ASRS Database Report Set

RNAV Arrival Reports

Report Set Description.................................A sampling of reports that reference RNAV Arrival related incidents.

Update Number..............................................12.0

Date of Update..............................................June 5, 2024

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

Records within this Report Set have been screened to assure their relevance to the topic.
MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

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

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

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

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

Becky L. Hooey, Director
NASA Aviation Safety Reporting System
CAVEAT REGARDING USE OF ASRS DATA

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

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

One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the lower measure of the true number of such events that are occurring. For example, if ASRS receives 881 reports of track deviations in 2010 (this number is purely hypothetical), then it can be known with some certainty that at least 881 such events have occurred in 2010. With these statistical limitations in mind, we believe that the real power of ASRS data is the qualitative information contained in report narratives. The pilots, controllers, and others who report tell us about aviation safety incidents and situations in detail – explaining what happened, and more importantly, why it happened. Using report narratives effectively requires an extra measure of study, but the knowledge derived is well worth the added effort.
Report Synopses
ACN: 2082258 (1 of 50)

Synopsis
Flight crew reported that when they entered the published holding pattern at OQUIDI, which is the IAF for RNAV(GPS)13 Approach to SKX, the FMS turned the aircraft right instead of left as published. The IAF holding pattern is left turns and the missed approach holding pattern at OQUIDI is right turns.

ACN: 2071587 (2 of 50)

Synopsis
Air carrier pilot reported a CFTT EGPWS warning during an approach to ROA using RNAV Y 24. ATC reported the aircraft was not below minimums.

ACN: 2070497 (3 of 50)

Synopsis
GA pilot reported a momentary loss of aircraft control while on the RNAV 28 approach to C29 airport in IMC conditions.

ACN: 2069943 (4 of 50)

Synopsis
LR-60 Captain reported a Controlled Flight Toward Terrain (CFTT) event while executing a RNAV approach that had been assigned late after they had briefed another approach. Their FMS did not reflect an intermediate fix or corresponding altitude which led to an ATC Low Altitude alert and Go around instruction.

ACN: 2069176 (5 of 50)

Synopsis
CID Approach Controller and aircraft First Officer reported aircraft made an incorrect turn and descent while on vector for RNAV approach resulted in CFTT event.

ACN: 2068919 (6 of 50)

Synopsis
Air carrier pilot reported during descent they failed to notice the aircraft descended below a step down altitude. Flight crew recovered from altitude deviation and continued approach.

**ACN: 2068070 (7 of 50)**

**Synopsis**
Hawker 750 flight crew reported receiving a low altitude alert on approach. Flight crew corrected altitude and completed the approach.

**ACN: 2067419 (8 of 50)**

**Synopsis**
Air carrier pilot reported while waiting on runway for takeoff an aircraft on approach to the same runway performed a go-around passing 200 ft over the reporter’s aircraft.

**ACN: 2067220 (9 of 50)**

**Synopsis**
An ARTCC Controller reported confusion between video map display overlays while controlling an aircraft with malfunctioning navigation and deicing equipment resulted in descent below MVA and a CFIT event.

**ACN: 2065439 (10 of 50)**

**Synopsis**
CRJ-700 flight crew reported an unstabilized approach, requiring maneuvering, resulted in a GPWS alert and CFIT.

**ACN: 2064111 (11 of 50)**

**Synopsis**
Captain reported multiple low altitude alerts from ATC on approach, went missed approach and diverted to an alternate airport.

**ACN: 2063914 (12 of 50)**
Synopsis
Air carrier First Officer reported receiving an aircraft terrain caution during descent into RNO. The Captain immediately stopped the descent, the caution disappeared, and the flight crew continued the landing.

ACN: 2061528 (13 of 50)

Synopsis
Pilot flying approach reported low altitude alert from ATC during approach in IMC.

ACN: 2061209 (14 of 50)

Synopsis
Air carrier Captain reported a near miss with a helicopter departing a hospital under the approach course. The Captain leveled off to avoid the traffic, performed a go around, then returned to land safely.

ACN: 2060282 (15 of 50)

Synopsis
Air carrier First Officer reported a GPWS Terrain warning while on the ELP RNAV RNP Z 26L approach. The pilots believe the aircraft was on path and the warning did not coincide with the aircraft's position. During descent the crew stated they had also received a momentary GPS fail indication.

ACN: 2059482 (16 of 50)

Synopsis
TRACON Controller reported they were not aware an aircraft did not read back their clearance correctly and the aircraft descended below the Minimum Vectoring Altitude.

ACN: 2059396 (17 of 50)

Synopsis
Flight Instructor reported a NMAC with another aircraft in the pattern while on initial approach to a non towered airport.
ACN: 2057637 (18 of 50)

Synopsis
A TRACON Controller reported an aircraft on a vector to final approach flew through the approach course and below the Minimum Vectoring Altitude.

ACN: 2057001 (19 of 50)

Synopsis
RV-8 pilot reported they set an incorrect altitude in the autopilot during approach which resulted in a rapid descent and terrain alert. Pilot climbed back to altitude and continue the approach.

ACN: 2056687 (20 of 50)

Synopsis
Air carrier pilot reported fatigue, gusts, flap overspeed and GPWS warning resulted in a CFTT event. Pilot reported during GPWS alert all terrain in sight and aircraft on glidepath.

ACN: 2055026 (21 of 50)

Synopsis
General aviation flight crew reported a near miss with a UAS while at 3,000 feet on an approach to landing. UAS sighting reported to controller upon landing.

