Missed Approach
Result.Flight Crew: Became Reoriented
Result.Flight Crew: Requested ATC Assistance / Clarification
Result.Air Traffic Control: Provided Assistance

Assessments
Contributing Factors / Situations: Aircraft
Contributing Factors / Situations: Airport
Primary Problem: Aircraft

Narrative: 1
Given SLMMR ONE RNAV Arrival. At fix TENCO given feeder route to FAPIN intersection cleared ILS 16L. Given the sharp intercept angle, I planned to use LNAV to intercept the localizer. The aircraft started turn to intersect and ATC asked where I was going. We told them turning to intercept the localizer, but was not receiving it. He told us to go missed and were given a heading and altitude. We complied with the instructions. Checked all our settings for the approach [and] they were all correct.

The First Officer was monitoring the raw data on lower screen and had tuned and identified the fix as per standard procedures. When given a heading to re-intercept the localizer, the heading showed us intercepting inside the FAF. I asked for a new heading. Just as we started a further turn right the localizer captured. The FMC showed the localizer extension line 1.5 to 2 miles to the right. As we flew down the localizer the two lines slowly merged. We landed safely.

There has been multiple reports from other pilots of this happening to legacy equipped aircraft at SMF. Until we find out why this is happening we should send GPS aircraft to this location. Speculation is the DME to DME update is causing a map shift late in the arrival. We were never shown off the arrival or notified we were.

Narrative: 2
Synopsis
Air carrier flight crew reported a discrepancy between the ILS and their navigation display causing conflicting and confusing information.
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 Vy), but I was forced to climb out at about 80 mph (approximately Vx) 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 Vx 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.
ACN: 1532610 (25 of 50)

Time / Day
Date: 201804
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.MSL.Single Value: 2000

Environment
Flight Conditions: IMC
Weather Elements / Visibility.Visibility: 10
Light: Daylight
Ceiling.Single Value: 500

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
Aircraft Operator: Air Carrier
Make Model Name: Regional Jet 900 (CRJ900)
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Nav In Use: FMS Or FMC
Nav In Use: GPS
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace.Class D: ZZZ

Person: 1
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Check Pilot
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiflame
ASRS Report Number.Accession Number: 1532610
Human Factors: Fatigue
Human Factors: Situational Awareness
Human Factors: Distraction

Person: 2
Reference: 2
Location Of Person.Aircraft: X
Narrative: 1

We were descending for approach. My Initial Operator Experience (IOE) Captain upgrade student picked up ATIS. Visibility 10 SM and a few clouds at 2,100 ft., which was what had been forecast. I briefed a visual approach to Runway 30 backed up with the RNAV GPS Z Runway 30. (ILS 30 OTS). As we checked in with the final Approach Controller we were told [a new] ATIS was current. [First Officer] picked up [new ATIS] and briefed me that the ceiling had gone down to 500 feet BKN. I quickly briefed the full RNAV approach and [we] were given a vector to the south.

We were eventually given a descent to 3,000 feet and cleared for the approach. As we approached, the snowflake began to descend from the top of the PFD and it was at this point I lost situational awareness and was thinking I would be cleared to descend to 1,600 feet. on the snowflake. I began a descent and didn't realize we were not yet at [the descent point] until descending thru 2,000 feet. I then began a climb back to 3,000 ft. and shortly thereafter were informed by the Approach Controller that he had an altitude alert and told us to confirm [we would cross a waypoint] at 3,000 feet. We acknowledged we were returning to 3,000 feet and continued the approach.

We ultimately failed to break out at minimums and executed the missed approach. We took vectors back around and on our second attempt, broke out at minimums, and landed.

I can only say that fatigue may have been a factor in doing something so stupid. It was the final leg of a 4-leg day. We had been delayed on maintenance the night before and were reduced to a 10-hour layover with a late show the following day. I only got about 6 hours sleep and had been doing IOE with a different student until [this] flight. Additionally, on the preceding leg, we got a wind shear warning accompanied by moderate to severe
turbulence shortly after takeoff, which may have contributed to still being somewhat distracted.

**Narrative: 2**

[Report narrative contained no additional information.]

**Synopsis**

CRJ-900 flight crew reported ATC issued a low altitude alert when they descended below charted altitude on the approach.
**Time / Day**
Date: 201804
Local Time Of Day: 1201-1800

**Place**
Locale Reference.Airport: AGS.Airport
State Reference: GA
Relative Position.Distance.Nautical Miles: 3
Altitude.MSL.Single Value: 1400

**Environment**
Flight Conditions: VMC
Light: Daylight

**Aircraft**
Reference: X
ATC / Advisory.Tower: DNL
ATC / Advisory.TRACON: AGS
Aircraft Operator: Personal
Make Model Name: Light Transport
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Passenger
Nav In Use.VOR / VORTAC: IRQ
Flight Phase: Initial Approach
Route In Use.Other
Airspace.Class D: AGS

**Person**
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Personal
Function.Flight Crew: Single Pilot
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Flight Instructor
Qualification.Flight Crew: Instrument
Experience.Flight Crew.Total: 8380
Experience.Flight Crew.Last 90 Days: 83
Experience.Flight Crew.Type: 400
ASRS Report Number.Accession Number: 1532085
Human Factors: Situational Awareness
Human Factors: Confusion

**Events**
Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : FAR
Anomaly.Deviation - Procedural : Clearance
Anomaly.Deviation - Procedural : Published Material / Policy
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 : Became Reoriented
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

In good visual conditions, after receiving an unplanned-for clearance for the VOR/DME-B into DNL field, I mistook AGS for DNL, overflew DNL on a southerly heading, and penetrated the AGS Class D without establishing the required communication with AGS tower.

First issue was that the DNL AWOS provided no advanced warning of which approach or runway was in use, nor would one expect it to. Ordinarily, that would not be an issue, as pilots flying into this normally uncontrolled field can choose his own runway and approach. In my mind, I had decided on the Visual Runway 29, given that the runway was better aligned than Runway 23 with the strong gusty winds. I then cleared for an approach I had not planned on, nor had time to prepare for.

Given the good visual conditions, I didn't worry too much about it, thinking I would easily locate the airport visually. And locate an airport visually, I did: the larger AGS airport is easily distinguishable from surrounding countryside. Whereas the much smaller DNL, surrounded by neighborhoods, highways and a golf course, and directly under the nose of my aircraft, I just didn't see.

CONTRIBUTING FACTORS:
1. Most of my professional flying career I have flown multi-crew, whereas this job is mostly single pilot, only occasionally supplemented with a copilot. Another pair of eyes (and brain) would have helped.
2. I was recovering from a couple of days of food poisoning, and - whilst my head felt clear - my stomach still felt tender, and I therefore refrained from eating anything at lunch time. I may therefore have been mildly hypoglycemic.
3. By the time we reached the Augusta area I was feeling the pressure to rush, as the flight took considerably longer than expected, owing to much stronger than expected headwinds: 120kt headwinds, vs 88kt forecast, for an aircraft that flies at 275ktas.
4. Like many, I suffer from the notion that, armed with an IFR GPS, it's impossible to miss one's destination.
5. Having two airports, both lined up with the VOR/DME-B definitely contributed to the
I believe a note in the approach plate, warning of the possible confusion between AGS and DNL airports, as I have seen in other approach plates would greatly help.

I began to notice the runways at my chosen airfield did not line up with 5-23 or 11-29. DNL's temporary tower repeatedly told me they didn't have me in sight. I saw an airplane taking off and making a hard left turn from what I now know was Runway 35 at AGS. At that point, I realized then that something was wrong, and I believe so did DNL tower.

Realizing I would soon encroach on AGS's traffic pattern, I applied power and climbed to 2500 feet MSL. DNL tower and I agreed that canceling IFR, squawking 1200 and contacting AGS approach for vectors back was the best course of action, which I did. The rest of the flight proceeded uneventfully.

Good VFR and a good GPS allowed me to drop my guard, thinking this would be a cinch. Upon realizing my mistake, I probably should have flown the published missed approach, but I had no idea what the missed approach procedure was. Given the weather, I didn't conceive ever using it and therefore, I didn't make time to review the procedure by requesting delay-vectors.

Factors affecting quality of human performance: Tired due lack of food, as I'd only had one egg for lunch, owing to my having skipped buying any food on account of my tender stomach. Tired due to lack of water; the long flight had made me reluctant to drink too much water, since I didn't want to have to relieve myself in the pilot's relief tube, which I've never used. Feeling rushed, due to the unexpectedly long flight. Feeling rather complacent, after having correctly planned the flight to avoid a line of weather that would have beset us the entire length of the flight, had I had planned a more direct route.

