

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.....31.0

Date of UpdateFebruary 27, 2019

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

Number of New Records in Report Set50

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

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

ASRS reports are submitted voluntarily. 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.

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

Becky L. Hooley, 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: 1605542 *(1 of 50)*

Synopsis

GA pilot reported a communications breakdown with ATC regarding clearance resulted in airspace violations.

ACN: 1604809 *(2 of 50)*

Synopsis

GA Pilot reported nonstandard TFR dissemination resulting in TFR violation.

ACN: 1603173 *(3 of 50)*

Synopsis

LJ35 flight crew reported an unstabilized approach and missed approach, along with severe turbulence, culminated with a hard landing in microburst, windshear conditions.

ACN: 1602821 *(4 of 50)*

Synopsis

C172 pilot reported changing weather conditions resulted in a return to the field, multiple changes to the flight plan and operation in IMC conditions without an Instrument Rating.

ACN: 1602535 *(5 of 50)*

Synopsis

Air carrier pilot reported AP/FD malfunction which led to them flying through the localizer and having to fly the rest of the approach by hand.

ACN: 1601816 *(6 of 50)*

Synopsis

Corporate Jet First Officer reported landing at the wrong airport after canceling IFR with the field in sight.

ACN: 1600889 *(7 of 50)*

Synopsis

PA-28 pilot reported continuing flight in deteriorating weather conditions by descending to dangerous level and then climbing through IMC conditions without a clearance.

ACN: 1600867 *(8 of 50)*

Synopsis

AC690 pilot reported autoflight and flight control trim system malfunctions during hazardous weather resulting in weather diversion.

ACN: 1599794 *(9 of 50)*

Synopsis

B757 Captain reported SFO ATC seemed understaffed and overworked during an arrival on a windy and rainy night.

ACN: 1599670 *(10 of 50)*

Synopsis

SR22 pilot reported the loss of GPS information led to incorrect airport information, a false terrain warning, and an airborne traffic conflict.

ACN: 1597278 *(11 of 50)*

Synopsis

Oakland Center Controller reported an aircraft descended below the minimums on the approach to STS, resulting in a Low Altitude Alert.

ACN: 1597169 *(12 of 50)*

Synopsis

SA-227 flight crew reported diverting to an alternate airport after shutting down #2 engine due to power loss and low oil pressure.

ACN: 1597161 *(13 of 50)*

Synopsis

Air carrier Captain reported being issued the wrong frequency to activate pilot controlled lights at an airport where the Tower was closed.

ACN: 1596840 *(14 of 50)*

Synopsis

C182 pilot reported landing at a closed airport due to smoke and fumes from an apparent engine failure.

ACN: 1596818 *(15 of 50)*

Synopsis

C210 pilot reported an electrical system failure led to a return to the departure airport.

ACN: 1596296 *(16 of 50)*

Synopsis

Bell Long Ranger helicopter pilot reported an engine failure while conducting a practice autorotation maneuver.

ACN: 1594301 *(17 of 50)*

Synopsis

C172 pilot reported a NMAC with another light aircraft in vicinity of FIM VOR.

ACN: 1594281 *(18 of 50)*

Synopsis

C182 pilot reported an autopilot malfunction that led to an excursion from altitude and late call to ATC.

ACN: 1593509 *(19 of 50)*

Synopsis

Captain of a large transport category aircraft reported the GPS provided wrong heading to fix information which resulted in flying off course.

ACN: 1592736 *(20 of 50)*

Synopsis

A319 flight crew reported receiving a GPWS terrain warning on RNAV Approach. Alert silenced as soon as escape maneuver was initiated.

ACN: 1592693 *(21 of 50)*

Synopsis

Controllers and GA pilot reported a NMAC with military aircraft holding for a fly over.

ACN: 1590825 *(22 of 50)*

Synopsis

CRJ-200 flight crew reported landing without completing the Before Landing checklist, citing a late clearance as contributing.

ACN: 1589506 *(23 of 50)*

Synopsis

Air Carrier flight crew reported being vectored in area of high terrain which caused GPWS to issue warning.

ACN: 1588422 *(24 of 50)*

Synopsis

C172 pilot reported having transponder issues, then additional equipment problems having to land to determine what was wrong with the aircraft.

ACN: 1586978 *(25 of 50)*

Synopsis

B747 Captain reported possible GPS jamming near active military airspace.

ACN: 1586513 *(26 of 50)*

Synopsis

C182 pilot reported being distracted while taxiing, exiting the taxiway and hitting an airport sign.

ACN: 1585567 *(27 of 50)*

Synopsis

Small aircraft pilot reported a low fuel condition, higher forecast crosswinds and the intentional landing in-between the taxiway and runway.

ACN: 1584320 *(28 of 50)*

Synopsis

B737 Captain reported two possibly related instances in two different aircraft involving loss of altimeters, airspeed, and VNAV.

ACN: 1583807 *(29 of 50)*

Synopsis

VFR Cessna private pilot reported encountering IMC conditions and requesting assistance from ATC.

ACN: 1583154 *(30 of 50)*

Synopsis

B767 Captain reported multiple clearance changes on approach to LAS resulted in some confusion and workload issues.

ACN: 1581720 *(31 of 50)*

Synopsis

PC-12 pilot reported a failed LPV approach due to a loss of GPS accuracy.

ACN: 1581659 *(32 of 50)*

Synopsis

PA-32 pilot reported an electrical failure affecting multiple systems.

ACN: 1580815 *(33 of 50)*

Synopsis

C150 student and instructor reported becoming disoriented and entering an unusual attitude in IMC conditions during practice instrument approach.

ACN: 1580779 *(34 of 50)*

Synopsis

PA28 pilot reported becoming task saturated while trying to stay VFR in IMC conditions.

ACN: 1580259 *(35 of 50)*

Synopsis

B737-700 flight crew reported confusion resulted when ATC changed the clearance multiple times on arrival into SNA.

ACN: 1580111 *(36 of 50)*

Synopsis

Dispatcher reported refusing a Captain's request to call the Tower for landing information because the information was available via the ATIS.

ACN: 1579314 *(37 of 50)*

Synopsis

B737 Captain reported cascading system failures and intermittent electrical failures.

ACN: 1579260 *(38 of 50)*

Synopsis

B737-700 Captain reported a track deviation resulted when the flight crew tried to reprogram the FMC following a late clearance change from ATC.

ACN: 1577247 *(39 of 50)*

Synopsis

B777-200 Captain reported the charted minimums on the temporary RNAV (GNSS) U Runway 14 chart, for SBGL, are too high to enable a safe landing from a VDP.

ACN: 1576558 *(40 of 50)*

Synopsis

GA pilot reported becoming disoriented and committing several airspace violations.

ACN: 1573542 *(41 of 50)*

Synopsis

M20 pilot reported a NMAC with a glider, followed by a G1000 malfunction.

ACN: 1573064 *(42 of 50)*

Synopsis

B737 observer pilot reported experiencing intermittent GPS reception issues while observing the flight crew on approach to MMMX.

ACN: 1571608 *(43 of 50)*

Synopsis

Learjet 45 pilot reported flying a RNAV/GPS approach when it was not authorized.

ACN: 1571346 *(44 of 50)*

Synopsis

Cessna 182 pilot reported experiencing intermittent "lost GPS signal" alerts while attempting to avoid Class B airspace and significant weather.

ACN: 1570622 *(45 of 50)*

Synopsis

GA pilot reported the Garmin Navigation database was incorrect referencing the new SFO Class B airspace.

ACN: 1569333 *(46 of 50)*

Synopsis

DA20 Captain reported executing a forced landing after losing both engines in flight.

ACN: 1567528 *(47 of 50)*

Synopsis

Corporate turbojet Captain reported issues with Approach Control while landing in marginal VFR conditions.

ACN: 1567243 *(48 of 50)*

Synopsis

C525 Captain reported failing to meet a crossing restriction during avoidance maneuvers related to a wake turbulence encounter in trail of a B737-900 on arrival into SEA.

ACN: 1565516 *(49 of 50)*

Synopsis

ZLC Controller reported an aircraft flew off course due to GPS jamming and went below the minimum terrain clearance altitudes.

ACN: 1565471 *(50 of 50)*

Synopsis

GA pilot reported a GPS anomaly led to a poorly executed approach with an altitude alert.

Report Narratives

Time / Day

Date : 201812
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : VNY.Airport
State Reference : CA
Relative Position.Angle.Radial : 25
Relative Position.Distance.Nautical Miles : 20
Altitude.MSL.Single Value : 3800

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Haze / Smoke
Weather Elements / Visibility.Visibility : 5
Light : Daylight
Ceiling.Single Value : 12000

Aircraft

Reference : X
ATC / Advisory.Tower : VNY
Aircraft Operator : Personal
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Personal
Flight Phase : Descent
Route In Use : Visual Approach
Airspace.Class C : BUR
Airspace.Class D : WHP

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 : 471
Experience.Flight Crew.Last 90 Days : 12
Experience.Flight Crew.Type : 52
ASRS Report Number.Accession Number : 1605542
Human Factors : Situational Awareness
Human Factors : Communication Breakdown

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

Events

Anomaly.Airspace Violation : All Types
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Exited Penetrated Airspace
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

I was [heading to] VNY Van Nuys Airport. The flight plan in my GPS navigator was designed to keep me clear of WHP and BUR airspace. At about 20 NM northeast of VNY, I contacted VNY Tower to inform them of my intention to land. I was instructed "Fly direct to Van Nuys and squawk [code]". I turned to fly direct to VNY. It was very hazy outside, and so I took extra time looking outside to visually locate the airport. It was too hazy to see VNY at that moment. I looked back at my instrument panel and at my GPS moving map page and realized I was just inside WHP airspace (a few hundred feet). I was unsure if VNY Tower intended me to fly through the airspace, but if only to be on the safe side, I steered out of it. I then realized that I had also flown into BUR airspace. I was at about 3400 feet MSL indicated and quickly descended below 3000 feet. I proceeded to VNY without further issues. I was near the local mountains, outside of any normal terminal traffic routes and there was no traffic within a 7.5NM radius, as indicated by the traffic awareness system on my moving map display.

I'm still not sure if VNY Tower intentionally instructed me to fly through WHP and BUR airspace and that's why they assigned me a transponder code, just as ATC would have; or if they intended me to steer clear of WHP and VNY airspace and assigned me a transponder code for another reason.

I could have of course steered clear of the airspace anyway. An additional way to have avoided the situation would have been if VNY tower had instructed me to "Proceed on course until clear of Whiteman and Burbank airspace, then fly direct to Van Nuys airport, squawk [code]" or if he intended me to fly through those airspaces, to instruct me "Proceed through Whiteman and Burbank airspace directly to Van Nuys airport, squawk [code]"

Synopsis

GA pilot reported a communications breakdown with ATC regarding clearance resulted in airspace violations.

Time / Day

Date : 201812
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : MHV.Airport
State Reference : CA
Relative Position.Angle.Radial : 200
Relative Position.Distance.Nautical Miles : 6
Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 20
Light : Daylight
Ceiling.Single Value : 12000

Aircraft

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

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 6000
Experience.Flight Crew.Last 90 Days : 10
Experience.Flight Crew.Type : 800
ASRS Report Number.Accession Number : 1604809
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC
Analyst Callback : Attempted

Events

Anomaly.Airspace Violation : All Types
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Exited Penetrated Airspace
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

On a VFR flight to L71 at 4000 MSL/1300 AGL I contacted MHV (Mojave) Tower from a position approximately 6 miles SSW of that airport for permission to transit their Class C airspace. The Tower Controller inquired if I was aware of a TFR which impacted their facility. I was not, and although I had both ForeFlight fed by ADS-B/in running on an iPad and a GPS with XM weather, both of which display TFRs, neither was showing any. Uncertain what the situation was, I immediately reversed course and on the advice of the Tower Controller contacted Joshua Approach, who also seemed somewhat uncertain about the status of the TFR, but after some consultation with his supervisor advised me he could clear me through to my destination if I could complete the flight within 15 minutes. I could and he did. While I do not believe I initially penetrated the TFR prior to contacting the Tower Controller and was subsequently cleared through it by Joshua, some days later I received a phone call from a friend who in turn had spoken casually with another individual who asked if he knew [my name] flying [aircraft N-number] and said he had noted my ADS-B return inside the TFR. Hence this report. The situation was somewhat unusual as I have come to depend on the "live" airspace depictions and find them very dependable. I suspect the TFR was somehow not distributed in the same way as normal TFRs. In any case, I will start making it a habit to download a formal briefing.

Synopsis

GA Pilot reported nonstandard TFR dissemination resulting in TFR violation.

Time / Day

Date : 201812

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1700

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 7

Ceiling.Single Value : 1100

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Learjet 35

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Ferry

Flight Phase : Landing

Airspace.Class D : ZZZ

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1930

Experience.Flight Crew.Last 90 Days : 40

Experience.Flight Crew.Type : 1150

ASRS Report Number.Accession Number : 1603173

Human Factors : Situational Awareness

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 1620
Experience.Flight Crew.Last 90 Days : 127
Experience.Flight Crew.Type : 320
ASRS Report Number.Accession Number : 1603460
Human Factors : Workload

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Clearance
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Person : Flight Crew
When Detected : In-flight
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

As we were approaching ZZZ, we were keeping an eye on the weather with at the destination using the stratus. We briefly talked to approach about the weather and what was painting on his radar and he informed us of some light to moderate precipitation. Shortly thereafter we began our first approach into the airport. My First Officer was flying at this time. He performed the approach, however, we were unable to visually identify the runway prior to having to go missed. Approach had given us some revised missed approach instructions, which included a turn to heading 180 and a climb to 1500 feet.

As I was cleaning up the airplane from going missed, I noticed that my First Officer had busted our altitude by 200 feet. I called out the error and he began correcting. As we continued flying, I noticed he continued having trouble maintaining the assigned altitude and decided to ask for a block altitude for him and to switch our roles to where I became the pilot flying and he would perform the duties of pilot monitoring. While being vectored around for the missed approach, we were vectored into an area where we received a brief moment of severe to extreme turbulence. At this point I told my FO (First Officer) to request a vector to the north where the weather was better and to inform ATC that we would like to hold to the north.

As we were about to cross the approach path, ATC informed us that another aircraft had made it in on the approach and asked if we'd like to give it another look. We accepted the

offer and he gave us a vector and approach clearance. Before we reached the final approach fix, we were informed that the winds had shifted and were now favoring the other runway and we'd be landing with a tailwind on our current runway. We elected to not shoot the current approach and get vectors for the approach into the other runway. ATC vectored us and we began to shoot the approach into the other runway.

The approach was flown as published and we flew at the MDA for a little while before spotting the runway and beginning our descent to land. The descent to landing appeared normal with only minor airspeed fluctuations, which at the time I attributed to the winds that were now gusty at the airport. When we got down over the threshold and began our flare to arrest the descent rate, I began to notice that something was not right. As I pulled the yoke back, the nose rose as expected, however, the aircraft's descent rate was not arresting or slowing down. Before I could add power we had landed hard on the runway. We completed the landing roll and turned off the runway. We informed tower that we believed we may have blown a tire and pulled off into a ramp to check the airplane. Upon inspection, we noticed some damage and reported the damage to our company/the operator, along with a report of what happened.

In reflection, the altitude issues my copilot suffered, stemmed from up/down drafts in the showers we were flying through, with my task saturation of cleaning the airplane up from the missed approach contributing, as I was unable to keep my typical close eye on him. As for the hard landing, I believe it can be attributed to a microburst/windshear event on short final. I had never experienced anything like it before. I think it would be beneficial for windshear avoidance on final to be added to the curriculum for pilots in both the ATP/CTP (Captain), as well as training for type ratings. I also believe that is important to point out at how much more insidious a microburst/windshear event can be when shooting a non-precision approach, and the microburst/windshear is entered at the same time as the descent to the runway. This masks typical cue to microbursts/windshear by creating the expectation of changes in performance due to commanding a descent.

Narrative: 2

We were set up for the RNAV/GPS XX. We had been cleared for the approach. As I was flying the approach, we descended to the MDA of about 600 feet. Maintaining 600 feet, we reached the MAP, and I saw the runway directly below us. We went missed, and followed our alternate missed approach instructions of heading 180, climb to 1600 feet. We were then given a heading of 270. We also had one or two instances of severe to extreme turbulence, along with continuous moderate turbulence.

After being told another aircraft behind us was able to land, we were setting up for a second RNAV/GPS XX approach. Prior to the FAF, we were told the runway winds had switched (approximately 40 degrees). We maintained 1600, and continued outbound to set up for the RNAV/GPS XY. We were getting additional turbulence in the vectors to the approach.

We began the approach to runway XY. After crossing the FAF, we descended to MDA, about 500 feet. We saw the runway environment, and began a descent to the runway. The descent did not feel unusual. As we approached the runway, we began to flare as normal. While the nose pitched up, the descent rate did not slow. We landed hard.

After landing, I informed the tower I thought we had blown a tire. We pulled off onto the ramp. I opened the main door, and noticed fuel leaking from the left wing. I told the rest of the crew that there was a fuel leak, and we evacuated the plane. I flagged down an emergency vehicle and told them we had a fuel leak.

There were no factors, even looking back on it, that I can point to that say "you shouldn't have tried this." During the final descent to landing, there did not appear to be any speed fluctuations indicating a windshear or microburst event. The descent rate did not appear to be outside a normal descent profile.

I think the cause of the hard landing was a sudden downdraft or windshear during the flare, even though there didn't appear to be any indication of those conditions during the descent.

Synopsis

LJ35 flight crew reported an unstabilized approach and missed approach, along with severe turbulence, culminated with a hard landing in microburst, windshear conditions.