ACN: 2054361 (22 of 50)

Synopsis
A Center Controller reported an aircraft approved to make a 360 turn deviated from its assigned altitude and flew below the Minimum IFR Altitude.

ACN: 2054102 (23 of 50)

Synopsis
Air carrier flight crew reported improper automation and aircraft control management by an inexperienced First Officer resulting in an unstable approach. The Captain took control
of aircraft and performed an upset recovery maneuver followed by a go-around and landing.

**ACN: 2053244 (24 of 50)**

**Synopsis**
Air carrier flight crew reported a course deviation while being vectored for an approach to DAL airport. The flight crew indicated similar sounding fixes SUMLN and JALIM contributed to the event. The course was corrected and the flight continued to a safe approach.

**ACN: 2053212 (25 of 50)**

**Synopsis**
HS125 Captain reported an FMS failure during approach resulting in a course and altitude deviation. The Captain executed a go-around, reset the FMS and was re-vectored for another approach to a safe landing.

**ACN: 2052888 (26 of 50)**

**Synopsis**
Air carrier flight crew reported NMAC with another aircraft on approach. Flight crew followed TCAS commands and landed uneventfully.

**ACN: 2051526 (27 of 50)**

**Synopsis**
Light aircraft pilot reported receiving a low altitude alert from ATC on approach to OLM airport when they descended below charted altitude in instrument conditions.

**ACN: 2050801 (28 of 50)**

**Synopsis**
Air carrier Captain reported receiving a low altitude alert from ATC due to descending below a crossing restriction on the approach.
Synopsis
B737 MAX 8 flight crew reported electric stabilizer trim failed during descent. Flight crew used manual trim for approach and landed uneventfully.

ACN: 2048511 (30 of 50)

Synopsis
Air carrier flight crew reported while using VNAV on the BRUSR1 STAR into PHX published crossing altitudes resulted in energy management challenges. The crew suggested a hard crossing altitude of 4,000 ft at JAMIL would mitigate these issues. ATC informed other crews have encountered similar challenges.

ACN: 2047819 (31 of 50)

Synopsis
Air carrier Captain reported GPS jamming on the descent into ELP. Captain stated there was a late approach change, by ATC, contributing to an unstable approach.

ACN: 2047814 (32 of 50)

Synopsis
Air carrier Captain reported receiving multiple TCAS traffic alerts while on an RNAV approach to GUM airport. Tower reported that they had similar multiple reports attributed to Navy ships and were unable to prevent the issue from occurring.

ACN: 2047741 (33 of 50)

Synopsis
PBI TRACON Controller reported aircraft deviated from approach course twice, resulted in descent below MVA and a CFIT event.

ACN: 2047145 (34 of 50)

Synopsis
Air carrier Captain reported during arrival on PHX BRUSR 1 STAR they were given a confusing clearance for a visual approach for Runway 8. Flight crew was using RNAV Runway 8 approach which reportedly does not share a common fix with BRUSR 1 STAR to
provide continuity, but the ILS Runway approach 8 does. The Captain stated the approaches are so similar, the inbound fixes should be the same.

**ACN: 2044237 (35 of 50)**

**Synopsis**
A319 First Officer reported the auto-flight system missed two altitude restrictions resulting in the flight crew receiving ATC low altitude alerts. Captain disengaged autopilot and flew approach manually.

**ACN: 2043851 (36 of 50)**

**Synopsis**
Center controllers reported an aircraft on approach flew below the minimum IFR altitude when it deviated off course and descended below published altitudes.

**ACN: 2043381 (37 of 50)**

**Synopsis**
A319 pilot flying reported the aircraft did not level off on the glidepath of the STAR and the approach, even though everything looked to be set up properly. ATC issued a low altitude alert and the aircraft issued an obstacle alert.

**ACN: 2043213 (38 of 50)**

**Synopsis**
Air carrier flight crew reported encountering severe turbulence on approach and a wind shear warning went off. This Captain performed a go-around and the flight landed at an alternate airport.

**ACN: 2042480 (39 of 50)**

**Synopsis**
Corporate jet pilot reported the pilot flying descended too low on a visual approach and they received a terrain alert.
ACN: 2041011 (40 of 50)

Synopsis
Air carrier flight crew received a low altitude alert from ATC while on approach. Flight crew complied with alert and landed uneventfully.

ACN: 2015250 (41 of 50)

Synopsis
PC-12 Captain reported a NMAC at an airport after the tower was closed. The slower aircraft was not communicating their intentions until final approach. The crew executed a 360 degree turn with the concurrence of ATC, then landed.

ACN: 2014798 (42 of 50)

Synopsis
Air carrier crew reported an altitude deviation and ATC low altitude alert while on approach to a foreign airport over terrain in moderate rain conditions. The pilot flying incorrectly determined and set a lower altitude than assigned from the approach chart while the pilot monitoring was distracted, and ATC alerted the crew of the deviation. The flight crew quickly corrected the altitude deviation and completed the approach and landing safely.

ACN: 2014045 (43 of 50)

Synopsis
SR-20 pilot reported a ground conflict while on approach due to another aircraft on the runway. Pilot executed an ATC-directed go around and returned to land.

ACN: 2011966 (44 of 50)

Synopsis
C172 Instructor Pilot reported wake turbulence from a military tanker overflying their aircraft resulted in an upset.

ACN: 2011565 (45 of 50)

Synopsis
Pilot flying reported a GPS malfunction or failure at the IAF, ZAMUV on the RNAV 23. ATC told the pilot that previous aircraft had experienced exactly the same issue at the same location.