Synopsis

GA pilot reported that he mistook a neighboring airport for his destination resulting in an airspace violation.
**Time / Day**
Date : 201804
Local Time Of Day : 1801-2400

**Place**
Locale Reference.Airport : BJC.Airport
State Reference : CO

**Environment**
Flight Conditions : IMC
Light : Night

**Aircraft**
Reference : X
ATC / Advisory.Center : ZDV
Make Model Name : Gulfstream IV / G350 / G450
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Nav In Use : GPS
Nav In Use : FMS Or FMC
Flight Phase : Climb
Route In Use : Vectors
Route In Use : Direct
Route In Use.SID : SPAZZ 3
Airspace.Class A : ZDV

**Person : 1**
Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1531989
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface

**Person : 2**
Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 5380
Experience.Flight Crew.Last 90 Days : 69
Experience.Flight Crew.Type : 1437
ASRS Report Number.Accession Number : 1532091
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface
Human Factors : Troubleshooting

Events
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Incorrect / Not Installed / Unavailable Part
Primary Problem : Ambiguous

Narrative: 1

We received our clearance from ATC out of BJC, which was the SPAZZ 3 departure JOPLN transition. Upon loading this clearance into the FMS (which has a current NAV database) the pilot noticed there was a missing waypoint (FRNKE) in the FMS that was depicted on the JEPPESEN chart 40-3L, 9 Mar 18. We reloaded the departure and the point was still not there. The routing notes say radar vectors to JEPPC then as depicted. So we loaded the waypoint into the FMS and verified its location on the chart.

We departed and were cleared to SPAZZ then flew the departure procedure as loaded and were called by Denver Departure to find out our routing. We told them it was the SPAZZ3 departure JOPLN transition and with points of SPAZZ FRNKE PUB JOPLN. The Controller stated if we were on the departure then we would not be anywhere near the restricted area. The Controller then sent us direct and handed us off to the next Controller.

During our analysis of the situation, we were confident the aircraft flew the route as loaded in the FMS and there were not any navigational errors with the aircraft systems. We continued to research the route and we discovered that the portion of the route from FRNKE to PUB does clip the northeast corner of the restricted area R2601 C, which was NOTAmed active at the time we crossed it. We then compared the FAA chart with the JEPPESEN chart and discovered that the JEPPESEN chart was depicted wrong. The FAA chart shows SPAZZ to PUB, which would keep you away from the restricted area where the JEPPESEN depicted SPAZZ to FRNKE to PUB, which takes you through the restricted area. The aircraft FMS database agreed with the FAA chart. At the time, we put our confidence in the depiction on the JEPPESEN chart and incorrectly added the point FRNKE to our flight.
plan so we could fly as depicted.

We would recommend notification to the FAA that a published chart contains an error.

**Narrative: 2**

The Jeppesen Chart in the Jeppesen App and ForeFlight App for the SPAZZ 3 RNAV Departure 40-3L dated 9 Mar 2018 out of Rocky Mountain Metro BJC does not match the current Gulfstream IV aircraft database 29Mar-25 Apr/18 or the SL-5612(FAA) SPAZZ 3 DEPARTURE chart from Aeronautical Radio Incorporated (ARINC).

During the preflight at BJC, the pilot noticed a discrepancy between the FMS flight plan route for the SPAZZ 3 DEPARTURE JOPLN TRANSITION and what was depicted on the Jeppesen Chart. Specifically, the point FRNKE and associated altitude were not in the FMS route as depicted on the Jeppesen chart for the JOPLN transition. After reviewing and discussing the Jeppesen departure plate, the crew reloaded the departure procedure and then added the point FRNKE and altitude restriction to the FMS flight plan between SPAZZ and PUB as depicted in the Jeppesen chart in order for the aircraft to fly the published routing. The chart route description simply states fly the route as depicted. After takeoff, the aircraft was initially vectored during the climb and then given direct to SPAZZ and a climb to FL450. After passing FRNKE in the left turn to PUB and climbing through approximately FL290, Denver Center notified the crew that she was unsure what we were doing and queried us on our clearance. The crew responded that we were flying the published SPAZZ 3 departure as cleared. Denver Center stated that if we were flying the departure we would have been nowhere near the Restricted Area. The crew relayed to Denver Center that we were showing SPAZZ FRNKE PUB as the published and cleared route. Denver Center again reiterated that if we were on the SID we wouldn't have been near the restricted area, cleared the aircraft direct, and handed us over to the next center controller.

During analysis of the situation, the crew was confident the aircraft flew the route as loaded in the FMS and there were not any navigational errors with regard to aircraft systems. After plotting the departure in ForeFlight, the route from FRNKE to PUB does clip the NE side of R2601 and we confirmed in the NOTAMs that R2601C was active during the period of the flight. At the time the crew was utilizing the Jeppesen departure chart during the climb out on the SID, with the FMS route displayed on the aircraft display units, and had the rest of the flight plan route loaded into The Jeppesen app (High IFR) after JOPLN for GPS flight monitoring. As the restricted area is not shown on the Jeppesen Chart, the crew was unaware of the close proximity to the SID routings. Furthermore, the crew discovered that the FAA chart in the ARINC App depicted a different route than the Jeppesen chart, SPAZZ direct PUB, which also agreed with the Aircraft FMS database. During the departure brief and SID review before takeoff, the crew placed confidence in the published Jeppesen chart and incorrectly assessed that there was an error in the newly released Aircraft Database. From what the crew can discern from all the information available now, the Jeppesen chart contains an error depicting the JOPLN transition line from FRNKE instead of SPAZZ.

The crew discussed what we could have done differently in order to catch the error on the misprinted chart. We concluded that we could have referenced additional charts when the FMS database did not match, queried Denver departure as to what routing they showed for the departure, or simply stated to departure control we were unable the SPAZZ 3 due to a mismatch and requested alternate departure procedures.

**Synopsis**
G-IV flight crew reported that the BJC SPAZZ 3 SID on the Jeppesen Chart and aircraft's database are depicted differently from the FAA chart.
ACN: 1531650 (28 of 50)

Time / Day
- Date: 201804
- Local Time Of Day: 0601-1200

Place
- Locale Reference
- ATC Facility: ZZZ.TRACON
- State Reference: US
- Altitude.MSL.Single Value: 7000

Environment
- Flight Conditions: IMC
- Weather Elements / Visibility: Rain
- Light: Daylight

Aircraft
- Reference: X
- ATC / Advisory.TRACON: ZZZ
- Aircraft Operator: Air Taxi
- Make Model Name: Caravan 208B
- Crew Size.Number Of Crew: 1
- Operating Under FAR Part: Part 135
- Flight Plan: IFR
- Mission: Cargo / Freight
- Nav In Use: GPS
- Flight Phase: Cruise
- Airspace.Class E: ZZZ

Component
- Aircraft Component: EICAS/EAD/ECAM
- 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
- Qualification.Flight Crew: Commercial
- ASRS Report Number.Accession Number: 1531650

Events
- Anomaly.Aircraft Equipment Problem: Less Severe
- Anomaly.Inflight Event / Encounter: Weather / Turbulence
- Detector.Person: Flight Crew
- When Detected: In-flight
- Result.Flight Crew: Overcame Equipment Problem
Assessments

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

Narrative: 1

I had reached cruising altitude at 7,000 feet and was IMC. No issues prior to that point. Autopilot was engaged and about 10 minutes into the cruise, the aircraft began a gradual lean to the left 20-30 degrees. I reached down to adjust the aileron trim when I caught a flash from the panel. I was not looking directly at the G600 but suspect the flash came from there. As I looked at the G600 to identify the flash, the aircraft began an uncommanded turn to the right. Garmin 530 showed 70 degrees +/- off course. This all happened in a space of less than 30 seconds. At this point, I disengage the autopilot and requested an immediate descent from Approach to get to VMC. I informed the controller I had lost my glass panel and needed VFR conditions. Controller directed me to descend to 4,700 feet and gave me directions to [an alternate airport]. I broke out at around 5,000 feet and felt the airplane was safe in VMC, so I declined [the diversion and] wanted to head direct to [the destination airport]. Controller passed me onto Center and let me know she had informed them that my glass panel had failed. As I got closer to [the destination airport], the ceilings started to come down and I had to continue to descend to maintain VFR. Eventually I was stuck around 1,000 feet AGL to maintain VFR as I entered [the] airspace. I was given a normal approach to Runway 21 and then offered Runway 25 which I declined. I landed uneventfully.

During the flight back I did some troubleshooting and no circuit breakers were popped, I did not detect any smell of smoke, the GPS/Heading was in GPS mode, and I was correctly programmed. I had tested the autopilot and trim using the normal published procedure. Prior to the event, no deficiencies with either the trim or autopilot systems were observed.

Synopsis

Cessna 208 pilot reported loosing the "Glass Panel" during cruise flight and immediately requested VFR conditions from ATC.
ACN: 1529846 (29 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference. ATC Facility: ZLA.ARTCC
- State Reference: CA
- Altitude.MSL.Single Value: 9000

**Environment**
- Flight Conditions: VMC

**Aircraft**
- Reference: X
- ATC / Advisory.Center: ZLA
- Aircraft Operator: Personal
- 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
- Mission: Personal
- Nav In Use: GPS
- Flight Phase: Cruise
- Route In Use: Direct
- Airspace.Class E: ZLA

**Person: 1**
- Reference: 1
- Location Of Person. Facility: ZLA.ARTCC
- Reporter Organization: Government
- Function. Air Traffic Control: Enroute
- Qualification. Air Traffic Control: Fully Certified
- ASRS Report Number. Accession Number: 1529846
- Human Factors: Situational Awareness
- Human Factors: Training / Qualification
- Human Factors: Other / Unknown

**Person: 2**
- Reference: 2
- Location Of Person. Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Personal
- Function. Flight Crew: Pilot Flying
- Qualification. Flight Crew: Commercial
- Qualification. Flight Crew: Multiengine
- Experience. Flight Crew. Total: 2410
- Experience. Flight Crew. Last 90 Days: 35
- Experience. Flight Crew. Type: 123
- ASRS Report Number. Accession Number: 1530057
Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

I was R side. The aircraft was at 9,000 Ft on a good route for that altitude. I noticed just north of GFS the aircraft deviating slightly left of course so I inquired, he said he was indeed of course and would correct. I then noticed the aircraft turning further left as opposed to making a slight right turn to correct, I gave him the MEA of 9,900 in his area and climbed his to 10,000. Around this time L30 called me (they had track control) and I informed them of what was happening and requested a revised altitude of 10,000 direct LAS, they approved it. I then turned around and told the aircraft that he was cleared right turn direct LAS climbing to 10,000. I did ask the aircraft a minimum of 2 times if they had the terrain in sight, they did. I did turn him below the MEA when I issued that right turn direct LAS. I then issued the brasher warning.