Time / Day

Date : 201812
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Relative Position.Distance.Nautical Miles : 30
Altitude.MSL.Single Value : 4500

Environment

Flight Conditions : Mixed
Weather Elements / Visibility : Haze / Smoke
Weather Elements / Visibility : Fog
Weather Elements / Visibility : Rain
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility.Visibility : .5
Light : Daylight
Ceiling.Single Value : 6000

Aircraft

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

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
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 150
Experience.Flight Crew.Last 90 Days : 6
Experience.Flight Crew.Type : 142
ASRS Report Number.Accession Number : 1602821
Human Factors : Training / Qualification
Human Factors : Situational Awareness

Events

Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Procedural : FAR
Anomaly.Inflight Event / Encounter : VFR In IMC
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Exited Penetrated Airspace
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

When I was on my flight to ZZZ airport, I noticed clouds and precipitation to the south/southwest, that's when I listened to ZZZ1 airport ASOS. It had said that there was no precipitation and clouds were still high. When I got the clearance to come into ZZZ airport on a right base leg for Runway XX, it was clear to see that there were haze and mist to the south/southeast. My original plan was to do a full stop taxi back Runway XX. Given the weather I saw coming, I decided to park and go into the FBO to check the weather again. I saw on radar through 1800wxbrief.com that a storm was passing through. I checked the METARs and they were saying clouds 6,000 feet overcast and 7sm visibility. I decided to take off; I got to 2,300 feet MSL to see that visibility was around 3sm, I decided to come back to ZZZ to land. Tower even said they had lost sight of me when I was on base leg to final Runway XX. I landed and parked the plane again and looked at the radar, it showed a massive storm directly to my south going northeast and a small storm about to hit and soon pass. I made the decision to refuel and preflight at ZZZ so when I did get the pocket to leave I could do it without wasting time. My next stop was planned for ZZZ2 airport. I looked at METARs from ZZZ to ZZZ2 and forecasts, ZZZ2 showed it was 6,000 foot overcast and 10sm visibility. ZZZ was reporting overcast 6,000 foot clouds, mist, and 4sm visibility. I could clearly see that visibility was less and I proceeded to wait until the storm had passed until I got my pocket of clarity. I had discussed my plan with my Flight Instructor and he saw what was happening on radar and METARs forecasted for ZZZ, ZZZ2, and ZZZ3. He agreed with my plan and said once I get the visibility and clouds I need to get out of there. When I noticed it was clearing up and visibility was clearing, I called a weather briefer and he told me the same thing as the METARs, he advised me to be very careful on my flight. Going into the flight, I knew I had to be cautious because of the visibility, clouds, and higher elevation due to hilly terrain. I departed ZZZ and activated my VFR flight plan from ZZZ to ZZZ2. I had planned to cruise at 4,500 feet giving me enough room to be below the overcast clouds. Visibility was at 5sm with haze/mist mixture, any lower I would've turned around immediately and probably would have spent the night at ZZZ. ZZZ Tower had put me on flight following to ZZZ2 with the intention of doing a touch and go and departing immediately to ZZZ4. ZZZ Tower transferred me to ATC Radio. For the first 15 minutes of my flight to ZZZ2 visibility was clearing to 10sm and clouds at 6,000 feet. I could clearly see a massive shelf cloud that was not forecast to my northeast going east. I could clearly see the ground below to check off my VFR checkpoints. When I reached 4,500 feet I had noticed the shelf cloud to be below me, so I stayed at 4,500 feet. When I reached my third VFR checkpoint that's when I saw clouds had moved in behind and to both sides of me. At that time as well, ATC Radio had transferred me to ATC Center. I told ATC Center, [I was at 4,500ft]. We had

radar contact, shortly after I told them there were clouds ahead of me and I didn't know what to do, I needed help. The shelf cloud looked to be 3,000 feet to 6,000 feet. I had lost sight of the ground due to fog as well. As I was looking for ground or an opening, I ended up going into the cloud. I notified ATC Center and told them I was not IFR rated, and that I was now in the cloud for a total time of 10 seconds. I knew I was in a cloud because as I looked outside the cockpit it was a complete whiteout and I was surrounded. When I was in the cloud, I immediately looked at my instruments keeping my heading and altitude the same and made sure to not panic or move around to get disoriented. When I got out of the cloud, I could clearly see a few clouds ahead of me and I had broken FAR 91.155 basic VFR weather minimums, being in class E airspace. I also checked periodically to make sure there was no icing on the wings. Right after I got out of the cloud, I asked about ZZZ2 weather and they said visibility was roughly 1sm or 1.5sm, that's when I decided to divert towards ZZZ4. I immediately put into the GPS so I knew exactly where I was going and asked if I could descend from 4,500 feet to 4,000 feet to get below the clouds ahead of me. I knew the clouds would end shortly because ATC Center had told me a local PIREP stating it was 10sm visibility and 6,000 feet overcast. Again, I looked around the surrounding area and there were still clouds behind, left, right, and now ahead of me. Also, it was heavy fog and haze below me. ATC Center asked if I could see the ground or dodge the clouds because they needed 2 miles to figure out a better plan for me, I responded and said that it was patchy below me and I could stay away from the clouds. I asked if I could descend again to 3,800 feet cruising altitude, they responded with altitude was at my discretion, just to try and stay on a constant heading. They came back and said to stay on course to ZZZ4 airport and altitude at my discretion. During the duration of the time I was talking to ATC Center, I asked if they could change my VFR flight plan from ZZZ to ZZZ2, to ZZZ to ZZZ4. They responded and said they had already changed it. The clouds started to break, there was still heavy fog below me that I could see ending and overcast of 11,000 feet as was forecast from ZZZ3 METAR. The fog below was curved and looked to be ending halfway in-between when I diverted and ZZZ3 airport. At that point, ATC Center had transferred me to ZZZ3 Approach. I contacted ZZZ3 Approach, [and advised them I was at 3,600 feet]. I had lowered my altitude after the break of heavy fog. ATC responded with two-way communication and radar contact. Also, it started to get darker, so I decided to turn on my navigation lights to ensure anyone around me could see me. When I got closer to their airspace, they told [me] to cruise at 3,500 feet. Then they told me to fly VFR at my discretion and to have a good flight. Between the cloud break and when I landed at ZZZ4, my flight was smooth no turbulence, no clouds, 10sm visibility, and clouds at 11,000 ft. overcast. I entered ZZZ4 entry corridors and landed smoothly. When I shut down, I closed my flight plan and reviewed the flight with my Flight Instructor.

The contributing factors of the flight were unexpected weather that no METAR or TAF was forecasting and reporting. I checked all my resources before taking off from ZZZ airport before I left. The leg from ZZZ to ZZZ2 is limited in weather reporting systems. The corrective actions I made was choosing to wait the first time from ZZZ and ultimately diverting to ZZZ4. Also, I changed my attitude to better understand what the clouds were and to make appropriate judgment calls based on what I saw. My concerns during the flight were the fact that I was breaking a regulation in an impossible situation, not being able to go anywhere without going through clouds, and how unexpected and fast moving the clouds were. I was not worried about going into the cloud because ATC Center was watching me on the radar, I was actively talking to them, and my instrument simulated training in the past had kept my head steady. I believe to ensure to not have a re-occurrence of what happened during this flight, is to stay at the airport on the ground until you for sure know all weather conditions are well above minimums.

Synopsis

C172 pilot reported changing weather conditions resulted in a return to the field, multiple changes to the flight plan and operation in IMC conditions without an Instrument Rating.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : IMC

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Nav In Use : GPS

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

Component

Aircraft Component : Autoflight System

Aircraft Reference : X

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 Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1602535

Human Factors : Human-Machine Interface

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation - Procedural : Clearance

Anomaly.Deviation - Procedural : Published Material / Policy

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Became Reoriented

Result.Flight Crew : FLC Overrode Automation

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

The plane had MEL for localizer inop and approach mode button inop. We flew to ZZZ as normal but communicated we are unable for ILS and needed the RNAV XXL. We set up and briefed the RNAV approach in accordance with [Company] SOP. We were given a 110 heading to intercept the XXL final approach course. The First Officer selected heading mode and Captain activated the approach on the FMS.

First Officer selected NAV mode so it would capture the final approach course. AP then went turn further right than the 110 heading to intercept the course. Captain tells First Officer to return to heading mode at 110 and wait till we are more aligned on final approach course. First Officer complies, but when he rearms NAV we can see that LNAV is boxed and captured. However, the AP/FD remained wings level.

Captain starts scanning and cross checking as to why we aren't joining the course properly. Then, Captain takes controls from First Officer via the TCS button to manually turn back on course. As this was happening ATC (ZZZ Approach) tells us to turn left 070 to now join the course learned RNAV XXL. Captain returns controls to First Officer and tells him to not use AP, just hand fly the approach.

The MEL 22-XX was for not using the APR mode button, as a crew wrote up the AP/FD behaved erratically when using it. We used NAV mode navigating off of the GPS only and had no issues till using NAV during approach to landing. I believe there is a deeper problem with this plane's automation system. We landed without incident and wrote up the issue in the MX logbook.

AP/FD malfunction. We took manual corrective action when we noticed the discrepancy between what the automation said it was going to do vs. what it did do. I, as Captain, should have been quicker correct the automation error.

As pilots, I feel we need to be more descriptive in writing up our MX problems. I feel this can help MX fix write ups more effectively, to the deeper root problem as opposed to surface problems.

Synopsis

Air carrier pilot reported AP/FD malfunction which led to them flying through the localizer and having to fly the rest of the approach by hand.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZHU.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 39000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Weather Elements / Visibility.Other

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZHU

Aircraft Operator : Corporate

Make Model Name : Medium Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Passenger

Nav In Use : GPS

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class E : ZHU

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 30000

ASRS Report Number.Accession Number : 1601816

Human Factors : Communication Breakdown

Human Factors : Distraction

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Communication Breakdown.Party2 : ATC

Analyst Callback : Attempted

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Landing Without Clearance
Anomaly.Ground Incursion : Runway
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

I was the SIC [on a flight] which landed at a privately owned airstrip a few miles short of our intended destination, HBV.

The flight to HBV, Hebronville, TX was logged at 2:19 hours. The flight was flown at an altitude of 39,000 ft under visual conditions. My partner and I while at altitude briefed the field conditions, WX, and decided upon a visual approach backed up with the RNAV GPS 13 approach into HBV. We were both not familiar with this field and stated this would be our best course of action.

The flight was uneventful until approximately 80 nm northwest of the intended field of HBV. The chain of events into this incident started at this point. Our approach planning was briefed at this point. Although [the Captain] and I were not familiar with this field we felt confident the RNAV GPS 13 would best back up the visual. LRD was the IAF for the approach. I briefed we would fly over and it and the FMS would guide us the rest of the way. Simple.

Things now start to change. Houston Center now starts to vector us away from Laredo. OK, we are now going to be east of our intended course. Additionally Center is providing us with a few fairly aggressive altitude crossing restrictions that started to demand our full attention. As flying pilot my full attention becomes fully devoted to complying with the ATC requests. Nothing unusual or unsafe but just requiring our total crew focus. At one point [the Captain] remarked this is crossing a bit tight. I stated I didn't want to descend any greater with [passengers] on board so we stated this to Center. No problem Center remarked but another vector to the East was given. I believe our altitude to be 3,000 feet at this point. My concentration as flying pilot was a little more inside of the airplane than I would have preferred. My situational awareness told me we were slightly east of course and now fairly close in. Houston Center asked if we would like to proceed with the GPS approach and we stated yes. As I selected the final approach fix altitude of 2,000 feet, VNAV and armed the approach mode I had an inherent worry about the FMS. It's been my experience with this box that it can sometime struggle with close in vectoring and provide erroneous inputs. Sometimes the FMS simply needs time to properly sequence and my concern was perhaps we could be a little too close. A pilot preconceived notion and a level of distrust in my avionics is being developed right here on my part, not good. My FMS is telling [me] to fly right to intercept yet so is my awareness. So all is well, besides were are VMC. As I scan back to my flight director I am not however 100% confident with my flight director. Where are all the approach cues I wanted to see? Visual 10 miles of visibility, I believe my box is struggling, just fly the jet were my thoughts. As fate would have a landing strip appears in the distance right on the nose. [The Captain] and I briefed what

the field would look like and its orientation. Everything before us looked good. Our decision to call the field visually and cancel with ATC was made. At this point I had to discredit my flight director inputs as I believed them to be somewhat misleading. I transitioned fully to a VFR landing and concentrated on my flying speeds and stopping the aircraft on a 5,000 foot strip.

In the flare my little voice which is never wrong started talking to me. Absent was the PAPI I briefed and other visual runway cues we had talked about. The landing was smooth and uneventful. I knew at this time of our flight crew error.

Landings into small private West Texas airports pose unique threats to arriving pilots, especially when flown in visual conditions. We all know and are trained to step up our game when flying into these unfamiliar strips that are now being constructed and popping up seemingly all over Southwest Texas. Some are certified top notch airports offering approach guidance. Others are not. It's been my experience with these fields [that they frequently] have NAVAIDs NOTAMed out of service, or some can be highly questionable when using. On this day all these factors played into my reasoning and pilot decision making. Perhaps this is why I continued a botched approach into a rancher's field. Unbelievable. Long time piloting experience is largely beneficial. However we must all fight pilot preconceived notions that can unfortunately lead us astray, much like this one did for me. With over 30,000 hours of combined military and civilian flight crew and piloting experience I have never been involved in any such incident. On this day that record came to an end. It stings a little.

Synopsis

Corporate Jet First Officer reported landing at the wrong airport after canceling IFR with the field in sight.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 2400

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Rain

Weather Elements / Visibility.Visibility : 2

Light : Daylight

Ceiling.Single Value : 700

Aircraft

Reference : X

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 : None

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Air Traffic Control : Fully Certified

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Air Traffic Control.Radar : 16

Experience.Air Traffic Control.Non Radar : 0

Experience.Air Traffic Control.Military : 0

Experience.Air Traffic Control.Supervisory : 2

Experience.Flight Crew.Total : 692

Experience.Flight Crew.Last 90 Days : 16

Experience.Flight Crew.Type : 190

ASRS Report Number.Accession Number : 1600889

Human Factors : Communication Breakdown

Human Factors : Physiological - Other

Human Factors : Time Pressure

Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Procedural : FAR
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : VFR In IMC
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

I was planning a day VFR flight. This was a flight I had made many times before. I had used the Garmin pilot app to do a weather pre-briefing, then got an official weather briefing from 1800wxbrief.com. TAFS along the route of flight were showing improving weather for the day. Current weather at Departure airport was 9SM and OVC030, Destination was 10 SM and SKC. The closest and only weather reporting station en-route showed 9SM and OVC011. With the lack weather stations along the 150NM flight I had made the assumption that the OVC011 would only be for a short period in the middle of the flight. With OK weather at the departure airport and great weather at the destination I took off. I had a back up plan that I could always turn around and return if the weather got low, or was lower than expected.

I did want to get home, so I was definitely experiencing some get-home-itis, but I had a plan to return to the departure point, so I felt it was safe to start out. En-route, the weather was worse than forecast, and worse than what was reported at the en-route weather station. Ceilings and visibilities started to drop just 10 NM east of the departure point. At this point though, I was flying through a gap between a mountain ridge and a restricted area that was active. Vis was 5 miles and ceilings were 2,000 overcast. Flying at 1,500 AGL I decided to continue on, as the restricted area and terrain wouldn't have allowed for a 180 turn even if I had wanted to.

Safely away from the mountain, I entered a flat area of terrain that would last 80 NM or so. Here the vis and ceiling dropped very slowly. The terrain was flat, with few obstructions, so not much to worry about. I had slowly pushed the nose over and kept dropping altitude maybe 50 feet at a time over this long stretch. Looking back had the vis and ceilings changed more rapidly, I believe I would have made a 180 turn and headed back.

I was now just south of the ZZZ airport, only about 50NM away from the destination airport, when I finally realized that I was in a bad spot. I was now flying at 600 feet AGL, and if I climbed 100 feet I would enter the bases. This happened a few times, but I kept pushing the nose over and got back below them. Visibility dropped to between 2 and 3

miles as I approached an interstate, which brought with it many towers that were 300 AGL. I realized that I had not reset my altimeter setting, and my altitude may be off. Worried that I might hit one of the towers, I began separating myself laterally from them. I knew I was in trouble when I started dodging the towers.

This would have been an excellent time to declare an emergency, but there was no time. I was busy going between looking out the window, then to my IPAD/GPS, to plan my next course. I was task saturated. There wasn't time to think about declaring an emergency. To stay alive, I had to keep flying the plane. I probably did the best thing I could have done. Aviate, Navigate, no time for communicate. Then, in a span of 10 seconds the visibility dropped from 3NM, to 2NM, to 1NM. The last thing I remember seeing was that I crossed a road that was perpendicular to my course, and saw a farm house zip by. I remember thinking that I was way too close to that house. Then, I was in the clouds.

I remembered back to my initial training about what to do if you encounter IMC conditions on a VFR flight. The advice was to make a "U" turn and get back to those conditions. I began a left turn. I turned over too far, to a 20 degree bank. I felt my head start to spin, just like in my early days of instrument training. I immediately knew that if I continued to turn, that I would lose control of the aircraft. I was 600 feet or less off the ground, and making a turn toward the last tower I was trying to avoid. I had been flying at full cruise (140 MPH), and never thought too slow down. Without any more thought, I snapped my full attention to the attitude indicator, and leveled the wings. I then eased back on the yoke to a 5 degree nose up attitude that I knew would give me a fast climb, without worry of getting to slow and stalling the plane. I climbed straight ahead. The windscreen slowly began to lighten as I worked my way through the clouds. For what seemed like ages, but was probably less than 2 minutes, I stared at the attitude indicator and did everything I could to keep it level. At about 4,000 MSL I popped through the tops of the clouds. Visibility was unlimited, and it was clear above.

Looking out ahead of me, the clouds only continued for another 10 miles along my route of flight. I took a few miles to just fly straight and level and compose myself. During this time I realized that the reason I was having to fight so hard to keep the plane's wings level, was that I had the autopilot engaged on heading hold mode. When I began the left turn, I made it 20-30 degrees off of the heading bug. I was fighting the autopilot trying to turn the aircraft back to the right.

I called ATC to get flight following through the Class C en-route to my destination. I didn't say anything to ATC about the event, but looking back, I wish I had. Even though I was safely out of the clouds, I was still quite shaken up. Even though ATC had not delayed me, they might have. Had I still went ahead and declared an emergency they would have known that I was shaken up, and they would have helped me to get on the ground quickly and safely.

Looking back on the flight there were so many times I should have called up ATC and told them I was in an emergency situation, but I didn't. That point should have been 10 NM east of my departure point, between the restricted area and the mountain ridge. Yes, it was still VMC, but I was already trapped. I couldn't climb, I couldn't turn back, and the weather was worse than I expected. At that moment there was only go forward or declare and emergency. I decided to press forward into weather that I was pretty sure was going to get worse. Had I called up ATC, I could have declared an emergency and climbed right then to get on top of the clouds. The risk was extremely high either way, at least climbing would have gotten me away from the terrain and obstructions that were along my route.

The best thing I will take away from this event is the idea of personal minimums. I have heard a lot about setting them for yourself, but never thought I needed them as a VFR pilot. As an IFR pilot sure, but VFR weather minimums are clear, 3 miles and 1,000 feet. It has always been black and white in my mind. That day the weather was showing VFR, why would I have not taken off. Now it is abundantly clear why I need to set my own personal minimums much greater than the minimums.

Synopsis

PA-28 pilot reported continuing flight in deteriorating weather conditions by descending to dangerous level and then climbing through IMC conditions without a clearance.