**ACN: 2011432 (46 of 50)**

**Synopsis**
An Air Carrier pilot reported GEG TRACON vectored them to base leg for a Visual Approach to MSO at a position and altitude that prevented them from flying a stabilized approach. Reporter states this is a recurring issue at this airport.

**ACN: 2010745 (47 of 50)**

**Synopsis**
A TRACON Controller reported an aircraft descended below their assigned altitude at the Initial Approach Fix and flew below the Minimum Vectoring Altitude.

**ACN: 2009903 (48 of 50)**

**Synopsis**
Air carrier Captain reported similar sounding fixes on the AMA RNP Z 22 approach, PULBE and TELVE, which caused a clearance and heading deviation.

**ACN: 2009800 (49 of 50)**

**Synopsis**
EMB-505 flight crew reported receiving a low altitude alert on approach and confusion regarding an approach clearance.

**ACN: 2009309 (50 of 50)**

**Synopsis**
Flight instructor with student reported taking evasive action to avoid a near midair collision in the traffic pattern at a non-towered airport.
Report Narratives
ACN: 2082258 (1 of 50)

Time / Day
Date: 202402
Local Time Of Day: 0601-1200

Place
Locale Reference.ATC Facility: ZAB.ARTCC
State Reference: NM
Altitude.MSL.Single Value: 14000

Aircraft
Reference: X
ATC / Advisory.Center: ZAB
Make Model Name: Any Unknown or Unlisted Aircraft Manufacturer
Crew Size.Number Of Crew: 2
Flight Plan: IFR
Flight Phase: Initial Approach
Route In Use: Direct
Airspace.Class E: ZAB

Person: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 2082258
Human Factors: Situational Awareness
Human Factors: Confusion
Human Factors: Workload

Person: 2
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Function.Flight Crew: First Officer
Function.Flight Crew: Pilot Not Flying
ASRS Report Number.Accession Number: 2082404
Human Factors: Workload
Human Factors: Situational Awareness
Human Factors: Confusion

Events
Anomaly.Deviation - Track / Heading: All Types
Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Requested ATC Assistance / Clarification
Result.Flight Crew: Became Reoriented

Assessments
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Software and Automation
Primary Problem : Software and Automation

Narrative: 1
Procedure turn on RNAV GPS 13 approach at Taos. Cleared direct OQUDI, cross OQUDI at 14000 ft, cleared RNAV 13 approach at Taos. Crossing OQUDI at 14000 ft, the procedure turn entry and turn inbound distance is insufficient to descend to 11000 ft. at OQUDI inbound as published. As depicted, we mistakenly assumed we could make a left turn and descend to cross at 11000 ft. inbound. When we tried to enter the hold, the aircraft turned right, which is the holding pattern at OQUDI for the missed approach procedure for the RNAV 13. We remained at 14000 ft. due to terrain and not being on a published segment of the approach. Contacted ABQ Center, explained what had happened, and we were recleared for the RNAV 13. Normal approach and landing. Would recommend joining the approach from TELOY. The MEA from TELOY to OQUDI is 11000 ft. and eliminates the need for a 3000 foot descent in a short distance. Commences the approach in a more stabilized fashion. Beware of multiple procedures (procedure turn and hold) that share a common fix.

Narrative: 2
Coming into Taos Regional from the southeast, we were given 14,000 ft. direct OQUDI for the RNAV 13 approach. We were cleared to cross OQUDI at or above 11,000 ft. and cleared to change to Taos CTAF/UNICOM. The Captain flew a parallel entry coupled with the FMS and autopilot and requested one lap in the holding pattern to continue descent to 11,000 ft. The FMS indicated Exiting Hold but did not show a Resume Hold button. I stated this to the Captain and asked if he would like me to add a hold back onto OQUDI. He said yes, and I added the Hold from patterns. This had the same inbound course of 168 degrees, but I realized afterwards indicated a right holding pattern instead of the published left (I believe it added the missed approach holding pattern). We agreed to stay at 14,000 ft. and not descend until the hold was corrected via heading mode. I returned to Albuquerque Center and communicated our intentions. Once in the left holding pattern, the captain descended to 11,000 ft. and proceeded with a stable and uneventful approach and landing. Cause: False expectations from the crew on how the FMS would execute the approach given direct OQUDI from the southeast. Suggestions: Request TELOY if given direct OQUDI allows more time to descend and get established while avoiding terrain and noise abatement areas. Greater familiarization and attention to detail with the FMS.

Synopsis
Flight crew reported that when they entered the published holding pattern at OQUDI, which is the IAF for RNAV(GPS)13 Approach to SKX, the FMS turned the aircraft right instead of left as published. The IAF holding pattern is left turns and the missed approach holding pattern at OQUDI is right turns.
**Time / Day**

- Date: 202401
- Local Time Of Day: 0001-0600

**Place**

- Locale Reference.Intersection: PROSE
- State Reference: VA
- Relative Position.Distance.Nautical Miles: 5
- Altitude.MSL.Single Value: 5400

**Environment**

- Flight Conditions: IMC

**Aircraft**

- Reference: X
- ATC / Advisory.TRACON: CLT
- Make Model Name: Commercial Fixed Wing
- Crew Size.Number Of Crew: 2
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: FMS Or FMC
- Nav In Use: GPS
- Nav In Use.Localizer/Glideslope/ILS: RNAV Y 24
- Flight Phase: Initial Approach
- Airspace.Class C: CLT