Narrative: 2

LA Center attempted contact using a different callsign to request status on V538. I had entered the IAF for the RNAV GPS-B approach into HND (JERAR) which I was anticipating getting cleared for and was tracking direct from GOFFS. When I realized CENTER was trying to contact me and received a steer to the Victor Airway I made a course correction towards the V while inputting LAS back into the Garmin. Once I received a Direct-To track to LAS I proceeded direct as directed. Conditions were severe clear with no ceiling. I appreciate Center calling me on the course deviation and getting us back on track.

Synopsis

ZLA controller and PA-28 pilot reported the aircraft deviated off course entering a higher MEA while programming the GPS. The Controller inadvertently turned aircraft below MEA.
**ACN: 1529244 (30 of 50)**

**Time / Day**
- Date: 201803
- Local Time Of Day: 0001-0600

**Place**
- Locale Reference: Airport: MLB.Airport
- State Reference: FL
- Relative Position: Angle: Radial: 348
- Relative Position: Distance: Nautical Miles: 10
- Altitude: MSL: Single Value: 9500

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory: TRACON: F11
- Aircraft Operator: Personal
- Make Model Name: PA-32 Cherokee Six/Lance/Saratoga/6X
- Crew Size: Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: None
- Mission: Personal
- Nav In Use: GPS
- Flight Phase: Cruise
- Airspace: Class E: F11

**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: Multiengine
- Experience: Flight Crew: Total: 2700
- Experience: Flight Crew Last 90 Days: 25
- Experience: Flight Crew Type: 1700
- ASRS Report Number: Accession Number: 1529244
- Human Factors: Distraction
- Human Factors: Situational Awareness

**Events**
- Anomaly: Airspace Violation: All Types
- Detector: Person: Flight Crew
- Were Passengers Involved In Event: Y
When Detected : In-flight  
Result: Flight Crew : Became Reoriented

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

Narrative: 1
I obtained briefing using ForeFlight program. Flew to SUA with plans to circumnavigate the MLB TFR. The display mode for the ForeFlight was in relatively close range so the upcoming TFR was not visible. On autopilot.

I discovered a new function on the ForeFlight program - "glide bubble" - and began setting it up which required referencing the Pilot Operating Handbook and doing conversions to compute the glide ratio. I used the iPad calculator apps and exited the ForeFlight app to do so. Hence, I did not "see" the upcoming intrusion. Then, before completing the task, a 2 1/2 year old passenger had an episode of diarrhea that overflowed his diaper. I tried to assist my other passenger who was in "the back" as best I could. This further delayed my returning to and viewing of the ForeFlight moving map. In addition, there was a strong tail wind.

When I returned to the ForeFlight map page, I had entered and was 2/3 through the TFR. I was contacting PBI approach for a squawk for landing at SUA as advised by the ATIS due to the presidential TFR near SUA. I was asked to contact Orlando approach by phone after landing. Uneventful approach and landing at SUA

Lessons learned: Plan route with waypoints planned and program them into GPS to avoid areas of conflict do not divert attention for extended periods from flight duties - even to enable a safety feature - no matter how beneficial it may be for future flights! Do it on the ground [and] use flight following.

Synopsis
PA-32R pilot reported a TFR airspace incursion resulted when he became distracted from his navigational duties.
ACN: 1527421 (31 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference
- ATC Facility: ZZZ
- Airport
- State Reference: US
- Relative Position
- Distance
- Nautical Miles: 11
- Altitude
- MSL
- Single Value: 3000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility
  - Visibility: 10
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory
- TRACON: ZZZ
- Aircraft Operator: FBO
- Make Model Name: PA-28 Cherokee/Archer/Dakota/Pillan/Warrior
- Crew Size
- Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: VFR
- Mission: Training
- Flight Phase: Initial Approach
- Flight Phase: Descent
- Route In Use: Vectors
- Airspace
- Class D: ZZZ

**Component**
- Aircraft Component: Electrical Power
- Aircraft Reference: X
- Problem: Failed
- Problem: Malfunctioning

**Person**
- Reference: 1
- Location Of Person
- Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: FBO
- Function
- Flight Crew: Pilot Flying
- Function
- Flight Crew: Single Pilot
- Function
- Flight Crew: Trainee
- Qualification
- Flight Crew: Private
- Experience
- Flight Crew
- Total: 165
- Experience
- Flight Crew: Last 90 Days: 15
- Experience
- Flight Crew: Type: 65
- ASRS Report Number
- Accession Number: 1527421
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.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Certificated flight instructor and Instrument student, were on an instrument training flight. After flying two instrument approaches to ZZZ1 airport, the crew asked Approach for vectors to final for the RNAV (GPS) XXR approach into ZZZ Airport.

After approximately 1.4 Hobbs (of 1.8 total), while on vectors at 3,000 feet inside the Special Flight Rules Area and just outside Class Bravo airspace, the pilot in the left seat noticed that the trim might have gone out. Very shortly thereafter, the GPS (Garmin 430) pulsed and then went black, losing both Communication radio and GPS instrument approach. The crew immediately contacted Approach to notify them of the equipment lost and asked for vectors to ZZZ Runway XXR. While being vectored, the crew noticed that the ammeter read zero amps. Then, the crew felt a pulsating pressure inside the cockpit similar to fluctuating pressurization. The crew reported a lost alternator to Approach, so Approach gave clearance to proceed at own navigation and altitude to ZZZ.

After contacting Tower, the communications became unusable. When the radio was garbled, the crew recycled the alternator switch. The GPS and communications cleared up for approximately 30 seconds before it pulsed and went black and smoke billowed out of the ammeter gauge. A small fire flared up covering the size of the ammeter and surrounding gauges. The crew immediately turned off the Master Switch and opened the left window vent to clear out the acrid electrical smoke.

Subsequently, Tower cleared out the pattern to Runway XXR, and the crew landed uneventfully to XXR. Upon clearing the runway, the aircrew used a hand-held transceiver to contact Ground. Ground cleared the crew to taxi immediately to the East ramp via taxiway bravo.

The crew shutdown the aircraft and pulled it into the next row's hangar section. Shutdown and post-inspection were normal.

Synopsis

PA-28 student reported an electrical failure and fire during flight. A landing at the destination field was normal.
ACN: 1525318 (32 of 50)

Time / Day
Date : 201803
Local Time Of Day : 0601-1200

Place
Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 3
Altitude.MSL.Single Value : 12000

Environment
Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Dusk
Ceiling.Single Value : 3000

Aircraft
Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Personal
Make Model Name : Cessna 162 Skycatcher
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Personal
Flight Phase : Cruise

Person
Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Instructor
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multifigine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 1005
Experience.Flight Crew.Last 90 Days : 352
Experience.Flight Crew.Type : 210
ASRS Report Number.Accession Number : 1525318
Human Factors : Troubleshooting
Human Factors : Time Pressure
Human Factors : Situational Awareness

Events
Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : VFR In IMC
Anomaly. Inflight Event / Encounter: Weather / Turbulence
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. Air Traffic Control: Provided Assistance

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

Narrative: 1
Departed [in the evening for return flight]. The weather was marginal winds [which] had decreased, ceilings were around 2,000-2,800 with precipitation along entire flight. Departed north bound activated VFR flight plan. [Within about 25 nm] we confirmed we were going to have to stay low along [the highway]. To the west there was blue sky, we decide to climb to fly VFR on top back to [where] there was VFR conditions at with sky clear. As we climb to VFR conditions we were on top at 9,000 feet MSL as we continue north we were caused to have to climb higher after 20 miles at 9,000 feet. To continue VFR conditions we were at 12,500 feet. Temp was -12c wind was 200 @ 40 kts. As we approached ZZZ we experienced light engine roughness, at this point the sun was beginning to set, we were above a solid overcast layer at 13,000 feet MSL with freezing levels at 5,000 feet MSL. We were trying to circle and try and find a hole over ZZZ. I tried to improve the engine roughness with adjusting mixture for altitude, carb heat. When I pulled carb heat I had a severe engine drop in RPM at this point I realized we were in an emergency situation and there was a possibility we could have an engine failure with the temperature so cold the carb heat was not effective. The temperature dew point spread was within a degree of each other. After a few minutes of trying to find a hole in the overcast layer and troubleshooting the engine roughness I called ATC center as I was not on flight following at the time. I called them and [advised them of the situation] and they gave me a transporter code. They asked me my intentions I told them I needed to get on the ground soon and I did not have the ability to shoot an approach and the risk of ice. ZZZ1 was reporting VFR conditions ATC advised me to continue to ZZZ1. The precipitation was the lightest. They cleared me to ZZZ1 via radar vectors 270 heading, at this point I was at 13,500 feet they wanted me to descend lower I told them I needed to stay VFR for ice conditions so I requested to stay higher they cleared me for 14,000 feet. As I was heading to ZZZ1 I realized I was facing a 40 knot head wind with a ground speed of 38 knots, temperature -15c. As we were heading towards ZZZ1, is where things started to get worse the engine was running very rough at this point I could not maintain altitude I was just on the edge of stall speed with the stall warning going off. I advised ATC that I would not be able to make it to ZZZ1 and asked them for any other airport nearby with better weather there was nothing with better weather that we would be able to stay VFR. I made the decision to attempt ZZZ knowing I would have to take a C162 IMC into Ice conditions. At this point I did not see any other options with the engine running so roughly and not improving. I definitely thought the engine was going to quit with carb heat on and barely running. ATC instructed me to turn to a heading and decided to 7,000 I used G300 to find ZZZ airport put the GPS into OBS mode and selected heading 120 for runway 12. I entered IMC at 13,200 feet MSL -14c, the sun had set by now and it was dark the temp was dropping we were picking up ice on the descent. I was descending at a rapid rate to get to warmer temperature. ATC was talking me though different heading to fly to get me
lined up for the airport runway 12. They were able to get me to 4,000 feet MSL we were still IMC with temperature +1c. They could not clear me any lower with the runway in front of me. I changed to UNICOM 122.8 so I could turn the runway lights on. I turned on terrain function on the G300 and descended lower to see the airport at 3,500 feet MSL. I went back to ATC to report field in sight and I was going to land there. We were greeted by the fire department and EMTs. I called FSS and closed VFR flight plan.