Time / Day

Date : 201812

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 20

Altitude.MSL.Single Value : 11000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Fog

Weather Elements / Visibility.Visibility : 1

Light : Night

Ceiling.Single Value : 500

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Turbo Commander 690 Series

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Flight Phase : Initial Approach

Route In Use : Vectors

Route In Use : Direct

Airspace.Class E : ZZZ

Component : 1

Aircraft Component : Autoflight System

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Aeroplane Flight Control

Aircraft Reference : X

Problem : Failed

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 5100
Experience.Flight Crew.Last 90 Days : 25
Experience.Flight Crew.Type : 228
ASRS Report Number.Accession Number : 1600867
Human Factors : Troubleshooting
Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Diverted
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

Aircraft had a recent avionics upgrade Garmin 650, G750 and Auto pilot.

Filed ZZZ direct ZZZZ [then to the destination] 11,000 feet. Departed ZZZ weather was 500 overcast and 1 mile visibility. Takeoff and departure was uneventful other than Icing conditions enroute (all anti ice was on) at approximately 25 miles from ZZZZ intersection Center inquired about my altitude stating I was 300 to 400 feet high with the correct altimeter setting, I reset the altimeter which corrected the problem, shortly after that the Autopilot disengaged causing the aircraft to yaw hard. Hand flying the aircraft I contacted Center about the Autopilot and request to return to ZZZ.

After completing the turn towards ZZZ it became apparent that I was having a problem trimming the aircraft for level flight, which wanted to pitch downward even after adjusting the trim wheel which was stiff to turn. During this time period ATC notified me of low altitude and to take immediate action which I did, holding the aircraft in level flight. I tried engaging the autopilot which would nose over abruptly. With not being able to trim the aircraft properly I was having difficulty maintaining heading and altitude, while trying to program the GPS for the approach into ZZZ. I had to go missed due to low visibility I then diverted to ZZZ1. I continued to have difficulty holding altitude and programing the GPS while enroute to ZZZ1. Tried the autopilot again which still nosed the aircraft downward.

Flying into IMC and icing conditions at night with not being proficient with the new avionics

contributed to not being able to maintain altitude. Not sure about mechanical issue other than I think the trim tab device was not working properly causing the trim issues.

Synopsis

AC690 pilot reported autoflight and flight control trim system malfunctions during hazardous weather resulting in weather diversion.

Time / Day

Date : 201812
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SFO.Airport
State Reference : CA
Altitude.AGL.Single Value : 500

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X
ATC / Advisory.Tower : SFO
Aircraft Operator : Air Carrier
Make Model Name : B757 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Phase : Final Approach
Airspace.Class B : SFO

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : SFO
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 Phase : Final Approach
Airspace.Class B : SFO

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)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Type : 1779.32
ASRS Report Number.Accession Number : 1599794
Human Factors : Communication Breakdown
Human Factors : Workload
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

We were on arrival to SFO. About an hour out, we were rerouted to BDEGA3 arrival. ATIS was calling for landing [Runway] 10L. Arrival and runway didn't match. In 2nd to last Center sector, we were given new arrival, STLER3. Again, ATIS was calling for [Runway] 10L, which doesn't match arrival. Just prior to switching to NORCAL approach, [new] ATIS comes out switching to simultaneous ILS and VA [visual approach] to 19L/R. Clearly from our direction, we are going to get a visual to [Runway] 19R. We decided and briefed a VA backed up by RNAV (GPS) 19R. We discussed importance of using PAPI on left. Since we had previously briefed an RNAV GPS to [Runway] 10L, we quick briefed the backup procedures for RNAV.

Planned and flew flaps 30 approach with 125 ref and 132 target. Winds forecast I believe 060@14kts. We then started being vectored basically along arrival and told visual [Runway] 19R. We were switched to Final Controller who was handling left and right runways. He was also very difficult to understand. He seemed to have an accent and slightly "slurred" type speech that drew out length of calls in fast paced environment. We were vectored to final and told to maintain visual with 737 to left runway. I inquired if we would be ahead or behind other aircraft and told "right next to".

Runway 19L was illuminated like a bright Christmas tree and Runway 19R barely lit up. I informed First Officer, who was flying pilot, to use preceding aircraft as reference for runway. We were cleared approach, told to maintain 3,000 feet until 9 DME, and to maintain 180kts to 5 DME. We basically flew RNAV approach on autopilot following all procedures for RNAV approach. I monitored the 737 right next to us on [Runway] 19L. Winds at 2,800 feet were 060/40. I was beginning to feel uncomfortably close to 737. We configured at about 1,500 feet; First Officer disconnected autopilot and hand flew rest of approach. We were cleared to land.

About 6 DME, we slowed to target of about 132 and that gave us spacing on 737 to left runway. At 900 feet I made 1,000 feet call and we were configured and stable. Runway environment for landing was relatively dark (especially compared to 19L). We also commented on no PAPI for guidance. Winds at 500 feet were about 060/30. I made 500 feet call and First Officer responded stable. I asked for wind check and winds were reported 100/14 (?). Winds at 200 feet were still about 060/25. At about 200 feet, I saw a descent rate of 1,000 feet per minute and commented "descent rate". First Officer made timely correction. I made a call out that crosswinds were decreasing. Landing was a bit firmer than normal but in touchdown zone and uneventful. We taxied clear and onto gate.

During entire approach and landing, we were both task saturated. On reflection, I don't believe my leadership effectiveness was as good as it should have been. I never made an inquiry to Tower about brightness of runway lights or why PAPI wasn't operational. It seems to me like SFO TRACON was behind the power curve and not ready or appropriately manned for the amount of arrivals. Controllers all seemed to be over task saturated. The environment was ripe for a safety mishap. Aircraft two behind us went around. Winds were not conducive on Approach for using the 19's.

Synopsis

B757 Captain reported SFO ATC seemed understaffed and overworked during an arrival on a windy and rainy night.

Time / Day

Date : 201812
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : CHD.Airport
State Reference : AZ
Relative Position.Distance.Nautical Miles : 5
Altitude.MSL.Single Value : 2200

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 22000

Aircraft

Reference : X
ATC / Advisory.Tower : CHD
Aircraft Operator : Personal
Make Model Name : SR22
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Training
Flight Phase : Final Approach
Route In Use : Visual Approach
Route In Use : Direct
Airspace.Class D : CHD

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 : Single Pilot
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 330
Experience.Flight Crew.Last 90 Days : 23
Experience.Flight Crew.Type : 334
ASRS Report Number.Accession Number : 1599670
Human Factors : Communication Breakdown

Human Factors : Distraction
Human Factors : Human-Machine Interface
Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

On final, I was lined up for [Runway] 4L. I lost GPS which immediately resulted in TAWS warnings (pull up, pull up, etc) with the MFD map showing the wrong airport. This is my home airport; I knew where I was. While lined up for [Runway] 4L, Tower asked me to confirm I was lined up for [Runway] 4L, the correct runway. I confirmed I was lined up, the MFD showing the wrong airport, asked to ident, and then I panicked and thought I must be at one of the other nearby airports. I asked if Tower could see me and with the delayed response, I deviated from approach assuming they could not see me, which caused the issue with landing traffic.

Synopsis

SR22 pilot reported the loss of GPS information led to incorrect airport information, a false terrain warning, and an airborne traffic conflict.

Time / Day

Date : 201811

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZOA.ARTCC

State Reference : CA

Altitude.AGL.Single Value : 500

Environment

Flight Conditions : IMC

Aircraft

Reference : X

ATC / Advisory.Tower : STS

Make Model Name : Small Aircraft

Flight Plan : IFR

Nav In Use : GPS

Flight Phase : Final Approach

Route In Use.Other

Person

Reference : 1

Location Of Person.Facility : ZOA.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 3.5

ASRS Report Number.Accession Number : 1597278

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.ATC Issue : All Types

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 : Provided Assistance

Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

I was working Sector 40/41 combined with no D-side. There was IFR weather throughout the sector with an approaching front. The weather at Santa Rosa was low IFR with several aircraft going missed. Indefinite ceiling of 200. Traffic was routine for the time of day and weather. Equipment was working normally. Aircraft X was performing an IFR flight to STS attempted to execute the GPS 32 Approach at STS. The approach was normal, until I noticed the aircraft approximately 4 miles from the airport at 500 feet. The airport elevation is 128 feet. I know from experience that that altitude is way too low to be at that position. I called STS Tower and told them to issue a low altitude alert. Shortly thereafter the Tower told the pilot to start the missed approach because the aircraft continued to descend, below the minimums for the approach. The pilot came back on my frequency and I told her that she was 4 miles away and 500 feet. She said that she never saw the ground, and added that she wasn't receiving vertical guidance on the approach. The lowest the aircraft went on the approach was 300 feet. I'm not sure how accurate that is, though. I know that on a non-precision approach, after the FAF, the pilot can descend rapidly to the missed approach altitude in order to attempt to see the runway. I feel like this event was unsafe though and that's why I'm submitting the report. On ERAM [En-route Automation Modernization], the MSAW [Minimum Safe Altitude Warning] has parameters that inhibits MSAW alerts when the aircraft is a certain distance from the destination airport. The only suggestion that I can make right now is to adapt the technology that terminal facilities/STARS has and I believe that is if the aircraft exceeds a vertical rate of descent on the approach, the MSAW alerts as well. I feel like that would be a useful tool.

Synopsis

Oakland Center Controller reported an aircraft descended below the minimums on the approach to STS, resulting in a Low Altitude Alert.

Time / Day

Date : 201811

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Make Model Name : SA-227 AC Metro III

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Mission : Ferry

Flight Phase : Cruise

Component

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1597169

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1597168

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Pilot Flying heard engines drop out of synchronization and noticed a spike in torque on E2. A drop in torque resulted immediately followed rapidly by a low oil pressure light on the right. Pilot Flying pulled right power lever to verify the correct engine, then pilots agreed on the right stop and feather handle and pulled it. Pilot Flying commanded Pilot Not-Flying to request direct to [a nearby alternate]. Pilot Not-Flying completed all checklists and programmed the GPS for the appropriate visual approach. Aircraft was losing airspeed at FL180 so the crew requested 17,000 feet where the aircraft was able to maintain airspeed and altitude. Visually, we were clear of all terrain and the aircraft was performing well. The crew briefed other options if E1 were to fail. The resulting visual approach and landing were without incident.

Narrative: 2

[Report narrative contained no additional information]

Synopsis

SA-227 flight crew reported diverting to an alternate airport after shutting down #2 engine due to power loss and low oil pressure.

Time / Day

Date : 201811

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : OAJ.Airport

State Reference : NC

Altitude.AGL.Single Value : 0

Environment

Work Environment Factor : Poor Lighting

Light : Night

Aircraft

Reference : X

ATC / Advisory.Tower : OAJ

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

Airspace.Class D : OAJ

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1597161

Human Factors : Situational Awareness

Human Factors : Confusion

Human Factors : Distraction

Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Detector.Person : Flight Crew

When Detected : Taxi

Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments

Contributing Factors / Situations : Airport
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Company Policy
Contributing Factors / Situations : Human Factors
Primary Problem : Chart Or Publication

Narrative: 1

We operated a night flight to OAJ. We noted on the dispatch release the fact that the OAJ airport had a new, operational Tower and Ground Frequencies. The Company 10-7 page did not have the new frequencies, but since we had them from the release/NOTAM information, we were good. There was a note on the Dispatch NOTAMs about the new CTAF frequency being 132.65, but no mention of which frequency to use for the Pilot Controlled Lighting (PCL), once the Tower closed for the night (It is not mandated or required by the FAA to be the same as the CTAF, sometimes it's different). So on the night, RNAV approach, we asked the corresponding ATC facility "which was the light frequency, 123.0 or 132.65?" Approach responded that we needed to use 123.0 for lights. We actually shot the first RNAV approach (due to the ILS being NOTAMed OTS, plus tailwind factor on 5) and had to miss, because at the derived DA minimums, we did not see the runway until it was too late. The runway end has no approach lights, not even simple ODALS, just the very basic REIL lights, which made it very difficult to see at minimums and in a foggy night. We set up for a second try at the RNAV/GPS approach, since we had plenty of fuel for that and then planned to divert to our alternate if necessary, with lots of reserve and extra fuel remaining. We were successful in seeing the runway REILS at minimums on the second RNAV/GPS 23 Approach. After a successful and safe approach and landing on RWY 23 at OAJ, we were taxiing in on the parallel taxiway when the runway and taxiway lights suddenly went out. We stopped the aircraft momentarily, while we clicked the light frequency given by Approach 7 times, as well as 5 times, to no avail. The lights never came on. We quickly decided that even with the failed lights (at least that was what we thought-we never guessed ATC gave us a bad or wrong frequency...), we could safely taxi the remaining 50-75 yards to the ramp entrance, which was very well illuminated, and go into our gate. The next day, when getting ready to depart OAJ during the day, we asked the new Tower what frequency should be used for the PCL lights, and explained that Approach gave us 123.0, and the "new" Tower told us that Approach was in error, that the correct frequency to use for the lights is 132.65, and that they would pass the new and correct frequency to the approach facility. At least one problem was solved. We don't know how or why the runway lights were on already at night, since the Tower was closed and the lights would require normally pilot action, but we are certainly glad that they were on and stayed on long enough for us to land on a foggy night, and taxi 99 percent of the way to the ramp before going off. This unsafe condition was caused by a couple of unusual circumstances: First, by Approach Control giving out the incorrect frequency for the Pilot Controlled Lighting to an arriving night flight (they gave 123.0 instead of the correct 132.65). Secondly, by the Company not having an updated 10-7 airport page containing accurate frequency data. The best way to prevent such night incidents, which easily could have ended up in an unsafe aircraft state (such as, if the lights had gone dark during the flare on landing, or even during the last 50 feet of the landing, allowing a pilot to lose visual perception, and perhaps land hard, since a go-around that low would normally allow the landing gear to make contact with the runway), is to have good and accurate information. The NOTAM section of the Flight Release from Dispatch was a good effort (it had the new Tower and Ground Frequencies), but not enough, since it did not specify the Pilot Control Light frequency. And of course, having the FAA ATC approach facility be up to date and give to aircraft under their control the "correct" frequency is a must. ATC can't be giving erroneous frequencies, or bad things

are bound to happen. Additionally, keeping the Company 10-7 pages current is extremely helpful in preventing incidents.

Synopsis

Air carrier Captain reported being issued the wrong frequency to activate pilot controlled lights at an airport where the Tower was closed.

Time / Day

Date : 201811

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 2500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

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 : Cruise

Route In Use : Direct

Airspace.Class E : ZZZ

Component

Aircraft Component : Cylinder

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 : Commercial

Experience.Flight Crew.Total : 5000

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1596840

Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Flight Deck / Cabin / Aircraft Event : Smoke / Fire / Fumes / Odor

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Anomaly.Ground Incursion : Runway
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

Cruising at 3,000 feet MSL my wife and I smelled smoke, soon after got a puff of smoke in cockpit. I was not under control from any ATC [facility]. I clicked nearest airport on [my GPS]. ZZZ airport was 3 miles ahead. Over flying the field prior to landing airport had yellow X displayed on runway but asphalt airstrip appeared in good condition. Next airport was 15 miles [away] so I landed on closed airport successfully with no problems. After parking removal of cowl I found front right cylinder cracked around the barrel between cylinder barrel and head. Local authority and neighbor stopped by. They had no problems with my presence and said airport was condemned due to lack of upkeep.

Synopsis

C182 pilot reported landing at a closed airport due to smoke and fumes from an apparent engine failure.

Time / Day

Date : 201811
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Altitude.MSL.Single Value : 5500

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 6
Light : Daylight
Ceiling.Single Value : 20000

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Personal
Make Model Name : Cessna 210 Centurion / Turbo Centurion 210C, 210D
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class G : 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 : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 170
Experience.Flight Crew.Last 90 Days : 5
Experience.Flight Crew.Type : 22
ASRS Report Number.Accession Number : 1596818
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Electrical system failure, suspected alternator or alternator belt resulted in loss of Number 1 Nav/Com and subsequent loss of all electric avionics and instruments. [I] was able to Squawk 7600 and confirm with ATC Center, but could only receive and not transmit due to Number 2 Nav/Com insufficient power to transmit. [I] did [a] 180 degree turn and proceeded back to ZZZ origination airport in VMC using handheld GPS for navigation. Contact via phone Approach and subsequently Tower and obtained clearance for a low approach to RWY XX at ZZZ to verify manual gear extension and then flew a successful no-flap landing. Spoke with Tower via phone after landing and confirmed no need for further action or reporting.

Synopsis

C210 pilot reported an electrical system failure led to a return to the departure airport.

Time / Day

Date : 201811
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.AGL.Single Value : 1300

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 1800

Aircraft

Reference : X
ATC / Advisory.CTAF : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : Jet/Long Ranger/206
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 135
Flight Plan : VFR
Mission : Training
Flight Phase : Final Approach
Route In Use : Direct
Airspace.Class E : ZZZ
Airspace.Class G : ZZZ

Component

Aircraft Component : Engine
Aircraft Reference : X
Problem : Failed

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 4100
Experience.Flight Crew.Last 90 Days : 75
Experience.Flight Crew.Type : 1520
ASRS Report Number.Accession Number : 1596296
Human Factors : Time Pressure
Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While performing a Functional Check Flight to validate performance of the GPS with the use of the Night Scanner landing light and verify Autorotation RPM Speed, the engine failed during the execution of the Autorotation RPM Speed Check. No prior maintenance was performed on the power plant or flight control system.

Upon entry into the autorotation and confirmation that systems were normal, the throttle was reduced to the idle position for the check. The caution/warning system alerted me to the engine out condition and I confirmed the condition with the N1 and Turbine Outlet Temperature gauges. An autorotation landing was performed to Runway XX at ZZZ with no damage to aircraft or facilities.

Synopsis

Bell Long Ranger helicopter pilot reported an engine failure while conducting a practice autorotation maneuver.

Time / Day

Date : 201811

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : NTD.TRACON

State Reference : CA

Altitude.MSL.Single Value : 6500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : NTD

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : NTD

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 : 178

Experience.Flight Crew.Last 90 Days : 63

Experience.Flight Crew.Type : 132

ASRS Report Number.Accession Number : 1594301

Human Factors : Situational Awareness

Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

Miss Distance.Horizontal : 500

Miss Distance.Vertical : 0

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

[I was] on Flight Following with ATC Pt Mugu, [vicinity of FIM], 6500ft, westbound. [I was] acting as PIC, with another pilot (student) in right seat. Received warning "traffic at 1 o'clock, 6500 feet, heading northeast, type unknown". As traffic was visible, and not on intersecting course, reply was made "Traffic in sight, no factor".

Soon thereafter, the unknown traffic was observed to change course on a right turn, finishing turn on a direct intersection course with our aircraft, at the same altitude. The incoming aircraft had strobe lights active, so the intersecting course was very clear. Evasive action was taken with a standard rate turn to the right.

The incoming aircraft was observed to initiate a left turn, thereby remaining on intersecting course. At this point I increased bank of turn, pulled power and initiated a steep descent. Incoming aircraft was now observed to be on a shallow descent, and very nearly intersecting our course despite evasive actions. It is my judgment that if I had not initiated a steep descent, collision was probable. Estimate that the incoming aircraft passed <500 feet behind, and +/- 200 feet of our altitude. GPS data onboard shows that we descended 300 feet in 15 seconds and altered course by 60deg.