**Person**

- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Function.Flight Crew: Pilot Not Flying
- Qualification.Flight Crew: Commercial
- Qualification.Flight Crew: Multiengine
- Qualification.Flight Crew: Instrument
- ASRS Report Number.Accession Number: 2071587
- Human Factors: Time Pressure
- Human Factors: Situational Awareness
- Human Factors: Workload

**Events**

- Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly.Inflight Event / Encounter: Weather / Turbulence
- Anomaly.Inflight Event / Encounter: CFTT / CFIT
- Detector.Automation: Aircraft Terrain Warning
- Detector.Person: Flight Crew
- When Detected: In-flight
- Result.Flight Crew: Took Evasive Action
- Result.Flight Crew: Requested ATC Assistance / Clarification
- Result.Air Traffic Control: Provided Assistance
Assessments
Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings
Contributing Factors / Situations : Software and Automation
Contributing Factors / Situations : Environment - Non Weather Related
Primary Problem : Ambiguous

Narrative: 1

During a left turn at 5400 ft. MSL 5 miles east of PROSE on the RNAV Y 24 at ROA, we experienced an EGPWS terrain warning. We immediately initiated a climb until the warning subsided, which was at 6000 ft. MSL. We advised the controller of the warning and then were cleared direct PROSE to rejoin the approach. The rest of the flight operated normally. A possible interaction between the bank angle and the radio altimeter being aimed at nearby terrain, combined with winds that are increasing the RAâ€™s perceived closure rate with said terrain. Possible research may be needed into erroneous EGPWS warnings while in turns above ROA. The controller assured us that we were at or above the minimum vectoring altitude.

Synopsis
Air carrier pilot reported a CFTT EGPWS warning during an approach to ROA using RNAV Y 24. ATC reported the aircraft was not below minimums.
Time / Day
Date: 202301
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: C29.Airport
State Reference: WI
Altitude.MSL.Single Value: 40

Environment
Weather Elements / Visibility: Icing
Weather Elements / Visibility.Visibility: 10
Ceiling.Single Value: 2800

Aircraft
Reference: X
ATC / Advisory.TRACON: MSN
Aircraft Operator: Personal
Make Model Name: Small Aircraft
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace.Class C: MSN
Airspace.Class G: C29

Person
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Personal
Function.Flight Crew: Single Pilot
Qualification.Flight Crew: Commercial
Experience.Flight Crew.Total: 1000
Experience.Flight Crew.Last 90 Days: 50
Experience.Flight Crew.Type: 50
ASRS Report Number.Accession Number: 2070497
Human Factors: Situational Awareness

Events
Anomaly.Deviation - Track / Heading: All Types
Anomaly.Deviation / Discrepancy - Procedural: Clearance
Anomaly.Inflight Event / Encounter: Weather / Turbulence
Anomaly.Inflight Event / Encounter: Loss Of Aircraft Control
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Returned To Clearance
Result.Flight Crew: Regained Aircraft Control
Assessments
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Weather
Primary Problem : Human Factors

Narrative: 1
The event occurred while on the RNAV 28 approach into Morey Field (C29). The flight originated from ZZZ under MVFR conditions. I did not file a flight plan. While enroute, ceilings were lower than I expected so I requested, and received, a pop up IFR clearance direct to C29. The flight enroute was uneventful. Upon contact with Madison Approach I requested the RNAV 28 approach into C29 and was told to expect the approach. I received a vector assignment of 050 degrees. At that time I assumed I would receive vectors to the final approach fix and set the GPS (Garmin 530) for vectors to final. I then received an altitude assignment that put me into actual IMC conditions. I was then approved for the RNAV 29 approach via the IAF EXIDE. This was my first time flying in the area and I had to confirm the IAF name. I received a vector to the IAF and while updating the GPS route I entered an unusual attitude. Once I recovered from the unusual attitude I already passed the IAF and instead of flying the appropriate approach via a course reversal I immediately turned inbound which took me out of the protected airspace and close to Madison (MSN). I then continued the approach without incident and cancelled my IFR flight plan in the air.

Synopsis
GA pilot reported a momentary loss of aircraft control while on the RNAV 28 approach to C29 airport in IMC conditions.
ACN: 2069943 (4 of 50)

Time / Day
Date: 202401
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Relative Position.Distance.Nautical Miles: 10
Altitude.MSL.Single Value: 12200

Environment
Flight Conditions: Mixed
Weather Elements / Visibility.Visibility: 10
Light: Daylight
Ceiling.Single Value: 11400

Aircraft
Reference: X
ATC / Advisory.Tower: ZZZ
Aircraft Operator: Fractional
Make Model Name: Learjet 60
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Passenger
Nav In Use: GPS
Flight Phase: Initial Approach
Airspace-Class D: ZZZ

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

Person
Location Of Person.Aircraft: X
Reporter Organization: Fractional
Function.Flight Crew: Pilot Flying
Function.Flight Crew: Captain
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Total: 4200
Experience.Flight Crew.Last 90 Days: 120
Experience.Flight Crew.Type: 1500
ASRS Report Number.Accession Number: 2069943
Human Factors: Communication Breakdown
Human Factors: Human-Machine Interface
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Situational Awareness
Communication Breakdown. Party 1: Flight Crew
Communication Breakdown. Party 2: ATC