**Synopsis**

C162 pilot reported diverting through ice and instrument conditions due to a rough running engine.
ACN: 1525294 (33 of 50)

**Time / Day**
- Date: 201703
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: EQA.Airport
- State Reference: KS
- Relative Position.Distance.Nautical Miles: 2
- Altitude.MSL.Single Value: 5000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility.Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 12000

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: ICT
- Aircraft Operator: Personal
- Make Model Name: RV-9
- Crew Size.Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: VFR
- Mission: Personal
- Flight Phase: Descent
- Route In Use: Direct
- Airspace.Class E: ICT

**Component**
- Aircraft Component: GPS & Other Satellite Navigation
- 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: 500
- Experience.Flight Crew.Last 90 Days: 20
- Experience.Flight Crew.Type: 350
- ASRS Report Number.Acquisition Number: 1525294
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
I experienced a failure of the Garmin GNS480 WAAS GPS antenna in flight. The antenna failed in such a manner as to create spurious emissions that caused all other GPS antennas on my aircraft to also lose signal. The Garmin GNS480 antenna on my aircraft is a GA-35 antenna approved for use with this unit. When the loss of position integrity occurred, I turned off the Garmin GNS480 unit. Upon doing so, all other GPS receivers in my aircraft resumed normal operation. Immediately upon returning power to the Garmin GNS480, all GPS receivers would again lose position lock. This repeatable sequence, and reports of similar failures including Garmin Communiqué #5, led me to the conclusion that the GA-35 antenna had failed in the same manner.

I’m filing this report because, in my aircraft, the Garmin GNS480 feeds GPS data to a Trig TT-22 ADS-B transponder, which would have failed ADS-B position integrity upon failure of the GPS. While I was not in ADS-B rule airspace (I was in airspace classes E and G for the duration of the event), I felt compelled to submit a report anyway in case of a future investigation of this incident. Had I been on an IFR flight plan, this would have been a reportable loss of navigation.

Synopsis
RV-9 pilot reported the failure of the Garmin GNS480 WAAS GPS antenna caused the failure of the other GPS antennas in his aircraft. The issue was corrected when the pilot turned off the Garmin unit.
ACN: 1523583 (34 of 50)

Time / Day

Date : 201803
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Altitude.MSL.Single Value : 5000

Environment

Flight Conditions : VMC
Light : Daylight
Ceiling.Single Value : 9900

Aircraft

Reference : X
ATC / Advisory.TRACON : 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 : VFR
Mission : Ferry
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class E : ZZZ

Component

Aircraft Component : Electrical Power
Aircraft Reference : X
Problem : Failed

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 : 687
Experience.Flight Crew.Last 90 Days : 280
Experience.Flight Crew.Type : 3.0
ASRS Report Number.Accession Number : 1523583

Events
Assessments

Contributing Factors / Situations: Aircraft
Primary Problem: Aircraft

Narrative: 1

Flew to ZZZ with the owner of the plane. Dropped him off there and was headed back to Home airport ZZZ1. Just about half way through the flight when I had just switched from the auxiliary fuel tanks I became concerned that the switching of the auxiliary fuel pumps had somehow put too much load on the alternator because just as I turned the fuel pumps on then back off is when my GPS began to flicker and the screen began to move back and forth in a distorted way. I decided to reach out to ATC because after seeing some flickering of the GPS I thought it may have been affecting radios and transponder as well. I decided to turn off the navigation lights and found that the GPS stabilized. I notified ATC center I was having some issues with GPS and thought it may be electrically related and wanted to make sure they could still hear me and I was still under radar contact. They told me that they didn't see me on the radar and to cycle my transponder so I did and they were able to identify me. I noticed the ammeter was still positive so I told them I believed to have it stabilized and would advise if I had any further issues. A few moments later (maybe 2 minutes) I noticed the ammeter began flickering back and forth then pegged itself at zero. I proceeded through the alternator failure checklist and through this process I realized I was running on battery. During the checklist of switching things off and on to identify the issue the GPS cycled off and back on. I realized both alternators had failed and so I wasn't really sure how long I had been definitely running on battery so I slowed the plane to VLO and attempted to extend the gear. The entire electronics including radios transponder and GPS were now flickering off and on and the turn coordinator showed a red flag. I believed that I would lose communication momentarily so I noted the frequency and punched in 7600 IDENT on my transponder to alert ATC I was losing communication. Just after I hit IDENT the entire electrical system shut off. I lost RPM gage, turn coordinator, engine monitors, fuel gages, flaps, landing gear, gps, radios and transponder. I followed safety procedure for total electrical failure and turned off all electrics and avionics and master switch. I contacted ATC by my handheld radio and requested a vector to the nearest suitable airport to land. I informed ATC I had a total electrical failure and did not know if my gear was up or down. I had felt the gear begin to come down but there were no lights so I wasn't sure. ATC vectored me over ZZZZ2 for two low approaches. The first low approach I flew to just 1,100 feet just below traffic pattern altitude because I was concerned about over-stressing the engine since I had no way to see what my RPM was reading. ATC informed me that my gear was not down. I requested a hold vector for time to get my gear down with emergency extension tool. I followed the emergency checklist to extend the gear and while on a 090 heading at 2,000 feet I was able to put the gear down using the emergency lever. I then was given another vector to perform a low approach. This time I was informed the gear "appeared to be down". After this ATC had me turn left for a right downwind for runway 36. I was able to land on 36 and the gear was in fact down and I had no issues landing without flaps there was plenty of runway. I was followed by large trucks and I believe the airport manager along with some fireman and airport
employees greeted me on the ground to make sure I was alright and take my name and number. I feel that I followed all safety protocol and made the best decision. If I had to do this again I would have lowered my gear at the first indication of electrical issues and landed at the first suitable airport which would have likely still been ZZZ2 but at least I may have gotten the gear down before the electrical system failed. I was glad I was able to alert ATC of an issue just in time and I was extremely glad I had the handheld radio with me.

**Synopsis**

PA30 pilot reported the failure of the electrical system resulted in a diversion and manual gear extension.
**ACN: 1523316 (35 of 50)**

**Time / Day**
- Date: 201803
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: ZZZZ.Airport
- State Reference: FO

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory.Center: ZZZZ
- Aircraft Operator: Air Carrier
- Make Model Name: B757-200
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: FMS Or FMC
- Nav In Use: GPS
- Flight Phase: Initial Approach

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Captain
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- ASRS Report Number.Accession Number: 1523316
- Human Factors: Situational Awareness
- Human Factors: Training / Qualification

**Events**
- Anomaly.Deviation - Procedural: Published Material / Policy
- Anomaly.Inflight Event / Encounter: Unstabilized Approach
- Anomaly.Inflight Event / Encounter: CFTT / CFIT
- Detector.Person: Flight Crew
- When Detected: In-flight
- Result.General: None Reported / Taken

**Assessments**
- Contributing Factors / Situations: Human Factors
- Primary Problem: Human Factors

**Narrative: 1**
Set up and briefed GPS approach. Unable to get lower altitude due to frequency congestion. When cleared for approach, the MDA altitude was set in window. When it became apparent we would not be able to get down, a 360 turn was requested to join final with a visual approach. I failed reset the altitude to the higher FAF altitude and continued descent until ground proximity alerted me to my error. A climb back to a higher altitude was made and a normal landing was completed.

Task saturation during transition from instrument approach to visual approach caused failure to change altitude target. If switching from IMC approach to a new type of approach, remember to set the correct target altitude in alert window.