Incoming aircraft observed as probable to be a twin engine, low wing General Aviation type aircraft. Original course and altitude was resumed, and finally ATC was informed that traffic became a factor and evasive actions were taken.

Contributing Factors:

Both aircraft navigating over a TFR (Surface to 5500 feet).

Due to TFR and recent high winds, minimal GA traffic expected to be operating in the airspace

Incoming aircraft was (I understand) not on Flight Following and not in contact with ATC.

Synopsis

C172 pilot reported a NMAC with another light aircraft in vicinity of FIM VOR.

Time / Day

Date : 201811
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 5
Altitude.MSL.Single Value : 1750

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 18000

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Personal
Make Model Name : Skylane 182/RG Turbo Skylane/RG
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Initial Climb
Route In Use : VFR Route
Airspace.Class D : ZZZ

Component

Aircraft Component : Altitude Hold/Capture
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 392
Experience.Flight Crew.Last 90 Days : 0
Experience.Flight Crew.Type : 287
ASRS Report Number.Accession Number : 1594281
Human Factors : Communication Breakdown

Human Factors : Time Pressure
Human Factors : Training / Qualification
Human Factors : Distraction
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 : FAR
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

I was to pick up an aircraft that had been in service at ZZZ. The chief maintenance task involved the installation of a new GPS (GTN 750) and its coupling to the already installed autopilot (STEC-65). The task proved more difficult than expected, and the autopilot exhibited persistent malfunctions, which greatly extended period of maintenance (about 5 months). Immediately after completion of avionics work, the aircraft underwent annual inspection. I was then to take possession of the aircraft and fly it to ZZZ1.

Before departure, I experienced delays in the readying of the aircraft for release by the company that provided the aircraft inspector. Among possible stressors was a weather system to the east of ZZZ1. The system was not expected to affect the flight to ZZZ1 but was anticipated to delay a subsequent flight out of ZZZ1. Before takeoff, I had been briefed on the standard VFR transition by ATC, and my read-back was declared "correct". I also reported that I possessed a paper copy of the transition. To warm up to the flight and the altered layout of the panel, I performed a lap around the traffic pattern. I gained comfort in the traffic pattern by the time I had reached the base leg. I then descended normally to about 300 MSL on final before exercising the option to overfly the runway at ZZZ1 and continue via the published transition.

The initial segment of the transition was over water with a subsequent turn inland for over-flight of the Tower at ZZZ. The initial climb was to 1500 MSL, at which point I engaged the altitude hold function of the autopilot while being asked to contact Approach. I confirmed that I would contact Approach, and as I recall, I briskly switched to Approach frequency. However, the autopilot commanded an unsettling nose-down trim, which I countered with back-pressure on the yoke. Given the recent service to the avionics, I considered the possibility of an autopilot malfunction. So, I then disengaged the autopilot and trimmed nose-up. This action, perhaps in concert with a near-shore updraft, precipitated a climb above 1500 MSL. I arrested the climb at about 1750 MSL, at which point communications commenced with Approach. Approach asked me to report my

altitude. I was flustered and struggled to clearly articulate the altitude of 1750 [MSL]. Approach conveyed that I had made a "late call". I explained that I had experienced a trimming problem. The controller advised that I could have reported the problem earlier and would have been offered assistance. I am grateful for the concern demonstrated by Approach. The remainder of the flight was uneventful, and all equipment performed well. I conclude that I may have trimmed the aircraft poorly before setting the altitude hold and then over-reacted to the compensatory adjustments that the autopilot commanded. The brief climb occupied my attention and disturbed my communications at a critical time. Fortunately, air traffic in the area was apparently light, and conflicts did not result.

Factors contributing to the incident:

1. Significant flight-free period during which work on avionics and other systems was performed (about 7 hours of long cross-country during the 5-month maintenance period and 0 hours during the prior three months).
2. Unfamiliarity with the appearance and functional state of avionics (some newly installed) and a sudden concern regarding a frank failure of the autopilot.
3. Unfamiliarity with airspace and environmental conditions.

Concerning corrective/preventive actions, (at a minimum) I plan to:

1. Fly with an instructor after significant aviation-free periods and/or changes in equipment critical to aircraft control.
2. Practice/brief procedures in complicated unfamiliar airspaces under supervision before attempting the procedures autonomously.

Although ATC categorized my overt transgression as a "late call" rather than as a "violation," I feel that it is important to report my experience for the benefit of the database and those whose safety it may impact. I expect that the exercise of recalling, analyzing and reporting the events will also benefit my skill-building and aeronautical decision-making.

Synopsis

C182 pilot reported an autopilot malfunction that led to an excursion from altitude and late call to ATC.

Time / Day

Date : 201811
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : CNO.Airport
State Reference : CA
Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Haze / Smoke
Weather Elements / Visibility.Visibility : 6
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : SCT
Make Model Name : Commercial Fixed Wing
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 125
Flight Plan : IFR
Mission : Cargo / Freight
Nav In Use : GPS
Nav In Use.VOR / VORTAC : PDZ
Flight Phase : Initial Climb
Route In Use : Vectors
Route In Use : Direct
Airspace.Class E : SCT

Component

Aircraft Component : GPS & Other Satellite Navigation
Manufacturer : Garmin
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 18150
Experience.Flight Crew.Last 90 Days : 40
Experience.Flight Crew.Type : 6500
ASRS Report Number.Accession Number : 1593509
Human Factors : Confusion
Human Factors : Human-Machine Interface

Human Factors : Training / Qualification
Human Factors : Troubleshooting
Human Factors : Distraction

Events

Anomaly.Aircraft Equipment Problem : Less Severe
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

Assessments

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

Narrative: 1

We had just departed CNO on RWY 08R and were complying with the departure procedure on the back of the 10-9 chart for obstacle clearance. I was the pilot not flying and the First Officer (FO) was the pilot flying. We were assigned 7000 ft MSL which we were maintaining. The first fix was the PDZ VOR. When we got to the VOR, a newly installed GTN 750 touch screen dual GPS unit gave conflicting information as to the next course out of PDZ for NIKKL intersection which was our next checkpoint. The GTN750 Flight Plan screen was accessed on the FO Unit at this point. The magenta highlighted fix after crossing PDZ was showing a next course of approximately 062 degrees magnetic for fix NIKKL. In actuality, NIKKL was more like a 100 degree magnetic course. The controller at So Cal queried us as to what our routing was and I verified that what she said was correct as what was programmed into the GTN750. The controller said, "Just fly direct NIKKL" which we did and she was very polite. I honestly don't know what went wrong with the GTN750. The VOR and COMM radios are set up in the unit and the VOR frequencies were set properly. I have seen the GTN750 fail to sequence to the next waypoint and as a result of being able to scroll through the Flight Plan seeing all the waypoints with the touch screen panel, it sometime happens that when you cross a waypoint, the screen seemingly hides the waypoint you just crossed and will sometimes jump ahead to a waypoint that is further down in the flight plan rather than the waypoint that is immediately following the one you just crossed. In any event, it is a very confusing situation and the design of the Garmin GTN 750 was evidently made for light aircraft instead of a transport category aircraft. We have had all types of problems with it from the day that we got it out of the avionics shop. The first flight that we ever flew with it, we found out airborne that one DME receiver was counting up rather than counting down to the navigation fix that we were proceeding to. Maintenance at our base ascertained that the avionics shop had not even hooked up the DME. As a result, it took a team on avionics specialists approximately 3 weeks to figure out how to connect up the DME from the GTN 750 to our DME indicators. As well, there are no warning lights to alert the pilot that when the ILS is selected, the pilot needs to switch the CDI from GPS to VLOC. So it would be completely possible to shoot an ILS approach with the CDI needle in the GPS position and possibly have a horrible accident as a result. Our approach checklist is the only fail safe item preventing this from happening. Our training on the GTN750 was an interactive video that we did on our home computers and although we had a very short hands on school in the general office, the interactive video was woefully inadequate. There are a lot of unusual things

about the installation. Number one, when the GPS mode of the CDI is selected, the RMI needles point to the waypoint selected in the GTN750, not the VOR selected on the NAV screens of the GTN750 as would be in a "normal GPS installation". Also, the company has placarded the GTN750 as "VFR ONLY". We were VFR at the time of this occurrence, but as always in the IFR environment. Another problem is that the installation of the GTN750s is all the way back to the end of the pedestal making it very hard to see and hand fly the plane at the same time. At the time of this occurrence. The FO was hand flying the aircraft. When the course change required to go to NIKKL intersection was depicted as approximately 062 degrees after the PDZ VOR, both myself and the flight engineer called this out to the FO and in actuality, he was correct in thinking the course was approximately 100 degrees and the information in the GTN750 was incorrect. I am very sorry for this mistake and we are going to have to study the GTN750 more carefully to learn of its tendencies to elicit incorrect information at the most crucial times.

[Additionally] we were having difficulty with an amber CDI light that was illuminated on the overhead indicating that our compass system was in error. As well the Vertical Gyro light illuminated and I looked up at my horizon and saw that it was in error with the Standby Horizon and the FO Horizon. Positioned Captain on Alternate which bootstrapped me to the FO vertical gyro and this extinguished the light. The CDI light went out on its own but this caused confusion and the FO went approx. 3 or more miles south of NIKKL before starting an aggressive turn back to get on the East Bound airway that we had filed. Cannot remember the exact airway. The controller queried us about our course and I stated that we were, "In the turn".

Synopsis

Captain of a large transport category aircraft reported the GPS provided wrong heading to fix information which resulted in flying off course.

Time / Day

Date : 201811
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : PIT.Airport
State Reference : PA
Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.Tower : PIT
Aircraft Operator : Air Carrier
Make Model Name : A319
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use : GPS
Nav In Use : FMS Or FMC
Flight Phase : Final Approach
Airspace.Class B : PIT

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 Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 210
Experience.Flight Crew.Type : 1073
ASRS Report Number.Accession Number : 1592736
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 : First Officer
Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 8260
Experience.Flight Crew.Last 90 Days : 100
Experience.Flight Crew.Type : 6445
ASRS Report Number.Accession Number : 1592722
Human Factors : Situational Awareness

Events

Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

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

Narrative: 1

Approximately 2,300 feet MSL on RNAV (GPS) RWY 10L PIT (ILS out of service) night VMC on PAPI glideslope, runway in sight, fully configured, stable and cleared to land. [Received] GPWS TERRAIN TERRAIN PULL UP. Despite being on glide slope and believing we were nowhere near terrain, began escape maneuver (TOGA and pitched up) and warning went away. Discontinued escape maneuver and continued stabilized visual approach to normal landing.

Narrative: 2

EGPWS/GPWS terrain warning while on night visual approach to PIT [Runway] 10L. Performed terrain avoidance maneuver, warning immediately ceased as throttles advanced to TOGA thrust, continued approach and landed.

Night VFR arrival into PIT ILS 10L Approach out of service. RNAV (GPS) RWY10L approach planned. On descent, GPS Primary on both FMGC's, accuracy confirmed HIGH, approach fix altitudes, final approach course, and FPA checked with approach chart.

On 11NM left base leg for RNAV (GPS) RWY 10L. Autopilot, auto-throttles off. Speed 190, Flaps 1, 3000 MSL. Vectored 080 to intercept, cleared visual 10L. NAV lateral guidance engaged outside of RACOO (the FAF). Crossed FAF at 180 kts, FINAL APP engaged, Flaps 2 selected. Flaps 3 selected shortly after crossing FAF (approximately 1850 RA), then Gear and Full Flaps approximately 1700 RA. On track, on RNAV glide path, PAPI showed 2 red and 2 white. Got EGPWS/GPWS aural terrain warning (I recall "terrain, terrain, pull up").

Captain stated that didn't make sense; I verbally agreed but executed the terrain avoidance maneuver since it was night time. The warning immediately ceased as the throttles were advanced to TOGA. We were fully configured, above glide path with PAPI showing all white. We visually confirmed no terrain hazard existed, and decided to continue the visual approach. We elected not to go heads down and re-program the approach and instead Selected VAPP speed and Selected 700 VSI for SA. The aircraft was stable at 1,000 [feet], stable at 500 [feet], and a normal landing was performed. After landing, IRS NAV drift and NAV position confirmed tight.

Synopsis

A319 flight crew reported receiving a GPWS terrain warning on RNAV Approach. Alert silenced as soon as escape maneuver was initiated.

Time / Day

Date : 201811
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : PAO.Tower
State Reference : CA
Altitude.MSL.Single Value : 1300

Aircraft : 1

Reference : X
ATC / Advisory.Tower : PAO
Aircraft Operator : Personal
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Flight Phase : Final Approach
Route In Use.Other
Airspace.Class D : PAO

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : NUQ
Aircraft Operator : Government
Make Model Name : Military
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Tactical
Flight Phase.Other
Route In Use : None
Airspace.Class D : NUQ

Aircraft : 3

Reference : Z
ATC / Advisory.Tower : PAO
Aircraft Operator : Personal
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Airspace.Class D : PAO

Person : 1

Reference : 1
Location Of Person.Facility : PAO.Tower
Reporter Organization : Government
Function.Air Traffic Control : Local

Qualification.Air Traffic Control : Fully Certified
ASRS Report Number.Accession Number : 1592693
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Human Factors : Distraction
Communication Breakdown.Party1 : ATC
Communication Breakdown.Party2 : ATC

Person : 2

Reference : 2
Location Of Person.Facility : NCT.TRACON
Reporter Organization : Government
Function.Air Traffic Control : Approach
Qualification.Air Traffic Control : Fully Certified
Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 12
ASRS Report Number.Accession Number : 1592694
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Distraction

Person : 3

Reference : 3
Location Of Person.Facility : NCT.TRACON
Reporter Organization : Government
Function.Air Traffic Control : Approach
Qualification.Air Traffic Control : Fully Certified
Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 15
ASRS Report Number.Accession Number : 1592696
Human Factors : Distraction
Human Factors : Situational Awareness

Person : 4

Reference : 4
Location Of Person.Facility : PAO.Tower
Reporter Organization : Government
Function.Air Traffic Control : Local
Qualification.Air Traffic Control : Fully Certified
ASRS Report Number.Accession Number : 1592697
Human Factors : Confusion
Human Factors : Situational Awareness

Person : 5

Reference : 5
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 884
Experience.Flight Crew.Last 90 Days : 33
Experience.Flight Crew.Type : 63

ASRS Report Number.Accession Number : 1593670
Human Factors : Distraction
Human Factors : Situational Awareness

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : NMAC
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Aircraft X was inbound IFR on the GPS Runway 31 approach. Aircraft Y, a VFR flight of 3 [military aircraft], was holding over Moffett Field (NUQ) in a left orbit at approximately 1,100 feet waiting for the appropriate time to overfly Levi Stadium. I issued traffic to Aircraft X when the flight of 3 were approximately 3 NM away and he reported the traffic insight. The [flight of 3] turned left directly towards Aircraft X on the approach at a similar altitude. Aircraft X continued his transmission reporting them insight and said he was turning to avoid them as they turned into him around a 3NM final to Runway 31. After he passed the traffic I asked if Aircraft X had the airport in sight, he replied he did. He then mentioned wanting to talk about the jets passing him and I replied that I would give him the tower number to call once he landed. After Aircraft X landed without incident, I gave him the tower number and when he called he wanted to report the NMAC.

This was the second NMAC report I had to file with one of my IFR arrivals and Aircraft Y [flight] orbiting over Moffett Field in less than 15 minutes. I had tried earlier to coordinate with Moffett to ensure the [flight of 3] wouldn't be a conflict with Aircraft X inbound and still a situation developed. I was given an impression that Moffett was having some difficulty with holding instructions to flight, but not something I can confirm. Either way, the speed the [flight of 3] were orbiting over NUQ made it very hard for me to miss with my slower traffic. If I had a better idea of what they were doing, I could then issue better advisories to my pilots to avoid the unsafe proximity they got into.

On occasion there was military fly over/bys at Levi Stadium. It might help if in the planning phases for these events that a representative from Moffett, San Jose, Palo Alto, NorCal Approach and the flight all have a conference call or in person meeting to discuss the operation so that everyone can get on the same page and avoid anything like this from happening again.

Narrative: 2

Aircraft Z was on the VOR approach to PAO. While Aircraft Z was on a 3 mile final to PAO at 1,500, [flight of 3 military aircraft] were in the VFR pattern at NUQ at 1,600 over flew Aircraft Z.

The weather in the area was smoky and visibility was not good. There was an aircraft operating over the stadium of the departure end of SJC airport dropping streamers and parachute jumpers. It was a lot of coordination and a lot of detail to keep that situation safe and not to delay SJC departures too much.

The whole situation had a lot of things line up for something to happen. We hardly ever have [aircraft] holding in the NUQ pattern let alone parachute operation [nearby]. Aircraft hardly ever do the PAO VOR approach. In addition there was a lot of smoke in the area due to the [local] Fire [activity].

Maybe we could have held the [military aircraft] some other place other than over an IFR final approach course.

The [military aircraft] were talking with NUQ tower and Aircraft Z was on a different frequency talking to PAO tower.

Narrative: 3

I was working the Licke and Hooks arrival sectors in to the South Bay. I cleared Aircraft X for the GPS approach into PAO, pointed the aircraft out to NUQ tower, advised the pilot that NUQ had [a flight of 3 military aircraft] in the pattern and transferred communications to PAO tower. I witnessed Aircraft X and Aircraft Y flight in very close proximity over NUQ. I assumed the tower was providing separation in their airspace. I later learned that Aircraft X was filing a NMAC. About 20 minutes earlier a coworker experienced a similar NMAC with Aircraft Z and Aircraft Y [military aircraft flight].

It was a strange evening with the smoke from the [nearby] fires greatly limiting visibility, creating IFR weather. Traffic was unusually busy. Aircraft Y flight was holding over NUQ for the flyby.

We should not have fly overs at [local sports] stadium. The stadium was built in a horrendous place for air traffic. The FAA should not accommodate these requests.

In order to accomplish these requests San Jose, NUQ, PAO, and maybe SQL should be shut down. We have tried at least 3 places to hold aircraft for these fly overs and each one has had a safety related issue. I also recommend the flights demonstrations arrive later. Aircraft Y flight showed up almost 45 minutes prior to the fly over. That's asking for trouble. The airspace over NUQ is extremely congested.