Events

Anomaly. Aircraft Equipment Problem: Critical
Anomaly. Deviation - Altitude: Crossing Restriction Not Met
Anomaly. Deviation - Altitude: Overshoot
Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly. Deviation / Discrepancy - Procedural: FAR
Anomaly. Deviation / Discrepancy - Procedural: Clearance
Anomaly. Inflight Event / Encounter: CFTT / CFIT
Detector. Automation: Air Traffic Control
When Detected: In-flight
Result. Flight Crew: Executed Go Around / Missed Approach
Result. Air Traffic Control: Issued New Clearance
Result. Air Traffic Control: Issued Advisory / Alert

Assessments

Contributing Factors / Situations: Aircraft
Contributing Factors / Situations: Software and Automation
Contributing Factors / Situations: Human Factors
Primary Problem: Human Factors

Narrative: 1

On Day 0 Aircraft X, a Learjet 60, descended below the MEA and intermediate fix crossing altitude on the RNAV (GPS) at ZZZ. Subsequently a go-around was issued by ATC, the approach was flown again to a successful landing Runway XX. We were originally issued a hold on the way to ZZZ, all airplanes requesting the RNAV (GPS) approach were issued holds. Another aircraft questioned how an airplane just landed and was told that the only airplanes getting in are flying the localizer approach. We then requested the localizer approach and we setup/briefed the approach as published. As we were being vectored to join the localizer we were then issued the RNAV (GPS) instead, a few miles from ZZZ VOR. After adjusting the FMS to now fly the GPS approach we crossed ZZZ at 13,000 ft. and started the approach. The fixes in the FMS were as follows: ZZZ [VOR] -> ZZZZZ -> ZZZZZ1. Missing from this approach, in the FMS, is the intermediate fix "ZZZZZZ" that has a crossing altitude of 12,900 ft. Not seeing this fix in the FMS, and having previously briefed a different approach with little time to set up and brief a completely different approach, we proceed down to the final approach fix altitude of 12,200 ft. at ZZZZZ. Upon leveling off we were given a "low altitude alert" from ATC stating the MEA in that sector is 13,000 ft. This was the first indication in the cockpit that something wasn't right, we immediately started a climb. We were then told that ZZZZZZ has a crossing restriction of 12,900 ft. After slight confusion in the cockpit for a second of "what fix?" a go around was initiated. Not even two seconds after that a go-around was issued by ATC. The go-around was flown as published and the approach was then again initiated and flown to a successful landing. Further exacerbating the situation was the FMS not recognizing the approach as an approach but simply waypoints, because of this the VNAV was not usable for the approach. To avoid a similar situation care should be given when accepting a new approach so close to the initial approach fix when a different approach had been setup and
briefed. Further verification of any intermediate fixes and crossing altitudes, not just the initial and final, would have helped had time permitted.

Synopsis
LR-60 Captain reported a Controlled Flight Toward Terrain (CFTT) event while executing a RNAV approach that had been assigned late after they had briefed another approach. Their FMS did not reflect an intermediate fix or corresponding altitude which led to an ATC Low Altitude alert and Go around instruction.
ACN: 2069176 (5 of 50)

Time / Day
Date: 202401
Local Time Of Day: 1801-2400

Place
Locale Reference. ATC Facility: CID.TRACON
State Reference: IA
Altitude. MSL. Single Value: 2800

Environment
Weather Elements / Visibility: Cloudy
Ceiling. Single Value: 1800

Aircraft
Reference: X
ATC / Advisory. TRACON: CID
Aircraft Operator: FBO
Make Model Name: Light Transport
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Passenger
Nav In Use: FMS Or FMC
Flight Phase: Final Approach
Route In Use: Vectors
Airspace. Class E: IOW

Component
Aircraft Component: Autopilot
Aircraft Reference: X
Problem: Malfunctioning

Person: 1
Location Of Person. Facility: CID.TRACON
Reporter Organization: Government
Function. Air Traffic Control: Approach
Qualification. Air Traffic Control: Fully Certified
Experience. Air Traffic Control. Radar: 1
ASRS Report Number. Accession Number: 2069176
Human Factors: Situational Awareness
Human Factors: Time Pressure

Person: 2
Location Of Person. Aircraft: X
Location In Aircraft: Flight Deck
Function. Flight Crew: Pilot Not Flying
Function. Flight Crew: First Officer
Qualification. Flight Crew: Air Transport Pilot (ATP)
Qualification: Flight Crew: Flight Instructor
Qualification: Flight Crew: Multiengine
Qualification: Flight Crew: Instrument
Experience: Flight Crew: Total: 1956
Experience: Flight Crew: Last 90 Days: 84
Experience: Flight Crew: Type: 486
ASRS Report Number: Accession Number: 2073172
Human Factors: Troubleshooting
Human Factors: Confusion

Events
Anomaly: Aircraft Equipment Problem: Less Severe
Anomaly: ATC Issue: All Types
Anomaly: Deviation - Altitude: Excursion From Assigned Altitude
Anomaly: Deviation - Track / Heading: All Types
Anomaly: Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly: Deviation / Discrepancy - Procedural: Clearance
Anomaly: Inflight Event / Encounter: CFTT / CFIT
Detector: Automation: Air Traffic Control
Detector: Person: Flight Crew
Detector: Person: Air Traffic Control
When Detected: In-flight
Result: Flight Crew: Took Evasive Action

Assessments
Contributing Factors / Situations: Aircraft
Contributing Factors / Situations: Software and Automation
Primary Problem: Aircraft