**Synopsis**

B757 Captain reported receiving a ground proximity alert while executing a 360-degree turn due to being too high on a GPS approach. Reporter recommended resetting the target descent altitude from MDA to FAF altitude when executing this maneuver.
**ACN: 1522381 (36 of 50)**

**Time / Day**
- Date: 201802
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: ZZZ.Airport
- State Reference: US
- Altitude.AGL.Single Value: 3700

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility: Visibility: 20
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: ZZZ
- Aircraft Operator: Corporate
- Make Model Name: Cessna 425/441 Conquest I/Conquest II
- Crew Size.Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: None
- Mission: Photo Shoot
- Flight Phase: Cruise
- Airspace.Class E: ZZZ

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Corporate
- Function.Flight Crew: Captain
- 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: 5529
- Experience.Flight Crew.Last 90 Days: 60
- Experience.Flight Crew.Type: 330
- ASRS Report Number.Accession Number: 1522381
- Human Factors: Distraction
- Human Factors: Communication Breakdown
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: ATC

**Events**
I was conducting a VFR, Aerial Mapping mission approximately 30 NM East of ZZZ airport at 3700 feet AGL (4,000 MSL), and receiving VFR advisories. I was flying Southbound on a precisely mapped aerial mapping line and was informed by Approach control of an IFR aircraft approximately 20 NM South of my position at 4,000 feet and was advised to climb to a higher altitude. I informed the controller that to do so would require me to turn around and start all over again. At that point the controller told me that a 10 degree turn to the right would resolve the conflict. I tried to explain to ATC that that would have the same effect as climbing. I told the camera operator sitting in the back of the aircraft to turn off the camera and we both started looking for the aircraft as I continued to try and negotiate with the controller for the impending turn back to start the line over. 

I believe I was asked by the controller to turn left to a heading of 090. As I was beginning to turn left I then instructed by ATC to climb to 4,500 and as I prepared to climb my operator, who had the aircraft in sight told me, Do not climb! I looked up and to the right and saw the IFR, GA aircraft approximately 400-500 feet above my aircraft heading North and I told the controller that I was not going to climb due to the aircraft proximity above me. Apparently the IFR, GA aircraft had climbed to a higher altitude and the controller did not realize that at the moment he asked me to climb.

Later during the flight I was given a phone number to call and told that I was subject to a possible ATC deviation. 

Contributing factor: My attempt to negotiate with the controller in an attempt to break off the line and turn around and start over again and the ATC's failure to vector the IFR GA aircraft in a manner that would have solved the conflict. In this case, the IFR aircraft was given priority and was not asked to turn or climb (that I recall) and the VFR aircraft (me) was asked to turn or climb to solve the conflict. Also contributing to the scenario was the IFR aircraft's climb to a higher altitude and the controller not knowing that he had done so.

Contributing factor: Aerial Mapping is a very precise operation, requiring the aircraft be flown at exact GPS altitudes, not MSL altitudes that align with the hemispherical cruising altitude rules. My company has a FAA waiver to deviate from the recommended VFR cruising altitudes due to the nature of aerial mapping operations. This is what set up a southbound VFR aircraft at 3,700 AGL (4,000) MSL up for a potential conflict with an aircraft traveling northbound at 4,000 MSL.
Contributing factor: The VFR aircraft (me) was not in controlled airspace and was only receiving ATC advisories. It is left to the PIC (me) of the VFR aircraft to ultimately decide how to handle traffic conflict resolution (AIM).

This was an unfortunate situation that could have had tragic consequences. For my part I should have just accepted the early climb or vector and not thought so much about the cost of having to discard good data and turn around and start the line all over again. Clearly the loss of time and money was a factor. I will not make that mistake again.

As for the controller, he may or may not have understood that I was operating a commercial, revenue generating flying operation and choose to vector (give priority) to the IFR, General Aviation aircraft. While I understand that ATC's main mission is to control and separate IFR traffic it is also clear to me that flying is never that simple. A GA, non-revenue IFR aircraft given priority over a commercial VFR aircraft in uncontrolled airspace and in VFR conditions simply because the IFR aircraft is on an IFR flight does not make sense to me in this situation.

I think the key take away here is that when both parties (ATC and pilots) stick to their priorities and do not think clearly, then safety can be compromised and fortunately this event did not end up a statistic on a government chart.

**Synopsis**

Twin Cessna Captain reported reluctance to accept ATC instructions to separate from IFR traffic while operating VFR on an aerial mapping mission which resulted in the IFR aircraft taking evasive action.
**Time / Day**

Date: 201802  
Local Time Of Day: 0601-1200

**Place**

Locale Reference. ATC Facility: D10.TRACON  
State Reference: TX  
Altitude. MSL. Single Value: 2000

**Environment**

Flight Conditions: IMC  
Weather Elements / Visibility: Fog  
Weather Elements / Visibility. Visibility: 4  
Ceiling. Single Value: 500

**Aircraft**

Reference: X  
ATC / Advisory. Tower: DAL  
ATC / Advisory.TRACON: D10  
Aircraft Operator: Air Taxi  
Make Model Name: Citationjet (C525/C526) - CJ I / II / III / IV  
Crew Size. Number Of Crew: 1  
Operating Under FAR Part: Part 135  
Flight Plan: IFR  
Mission: Passenger  
Nav In Use: FMS Or FMC  
Nav In Use.Localizer/Glideslope/ILS: Runway 13L  
Flight Phase: Initial Approach  
Airspace. Class B: DAL

**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: 34570  
Experience. Flight Crew. Last 90 Days: 100  
Experience. Flight Crew. Type: 704  
ASRS Report Number. Accession Number: 1522355  
Human Factors: Workload  
Human Factors: Situational Awareness  
Human Factors: Human-Machine Interface
**Events**

Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation - Procedural : Clearance  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : FLC complied w / Automation / Advisory  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Air Traffic Control : Issued New Clearance  

**Assessments**

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

**Narrative: 1**

Very busy arrival into DAL. ILS13L/R were the landing runways. I requested the ILS 13R approaching DAL, the controller advised the next sector would be assigning the runway but we would "probably get our choice" as we were the last aircraft in line for landing at DAL. I had ILS 13R loaded in the FMC, "Auto Tune" active, and had the ILS 13R Jepp page displayed on the MFD.

When I was switched to the final controller he was so busy I did not want to interrupt him with the request for ILS 13R as he was constantly giving clearances. I observed he was clearing aircraft to BOTH runways. The controller had me down to 2000 ft and stated: intercept the ILS 13L, maintain 2000 ft until established, "Cleared for the ILS 13L approach," I was surprised to discover the auto switching DID NOT switch from GPS to ILS and I had to manually switch to GREEN needles and also had to manually set the course bar to the inbound course. When I intercepted the final the controller stated "you appear to be lined up for the ILS 13R!" Clouds were scattered and he instructed me to overfly the runway at 1500 ft then climb to 3000 ft. I realized during the confusion that I, in fact, did have the ILS 13R loaded and displayed. So I manually loaded the ILS 13L frequency in the NAV radio as the controller vectored me back around for another approach. I left the ILS 13R Jepp display on the MFD. I also just left the display in green needles. During the next vector the controller asked me which runway I preferred and I asked for the ILS 13R. The controller had me down to 2000 ft and stated: intercept the ILS 13R, maintain 2000 ft until established, cleared for the ILS 13R. I intercepted the ILS 13L because I failed to change the NAV radio back to the ILS 13R and turned inbound on the ILS 13L instead of the ILS 13R. I was switched to the tower and the tower said I was lined up for the ILS 13L and I was cleared to land runway 13L!

**Synopsis**

CE525B pilot reported improperly operating navigation equipment resulting in lining up with the wrong ILS approach.
**Time / Day**

Date: 201802
Local Time Of Day: 1201-1800

**Place**

Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.MSL.Single Value: 21000

**Environment**

Flight Conditions: Mixed
Weather Elements / Visibility: Cloudy
Weather Elements / Visibility: Rain
Weather Elements / Visibility. Visibility: 1
Light: Daylight
Ceiling. Single Value: 400

**Aircraft**

Reference: X
ATC / Advisory.TRACON: ZZZ
Aircraft Operator: Personal
Make Model Name: PA-60 601/601P Aerostar
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: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Instrument
Experience.Flight Crew.Total: 28000
Experience.Flight Crew.Last 90 Days: 65
Experience.Flight Crew.Type: 2100
ASRS Report Number. Accession Number: 1521658
Human Factors: Communication Breakdown
Human Factors: Troubleshooting
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC
Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments
Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1
On a VFR flight at FL175. ATC approved an IFR climb to FL210 for weather avoidance. While maneuvering to avoid moderate rain showers the left engine experienced a sudden loss of power. The engine continued to run, but produced no power. I decided to keep the engine running as the oil pressure was green and no visible signs of oil leaking. The engine would produce 0" thrust but did continue to run and provide enough power to operate the left alternator. I advised ATC and was given a lower altitude. I decided to divert to ZZZ. As my altitude got lower the engine began to respond with more power, but would not make more than 50% power. I was provided timely vectors to a GPS approach to ZZZ and landed. I had the engine inspected, and the attachment hardware for the inboard turbo charger waste-gate was found to be missing. This caused an imbalance in the induction system and loss of power. The hardware was replaced and an operational ground check to full power was made. Refilled and departed to ZZZ1.

I probably should have taken advantage of [emergency] services that ATC provides, and would have done so if the engine had it quit or had to be shut down. Selection of the divert airport is often influenced by "where can I get this fixed". ZZZ2 was a bit closer, but has no facilities to inspect or repair this type of aircraft. I knew that there was flight training facility at ZZZ and assumed that there would be maintenance there. The aircraft also had a functional autopilot that without, I would have selected an airport further east and away from the rain and low ceilings that were in the area at the time.