Narrative: 4

Aircraft Z was IFR inbound to Palo Alto on the VOR approach to Runway 31. Aircraft Y, a flight of 3 [military aircraft] was VFR inbound to Moffett Field (NUQ) to hold over the airport in preparation for a flyby over [local sports stadium]. I observed the course of the [flight of 3] on approach to NUQ and issued traffic to Aircraft Z. As the aircraft got closer without Aircraft Z spotting the traffic, I called Moffett on a shout line and asked if they had my traffic in sight. Moffett replied negative and I said I am going to issue the traffic and got off the line. I then issued a safety alert to Aircraft Z who reported seeing the [flight of 3] fly by in close proximity. The pilot was able to continue the approach and landed without incident. The pilot then heard another traffic conflict with the [military aircraft] and another aircraft inbound to Palo Alto and decided he wanted to call Palo Alto Tower and file a NMAC report.

This was a difficult situation for me to try and resolve as the aircraft was IFR on approach

and nobody coordinated with me what the [military aircraft] were doing. I tried reaching out to Moffett to inquire and due to the speed of the [military aircraft] it quickly became a traffic alert/NMAC before I could recommend a safe action to Aircraft Z. Moffett seemed unaware there was traffic in their airspace landing Palo Alto. After the [military aircraft] passed Aircraft Z, I inquired if they were able to continue the approach, which they did and landed without further incident. I did review that Aircraft Z had not been pointed out to Moffett Field via the automated feature, I do not know if NCT had otherwise coordinated with NUQ.

The weather at Palo Alto at the time was below VFR due to smoke, with visibility at 2 and 1/2 statute miles.

I cannot speak to how much information was given to Moffett Field or when regarding Aircraft Z transitioning IFR on the VOR approach to Palo Alto, or when they give communications on Aircraft Y flight to figure out what they were doing. That information needs to be shared earlier to all parties, whether by NCT of Moffett Tower, so that appropriate traffic calls can be issued and if needed control instructions issued to ensure separation.

Narrative: 5

I was flying on an active IFR flight plan to PAO, with a clearance for GPS 31. During the approach, PAO Tower advised me of a "Flight of 3" circling over Moffett (NUQ) and passing beneath me at the PUDBY intersection. I looked, but did not visually make contact. Tower advised they were about 1000 feet below me and not a factor, as they were heading southeast.

I crossed PUDBY at 2000 MSL and configured the aircraft for final approach. Visibility was about 2 miles and I did not have the field in sight. At about 1000 MSL, during the final approach, Tower suddenly advised me of "Traffic one o'clock, three miles, one thousand one hundred, and flight of three crossing right to left." At this point I made visual contact with the aircraft and noted that they were actually flying in a turn towards my location. I made an evasive turn of about 20 degrees right, and the aircraft passed in front of me and about 1000 feet off my left wing in the opposite direction of my flight at my same altitude.

PAO advised "If you need to climb up or maneuver it's completely your discretion" as I was making the evasive turn. At about this point I did finally get the PAPI lights in sight and reported the airport in sight. I was able to continue and safely land from my deviated procedure.

I find it highly questionable what the [military aircraft] were doing flying "VFR" across an active final approach course at an IFR airport during low visibility. I am thankful that they coincidentally happened to pass in front of my aircraft, allowing me to take evasive action. Since military aircraft do not participate properly in the NAS with ADS-B, I had no information on their speed, altitude, or intentions until the moment of finding myself precariously close to them.

I feel this incident put the lives of myself and my family at risk. I telephoned PAO tower on the ground, and the tower controller advised me he was filing an incident report about it as well.

Synopsis

Controllers and GA pilot reported a NMAC with military aircraft holding for a fly over.

Time / Day

Date : 201811

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Dusk

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1590825

Human Factors : Distraction

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 : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1590679

Human Factors : Situational Awareness

Human Factors : Distraction

Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

I was the Pilot Flying (PF) into ZZZ at dusk. The First Officer told me during our pre-departure briefing that he was somewhat new and hadn't flown the [aircraft] since his differences IOE. I took a lot of extra time even before pushback briefing everything I could think of about the differences as well as our flight, especially Runway XY into ZZZ. The event occurred on approach and landing on Runway XY into ZZZ. We were getting vectored for the RNAV GPS XY, and the Approach Controller seemed like he was distracted, as the vectors he was giving us were odd. I sensed this, and decided to start getting configured early, to slow things down and reduce the workload for the final approach segment. The vector he gave us already put us in a position to be behind. I had to query him to give us a turn to final and clear us for the approach. We were given a lower altitude, and cleared for the approach. We were both on the same page in terms of the approach briefing, we went over it meticulously in our briefings. It was my first time flying into ZZZ, and I believe I was hyper-focused on flying the approach. I made the standard callouts, including "Flaps 45, Before Landing Checklist", and this was where I believe something distracted us both. If I had to guess, it would probably be the Tower clearing us to land. I remember calling for the checklist, but I don't think it was ever done. After touchdown, I pulled out the thrust reversers, and I believe a L (or R) THR REV UNSAFE amber message illuminated, and we had no reverse thrust. I armed the thrust reversers and began using them, but by the time I had them out, we were already at about 70 knots. We had plenty of Runway available to stop and were slowed to taxi speed well before taxiway Juliet. We taxied to the gate without incident.

As the Captain, if the checklist was indeed not completed, I should have caught this.

Narrative: 2

My Captain and I were flying to ZZZ. We started briefing our approach and landing early as it is a short flight and a complicated approach with a short runway. Because of this, we made sure to pay extra attention to the briefing. As we got closer to the airport, we asked the approach controller for vectors to the RNAV Runway XY approach. We did this because it is much safer than doing a visual approach. During the vectors to the approach, we started getting configured early to avoid getting task saturated in the event we get vectored too tightly. After being given our intercept angle, we were well set up for our approach. While getting closer and closer to intercepting the final approach course, we were still waiting to be cleared for the approach. My Captain decided to query the controller to see if we were clear for the approach. He then cleared us for the approach while we were very close to the approach course. Then, we were immediately handed off to Tower who cleared us to land. At the same time, we had to make our final configuration changes and complete all of the call-outs associated with our approach. We quickly became task saturated and I missed my cue to arm our thrust reverses. During all of this

task saturation, we must have missed, or did not complete our before landing checklist due to being distracted by a hand-off at an inconvenient time.

The mistake was detected after landing when the pilot flying tried to deploy the thrust reversers. The reversers would not deploy. That is when the pilot flying noticed that the reversers were not armed.

This occurrence was caused by tight vectors and a late approach clearance, as well as a hand-off to Tower during an already task saturated period of flight.

The pilot flying then armed the reversers while continuing to stop using the brakes. The aircraft was able to slow down with plenty of runway remaining. We then exited the runway in a safe manner onto the nearest taxiway.

I do not believe the Controller was expecting us to ask for an RNAV approach. It seemed he had become task saturated as well due to the fact that he had to be asked before telling us we were cleared for the approach. It may help to advise our intentions to fly an approach earlier, as well as being given wider vectors that do not create task saturation.

Synopsis

CRJ-200 flight crew reported landing without completing the Before Landing checklist, citing a late clearance as contributing.

Time / Day

Date : 201810
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ROA.TRACON
State Reference : VA
Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : ROA
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 C : ROA

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1589506

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 : 1589510

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew

When Detected : In-flight
Result.Flight Crew : FLC Overrode Automation

Assessments

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

Narrative: 1

Being vectored to a visual approach Runway 22 into ROA, we had a terrain caution followed by a pull up and responded accordingly.

GPWS announced the warning.

While remaining at the assigned 4,000 feet from ROA approach, we were on a left base for Runway 22 when we received the terrain warning and associated pull up.

I instantly disconnected autopilot and climbed the aircraft 200 feet. Although I was mainly focused on the instruments during that time, I'm confident that the warning was dismissed almost instantly once passed the highest point on the ridge being crossed.

My only suggestion would be crews deliberately discuss crossing ridges at the lowest point possible at assigned ATC altitudes or opening up conversation with Roanoke approach to see if we can get higher altitudes and longer vectors. I did read the previous write about the crew going into Roanoke and having the same issue and this event was discussed in the cockpit well before it happened so both the captain and myself were ready to respond to the caution.

Narrative: 2

Cleared visual approach Runway 24 in ROA, on left base outside HIBAN on GPS 24 approach, descending to 3,700 feet, GPWS sounded terrain, pull up. Terrain was selected on MFD and not depicting terrain.

Briefed waiting to descend to 3,700 for HIBAN until after crossing ridge just too south of course, initiated descent passing ridge, but GPWS still sounded. Most likely caused by the RA sensing a rapid increase in terrain passing ridge as I initiated the descent. Turbulence may have contributed by causing a momentary descent rate greater than selected.

I was able to visually verify we were clear of terrain and initiated an immediate climb. The alert silenced after climbing approximately 100 feet.

For this approach in particular, there is no need to leave 4,000 (last ATC assigned altitude) until basically over HIBAN in VMC conditions. There is still plenty of time to lose excess altitude to follow the FPA. I should have just stayed at 4,000 until turned onto the approach more considering I had given myself the distance from HIBAN to make a shallow descent and still configure with plenty of time to have a stable approach.

Synopsis

Air Carrier flight crew reported being vectored in area of high terrain which caused GPWS to issue warning.

Time / Day

Date : 201810
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Relative Position.Distance.Nautical Miles : 3
Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : IMC
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 040

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 : Training
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class E : ZZZ

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 200
Experience.Flight Crew.Last 90 Days : 49
Experience.Flight Crew.Type : 83
ASRS Report Number.Accession Number : 1588422
Human Factors : Human-Machine Interface
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : VFR In IMC

Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

During flight in IMC conditions on a segment of the IFR flight to ZZZ, the Mode "C" transponder began to display different types of altitude that was different from the altimeter. Approach contacted me about the issue and I reset the transponder during the flight but that did not resolve the issue about the changing altitudes. When I pressed the PTT [Push To Talk] to advise Approach, the G430 screen reset itself during the flight. In this particular aircraft, the G430 screen has the only communication radio and navigation radio in addition to the GPS equipment that I was using for the flight. After the GPS unit reset itself, I called Approach and told them the Mode C transponder was turned off and back on but the issue was not resolved.

Once again, I pushed the PTT button to transmit, the GPS screen turned off and remained off. Once this occurred, I made the decision to get out of IMC conditions so I descended to 3,500 feet into VFR conditions. At this point of the flight, I just passed ZZZ airport and I made a mental note of where the nearest airport was at. Approach asked me where I was at in altitude and I told them I was 3,500 feet due to the GPS screen was not functioning properly and I was not going to be in IMC conditions with this issue. I made up my mind that I did not want to continue the flight and I asked for a priority landing at ZZZ so that I can attempt to determine the problem or call the mechanic and explain the situation. Approach either didn't hear my request or was too busy with other things, so I am not sure if my request was heard. I was able to communicate with Approach with a black screen on the GPS unit during this time.

About 2-3 minutes later, the communication was lost with Approach and I was not able to hear them or talk. I told Approach I am canceling the IFR flight plan and diverting to ZZZ for a landing. Another aircraft on the same frequency that I was on relayed from ZZZ Tower that I was cleared to land on any runway. I relayed that I acknowledge the message and told the plane that I have limited to no communications and no GPS screen which has the communication and navigation radio channels. The other aircraft told me I was cleared to land on any runway, so I made a landing on RWY XX where I was met by the fire department and an Operations personnel. I told them no one was injured, nor the aircraft, nor was there any fire or damage to the aircraft, just a communication and GPS screen issue.

I was escorted to the FBO by the Operations personnel where I made a phone call to the flight school and expressed the issues I had during the flight. I honestly don't know what caused the issue nor do I know what could have been done to prevent the issue from occurring in the future.

Synopsis

C172 pilot reported having transponder issues, then additional equipment problems having to land to determine what was wrong with the aircraft.

Time / Day

Date : 201810
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZDV.ARTCC
State Reference : CO
Altitude.MSL.Single Value : 38000

Aircraft

Reference : X
ATC / Advisory.Center : ZDV
Aircraft Operator : Air Carrier
Make Model Name : B747 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Nav In Use : GPS
Flight Phase : Cruise
Airspace.Class A : ZDV

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 : Air Carrier
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1586978
Human Factors : Troubleshooting

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 : FLC complied w / Automation / Advisory
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings

Primary Problem : Ambiguous

Narrative: 1

Approaching RAP VOR we were advised a re-route for active military airspace. Then [received] transponder L EICAS message. We switched to R transponder and also got an associated R transponder EICAS message. We asked ATC if they still had us on radar and they said yes they did. ATC advised it was most likely military jamming. Next we got a FMC verify position. Then unable RNP. I noticed both GPS L and R were way off and causing FMC position updating to be off RNP 2 ANP was 20. We advised ATC of navigation issues due to GPS jamming and asked for vectors. ATC advised this was not a problem and had been happening in the area. We decided to inhibit the GPS NAV and see if it would correct itself by radio NAVAID. This did seem to be working as the Actual Navigation Performance (ANP) was getting better but as we were getting close to [top of descent] and ready for an RNAV arrival and RNAV approach we decided to just ask for vectors to an ILS with a slight tailwind due to ANP would not be acceptable for an RNAV approach. If we had had more time before descent to advise Maintenance and possibly reset breaker GPS L might have fixed the issue.

Synopsis

B747 Captain reported possible GPS jamming near active military airspace.

Time / Day

Date : 201810
Local Time Of Day : 1201-1800

Place

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

Environment

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

Aircraft

Reference : X
ATC / Advisory.CTAF : ZZZ
Aircraft Operator : Air Taxi
Make Model Name : Skylane 182/RG Turbo Skylane/RG
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Taxi
Route In Use : Direct

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 : Instrument
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 1050
Experience.Flight Crew.Last 90 Days : 60
Experience.Flight Crew.Type : 1010
ASRS Report Number.Accession Number : 1586513
Human Factors : Distraction

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Ground Excursion : Taxiway
Anomaly.Ground Event / Encounter : Object
Detector.Person : Flight Crew
When Detected : Taxi
Result.General : Maintenance Action

Result.General : Flight Cancelled / Delayed
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

While taxiing from my hangar to the runway, I was distracted by programming my GNS 530W, and veered off the taxiway (a very dumb mistake). I then came in contact with a temporary sign used to advise non-pilots, the sign reads: "No Vehicular Traffic Past this Point." The prop made contact with the sign at idle speed and sliced it into 4 strips. The prop will now be overhauled to ensure safety. The prop RPM did not change when hitting the sign. I was the sole occupant, during this part 91 flight.

This is clearly pilot error. My biggest takeaway is this: anytime the aircraft is moving, eyes are out the window. No excuses. Contributing factors include possible fatigue: this was my 5th flight of the day after waking up [early in the morning]. Also contributing factors: distraction in the cockpit by trying to program GPS while taxiing and pilot complacency by being overly confident in knowing the taxiway since I've done it hundreds of times. This will not happen again if I keep my eyes out of the window during taxi.

Synopsis

C182 pilot reported being distracted while taxiing, exiting the taxiway and hitting an airport sign.

Time / Day

Date : 201810
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : U08.Airport
State Reference : NV
Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft

Reference : X
Aircraft Operator : Personal
Make Model Name : Piper Single Undifferentiated or Other Model
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Landing
Route In Use : None

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 : 2759
Experience.Flight Crew.Last 90 Days : 123
Experience.Flight Crew.Type : 17
ASRS Report Number.Accession Number : 1585567
Human Factors : Time Pressure
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Ground Excursion : Taxiway
Anomaly.Ground Excursion : Runway
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Diverted

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

I checked the weather and received VFR flight following from Nellis Control. I remained east of the Nellis restricted areas throughout the flight. I was in the terminal phase of the flight when the winds began to pick up and were not as forecasted. There was a significant crosswind at ([my destination]) so I chose to divert to (U08). U08 does not have an ATIS and I was guessing the wind from the windsock and a departing helicopter that reported the wind as north at 25 knots. After overflying the field a few times I began to run low on fuel. The crosswind turned into a direct crosswind at 35 knots (exceeding aircraft limitations) and I began to run low on fuel. I made the decision to land diagonally across the taxiway, across the smooth gravel that is between the taxiway and the runway and ultimately onto Runway 31 at an angle. My GPS indicated that my groundspeed on the approach was approximately 17 knots and I rolled smoothly across the gravel to the runway. There was no damage to any of the runway environment or the aircraft. My ground roll was approximately 150 feet. In order to execute the landing safely I had to overfly a few structures that were not lined up with the runway...This may have startled residents of the town. I had already cancelled and switched from Nellis Control and my datalink weather and ATIS reports of all of the surrounding airports indicated significant crosswinds as well. I made the decision to not switch back to Nellis to declare an emergency because there would be no services they could provide to me at that point. There is a vast distance between airports with fuel on the east side of the Nellis Complex. In the future I will proceed down the west side where there are more options and airports with fuel.

Synopsis

Small aircraft pilot reported a low fuel condition, higher forecast crosswinds and the intentional landing in-between the taxiway and runway.

Time / Day

Date : 201809

Environment

Flight Conditions : IMC

Light : Night

Aircraft

Reference : X

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

Flight Phase : Cruise

Component : 1

Aircraft Component : Air Data Computer

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Airspeed Indicator

Aircraft Reference : X

Problem : Malfunctioning

Component : 3

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Malfunctioning

Component : 4

Aircraft Component : Electronic Flt Bag (EFB)

Aircraft Reference : X

Problem : Malfunctioning

Component : 5

Aircraft Component : Altimeter

Aircraft Reference : X

Problem : Malfunctioning

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)
Experience.Flight Crew.Total : 20000
Experience.Flight Crew.Type : 8815
ASRS Report Number.Accession Number : 1584320

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

Refer to prior [safety] reports. The conclusions of both [reports] were not reviewed as POSSIBLY being related. Both [incidents] were identical except for the airspeed too low and overspeed warnings which were experienced as well as all other items mentioned. All three AIRSPEED and ALTIMETERS were INOPERATIVE in both cases. The [incidents] occurred in two different airplanes. The most recent occurred in night/IMC conditions with heavy thunderstorms at cruise, descent and approach. Ground based ATC radar was used to readout our altitude and groundspeed. We were unable to fly the GPS approach in use due to loss of VNAV. We used the opposing runway with raw data ILS on standby system with 20-30 knot tailwinds on a wet runway. The onboard [checklist] is in total error regarding the pitch and power settings. The QRH (Quick Reference Handbook) references were accurate using the standby attitude indicator. Also the Captain's iPad froze and the onboard paper QRH was used. First Officer was manually flying the aircraft.

Synopsis

B737 Captain reported two possibly related instances in two different aircraft involving loss of altimeters, airspeed, and VNAV.