Narrative: 1
Aircraft X was at 3300 feet MSL when I issued a vector of 280 degrees and instructed the aircraft to maintain 3300 until established on the final approach course for the RNAV approach to Runway 25 at IOW. The pilot read back the approach clearance and then stated they had a PIREP for me when I was ready. I observed the aircraft to slightly start turning for the vector issued so I told the pilot to go ahead with the PIREP. While the pilot was reading the PIREP to me, I observed the aircraft turning back to its original track direct to BUCKA, an initial approach fix on the that approach procedure. After the aircraft was through the approach course and the pilot unkeyed the radio, I noticed the aircraft was descending to an unsafe altitude and I instructed the pilot to climb and maintain 3000 feet. Then I immediately issued a low altitude alert and advised the pilot that the minimum vectoring altitude in their area was 3200 feet. The pilot acknowledged and climbed to 3200 feet at which point I issued a vector of 230 degrees to join the approach but also to vector them away from a known obstruction in case of an additional unprecedented descent in that area. The pilot then joined the final approach course and asked if they were still cleared for the approach. I responded in the affirmative and restated an approach clearance for clarity. The pilot was then shortly after approved to switch to the common traffic advisory frequency and landed safely at IOW airport. The pilot cancelled their IFR flight plan on the RCO (Remote Communications Outlet) clearance delivery frequency. Shortly after I issued a ÆœBRASHERÆ© warning for a possible pilot deviation and advised the pilot contact me via phone. I recommend the RNAV approach procedure for Runway 25 at IOW airport be changed to remove the HEWRI waypoint as this waypoint has a published crossing altitude of 2800 feet, which is below the minimum vectoring
altitude in that area. The pilot had contacted us after landing via phone and advised that they as confused their altitude with the 280 vector that was assigned and the altitude at HEWRI of 2800 feet. The pilot also stated they had to disengage the auto pilot as the aircraft began to descend unprecedentedly.

**Narrative: 2**

We were assigned direct BUCKA but informed we would be given vectors for the RNAV 25 into IOW while in a broken layer. We descended down to 3300 as assigned prior to BUCKA and direct to BUCKA was a course/heading of around 350. About 2 miles prior to BUCKA we were assigned heading 280 to intercept the final approach course, maintaining 3300 until established. After acknowledging with ATC I began giving a PIREP of a cloud layer above us we had passed though on our descent. The pilot flying set 280 and heading mode to intercept as the autopilot was engaged. I stopped giving the PIREP as I noticed our the airplane began a slight bank to the right before continuing to the left and the nose began to drop unexpectedly. The pilot flying took manual control of the aircraft and increased our pitch to a positive rate while continuing a left turn to intercept the final approach course as ATC reported an altitude alert. I didn't see the lowest altitude we reached, but I think somewhere around 2800 ft. I reported climbing through 3000 ft with ATC. I called for the pilot flying to climb back to 3300 and he wanted to make sure we were still cleared for the approach. I queried ATC and they stated we were cleared for the approach, so I didn't continue to advocate for 3300 as we were established inbound inside of BUCKA at this point. We continued without incident from there to land on Runway 25 at IOW fully breaking out of the broken layer around 2300 MSL. I am not sure what caused the issue as we approached BUCKA. This airplane in our fleet with Collins Proline avionics, I am not sure if that was a factor as the other aircraft have dual Universals. Sometimes the autopilot can be a bit finicky and begin to roll to the left or right opposite the direction we intend for a second, so I didn't initially think much of the slight bank to the right. However, it could have been possible that we had selected direct to the procedure turn outbound BUCKA or hold at BUCKA in the Proline. I don't think this is the case as if so it auto-sequenced to HEWRI as the next point by the time I looked at our course after verifying we were climbing. I am not sure what caused the nose to drop with the associated altitude loss either. If the autopilot was trying to reach an altitude at BUCKA with us being so close to it, a high rate of change would likely be needed, but no altitude was set at BUCKA in the proline and we had previously leveled off at 3300 and were in ALT (Altitude) mode prior to being cleared for the approach. I believe VNAV was selected by the PF (Pilot Flying) to intercept the glidepath, but even if a different mode had been accidentally selected in the moment, I can't think of anything that would have caused us to enter a sharp drop in pitch purely from a change of mode selection. Another potential factor could have been the tight turn that we were left with when ATC cleared us for the approach. I don't know if the airplane 'decided' a steeper turn was needed to make the intercept and the nose drop may have had something to do with a potentially high load factor if altitude had been maintained. A more proactive approach with ATC could have also better set us up to intercept the final approach course. Additionally, if more vigilance were maintained as the airplane intercepted the final approach course, maybe something indicating advance notice of the autopilot actions or observations to better identify the issue could have been made. Giving a PIREP is something that could have waited or been accomplished sooner in order to be more vigilant in monitoring the approach as we intercept the final course.