Synopsis
PA-60 pilot reported diverting after experiencing a loss of engine power.
Time / Day
Date: 201802
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: BTV.Airport
State Reference: VT
Altitude.MSL.Single Value: 4000

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft
Reference: X
ATC / Advisory.TRACON: BTV
Aircraft Operator: Air Carrier
Make Model Name: Medium Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Nav In Use: FMS Or FMC
Nav In Use: GPS
Flight Phase: Initial Approach
Route In Use: Visual Approach
Airspace.Class C: BTV

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1520833
Human Factors: Situational Awareness

Events
Anomaly.Inflight Event / Encounter: CFTT / CFIT
Detector.Automation: Aircraft Terrain Warning
Detector.Person: Flight Crew
When Detected: In-flight
Result.General: None Reported / Taken

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

**Narrative: 1**

Approach Control had asked us if we could see the airport about 10 miles to our north. I told him we needed space to get down. We were instructed to turn to heading 090. A minute later, we were cleared to maneuver as needed for the visual approach to 33. We were somewhere between 4,000 and 7,000 feet descending through visual conditions. I told my First Officer to fly past the extended centerline and come back since we needed a little bit more time to get down. He made that one "s-turn" then centered himself back onto the extended centerline. The snowflake in the FMS was starting to come alive from the bottom. Visually, we were in great shape. The GPS 33 was loaded in the FMS for situational awareness as well since the ILS 33 was out of service. Suddenly, we got a GPWS warning for "terrain terrain pull up." It confused us both as we could see that we were above all obstacles and terrain while transitioning towards 1,000 feet per minute well above 1,000 AGL. I helped the First Officer begin his pull up to clear the conflict. Once clear, we continued the approach to land without any issues. After landing, I did notice that if the ILS glide path was operating, it has a 3.2 degree descent angle rather than the standard 3.0 a normal ILS has or standard FMS descent angle.

In IMC, we absolutely would have gone around per our company SOPs not being able to see the ground. In this case, flying past the approach course over a small valley turning back towards the airport and descending towards rising terrain the GPWS was set off, however, both of us believed our actions were sufficient to clear the conflict safely without a go around procedure. In the future, I will ask for an instrument approach procedure to avoid any possible safety issue.

**Synopsis**

Air carrier Captain reported continuing the visual approach to BTV Runway 33 after receiving a GPWS terrain warning because all terrain was in sight.
**Time / Day**

Date : 201702
Local Time Of Day : 1801-2400

**Place**

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

**Environment**

Flight Conditions : Marginal
Weather Elements / Visibility : Rain
Light : Night
Ceiling.Single Value : 2700

**Aircraft**

Reference : X
ATC / Advisory.TRACON : ZZZ
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
Flight Phase : Landing
Route In Use : Direct
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 : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 475
Experience.Flight Crew.Last 90 Days : 63
Experience.Flight Crew.Type : 128
ASRS Report Number.Accession Number : 1520043
Human Factors : Distraction
Human Factors : Physiological - Other
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

**Events**
Narrative: 1

This flight was my first single pilot IFR/IMC flight, as well as my first night IMC flight in many months. I had slept exceedingly poorly the previous night and was operating with an unfamiliar GPS, but because of the high ceilings I did not believe the flight was risky.

The moment I entered IMC I became spatially disoriented and I struggled the entire flight to control the airplane and work the GPS. I requested and planned to shoot the GPS RWY XX circle YY approach, and continued to attempt to control the attitude of the plane while attempting to load and activate the approach. I was +/- 100 ft constantly and banked up to 30 degrees either side each time I looked away from my instruments. I had difficulty locating the airport environment, and during the circle, I struggled with my height, speed, and spatial orientation to the airport, which resulted in a circle that was too close to the runway. That resulted in excess energy and an awful three point landing and I barely slowed the plane enough for the last taxiway turn off. I taxied to the ramp and immediately shut down the plane, exited the aircraft, and attempted to steady myself.

My legs were so shaky I ended up sitting on the ground for the next couple of minutes. My family drove up to the ramp, and without saying a word I secured the aircraft and left the airport. 1 hour after landing, I unloaded my car and saw my reminder to close my flight plan. I called the TRACON and was politely informed that the police were called to the airport to look for my airplane. I apologized twice, and it was an excellent reminder of how poorly I had conducted my flight and how rusty and unskilled I had become without hand flying the airplane during my flights as an instructor.

Synopsis

C172 pilot reported neglecting to close a flight plan following a stressful instrument flight.
ACN: 1519732 (41 of 50)

**Time / Day**
- Date: 201802
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: VRB.Airport
- State Reference: FL

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: PBI
- Make Model Name: Citation Excel (C560XL)
- Crew Size.Number Of Crew: 2
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: GPS
- Flight Phase: Initial Approach
- Airspace.Class E: PBI

**Component**
- Aircraft Component: Data Processing
- 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 Flying
- Function.Flight Crew: First Officer
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- ASRS Report Number.Accession Number: 1519732
- Analyst Callback: Completed

**Events**
- Anomaly.Aircraft Equipment Problem: Critical
- Anomaly.Deviation - Track / Heading: All Types
- Anomaly.Deviation - Procedural: Published Material / Policy
- Anomaly.Deviation - Procedural: Clearance
- Detector.Person: Flight Crew
- When Detected: In-flight
- Result.Flight Crew: Overcame Equipment Problem
- Result.Air Traffic Control: Provided Assistance
Assessments
Contributing Factors / Situations : Chart Or Publication
Primary Problem : Chart Or Publication

Narrative: 1
The universal FMS 1 database expires on 1 March. GPS 12R approach to Vero Beach turned the aircraft to line up on a non-existent runway 12 at Fort Pierce airport (FPR). I had been cleared for a visual approach to runway 12R at Vero Beach (VRB) in clear weather conditions while approximately 12 miles southwest of VRB and 3 miles southwest of Fort Pierce (FPR) with both airports in sight. Because I was unfamiliar with VRB, I had briefed a visual backed up with the GPS 12R, and was using the autopilot to intercept the GPS course from an extended right base. I expressed surprise to the pilot monitoring that VRB was actually the closer airport as the autopilot turned us towards that airport (FPR). Simultaneously we realized it couldn't be correct and the ATC controller queried our turn. The pilot monitoring confirmed that the FMS was programmed to fly the GPS 12R to VRB, but it was taking us to the wrong airport. I stopped our descent and was turning back to our original course and ATC canceled our approach clearance and issued a heading correction to the right base at VRB all at approximately the same time. From that point I ignored the navigation information from the FMS and flew an uneventful visual approach to VRB. On short final the FMS navigation corrected itself and provided guidance to the correct airport. Our pilots should be warned that this database might try to align the aircraft with the wrong airport when the VRB GPS12R approach is selected in close proximity to FPR. Consider advising the database provider of the problem. No known satellite outages or RAIM warnings were in effect.

Callback: 1
Reporter clarified that the company has initiated action on this reported problem with the database. No other incidents have been reported and the vendor has been notified.

Synopsis
CE560XL pilot reported encountering a navigational error in the company's FMS database and recommend that the vendor providing FMS database be notified of the problem.
**Time / Day**

Date: 201802
Local Time Of Day: 1201-1800

**Place**

Locale Reference. ATC Facility: BOI.TRACON
State Reference: ID
Altitude. MSL.Single Value: 10000

**Environment**

Light: Daylight

**Aircraft**

Reference: X
ATC / Advisory. TRACON: BOI
Aircraft Operator: Air Carrier
Make Model Name: Medium Large Transport, Low Wing, 2 Turbojet Eng
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Flight Phase: Descent
Route In Use: Vectors
Airspace. Class E: BOI

**Person : 1**

Reference: 1
Location Of Person.Facility: BOI.TRACON
Reporter Organization: Government
Function.Air Traffic Control: Approach
Qualification.Air Traffic Control: Fully Certified
ASRS Report Number. Accession Number: 1519166

**Person : 2**

Reference: 2
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number. Accession Number: 1521924
Human Factors: Communication Breakdown
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC
Communication Breakdown.Party2: Flight Crew

**Person : 3**
Reference : 3
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1522241
Human Factors : Situational Awareness
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

**Events**

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Air Traffic Control : Issued Advisory / Alert

**Assessments**

Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

**Narrative: 1**

I was working handoff BZN for the BZN radar controller because of the volume and complexity of traffic coming in [and it was a busy] weekend. Just now had the situation with another aircraft busting an MVA and the radar controller cleared Aircraft X direct to BZN to maintain 11000. Aircraft X read back direct BZN, maintain 10000. We were both focused on the prior MVA bust (and vectors for resequence) a few minutes before and missed the readback. Next thing we know, Aircraft X is level at 10000 in an 11000 MVA. Radar Controller issued low altitude alert.

Volume and complexity were contributing factors. Initiating flow into BZN during busy spurs like the one above would alleviate missed readbacks and keep controllers more focused.