Time / Day

Date : 201810
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Altitude.MSL.Single Value : 4500

Environment

Flight Conditions : Mixed
Weather Elements / Visibility : Cloudy
Weather Elements / Visibility.Visibility : 10
Light : Night
Ceiling.Single Value : 4500

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 : VFR
Mission : Training
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class C : ZZZ

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Air Traffic Control : Approach
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 175
Experience.Flight Crew.Last 90 Days : 45
Experience.Flight Crew.Type : 90
ASRS Report Number.Accession Number : 1583807
Human Factors : Situational Awareness
Human Factors : Training / Qualification
Human Factors : Distraction

Events

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

Anomaly.Inflight Event / Encounter : VFR In IMC
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

I was flying from ZZZ to ZZZ1. When I was in the TRACON area, I flew through a cloud at 4,500 feet. I kept my wings level and flew my course line keeping an eye on my GPS and six pack. I ended up going through another cloud at 4,000 feet and another at 3,500 feet. After informing TRACON every time I went through a cloud, TRACON asked if I would like to pick up an IFR flight plan. Not being instrumented rated, I informed him I was not personally Instrument Rated, but he kept offering for me to pick up a plan. I had only experienced clouds during the day during training. Experiencing night clouds were totally different and very freaky because of my lights in the cloud - without the lights though, it was only black (making the situation even scarier). I asked after going through a third cloud to divert to ZZZ2. The controller started reading off vectors and mentioned a cloud of precipitation off the west side of ZZZ2. Turns out I was going through clouds that had randomly popped up with the rain. These clouds were not reported on the ATIS/AWOS. Also, I was pointed towards a dark empty part of the terrain making it almost impossible to tell I was in a cloud until I was in one. I decided to continue on at 3,000 feet because in order to divert I would have to fly through more clouds (the pop up rain) to get to ZZZ2. I continued on and the flight was otherwise uneventful.

It was super nerve wracking going through clouds at night. I had never experienced it before. I think it is important Private Pilots experience IFR conditions at night to remain calm like I had in these situations. I did everything to keep the plane level and descend down, but it was still scary since it was all new to me.

Synopsis

VFR Cessna private pilot reported encountering IMC conditions and requesting assistance from ATC.

Time / Day

Date : 201810
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : LAS.Airport
State Reference : NV
Altitude.MSL.Single Value : 6000

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.TRACON : L30
Aircraft Operator : Air Carrier
Make Model Name : B767 Undifferentiated or Other Model
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 : Initial Approach
Route In Use.STAR : TYSSN5
Airspace.Class B : LAS

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1583154
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Workload
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Clearance
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We were filed and cleared the TYSSN5 RNAV arrival into Las Vegas. We had briefed the RNAV GPS to 19L. We were vectored off the arrival after KADDY and told to expect direct to LOOSN and the SITEE3 arrival. I gave the airplane to my first officer while I briefed the new arrival. After I took the airplane back. We were stepped down in altitude to 6000 ft as we approached LOOSN. Approximately at LOOSN we were given a clearance "turn left to 270 cleared the RNAV Visual to Runway 19L." We were expecting the RNAV GPS backed up by the visual, so it did not initially dawn on us what he had cleared us for. Shortly thereafter he came back and said he had given us an incorrect clearance and told us to return to the SITEE. We had already cleared out the SITEE and from our current position it would have been difficult to return to the arrival prior to the end of the arrival. My First Officer told the Controller that we had dumped the SITEE arrival and wished to fly "the visual." We were then cleared the visual. We were confused by the clearance for an RNAV Visual as it is not in our JEPPEL-PRO app and we were expecting to fly a visual backed up with the RNAV. The multiple clearance changes requiring FMS programming in close proximity to the field caused us to become task saturated and led to a situation where communication between the Controller and aircrew became unclear. My First Officer did a good job trying to mitigate the problem by getting us the visual approach. I believe we complied with the clearances as given, but this situation could have easily caused us to accept a bad clearance or to fail to follow a clearance correctly. Crews should be aware that this RNAV Visual exists in case it is given and be ready to get a different clearance since we do not have approval for this approach. Multiple FMS changes near the field coupled with expectation bias could have led to us not complying with our clearance or accepting a clearance for a procedure we are not approved to fly. Better training on the existence of RNAV visuals at different fields, the requirements for flying them would have helped us combat the expectation bias that occurred with the RNAV backed up with a visual and the RNAV Visual. Our guidance in the FOM on RNAV Visual Approaches is also not clear. In one place it specifies the RNAV Visual [at a different airport] as being the only one approved, but in another place the RNAV Visual is discussed as though we can fly them as long as certain other requirements are met.

Synopsis

B767 Captain reported multiple clearance changes on approach to LAS resulted in some confusion and workload issues.

Time / Day

Date : 201809

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : OUN.Airport

State Reference : OK

Altitude.MSL.Single Value : 11000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Fog

Weather Elements / Visibility.Visibility : 2

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : OKC

Aircraft Operator : Personal

Make Model Name : PC-12

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

Route In Use.STAR : GULLI 2

Airspace.Class E : OKC

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Air Traffic Control.Radar : 10

Experience.Air Traffic Control.Non Radar : 3

Experience.Flight Crew.Total : 10000

Experience.Flight Crew.Last 90 Days : 62

Experience.Flight Crew.Type : 1500

ASRS Report Number.Accession Number : 1581720
Human Factors : Situational Awareness
Human Factors : Troubleshooting
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

During arrival into Oklahoma City terminal area, I was routed via the GULLI 2 Arrival for the OUN airport. Navigation systems and all aircraft systems appeared to be functioning normally. The aircraft was on autopilot with NAV mode engaged. Upon reaching the GULLI intersection the aircraft failed to turn toward the next fix. The advisory caution concerning anticipated turn was indicated as normal. During the period after GULLI while the aircraft was being hand steered to the next segment, I noted the GPS signal was not in error mode. I requested and received a heading from the Approach Controller to assist with troubleshooting the issue. I was then able to reset the avionics as required. All normal functions were confirmed to "restored/normal" and the autopilot was re-engaged to track the heading assigned. I concurrently prepared for the RNAV 18 Approach to OUN. During the approach sequence all was normal with glide slope arming and subsequent "capture" of glide slope. At approximately 2.5 - 3.5 mile final the LPV annunciation was displayed, but the EFIS red X appeared on the vertical flight director segment. The #1 GPS then changed to LNAV instead of LPV. In accordance with established self-regulating "policy", I executed a missed approach and requested a vector for an ILS approach to Runway 18. During the vectors for ILS, I set up number 2 NAV for the RNAV 18 Approach as a backup and to assist with an anticipated PIREP. The ILS approach was completed normally, but the #2 GPS had the same failure as during the first approach, with a loss of GPS accuracy. Weather conditions were 200 OVC 2SM on the approach with tops of ground fog/clouds at 3,000. When reported to ATC, I received information that at least one other aircraft has a similar experience. There were NOTAMS out for high level GPS abnormalities but I believe this incident was related to ground based GPS augmentation equipment. (GBAS).

Synopsis

PC-12 pilot reported a failed LPV approach due to a loss of GPS accuracy.

Time / Day

Date : 201809
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 120
Altitude.MSL.Single Value : 7000

Environment

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

Aircraft

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

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 : Instructor
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 450
Experience.Flight Crew.Last 90 Days : 200
ASRS Report Number.Accession Number : 1581659
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

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

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During flight to ZZZ from home airport, the aircraft GPS failed. Quickly followed by a complete failure in the Garmin 530. Approximately 3 minutes after this occurrence, the aircraft's PFD display showed a failure in all integrated equipment including attitude information, airspeed indicator, altimeter, heading indicator, and the integrated compass. Immediately following was a red and white flickering over the screen signaling what was presumed to be power failing to the display. During this time the pilot was attempting contact with Center, of which no contact could be confirmed. At this time the pilot entered 7600 into transponder to signal lost communication. The pilot attempted to contact TRACON by telephone, though spotty service made attempts difficult. The best attempt was during flight nearby ZZZ1, where the pilot was able to inform TRACON that communications were lost and confirm continuing flight to ZZZ with an expected landing on runway XX, communication by phone was lost or failed at this point. None of the aircraft's lighting was operational including all exterior and interior lights. Cell phones were used to produce lighting for round dial gauges during flight as sunlight was diminishing. An MFD tablet running on standby power assisted limited navigation support while the pilot used tablet for primary GPS position, speed, and altitude enroute to ZZZ. The tablets were cross referenced with round dial instruments to ensure accuracy, though tablets were used mostly for convenience sake, (lighting and information organization). In this process the pilot noticed the ammeter indicating "0" amps, leading to the assumption of either an alternator failure and/or battery failure as the main cause. Around this time the transponder squawk code disappeared, though the backlight stayed lit up. Transponder functionality was unsure at this point. As the aircraft approached ZZZ, a diversion left of course was made to remain VFR as a descent to the airfield was made. Upon reaching the airfield the pilot maneuvered for a right downwind for runway XX, executed a wonderful landing, and taxiing to the parking area beneath the control tower led by light gun signals.

The aircraft has had a previous battery issue within the past several weeks, to best of pilot knowledge, where the battery was recharged but not replaced. Information was provided to pilot by aircraft owner morning after incident surrounding this report.

Synopsis

PA-32 pilot reported an electrical failure affecting multiple systems.

Time / Day

Date : 201809

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 0

Light : Daylight

Ceiling.Single Value : 1300

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Personal

Make Model Name : Cessna 150

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Training

Flight Phase : Final Approach

Route In Use : Vectors

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Instructor

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 4500

Experience.Flight Crew.Last 90 Days : 150

Experience.Flight Crew.Type : 200

ASRS Report Number.Accession Number : 1580815

Human Factors : Communication Breakdown

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Workload

Human Factors : Confusion

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

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 : Instrument
Qualification.Flight Crew : Private
ASRS Report Number.Accession Number : 1582100
Human Factors : Workload
Human Factors : Human-Machine Interface
Human Factors : Confusion
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Anomaly.Deviation - Procedural : Published Material / Policy
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

While flying in IMC with a student, my student became spatially disoriented. She was being vectored to a left heading of 040 to set up for the ILS XX at ZZZ. I watched her turn past her heading. I told her to turn back. She continued to the left. I was starting to question if her heading was really that off or if we were experiencing a vacuum failure. She said your flight controls. I took over but was already getting disoriented when I took the controls and struggled to regain control of the aircraft. My student became afraid we could stall, although we were not slow. She pushed the controls forward. We lost about 1,500 feet in a turn before regaining control of the aircraft. I feel that my student became spatially disoriented while I fell behind what was happening due to my questioning of the instruments. We lost altitude due to the unusual attitude. She and I are both current instrument rated pilots. She passed a check ride [a few months ago]. I passed a multi-commercial check ride [a few months ago]. We have both flown approaches since then. Neither of us had been in an unusual attitude in actual conditions before. We did unusual attitudes on a simulator the next day. We will both do it in the plane as soon as weather and schedule permits.

Narrative: 2

I was working on my commercial rating, but the ceilings were too low to do maneuvers. I still needed total time and I was scheduled to fly the next day for a fly-out, and I had never flown that airplane before, so we decided to take that airplane IFR to familiarize ourselves with it. My instructor had never flown that particular airplane IFR. I was, and am, a VERY low-time pilot in actual IMC. We decided to shoot one approach.

ATC cleared us to 3,000 feet, heading 090, with vectors for the ILS XX. We entered the clouds at ~1,300 AGL. Everything went well initially, but early on I asked my CFI to be in charge of tuning radios and putting things into the GPS because I knew it would task-saturate me. However, I continued to talk on the radios. I turned left to a heading of 100 at ATC's instruction, and leveled out at 3,000 feet. While finishing my briefing of the approach, ATC gave me another turn to the left, and I blew past the heading because I was fixating on the gradual descent shown on the VSI. With the airplane in a left descending turn and ATC talking on the radio directing us to turn back to the right, I began to feel disoriented and uncomfortable, and I gave the controls to my CFI. She said, "What are you doing? Are you okay?" and I said something like, "I feel a little disoriented, please take the controls" and she said "I have the controls".

We proceeded to enter an unusual attitude with a steeply banked right turn, according to the attitude indicator. My CFI called ATC and told them that we were having trouble, and that we had lost our vacuum pump. I looked at the vacuum gauge and it was in the green; I told my instructor the vacuum looked like it was working and I thought we were in an unusual attitude. I began to panic and completely lost my scan. At some point, hearing the panic also in my CFI's voice, I decided to take the controls again, but said nothing. Based on engine noise and afraid of deteriorating airspeed/impending stall, I pushed the stick forward. That must have put us into a dive because a few seconds later I heard the engine getting loud so I pulled the throttle back and looked at the ASI, which showed an IAS of ~130 MPH...in the yellow arc... so I began to bring the airplane back to a level pitch. I felt we were level again in controlled flight and began looking for the ground - I announced as I soon as I could see the ground, and leveled out under the clouds. ATC began to vector us to ZZZ at our request, then vectored us back to ZZZ1 when we changed our mind. We realized we did not know the weather at ZZZ and we did not want to fly back into the clouds inadvertently.

We flew back to ZZZ1 at 1,400 feet MSL without incident, staying visual, and landed.

Factors involved in this loss of control / unusual attitude in IMC incident were as follows:

1. Pressure to fly to build total time.
2. Pressure to fly this particular aircraft since I was scheduled in it the next day and had never flown it before.
3. Me being a low-time pilot, and an extremely low-time actual IMC pilot.
4. Me having never flown this particular aircraft, and having done all my IFR training in a C-172, which has very different control feel compared to a C-150.
5. Me relying on my CFI to be able to get me out of trouble.
6. My CFI being relatively unfamiliar with the incident aircraft and not having any IFR experience in it, and having most of her recent experience in 172's as well.
7. My CFI relying on me to not get myself into trouble and getting "behind" the situation.
8. Overcast at 1,300 feet AGL; hard IMC conditions at the time of loss of control.
9. Possible temporary loss of the vacuum system.
10. Panicking - on my part and my CFI's
11. Failing to maintain an instrument scan leading up to the incident and while I was panicking.
12. Failure on my part to uphold the initial "positive transfer of control" - since I took the

controls back without speaking and we were probably both trying to control the aircraft at that point / loss of trust in my CFI to recover the situation when I heard her panicking.

13. Mild fatigue on my part - I had slept for maybe 5-6 hours the night before, which is not quite enough for me in general.

14. Task saturation on my part - inability to think about briefing the approach, talk on the radio to ATC, and maintain my scan / control the aircraft.

The only factor in our favor about this event was that we had a 1,300 feet ceiling, no adverse weather conditions, and no rising terrain or obstructions.

The best way to prevent this would have been to realize that it was stupid, especially as a low-time pilot, to take an unfamiliar airplane (both in terms of model of airplane and avionics on board) into actual IMC without practicing in it first under the hood in VMC [and] learning the control pressures and the avionics in a safer environment. We should have stayed on the ground. We could have flown the simulator to build time.

Better ways to respond as the situation unfolded would have been for me to turn ALL non-flying tasks over to my CFI (better Crew Resource Management) when we entered the clouds so I could concentrate 100% on flying the airplane. When I first began to feel disoriented, I could have taken a deep breath, leveled the wings, and continued a careful scan, before worrying about ATC's instructions. After my CFI took the controls, she could have done the same thing - leveled the airplane and made sure she had positive aircraft control before trying to comply with ATC's directive to turn right. In the middle of it, I do not know if I should have taken the controls back or not from my instructor, because I do not know if she had positive aircraft control or not, but I should have said something about it. It was dangerous for me to make control inputs based on engine noise alone while in a (literally) blind panic. We were lucky to survive.

Other ways to prevent future such incidents, besides the above, is to pay very close attention to the IMSAFE and PAVE checklists before each flight, especially IMC flights. I plan to gain more actual IMC time in familiar airplanes with CFI's who are also very familiar with the given airplane in IFR situations. I plan to never take an unfamiliar airplane or avionics suite into actual IMC before flying a proficiency check under the hood in VMC or a proficiency check in IMC with an instructor who is high-time in that airplane. I will maintain my proficiency by flying MANY more approaches/holds/etc., per 6 months than are prescribed to stay legal as an instrument pilot. I will maximize my crew resources as needed to ensure that I can maintain aircraft control and not task-saturate. In general, I will avoid single-pilot IFR/IMC operations until I have a few hundred hours of actual IMC time. I also need to train myself to think rationally and maintain an instrument scan even in high-stress situations - this will be harder to do.

Synopsis

C150 student and instructor reported becoming disoriented and entering an unusual attitude in IMC conditions during practice instrument approach.

Time / Day

Date : 201809
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : 3DW.Airport
State Reference : MO
Relative Position.Angle.Radial : 080
Relative Position.Distance.Nautical Miles : 30
Altitude.MSL.Single Value : 2100

Environment

Flight Conditions : Mixed
Weather Elements / Visibility.Visibility : 6
Light : Dusk
Ceiling.Single Value : 800

Aircraft

Reference : X
Aircraft Operator : Personal
Make Model Name : Piper Aircraft Corp Undifferentiated or Other Model
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : VFR
Mission : Personal
Flight Phase : Initial Approach
Route In Use : Direct

Person

Reference : 1
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Private
Experience.Flight Crew.Total : 70
Experience.Flight Crew.Last 90 Days : 35
Experience.Flight Crew.Type : 49
ASRS Report Number.Accession Number : 1580779
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Distraction

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : VFR In IMC
Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Human Factors

Narrative: 1

I was flying to Downtown Springfield (3DW). The weather briefing I received just before my departure for the closest airport to my destination was 3000 ft and greater than 6SM. Deteriorating weather was expected. South and east of my route was showing lower ceilings and rain. 80 miles out at an altitude of 4000, the visibility was worsening and I would lower my altitude to avoid the clouds. 40 miles out with it now dark; I continued to reduce altitude to between 2100 MSL to 1900 MSL to avoid clouds. At 1900 [MSL], I was in the clouds around 30 nm out. The airplane was equipped with an S-Tec 20 autopilot and Garmin GNS 430 (non-WAAS) GPS. The autopilot [was] on and the GPS programmed direct to 3DW. My CFI left me a voicemail around this time and I returned his call letting him know of my situation. At this time, I should have performed a 180 [turn], but continued to think conditions would improve due to MVFR reporting from the destination airport. I failed to realize the weather reports could be inaccurate and misjudged my ability.

With my CFI on the phone, I was able to program the GPS with his help for a GPS approach. I was lined up with the runway and was clear of the clouds at 500 feet AGL. I landed safely with a few bounces.

I would recommend that weather reports should not be implicitly trusted and immediately turn around once or before you've exceeded your personal minimums. Flying in the clouds for non-instrumented rated pilots is much more stressful and life threatening than you could imagine. Disorientation is for real and not in your control.

Synopsis

PA28 pilot reported becoming task saturated while trying to stay VFR in IMC conditions.