**Synopsis**

CID Approach Controller and aircraft First Officer reported aircraft made an incorrect turn and descent while on vector for RNAV approach resulted in CFTT event.
ACN: 2068919  (6 of 50)

**Time / Day**
- Date: 202401
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference. ATC Facility: ZZZ.TRACON
- State Reference: US
- Relative Position. Distance. Nautical Miles: 17
- Altitude. MSL. Single Value: 12000

**Environment**
- Light: Daylight

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

**Person**
- 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. Last 90 Days: 140
- Experience. Flight Crew. Type: 21000
- ASRS Report Number. Accession Number: 2068919
- Human Factors: Human-Machine Interface
- Human Factors: Workload
- Human Factors: Distraction

**Events**
- Anomaly. Deviation - Altitude: Crossing Restriction Not Met
- Anomaly. Deviation - Altitude: Overshoot
- Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly. Deviation / Discrepancy - Procedural: Clearance
- Anomaly. Inflight Event / Encounter: CFTT / CFIT
Assessments

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

Narrative: 1

Approaching the ZZZZ fix, ATC cleared us for the RAVAV X XXR Approach. The Pilot Monitoring (PM) asked the Pilot Flying (PF) if he wanted the FAF altitude of 8,100 ft. in the Mode Control Panel altitude window and set it for him. The PM neglected to check that the aircraft was in the VNAV mode before setting the altitude, (the aircraft was descending at 1000 FPM in VSPEED mode). There was a slight distraction about which approach to shoot and as the Crew consulted approach plates and discussed if an ILS or RNAV would be preferred, both Crew failed to notice the aircraft descending below the step down altitude of 9900 ft. at ZZZZZ1 and 12,000 ft. outside ZZZZZ. Being in VNAV mode would have prevented the error. As we turned our attention back to the approach we were flying we noticed our altitude deviation and leveled off. No secondary warnings of Low Altitude were activated, (TCAS etc.) during the entire event and recovery we had the mountainous terrain below and along the approach path in sight, and ATC never called out our altitude deviation. We remained in level flight until back on the approach profile and continued the approach without incident. Suggestions: Better automation management, especially in regards to any descent using VNAV through intermediate step altitudes, needs be accomplished. Also, perhaps the PM should not offer to change Mode Control Panel parameters so readily when the PF is still orientating to a new clearance.

Synopsis

Air carrier pilot reported during descent they failed to notice the aircraft descended below a step down altitude. Flight crew recovered from altitude deviation and continued approach.
ACN: 2068070 (7 of 50)

Time / Day
Date: 202308
Local Time Of Day: 0601-1200

Place
Locale Reference. ATC Facility: ZZZ.TRACON
State Reference: US
Relative Position. Distance. Nautical Miles: 1
Altitude. MSL. Single Value: 7500

Environment
Flight Conditions: Mixed
Weather Elements / Visibility: Rain
Weather Elements / Visibility: Thunderstorm
Light: Daylight

Aircraft
Reference: X
ATC / Advisory. TRACON: ZZZ
Aircraft Operator: Corporate
Make Model Name: HS 125 Series 700
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Passenger
Flight Phase: Initial Approach
Route In Use: Direct
Airspace. Class E: ZZZ

Person
Location Of Person. Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Corporate
Function. Flight Crew: First Officer
Qualification. Flight Crew: Multiengine
Qualification. Flight Crew: Air Transport Pilot (ATP)
Qualification. Flight Crew: Flight Instructor
Qualification. Flight Crew: Instrument
Experience. Flight Crew. Total: 3303.1
Experience. Flight Crew. Last 90 Days: 56.7
Experience. Flight Crew. Type: 1122.5
ASRS Report Number. Accession Number: 2068070
Human Factors: Communication Breakdown
Human Factors: Situational Awareness
Human Factors: Workload
Human Factors: Distraction
Communication Breakdown. Party1: Flight Crew
Communication Breakdown. Party2: Flight Crew
Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

While descending for the RNAV Runway XX approach into ZZZ, we had a brief altitude excursion. I was the Pilot Monitoring and Second in Command for the flight. We were cleared for the RNAV XX via VOR, ZZZZZ, Straight in and told to maintain 7,500 ft. to the VOR. As I was looking down programming the FMS, I looked up and noticed that the Captain had descended below our altitude assignment of 7,500 ft. and went as low as 7,100 feet as I recall. I called out the altitude and asked the Captain why the VNAV had been turned off. At that same time, Approach advised us of a low altitude alert and we were told to climb to 7,500 ft. We climbed back up to 7,500 ft. and completed the approach with no other issues. At no time did ATC advise us of a pilot deviation and never asked us to call a phone number. When flying RNAV approaches, our company procedure is to make sure all crossing restrictions are entered into the FMS and checked. If an altitude does not meet the crossing restriction, we enter the crossing restriction altitude for each assigned fix. Then we put the final approach fix altitude in the altitude preselect and use the VNAV button to descend and meet all crossing restrictions, while monitoring the pink altitude in the top right hand corner of the PFD to make sure the airplane knows what altitude to descend to. This was an RNAV approach to LNAV/VNAV minimums, so we would select Approach mode after the airplane was within 30 degrees of the Final Approach Course and established inbound for the approach. We followed this procedure for this approach, however, somehow the VNAV button got disengaged which led to the airplane descending below our crossing altitude of 7,500 ft. at the VOR. The problem was compounded when I diverted my attention to the FMS and was not watching the Captain's autopilot selections and monitoring our altitude. Cause: VNAV function was somehow disengaged and we descended toward the altitude selected in the altitude pre-select.

Weather in the area. Heavy rain shafts all around the airport and we were discussing whether to continue or request vectors away. I was programming the FMS and did not see the Captain descend below our altitude or press the VNAV button to disengage it. We were in IMC, but published missed would have put us into rain shafts, so we were discussing alternate missed approach procedures and relayed that request to ATC. We have also had some confusion about accepting the RNAV XX from the VOR, ZZZZZ straight in or just ZZZZZ straight in and have been given an altitude of 7,500 ft. to maintain, instead of 8,100 ft. like on the chart. Our pilots and other pilots are confused if 7,500 ft. is legal or if we would need to cross at 8,100 ft. like stated on the chart. I looked up and noticed the
altitude deviation and called it out to the Captain immediately. ATC also advised us of a low altitude alert and told us to climb to 7,500 ft, which we complied with.