**Narrative: 2**

While enroute to Bozeman and planning for the arrival I noticed an inconsistency between FMS data base and Jepp-Pro database. The FMS contained an approach for RNAV (RNP) 30 only whereas the Jepp-Pro data base had a plate for the RNAV GPS-A approach only. We were cleared to descend and handed over to approach control (Salt Lake I believe it was) who cleared us to descend to 11,000 MSL. The ATIS reported visual conditions with a visual approach to runway 30 in use. We were indeed in VMC conditions. I recall that approach control (ATC) provided us with a number of options for the approach which due to FMS and Jepp database discrepancy we could not accept. After a very brief validation/discussion with FO (monitoring pilot) I instructed FO to request vector to final (I recall having the valley of airport location and surrounding terrain in sight at that point in
time). Approach provided us with a heading. I recall FO calling out heading (which I set) including a call out of 10,000 ft altitude. I did not hear the new assigned altitude given by ATC but set 10,000 MSL and activated FLCH. At that same point in time I had airport in sight and likely for that reason I omitted questioning altitude callout by FO plus have him validate new altitude assignment by ATC. ATC advised us of altitude deviation. I quickly made attempt to return back to 11,000. Almost at the same time ATC asked if we have airport in sight which I confirmed after which ATC cleared us for the visual to runway 30. ATC (Approach) had us switch to tower. We planned for and made a full flap landing.

Not questioning my FO and not validating with ATC apparent new altitude assignment was clearly my mistake. I have relied on the visual meteorological conditions too much (let down my guard so to speak) and with that given myself too much leeway of believing that a descent to 10,000 ft would be OK. In future I will require to vigorously adhere to the principle of "Trust but Verify" or "When in Doubt Ask". I realize that the Operations Manual is clear on the aspect of both pilots needing to have heard and understand a clearance. If that is not the case a validation/confirmation with ATC has to be obtained. The requirement to a more diligent filing of a report is a further learning and action point for me.

**Narrative: 3**

While enroute to BZN, Salt Lake Center handed us to Big Sky Approach. The conditions were VMC. We had been cleared to descend. Runway 30 was in use. Approach had given us a number of fixes for the RNAV-GPS 30 A, which when reviewing the approach, myself and the CA (pilot flying) saw the fixes were not in the FMS. At that time, we requested vectors to final and were in visual conditions with the airport in sight. Approach assigned us a heading, which I relayed to the captain. While searching for the newly issued fixes in the FMS, I may have misunderstood our descent altitude. With the runway in sight, I was watching our descent when the controller said we only cleared to 11,000. At that time, I noted we were around 10,500 and we immediately made the correction, resetting our altitude to 11,000. Within a second or so, the controller told us to disregard and cleared us for the visual approach for 30.

The Captain was going to talk with our chief pilot to determine why the approach was missing from our FMS. From the learning experience, I am ensuring that I am verifying the correct descend to altitude.

**Synopsis**

BOI TRACON Controller and flight crew reported an aircraft descended below the issued altitude and below the MVA.
**ACN: 1519160** (43 of 50)

**Time / Day**
- Date: 201802
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference. ATC Facility: BOI.TRACON
- State Reference: ID
- Altitude. MSL. Single Value: 9000

**Environment**
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory. TRACON: BOI
- Aircraft Operator: Air Carrier
- Make Model Name: EMB ERJ 170/175 ER/LR
- Crew Size. Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Plan: IFR
- Mission: Passenger
- Flight Phase: Initial Approach
- Route In Use: Visual Approach
- Airspace. Class E: BOI

**Person**
- Reference: 1
- Location Of Person. Facility: BOI.TRACON
- Reporter Organization: Government
- Function. Air Traffic Control: Handoff / Assist
- Function. Air Traffic Control: Approach
- Qualification. Air Traffic Control: Fully Certified
- Experience. Air Traffic Control. Time Certified In Pos 1 (yrs): 5
- ASRS Report Number. Accession Number: 1519160
- Human Factors: Situational Awareness
- Human Factors: Workload

**Events**
- Anomaly. Airspace Violation: All Types
- Anomaly. ATC Issue: All Types
- Anomaly. Deviation - Procedural: Published Material / Policy
- Anomaly. Inflight Event / Encounter: CFTT / CFIT
- Detector. Person: Air Traffic Control
- When Detected: In-flight
- Result. Air Traffic Control: Issued New Clearance

**Assessments**
Contributing Factors / Situations: Procedure
Contributing Factors / Situations: Weather
Primary Problem: Procedure

**Narrative: 1**

I was working Hand Off BZN (HOB) assisting the Bozeman APB controller. Very busy session with many arrivals. One of the busiest weekends. I was busy organizing arrival and departure strips and coordinating releases with BZN tower for departures in between arrivals. APB controller cleared Aircraft X for the visual approach left base Runway 30 with another aircraft 6 miles in trail for the straight in. Everything happened very quickly. Aircraft X requested a right 270 to lose altitude but that would've conflicted with the straight in traffic. The controller cancelled approach clearance and turned Aircraft X heading 180 to maintain 9000 ft. Aircraft X clipped an 11000 ft MVA.

Hand Off Bozeman is a position that we work maybe twice a year. This is my first time in over a year working HOB. One thing that might have helped out with this situation is to call the center and start a flow program into BZN when we know that traffic will be very busy. Sun Valley, Idaho, and Aspen, Colorado had flow and CFRs (Call For Release) on this very same day. Having 10 aircraft all inbound to BZN while running instrument approaches to Runway 30 is not fun. The approaches to Runway 30 are horribly designed and there is not a straight in approach. All of them are curved RNP or GPS approaches that are very hard to sequence. Need to slow down the traffic to work Runway 30 effectively.

**Synopsis**

BOI TRACON Controller working Bozeman Handoff reported that an aircraft clipped a higher MVA during a very busy traffic session.
**Time / Day**

Date: 201802  
Local Time Of Day: 1201-1800

**Place**

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

**Environment**

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

**Aircraft**

Reference: X  
ATC / Advisory.Tower: 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: IFR  
Mission: Personal  
Nav In Use: GPS  
Flight Phase: Landing  
Route In Use: Visual Approach

**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  
Qualification.Flight Crew: Multiengine  
Experience.Flight Crew.Total: 4300  
Experience.Flight Crew.Last 90 Days: 44  
Experience.Flight Crew.Type: 1400  
ASRS Report Number.Accession Number: 1519146  
Human Factors: Situational Awareness  
Human Factors: Confusion  
Human Factors: Fatigue

**Events**

Anomaly.Deviation - Track / Heading: All Types  
Anomaly.Deviation - Procedural: Published Material / Policy  
Anomaly.Deviation - Procedural: FAR  
Anomaly.Deviation - Procedural: Clearance  
Anomaly.Ground Incursion: Taxiway
Anomaly: Inflight Event / Encounter: Unstabilized Approach  
Detector: Person: Flight Crew  
When Detected: Taxi  
Result: Flight Crew: Became Reoriented

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

Narrative: 1
I flew on an IFR flight plan. Upon arrival in the area, approach vectored me north of ZZZ1, then south toward [the] field, setting up for a visual approach to Runway XX. While on vectors, I reviewed the Airport Diagram in ForeFlight on my yoke-mounted iPad. I was particularly interested in the touchdown zones since the runway tarmac extends beyond [the intersecting] runway at the approach end. At this point, looking at the North-Up diagram, I thought Runway XX was the instrument runway when it is actually [the parallel], Runway XY. I entered and activated the Visual Approach to Runway XX. Approach cleared me for a visual approach to [the parallel runway], Runway XY, on an extended base leg, instructed me to turn final outside of 5 miles, and handed me off to Tower. I had the field in sight, but I interpreted what I was seeing incorrectly. What I thought was Runway XX was really Runway XY, and what I thought was Runway XY was [a] Taxiway. It didn't feel right, but I continued. The PAPI was on the right side of what I thought the runway was, and the markings were very indistinct, as opposed to the real runway XY, which was very well marked. I knew the Visual Approach indications on the GTN-650 were for Runway XX, but I elected not to reload the approach so as not to be distracted on the approach. I cleared the "runway" visually, and landed on what turned out to be [a] Taxiway. On rollout, I was directed to hold my position, informed that I had landed on the taxiway, and directed to call the tower by telephone, which I did after shutdown.

[This aircraft] is a well-equipped TR-182 with a Garmin GTN-650 GPS/NAV/COMM, an Appareo-ESG Transponder with ADS-B In/Out, and a backup King KX-165 NAV/COMM. All the equipment was operating and equipped with up-to-date databases.

This incident is totally my fault, and it should never have happened. The weather was fine, air traffic was quite minimal, and ATC directions were clear. The proximate cause in my mind is erroneously identifying [Runway] XX as the instrument runway and loading the visual approach to same. I created a false picture of the airport in my mind and then acted upon it as if it were so, even in the presence of some niggling doubts. I think fatigue was a factor as I was approaching 8 hours in the air for the day. Also, the GTN-650 is a relatively new addition to my cockpit, but I had read the manual, watched Garmin's online videos, and practiced with the Garmin simulator; I had at least 40 hours in the air using the equipment, including the visual approach mode. Finally, ZZZ is an unfamiliar airport that I had flown into only once previously, several years go.