Time / Day

Date : 201809
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SNA.Airport
State Reference : CA
Relative Position.Angle.Radial : 225
Relative Position.Distance.Nautical Miles : 3
Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : Mixed
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 1400

Aircraft

Reference : X
ATC / Advisory.TRACON : SCT
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
Flight Phase : Initial Approach
Airspace.Class C : SNA

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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 340
ASRS Report Number.Accession Number : 1580259
Human Factors : Time Pressure
Human Factors : Situational Awareness
Human Factors : Communication Breakdown
Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 432
ASRS Report Number.Accession Number : 1580278
Human Factors : Time Pressure
Human Factors : Confusion
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
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 : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

SNA ATIS - 1400 FT scattered using RNAV (GPS) Y 20R approach. 20R ILS NOTAM out of service. The RNAV (GPS) Y was loaded into the FMC and briefed. On handoff to SoCal Approach, the controller advised us to expect RNAV (RNP) Z 20R starting at KLEVR (IAF). The approach was loaded and briefed accordingly. Approximately 3 NM from KLEVR, SoCal canceled our approach clearance and assigned us a heading and new altitude of 3000 FT, with "expect vectors to EHVOX (IF) on the RNAV Z." After passing approximately abeam KLIPP waypoint on the RNAV Z, ATC gave us a right turn direct to the FAF waypoint ZETOV. Since we had just been vectored off the approach at KLEVR that required an RF leg (Ball note 6 on Approach Plate) and while still under IFR control, we questioned the controller about the assigned vector. ATC responded by giving us a right turn to a 270 degree heading. The controller then assigned us the RNAV (GPS) Y 20R Approach. The new approach was loaded and re-briefed. We were then assigned a north heading followed by a right turn to the southeast towards HUKEM. Due to the additive conditions of multiple approach changes from Y to Z back to Y and multiple vectors and altitude changes, our expectation bias was to have us join the RNAV Y Approach at SAGER (IF) based on the previous expect clearance on RNAV Z to EHVOX (IF). We tried to clarify our clearance with the controller at that point, but there was a complete breakdown in communication with

ATC since neither of us had a shared mental model of how the approach was going to be conducted, so we decided that the safest course of action was to initiate a Visual Approach by calling the airport "in sight" thus eliminating any further controller confusion. ATC then cleared us for the Visual Approach to Runway 20R. The remainder of the approach and landing were normal. The biggest issue in our case is with ATC changing their minds multiple times on a close-in approach assignment. It does not allow the crew time to fully brief the approach except for the big items. Also, when issued an expect clearance, and then given a clearance that differs from that, adds a layer of confusion since there is very little time to clarify what is expected unless it is obviously clear or explained in the clearance.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

B737-700 flight crew reported confusion resulted when ATC changed the clearance multiple times on arrival into SNA.

Time / Day

Date : 201809
Local Time Of Day : 1201-1800

Place

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

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Descent
Route In Use : Direct

Person

Reference : 1
Location Of Person : Company
Reporter Organization : Air Carrier
Function.Dispatch : Dispatcher
Qualification.Dispatch : Dispatcher
ASRS Report Number.Accession Number : 1580111
Human Factors : Communication Breakdown
Human Factors : Workload
Communication Breakdown.Party1 : Dispatch
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Dispatch
When Detected : In-flight

Assessments

Contributing Factors / Situations : Company Policy
Contributing Factors / Situations : Equipment / Tooling
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Manuals
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

I got an ACARS from the crew requesting landing runway in use at ZZZ airport. ZZZ does not have digital ATIS, so after looking at current and forecast winds and weather, and

looking at the arriving traffic to ZZZ airport, I determined which runway would probably be what the tower was using. Winds were close to 10 knots and the weather was clear. I had planned the runway in my pre-flight planning and also checked satellite coverage which was available at the arrival time for a GPS Approach. I also remarked the satellite coverage on the release. A few minutes after sending this information to the crew on ACARS, I get an ACARS back from the crew telling me to call the tower for landing runway information. At which point I wrote back to suggest that the crew monitor the airport ATIS frequency when in range to get the landing data. A few minutes later, I received an ACARS back from crew, that what I was providing was unsatisfactory. At which point I wrote back that I would not call the tower for the information because he had access to it via the radio, by monitoring ATIS frequency, since there is no digital ATIS. This is SOP. This is the last I heard from the flight until the Captain called later and asked to speak to my supervisor. At which point I transferred him to my Manager. If there were a good reason to call the tower for runway data, because of deteriorating weather conditions, aircraft mishaps, or ATC issues, I would have called the tower for the information, but since there were no circumstances out of the ordinary, I was not going to interrupt tower operations for a simple runway in use question, when this information was readily available via the ATIS frequency. At the same time this was happening, I was dealing with a diversion and 2 airborne reroutes for flights due to extremely bad weather in the area, along with trying to get my inbound flight plans completed, also dealing with the same weather. Flight crew over reliance on dispatchers, for information that is readily available to them. If there was a good reason to call the tower for landing runway information, such as weather conditions, or ATC issues, then calling the tower is not a problem. But to call the tower for landing runway information when there is no good reason to, puts pressure on tower controllers and takes time away from dispatchers who may be in a critical situation as I was on this date. The only reason the crew wanted landing runway information from the tower directly, is that there is no digital ATIS for view on ACARS, even though the crew can and will have to check ATIS on frequency to get landing data info. Put an alert out to crews and update the manual, that unless circumstances dictate a call to the tower for landing runway information crews should not request dispatchers to call the tower for landing information at airports where there is no digital ATIS.

Synopsis

Dispatcher reported refusing a Captain's request to call the Tower for landing information because the information was available via the ATIS.

Time / Day

Date : 201809

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Cruise

Component

Aircraft Component : Air Data Computer

Aircraft Reference : X

Problem : Failed

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 20000

Experience.Flight Crew.Type : 8815

ASRS Report Number.Accession Number : 1579314

Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Became Reoriented

Result.Flight Crew : Diverted

Result.Flight Crew : FLC Overrode Automation

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Landed As Precaution

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings

Contributing Factors / Situations : Weather

Primary Problem : Aircraft

Narrative: 1

Cascading systems failure in which QRH does not address. Also iPad QRH did not operate. No Altimeter and Airspeed VVI indicators were reliable with over 200+ knots difference. VNAV inoperative. ENG light illuminated. Flight Control lights illuminated. IMC at night with severe thunderstorms in all phases of flight path. Unable to land on primary runways in use due to GPS/RNAV only approaches without VNAV. Unable to land at alternate airport due to intermittent loss of electrical power for raw data approach and runway lights. Landed with tailwinds exceeding 20 knots, [and] only option on a raw data approach with ground based ATC Radar assisting with airspeed and altitude callouts every minute until touchdown. Maintenance BITE test indicated dual Air Data computer failure. I experienced the same exact scenario on a different aircraft with [reports] filed.

Synopsis

B737 Captain reported cascading system failures and intermittent electrical failures.

Time / Day

Date : 201809

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SNA.Airport

State Reference : CA

Altitude.MSL.Single Value : 3000

Environment

Light : Night

Aircraft

Reference : X

ATC / Advisory.TRACON : SCT

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

Nav In Use : GPS

Flight Phase : Descent

Route In Use.STAR : OHSEA

Airspace.Class C : SNA

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 409

ASRS Report Number.Accession Number : 1579260

Human Factors : Workload

Human Factors : Situational Awareness

Events

Anomaly.ATC Issue : All Types

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 : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Flying the OHSEA 1 Arrival into SNA. The RNAV (RNP) Z Runway 20R was loaded into FMC. We were told to expect the RNAV (GPS) Y Runway 20R. At two-miles from KLEVR I programmed the FMC with the new approach. Then as I was cleaning up the LEGS page, the LNAV disconnect flashed in the scratch pad momentarily and the aircraft went straight instead of making the turn at KLEVR. We corrected the turn to get back on course. ATC asked our heading and we told them what happened. He gave us a heading and said no problem. He vectored us to final and we landed uneventfully.

Synopsis

B737-700 Captain reported a track deviation resulted when the flight crew tried to reprogram the FMC following a late clearance change from ATC.

Time / Day

Date : 201809

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SBGL.Airport

State Reference : FO

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B777-200

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 : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1577247

Human Factors : Troubleshooting

Events

Anomaly.Deviation - Procedural : Other / Unknown

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Chart Or Publication

Primary Problem : Chart Or Publication

Narrative: 1

GPS approach to RWY 14 at GIG has poor vertical guidance and places aircraft well above a normal VDP to land on RWY 15 with displaced threshold...potentially causing an overrun if landing long due to high approach. The RWY has NO PAPI installed at the new threshold and the VNAV path is much too high at minimums.

This approach has all the ramifications of a runway overrun because there is no discernible threshold and there is no PAPI guidance system to assist a visual landing. The glide path for the [VDP] is much too high for the display's threshold.

Install a PAPI at the new displaced threshold on this runway...also do not call it RWY 14 as it is still the same RWY 15 it has always been. In addition, paint a discernible new threshold with appropriate markings and remove all other markings prior to the threshold.

Synopsis

B777-200 Captain reported the charted minimums on the temporary RNAV (GNSS) U Runway 14 chart, for SBGL, are too high to enable a safe landing from a VDP.

Time / Day

Date : 201809

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : SCT.TRACON

State Reference : CA

Altitude.MSL.Single Value : 11500

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.FSS : PRC

Aircraft Operator : FBO

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

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Cruise

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : FBO

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 128

Experience.Flight Crew.Last 90 Days : 15

Experience.Flight Crew.Type : 4

ASRS Report Number.Accession Number : 1576558

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Fatigue

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.Airspace Violation : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

While planning a flight westbound from the Phoenix area to the LA Basin I had copied down the controlling agencies and frequencies for restricted areas as well as MOAs along my intended route of flight. Also recorded were the flight service contacts on their respective VORs.

West of the BUCKEYE VOR, I identified and verified the BARD VOR and flew a course through several restricted areas since I had made an error in my preflight planning writing down Prescott's contact and the VOR frequency where that of BLYTHE and Riverside belonged. I did not detect this error between passenger and engine management climbing out of turbulence. When I realized I was unsure of my position I tried contacting SoCal for a position check. Negative with them, I flew to the most recognizable settlement while trying to establish my position on the sectional and drifted through the ADIZ into Mexican airspace. Finding that I was now west of Yuma, I immediately requested a position check with either San Diego or Prescott flight service- I do not recall which at this time. I was given a discrete squawk and when radar contact was made 10 miles west of MCAS Yuma I requested vectors back into American airspace and reported a possible pilot deviation through the restricted areas, MOAs and the ADIZ into Mexico. Flight Service asked if my flight had originated in the US and I replied it had. They contacted Air Marine Operations Center which had been tracking me and said it was not an issue as I flew back into American airspace. I asked for any other instruction or required reporting and was advised none. Flight Service wished me a good day and I thanked them profusely before I flew a 337-degree course to Blythe to regroup and refuel, copy down the details above and carefully reconsider continuing the trip.

A lack of alertness caused by fatigue in the planning of the trip, as well as in-flight, and a desire to meet a commitment at my destination (Get-There-Itis) fueled this, my only incident. I have since established hard sleep and overtime rules to protect my airmanship and have scheduled some remedial training in navigation. I am also currently looking to purchase a GPS navigation aid for situational awareness to prevent further incursions.

Synopsis

GA pilot reported becoming disoriented and committing several airspace violations.

Time / Day

Date : 201808

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : GRK.TRACON

State Reference : TX

Altitude.MSL.Single Value : 8000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 30000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : GRK

Aircraft Operator : Personal

Make Model Name : M-20 R Ovation

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Airspace.Class E : GRK

Aircraft : 2

Reference : Y

Aircraft Operator : Personal

Make Model Name : Sail Plane

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

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 : Captain

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 3450
Experience.Flight Crew.Last 90 Days : 180
Experience.Flight Crew.Type : 50
ASRS Report Number.Accession Number : 1573542
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Conflict : NMAC
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Miss Distance.Vertical : 500
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

I had to get a new MFD in the aircraft. After installation, the shop was reprogramming the G1000, I got the paperwork and everything appeared to be working during preflight. On an IFR clearance flying my Mooney, with autopilot engaged at 8000 MSL near FORSS transition, I saw a conflict glider not moving in the windscreen but getting larger, on a collision course from my 11 o'clock. He was at 8000, and if I had not deviated, I would have certainly had a mid-air collision. The glider never saw me and was not talking to anyone that I'm aware of. I had no indication in the cockpit. I reported the near miss with the glider and the corresponding altitude dev.

I did not hear any warning from ATC that I was in an active glider area, nor did I see any depiction on the VFR sectional in Jeppesen app on my iPad. Probably missed the glider by 500 ft after taking evasive action. My concern is to keep a similar incident from occurring again. If I was heads down, I may not have been here to write this report. It would have been very valuable to get a heads up from ATC that I was in an active glider zone.

I leveled back at 8000 and re-engaged the autopilot. Shortly after FORSS, I noticed an error with my G1000 GPS, I was stuck in GPS Terminal Mode instead of Enroute. Then I noticed the GNSS fail message on the STEC autopilot. I began to troubleshoot and the autopilot decoupled from the nav mode and went into a heading mode. When I pulled out the chart I realized I was east of where I was cleared, proceeding on a 020 heading, but my clearance was [elsewhere]. I fessed up to the navigation error, and ATC gave me present position direct to ZZZZZ for the rest of the arrival. The rest of the flight was uneventful.

My G1000 needs further programming I am now aware to prevent a similar occurrence.

Now that I am aware of how this system behaves, I will know what to watch for in the future to prevent this from happening again.

Synopsis

M20 pilot reported a NMAC with a glider, followed by a G1000 malfunction.

Time / Day

Date : 201808

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : MMMX.Airport

State Reference : FO

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : MMMX

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

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 : Descent

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 : Air Carrier

Function.Flight Crew : Other / Unknown

ASRS Report Number.Accession Number : 1573064

Analyst Callback : Completed

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance

Detector.Person : Flight Crew

Detector.Person : Observer

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

I was sent to MMMX as an observer in the jumpseat during this event. During the arrival, GPS-L INVALID and GPS-R INVALID enunciated repeatedly in the vicinity of MAVEK. The working crew advised this is a usual event and took no action. It seemed odd that no notice to the crew, no message, nothing in the company pages with regards to MMMX spoke of this issue. Once I arrived at the hotel for the layover, I investigated actions required in the event of an invalid GPS signal. There is nothing in the QRH, but there is a procedure in the ops manual. It's a pretty lengthy procedure that, in the end, requires monitoring your position using raw data or monitoring the POS REF page of the CDU (Control Display Panel) for accuracy. I recall back about six years ago the approach we used connected the enroute, arrival and approach across the SMO VOR. That approach, now the ILS DME 1 05R, changed from tracking the 160R from SMO to tracking the 164R from SMO. The first time we flew that approach, we were faced with a NAV failure. The fleet immediately issued a notice advising crews of this issue and reminded crews of the procedural requirement to tune, identify and track ground-based NAVAIDS during all phases of flight. With this in place, we weren't surprised by the failure nor unable to cope with the loss of NAV. There appears to be no notice in place to advise crews of this anomaly during the approach. Nor does there appear to be a procedure in place to accommodate this failure other than to return to the ops manual and work through the FMC Navigation Check - a lengthy process during a pretty critical phase of flight when distractions need to be kept to a minimum. Apparently, when the change in ILS procedure was made to place arriving aircraft close to a military installation that routinely jams GPS signals, GPS/NAV failures onboard aircraft arriving into MMMX became common. I would recommend filing the AVSAR 4A and requesting the ILS/DME1 05R so that crews have ground-based NAVAIDS that can be used to back-up their position. As well, I would suggest a message to crews advising them that during the arrival into MMMX, ground-based NAVAIDS must be tuned, identified, used and tracked so that when the GPS becomes invalid, the flight can continue safely in this mountainous area. The other option would be to advise crews of this issue during the arrival and require that one pilot monitor the POS REF page of the CDU. According to our procedures, if the two IRS positions are in agreement and the FMC position is not significantly different, the FMC position is probably reliable. Although this procedure is published in the ops manual, it's hard to find and might not be at the tip of your fingers, so to speak, during this critical phase. A notice indicating this loss should be expected and the procedure available to counteract the failure, would be most helpful.

Callback: 1

Reporter has recommended to the Company Ops. Dept. that all flights into Rwy 5 at MMMX be filed for an ILS/DME approach and that crews be reminded of the requirement in the general operating manual to have all preparations completed to be able to transition to a non-GPS approach when flying an RNAV approach.

Synopsis

B737 observer pilot reported experiencing intermittent GPS reception issues while observing the flight crew on approach to MMMX.

Time / Day

Date : 201807
Local Time Of Day : 0001-0600

Place

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

Environment

Flight Conditions : Mixed
Weather Elements / Visibility : Cloudy
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 600

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Corporate
Make Model Name : Learjet 45
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Nav In Use : FMS Or FMC
Flight Phase : Final Approach
Route In Use : Visual Approach
Airspace.Class D : ZZZ

Component

Aircraft Component : FMS/FMC
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 6044
Experience.Flight Crew.Last 90 Days : 110
Experience.Flight Crew.Type : 70
ASRS Report Number.Accession Number : 1571608
Human Factors : Communication Breakdown

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

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Air Traffic Control
Miss Distance.Vertical : 500
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

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

Narrative: 1

This specific aircraft had a database problem with both UNS-1 FMS (Flight Management System) units. After a previous software update, it reset the date to a future date, and as a result, the FMS was unusable for RNAV/GPS approaches. A GPS approach could be loaded in the FMS, but the message "No RAIM at FAF (Final Approach Fix)" would display, and all guidance would be lost after crossing the FAF on an IAP (Instrument Approach Procedures).

As a result, the company issued an email explaining the problem, and stating that GPS approaches could not be flown, as there would be no guidance after the FAF, and that ground-based approaches were to be used until the problem could be solved, as per manufacturer's instructions on the original squawk.

The gist of it was this: The FMS could guide you on a RNAV/GPS approach up to the FAF, but after that point, all lateral and vertical guidance would be lost.

We flew the arrival into ZZZ and were handed off from Center to Approach Control. I was the PM (Pilot Monitoring) and was responsible for the radio communication. The PIC was the PF (Pilot Flying) on this leg. We had discussed the problem with the FMS en route, and had agreed on the fact that there would be no guidance on an RNAV/GPS approach after the FAF, and that we would plan on the ILS approach.

ATIS reported the winds as calm, overcast at around 6,000/6,500 feet, and FEW clouds at 600 feet. It also reported that the Runway 9 was in use, and to expect the RNAV/GPS or visual approach to Runway 9.

Upon handoff to Approach Control, I informed them that we were unable any RNAV approaches, and he responded that he assumed that meant that we were looking for the ILS, which I confirmed. He came back at some point saying that the ILS was out of order and asked what we wanted to do. I had already given the PIC the ATIS report, and he instructed me to tell them that we could accept the RNAV/GPS to Runway 9. The controller asked us to confirm that we were indeed able to accept the RNAV approach, and the PIC

nodded his head and said yes, so I replied with an affirmative.