Synopsis
C182 pilot reported landing on a taxiway parallel to the intended runway.
ACN: 1518874 (45 of 50)

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: 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 normalized, 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.
ACN: 1518376

Time / Day
Date: 201802
Local Time Of Day: 1801-2400

Place
Locale Reference.ATC Facility: MSY.TRACON
State Reference: LA
Altitude.MSL.Single Value: 2500

Environment
Flight Conditions: Mixed
Weather Elements / Visibility. Visibility: 10
Light: Night
Ceiling.Single Value: 600

Aircraft
Reference: X
ATC / Advisory.Tower: MSY
Aircraft Operator: Air Carrier
Make Model Name: B737-700
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Nav In Use: GPS
Flight Phase: Initial Approach
Airspace.Class B: MSY

Person: 1
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: First Officer
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days: 351
ASRS Report Number.Accession Number: 1518376
Human Factors: Situational Awareness
Human Factors: Workload

Person: 2
Reference: 2
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 391
ASRS Report Number.Accession Number : 1518385
Human Factors : Workload
Human Factors : Distraction
Human Factors : Situational Awareness

Events
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : Aircraft In Service At Gate
Result.General : None Reported / Taken

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

Narrative: 1
We were operating a flight into MSY and were on our third approach. The first approach resulted in a go-around due to excessive tailwind on final. The second approach to a different runway resulted in a missed approach due to the runway environment not being in sight at minimums. Our third approach was the GPS Y Runway 29. While being vectored on downwind for the third approach, we inadvertently loaded LPV minimums into the baro selector instead of LNAV VNAV mins. The weather was well above mins for the LNAV/VNAV, with visibility at ten miles. We broke out around 600 to 700 ft AGL and landed uneventfully. I believe that the two missed approaches, combined with the tight sequencing for subsequent approaches by ATC, contributed to this error. Another contributing factor was that this was my first go-around in the actual aircraft and I was task saturated flying the aircraft. Task loading was high during this time, especially with the weather conditions.

We could have requested a hold or delay vectors to buy more time. I know that we can’t use LPV mins but simply missed the error due to task saturation. Another suggestion would be to remove LPV mins from our charts all together. We simply used the lowest mins to get in and they weren't available to us per the AOM.

Narrative: 2
On third approach into MSY, ATC gave us Runway 29 due to tailwinds (17 knots, which we had missed at 100 ft) on Runway 11 and we had a missed approach on ILS 2 for low ceilings. The new First Officer briefed the GPS Runway 29 LPV. It did raise a question mark, but I was busy with ATC, [Performance Weight and Balance], weather, fuel for possible divert, ETC. We broke out east of 29 at about 800 ft. The LNAV/VNAV would have been appropriate. And of course the LPV is not authorized.

On customized approach plates, why do we have approaches that are not authorized? Please only put authorized approaches on approach plates.

Synopsis
B737-700 flight crew reported setting incorrect minimums for the approach to Runway 29 at MSY.
ACN: 1518307 (48 of 50)

Time / Day

Date: 201802
Local Time Of Day: 0601-1200

Place

Locale Reference.ATC Facility: ZZZ.TRACON
State Reference: US
Altitude.MSL.Single Value: 3000

Environment

Flight Conditions: VMC
Weather Elements / Visibility.Visibility: 10
Light: Daylight
Ceiling.Single Value: 12000
RVR.Single Value: 3

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: Initial Approach
Route In Use: Vectors
Airspace.Class C: 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: Instrument
Qualification.Flight Crew: Private
ASRS Report Number.Accession Number: 1518307
Human Factors: Communication Breakdown
Human Factors: Situational Awareness
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

Events

Anomaly.Aircraft Equipment Problem: Less Severe
Anomaly.Deviation - Altitude: Excursion From Assigned Altitude
Anomaly.Deviation - Procedural: Published Material / Policy
Anomaly.Deviation - Procedural: Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Equipment / Tooling
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Environment - Non Weather Related
Primary Problem : Procedure

Narrative: 1

I was on an IFR flight plan on the arrival and was instructed to "turn to 110 to maintain 3,000 until established on the localizer." I was at 3,000 and saw the localizer come in as I had activated the ILS approach on my GNS 650. However, my glideslope didn't appear on my PFD and as I was troubleshooting, I descended to 2400. I was in VMC and had the field in sight.

ATC came on and told me to climb immediately to 3,000 which I did and I requested to cancel my clearance as I was in VMC. ATC asked why I had descended and I told him I was cleared to descend once established on the localizer. He asked, well what about your glideslope? Were you established on it? I said I wasn't. ATC told me that the MVA in the area was 3,000 and switched me to tower.

In hindsight I realize that even though I activated my approach, it did not switch to VLOC. I know I was more than two miles from the FAF when I activated the approach so it should have automatically switched over. This is a problem several of us Cirrus Owners and Pilots have encountered with the DFC 90 and GTN 650's -sometimes it automatically switches to VLOC and sometimes it doesn't, even when the approach is activated more than two miles from the FAF. This is a problem with the DFC 90 that needs to be understood. It is not good that it sometimes switches from GPS to VLOC and sometimes does not.

I had thought I was cleared to descend once I was established on the localizer and that is what I did. I may have misheard the clearance and perhaps ATC said "established" only, but I have always understood established to mean the localizer and the glideslope.

Synopsis

SR22 pilot reported an issue with the avionics system design that induced an excursion from the cleared altitude on final approach to an altitude below the MVA.
ACN: 1517959 (49 of 50)

**Time / Day**

Date: 201802
Local Time Of Day: 1201-1800

**Place**
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.MSL.Single Value: 1300

**Environment**
Flight Conditions: VMC
Light: Daylight

**Aircraft**
Reference: X
ATC / Advisory.Tower: 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: VFR
Mission: Test Flight
Flight Phase: Final Approach
Route In Use: Visual Approach
Airspace.Class D: ZZZ

**Component : 1**
Aircraft Component: Air/Ground Communication
Aircraft Reference: X
Problem: Failed

**Component : 2**
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: Personal
Function.Flight Crew: Single Pilot
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Commercial
Experience.Flight Crew.Last 90 Days: 20
Experience.Flight Crew.Type: 1400
ASRS Report Number.Accession Number: 1517959
Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Procedural : Landing Without Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

A test flight after having a new Garmin G5 installed replacing my vacuum instruments. I decided to fly an ILS instrument approach to my home base. Upon departure I noted that my Navigation system in GPS mode was having difficulty tracking my course, [so] I decided to fly the ILS as planned to see if there was any other irregularities. I reported inbound and was approved for the approach from the Tower and told to report the IAF. When reaching [the IAF] the Tower was busy with other aircraft, I waited and reported inbound when the frequency was open. Shortly after my Navigation system failed as well as my radios. At this time, I was on a 2-mile final aware of the other traffic, which was landing ahead of me. Having no communication with the Tower and not having received a clearance to land I decided to continue, realizing the Tower knew I was on final [and] I was aware of other aircraft. As the landing aircraft ahead of me cleared the runway I touched down, relieved to be on the ground. After parking my aircraft and alerting the avionics shop of the failure, I called the Tower to explain the problem.

Synopsis

C182 pilot reported loss of all communication and navigation capability on a test flight after installing a new instrument suite.
Time / Day
Date : 201802
Local Time Of Day : 1201-1800

Place
Locale Reference.Airport : M01.Airport
State Reference : TN
Relative Position.Distance.Nautical Miles : 12
Altitude.MSL.Single Value : 1900

Environment
Flight Conditions : IMC
Weather Elements / Visibility : Rain
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility.Visibility : 1.5
Light : Daylight
Ceiling.Single Value : 300

Aircraft
Reference : X
ATC / Advisory.TRACON : M03
Aircraft Operator : Corporate
Make Model Name : Super King Air 200
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Ferry
Nav In Use : FMS Or FMC
Nav In Use : GPS
Flight Phase : Initial Approach
Route In Use.Other
Airspace.Class B : MEM

Component
Aircraft Component : Autopilot
Aircraft Reference : X
Problem : Failed

Person
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 : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification. Flight Crew: Instrument
Experience. Flight Crew. Total: 7600
Experience. Flight Crew. Last 90 Days: 200
Experience. Flight Crew. Type: 1500
ASRS Report Number. Accession Number: 1517956
Human Factors: Situational Awareness
Human Factors: Distraction

Events

Anomaly. Aircraft Equipment Problem: Less Severe
Anomaly. Deviation - Altitude: Overshoot
Anomaly. Deviation - Procedural: Published Material / Policy
Anomaly. Deviation - Procedural: Clearance
Anomaly. Inflight Event / Encounter: CFTT / CFIT
Detector. Person: Flight Crew
When Detected: In-flight
Result. Flight Crew: Became Reoriented
Result. Flight Crew: Returned To Clearance

Assessments

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

Narrative: 1

The altitude selector was mis-set and the descent was started after passing the (IAF) FAXIP. The aircraft was flown several hundred feet below the MEA of 1900 feet prior to arriving at the FAF VAGDY. The error was detected during a scan and observation that Glideslope was not captured nor passage of the FAF at VAGDY had occurred. A climb was initiated back toward 1900 feet. At VAGDY station passage, Glideslope was captured for the LPV and the approach was continued to the landing.

Just as Memphis approach gave the clearance for the RNAV (GPS) 17 via FAXIP, the autopilot failed and the aircraft had to be hand flown. Numerous attempts were made to try and reset the autopilot to no avail while in transit to FAXIP. ATC was contacted and informed that I would fly the Procedure Turn and did not want vectors to final. While in the Procedure Turn, the altitude selector was mis-set as a result of the autopilot distractions.

In retrospect, I should have informed ATC that I just experienced an autopilot failure and specifically requested vectors to the final approach course.

Synopsis

BE20 pilot reported descending below charted altitude on approach to M01, and attributed the deviation to an Autopilot failure.