We were cleared direct to IAF (Initial Approach Fix). I had loaded a different waypoint in the FMS as an IAF, so had to reload the approach into the FMS. The PIC requested a vector to fly towards [IAF] while we were getting the approach loaded into the FMS, and ATC gave us a heading to fly, and when able- direct to [IAF]. Once loaded, we navigated to [IAF], and turned inbound onto the final approach course at [waypoint], towards the FAF. I was busy with the before landing configuration of the plane, and the checklist- with my head down, and glanced momentarily outside and saw that the reported FEW 600 feet was a fairly solid layer underneath with patches of ground contact, closer to BKN in my opinion.

Approach handed us off to the Tower, but the PIC asked for confirmation that we had indeed been cleared for the approach. The Tower Controller asked us to standby for a second while he confirmed- he confirmed that we were. I was busy completing the BEFORE LANDING checklist, and when I looked up- saw that we had flown past the FAF and were descending in IMC conditions into the layer of cloud. I looked over at the PIC to ask him what his intentions were, and to see if he had some form of guidance on his PFD (Primary Flight Display) when the Tower Controller called on the radio saying : "Stop your descent immediately!" as we had triggered a ground proximity warning for him. I looked up, and saw that we had just broken out below the cloud layer, and that there was a ridge line between us and the runway.

We continued visually, and landed on Runway 9.

In hindsight, there should not have been any assumptions made on my part that the PIC and I were on the same page regarding the functionality of the FMS. I should have clarified with the approach controller that we would only be able to accept the approach up until the FAF, and if we were not in VMC at that point, that we would be diverting to [an alternate airport], or another alternate- if they were not willing to allow us to fly the ILS approach into ZZZ. I should have been more assertive towards the PIC, insisting on a missed approach when we reached the FAF without the airport in sight.

Synopsis

Learjet 45 pilot reported flying a RNAV/GPS approach when it was not authorized.

Time / Day

Date : 201808
Local Time Of Day : 1201-1800

Place

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

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Thunderstorm
Weather Elements / Visibility : Rain
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 4000

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Personal
Make Model Name : Skylane 182/RG Turbo Skylane/RG
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Personal
Flight Phase : Cruise
Route In Use.Other
Airspace.Class B : ZZZ

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 : Private
Experience.Flight Crew.Last 90 Days : 27
Experience.Flight Crew.Type : 209
ASRS Report Number.Accession Number : 1571346
Human Factors : Distraction

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : FAR
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

Flying my 182 from ZZZ to an avionics shop in ZZZ1 to correct autopilot issues. The weather was unsettled - standard late afternoon "pop up" convection in the greater [city] area. I decided to fly south around the west side of [the city] since the weather looked best in that area. Immediately after departing I received an indication that my panel GPS was not receiving signal. I had reviewed Airport, Obstacle, TFR, and ARTCC NOTAMS but did not see any indication of expected GPS signal loss. Given the recent challenges with my autopilot - I considered that perhaps this was yet another "issue" with my avionics. Initially - I knew the area well enough to navigate by sight (while heading SW) but I then turned on my Stratus and connected to my iPad that I keep for back up to regain situational awareness of my location. At this point my altitude was level at 3200 ft MSL and I decided to turn south flying under the 4000 foot base of the Bravo airspace. As I continued on the heading I noticed some convection forming and decided to lower my altitude to 3000 ft MSL and fly right around the corner of the Bravo shelf that sits at 3000 MSL. At this point, still about 8-10 miles from ZZZZZ I got another "lost GPS signal" from my panel and immediately reverted to my Status/iPad combination which appeared to be working. A few minutes later - the panel GPS returned and my iPad "flashed" and showed me approximate 2-4 miles at the Bravo 3000 ft MSL shelf. I immediately reduced altitude to 2800 ft and continued to fly out from under the shelf to the 4000 ft MSL Bravo shelf and then on to ZZZZ where I landed.

It is unclear if I in fact "busted" the Bravo or not - it was certainly very close. I'll also mentioned that I left ZZZZ in a different airplane headed east about 1 hour later and it initially had GPS reception challenges as well - so perhaps something was going on with the GPS network. In reflection - it is clear that I've been very comfortable with technology based navigation - and did not think to use pilotage as a backup for electronic navigation. It is also worth noting that I was flying after a full day of work, still distracted from work issues, and flying in stressful weather conditions as well - and was not as fresh as I should have been for this flight.

Synopsis

Cessna 182 pilot reported experiencing intermittent "lost GPS signal" alerts while attempting to avoid Class B airspace and significant weather.

Time / Day

Date : 201808
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : NCT.TRACON
State Reference : CA
Altitude.MSL.Single Value : 6300

Environment

Weather Elements / Visibility : Haze / Smoke
Weather Elements / Visibility.Visibility : 8
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : NCT
Aircraft Operator : Personal
Make Model Name : Small Aircraft
Crew Size.Number Of Crew : 1
Flight Plan : None
Mission : Personal
Nav In Use : GPS
Nav In Use.VOR / VORTAC : OSI
Flight Phase : Cruise
Route In Use : None
Airspace.Class B : NCT

Component

Aircraft Component : Navigational Equipment and Processing
Manufacturer : Garmin
Aircraft Reference : X
Problem : Design
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 : Commercial
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 5200
Experience.Flight Crew.Last 90 Days : 35
Experience.Flight Crew.Type : 3500
ASRS Report Number.Accession Number : 1570622

Human Factors : Human-Machine Interface
Human Factors : Troubleshooting
Analyst Callback : Completed

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Airspace Violation : All Types
Anomaly.Deviation - Procedural : FAR
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Exited Penetrated Airspace
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Chart Or Publication
Primary Problem : Ambiguous

Narrative: 1

I was taking a short trip to the coast from PAO with a brand new Garmin Navigation database update into a brand new Class B change for the SFO area. The new Garmin update included the new Class B information. The GPS showed me that the base of the Class B changed from 4000 to 8000 not too far from OSI VOR. This was a change, since it had been a shift from 4000 to 6000. I was briefly over 6000 before descending. When I returned, I double checked the new chart and found that the GPS data was wrong--the base was 6000 not 8000. I later checked with the also brand new database in the Garmin Receiver in my other airplane. It also showed incorrect information as to the base of the Class B in that same area. It also showed 8000 instead of 6000.

Bottom line is that I relied on the newly downloaded database, which was supposed to accurately conform to the new changes in the Class B. Although the new database in both airplanes seemed to conform to the many changes, it was inaccurate as to this area. This occurred only 2 days after the Class B changes, so I am planning on informing Garmin of their error. Both airplanes, with 2 separate Garmin products, both with 2 new Garmin database downloads were consistent but wrong.

Callback: 1

Reporter received confirmation from manufacturer acknowledging a database error.

Synopsis

GA pilot reported the Garmin Navigation database was incorrect referencing the new SFO Class B airspace.

Time / Day

Date : 201808
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZZ.Airport
State Reference : FO
Relative Position.Distance.Nautical Miles : 4
Altitude.MSL.Single Value : 27000

Environment

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

Aircraft

Reference : X
ATC / Advisory.Center : ZZZZ
Aircraft Operator : Air Taxi
Make Model Name : Falcon 20FJF/20C/20D/20E/20F
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Cargo / Freight
Flight Phase : Landing
Route In Use : Visual Approach

Component

Aircraft Component : Turbine Engine
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 Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 5151
Experience.Flight Crew.Last 90 Days : 200
Experience.Flight Crew.Type : 695
ASRS Report Number.Accession Number : 1569333

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Flight Deck / Cabin / Aircraft Event : Illness
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Anomaly.Ground Event / Encounter : Ground Strike - Aircraft
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Physical Injury / Incapacitation
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Inflight Shutdown
Result.Aircraft : Aircraft Damaged

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

After reaching our cruising altitude of FL270, I checked our windscreen for ice and saw trace amounts. I turned on both engine anti-ice switches. Almost immediately, a thump was felt and the left engine rolled back and failed. I disconnected the auto pilot, and took the controls from the flying pilot. After taking a few moments to assess the situation I called for the engine out checklist, which [the FO (First Officer)] had already started turning to. I spoke to Center and requested direct to [a nearby alternate], which I knew was mostly clear of mountains and obstacles and nearby. Center advised that [that airport] has no services at this time, and suggested [a different alternate], and cleared us direct.

After completing the shutdown checks for the left engine I continued to assess our situation and decided that [an] air start attempt would be appropriate. [The FO] ran the air start procedure by the checklist, and as soon as the left engine came back to life, the right engine immediately rolled back and failed in the same manner as the left had earlier. At this time we were approaching [the alternate] and I knew we were in trouble due to the fragile state of the left engine.

In a few minutes the left engine indeed failed and we were now less than 10,000 ft AGL and descending dead stick at 2-3000 ft./m. Since we could not see the airport below cloud cover I used the Garmin GPS moving map to identify my position relative to the runway. I attempted a steady right turn from over field to base to final but came up short as I ran out of altitude and airspeed, striking trees at approximately 130 knots, and coming to a rest in a cornfield.

FO complained immediately of a hurt shoulder, and after a few seconds of self-assessment I realized that I was uninjured. After getting up to attempt to open the main door, I looked forward again and saw [the FO] halfway out my window. We both egressed to the left side of the plane and phoned company and family and waited for emergency services to arrive.

At this time I do not know what caused the engine failures, though the dual failure would suggest fuel contamination or FOD ingestion. We were unable to inspect the engines ourselves after the landing.

Synopsis

DA20 Captain reported executing a forced landing after losing both engines in flight.

Time / Day

Date : 201807
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : RYY.Airport
State Reference : GA
Altitude.AGL.Single Value : 3000

Environment

Flight Conditions : Mixed
Weather Elements / Visibility : Fog
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Tower : RYY
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 : Passenger
Flight Phase : Final Approach
Airspace.Class D : RYY

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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 11000
Experience.Flight Crew.Last 90 Days : 100
Experience.Flight Crew.Type : 750
ASRS Report Number.Accession Number : 1567528
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Air Traffic Control
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

I was assigned a trip as the Captain on a flight to RYY. The weather was marginal IMC, due to ground fog. The forecast for arrival was to be VMC. There were no NOTAMs for the flight. 30 min out, my first officer received the ATIS from the airport and the weather was improving to VMC, but the winds were calm, so ground fog was still in the area and they were advertising the RNAV/GPS 9. My FO (First Officer) advised me that there were issues with the FMS system in the past about it dropping GPS/RNAV approach's at the final app fix. Since the winds were calm, I asked him to ask the controllers that we would like the ILS 27 approach. The controller told us that the approach was not available. Since the weather was improving and I had ground contact, we as a crew discussed flying the RNAV/GPS 9 approach until the FMS or weather was an issue then we would go missed. Inbound on the approach, I had ground contact and the visibility was more than 3 miles. Turning onto final, I had the airport in sight and we both agreed to continue with the approach, not seeing [any] problems. Approx. 1 mile from the end of the rwy, with the rwy in sight, the tower controller told us to check altitude. We advised him that we had the rwy in sight. Taxiing in, we switched to ground control freq., and I asked when was the ILS 27 was NOTAM'd out of service. He said it wasn't, he just didn't want to give it to us.

Synopsis

Corporate turbojet Captain reported issues with Approach Control while landing in marginal VFR conditions.

Time / Day

Date : 201808

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : S46.TRACON

State Reference : WA

Altitude.MSL.Single Value : 15000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 25

Light : Daylight

Ceiling.Single Value : 25000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : S46

Aircraft Operator : Corporate

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use.STAR : GLASR1

Airspace.Class E : S46

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : S46

Aircraft Operator : Air Carrier

Make Model Name : B737-900

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class E : S46

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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 14500
Experience.Flight Crew.Last 90 Days : 80
Experience.Flight Crew.Type : 275
ASRS Report Number.Accession Number : 1567243
Analyst Callback : Completed

Events

Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

Failed to meet crossing restriction at WOODI intersection due to wake encounter and evasive action.

Inbound to SEA on GLASR1 STAR, cleared to "descend VIA GLASR1". We were flying a Citation CJ4, ten miles in trail of a 737-900. Shortly after passing JAKSN intersection, we began to encounter wake turbulence as buffeting and uncontrollable left/right rolling. I reduced our descent rate to remain above the path of the preceding 737-900. The buffeting and rolling stopped and we continued our descent, but were unable to make the "at or below 14000 feet" crossing restriction over the WOODI intersection. I believe we crossed WOODI about 1000' high. We reported the wake encounter to the controller and mentioned our lack of meeting the crossing restriction. The controller said nothing to us regarding the altitude deviation. The remainder of the STAR and approach continued behind the 737-900 with occasional wake buffeting.

We are experiencing wake turbulence more frequently, especially on STARs and approaches. My guess would be due to the accuracy of the GPS/RNAV equipment.

Synopsis

C525 Captain reported failing to meet a crossing restriction during avoidance maneuvers related to a wake turbulence encounter in trail of a B737-900 on arrival into SEA.

Time / Day

Date : 201808

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZLC.ARTCC

State Reference : UT

Altitude.MSL.Single Value : 11000

Aircraft

Reference : X

ATC / Advisory.Center : ZLC

ATC / Advisory.Tower : SUN

Aircraft Operator : Corporate

Make Model Name : Citation Excel (C560XL)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use.Other

Airspace.Class E : ZLC

Person

Reference : 1

Location Of Person.Facility : ZLC.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

ASRS Report Number.Accession Number : 1565516

Human Factors : Situational Awareness

Human Factors : Human-Machine Interface

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.Air Traffic Control : Issued New Clearance

Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Airspace Structure

Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings

Contributing Factors / Situations : Company Policy

Primary Problem : Company Policy

Narrative: 1

During this time there was widespread GPS jamming going on. Almost every aircraft was reporting with GPS outages. Two other SUN arrivals had advised GPS malfunctions, but reported their GPS back online prior to the initial approach fix. They flew the RNAV approach from PRESN without incident. We contacted SUN Tower after the first approach to make sure they were unaffected and the tower said the pilot didn't report any issues. When Aircraft X was approximately 4 miles south of the PRESN intersection the pilot reported his GPS capabilities had returned. The R-Side cleared the aircraft to cross PRESN at or above 9,000, cleared RNAV approach.

After transferring communication to SUN Tower, [R-Side] noticed the aircraft had taken a more easterly turn than we normally see on the approach. With the abundance of smoke in the area, and the TFR very near the RNAV track, we wondered if the tower had broken off the approach, or if something different was happening. I called the tower and told them Aircraft X was off course, and if they knew what was going on. They said he had just reported over PRESN at 11,000. The RADAR showed that Aircraft X was about 12nm North West of the PRESN intersection, nearing (about 3 miles from) a 10,900 TAV mode C indicating 10,700. [R-Side] told me to issue a turn to the south. I issued, to the tower, a 155 heading and 10,000 altitude. We had traffic south of Aircraft X at 11,000. The lowest altitude we saw Aircraft X was 9,600 in either a 9,000 or an 8,000 TAV, the turn seemed to be timely enough to keep him out of the 10,900. Had [R-Side] not noticed, that flight crew and the passengers would be dead. I have no doubt.

The military must practice - I understand. GPS jamming (or "Testing" as they call it) is part of that. What I hear, third party, is that the military doesn't believe it affects civilian aircraft to a noticeable extent. They need to understand that it does. That the workload is exponentially increased with this type of exercise. We're willing to help as much as we can - but there's a limit, where loss of life can happen because ATC and a flight crew believe their equipment are working as intended, but are in fact leading them into the side of the mountain with numerous aircraft active. That's a pretty reasonable limit, and I think we could actually pull that line back a bit.

Synopsis

ZLC Controller reported an aircraft flew off course due to GPS jamming and went below the minimum terrain clearance altitudes.

Time / Day

Date : 201807

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : PVU.Airport

State Reference : UT

Altitude.MSL.Single Value : 9000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 14000

Aircraft

Reference : X

ATC / Advisory.TRACON : S46

Aircraft Operator : Personal

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Landing

Route In Use : Vectors

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 : Multiengine

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1670

Experience.Flight Crew.Last 90 Days : 25

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1565471

Human Factors : Distraction

Human Factors : Fatigue

Human Factors : Physiological - Other

Human Factors : Confusion

Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Automation : Air Traffic Control
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 : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

Nearing the end of a hot, bumpy four-hour IFR flight to PVU that was largely conducted on oxygen at altitudes ranging from 8,000 to 14,000 feet MSL I was turned over to Salt Lake Approach Control north of the YMONT intersection, given a vector and cleared from 14,000 ft to 13,000 ft MSL. The vector took me just north of PVU which was clearly visible. The location of the airport was clear and visibility was no factor. Winds were reported to be light and variable and the ATIS indicated RWY 13 as the active. I requested the RNAV (GPS) RWY 13 approach and was told to expect that. I loaded the approach into the GPS and verified that the waypoints were the same as were indicated on the paper chart, reviewed the approach and expected vectors to get me to ZUXAG (the IAF) without a need for a turn of greater than 90 degrees. As nearly as I can remember it, Salt Lake Approach Controller then said "Cleared direct FFU, cross FFU at or above 9000, cleared for the approach". I must have been more tired and dehydrated than I thought I was, because I was having a struggle to figure out how to enter the approach from FFU without having to make a turn of greater than 90 degrees. Additionally, as I approached ZUXAG the GPS flight direction path indicated a need to make a left 270 degree turn rather than right turn I was expecting. I instinctively followed the indicated GPS flight path rather than doing what I earlier felt to be the right move, a turn to the right of more than 90 degrees. Shortly after entering the turn I disconnected the autopilot when roughly parallel and far offset from RWY 13. When the controller then asked if I wanted the visual I said something to the effect of "Yes, thank you". I was turned over to the Tower and proceeded to position myself to enter the right downwind leg for RWY 13 at a position just clear of a nearby rain cell. The Tower indicated that the winds had changed dramatically from light and variable to 220 degrees at 16 knots gusting to 25 and asked if I wanted RWY 18 instead of 13. I said yes and prepared to enter a right base for RWY 18. While five hundred feet above pattern altitude about to make the turn to final the Tower said that they had a low altitude alert. When I told them my current altitude they cleared me to land on RWY 18. The last minute changes and altitude warning had the effect of concentrating my attention and I made an uneventful landing, back taxied per the instruction from the Tower and taxied for fuel and overnight parking. I'm unsure what the source of the low altitude alert may have been, a false altitude report from my transponder or a glitch in the ATC computer but it certainly got my attention. The most disturbing part of this event filled, but ultimately safe arrival at PVU was the unanticipated clearance from ATC and the equally unanticipated steering directions provided by the GPS while converging on the IAF for the approach. I will spend some time on the Garmin simulator trying to determine why the GPS reacted as it did. I will also caution myself in the future to not build-in false expectations regarding up-coming ATC instructions. The expectation that I would be vectored onto the leg from ZUXAG to DICOT following FFU to avoid the greater than 90 degree turn led me to take actions that could have been

dangerous had IMC prevailed. Flying into unfamiliar airports in complex airspace requires a degree of concentration that fatigue and dehydration make difficult.

Synopsis

GA pilot reported a GPS anomaly led to a poorly executed approach with an altitude alert.