**Synopsis**

Hawker 750 flight crew reported receiving a low altitude alert on approach. Flight crew corrected altitude and completed the approach.
ACN: 2067419 (8 of 50)

Time / Day

Date: 202312
Local Time Of Day: 1801-2400

Place

Locale Reference.Airport: MDSD.Airport
State Reference: FO
Altitude.AGL.Single Value: 0

Environment

Light: Night

Aircraft: 1

Reference: X
ATC / Advisory.Tower: MDSD
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: Takeoff / Launch

Aircraft: 2

Reference: Y
ATC / Advisory.Tower: MDSD
Make Model Name: Any Unknown or Unlisted Aircraft Manufacturer
Flight Phase: Landing

Person

Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Flight Crew: Pilot Not Flying
Function.Flight Crew: Captain
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
ASRS Report Number.Accession Number: 2067419
Human Factors: Communication Breakdown
Human Factors: Situational Awareness
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

Events

Anomaly.ATC Issue: All Types
Anomaly.Conflict: Ground Conflict, Critical
Detector.Automation: Air Traffic Control
Assessments

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

Narrative: 1

First Officer (FO) was pilot flying. Environment was night time. MDSD tower cleared us to "Line up and wait." Verified that approach path for Runway 17 was clear. There was an aircraft turning final on RNAV Runway 17 which is approximately 15 miles from the runway. Spacing was not a problem. Tower held us on the runway for a long time. When we were about to query, Tower said "Aircraft X cleared for immediate takeoff, traffic 2 miles." Brakes were released and power was brought up to stabilize. FO astutely noticed that TCAS showed landing traffic descending out of 300 feet. MDSD then called "Aircraft X, hold position." Aircraft was brought to complete stop after approximately 30 feet. We asked to exit at taxiway Bravo and held short of taxiway Alpha for another departure. All appropriate checklists and procedures were accomplished. At no point was English used between MDSD tower and landing traffic, Aircraft Y. We had no situational awareness as to the hazard until the last few moments. Aircraft Y passed overhead at approximately 200 feet while we were still on the runway after they went around. We have no idea who initiated the go around for landing traffic. A company flight crew, that landed previous to us, witnessed the event and corroborated the details. We tried to query the controller for an explanation but he gave no response. We were subsequently cleared for takeoff which was uneventfully.

Synopsis

Air carrier pilot reported while waiting on runway for takeoff an aircraft on approach to the same runway performed a go-around passing 200 ft over the reporter’s aircraft.
ACN: 2067220 (9 of 50)

Time / Day
Date: 202312
Local Time Of Day: 1801-2400

Place
Locale Reference. ATC Facility: ZZZ.ARTCC
State Reference: US
Altitude.MSL.Single Value: 23000

Aircraft
Reference: X
ATC / Advisory.Center: ZZZ
Make Model Name: Light Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew: 2
Flight Plan: IFR
Flight Phase: Descent
Route In Use: Vectors
Airspace.Class E: ZZZ

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

Person
Location Of Person.Facility: ZZZ.ARTCC
Reporter Organization: Government
Function.Air Traffic Control: Enroute
Qualification.Air Traffic Control: Fully Certified
ASRS Report Number.Accession Number: 2067220
Human Factors: Workload
Human Factors: Confusion

Events
Anomaly.Aircraft Equipment Problem: Less Severe
Anomaly.Airspace Violation: All Types
Anomaly.ATC Issue: All Types
Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural: Clearance
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: Landed in Emergency Condition
Result.Air Traffic Control: Issued Advisory / Alert

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

Narrative: 1

Aircraft X was handed off and coordinated as a [priority handling] with no navigation no alt equipment and no deicing. It was coordinated that he was requesting the Rnav XX approach into ZZZ which I questioned because he didn't have navigation. I was then informed that he "kind of" had navigation and he was requesting vectors. I asked what heading he was currently on and was told he wasn't on a heading just flying towards ZZZ somehow with his FMS? I said roger because obviously the other controller calling didn't have the full picture. Once he checked on frequency, I asked my own questions and discovered that he had gotten his navigation back and altitude readout but still no deicing equipment and was looking for a VFR hole to get through the cloud deck. I inquired some surrounding aircraft, and informed Aircraft X about a possible "river" in the clouds that he could get through. I then informed him that a ZZZ departure routed 20 miles south of him picked up zero icing on the climb out but reported a solid layer at 10k that he could not see through. I vectored him towards the "River" opening then gave him deviations left and right and Pilots discretion to 110, the bottom of my airspace. As he approached 110 I asked my supervisor if I should hand him off to ZZZ1 approach or hold onto him because he would eventually be handed back off to me once he turn back on course. I either didn't hear the response or there wasn't a quick enough answer so I made a command decision that with my 17 yrs of approach experience it would be a better service to limit freq changes and keep him on my freq since I knew the entirety of the situation. I pointed him out to ZZZ1 approach and continued his decent to 031 which was the lowest crossing alt on the RNAV XX app into ZZZ that he was requesting. I kept him updated with any knew information and remained in constant comms until he reached 031. Once he reached 031 I noticed he was turning back towards the IAF ZZZZZZ and asked for an update, he told me he was still in the clouds and asked for lower, I descended him down to 026 which was the MVA and informed him that I could descend his to 024 in 2 or 3 minutes when he enters the next lower MVA or so I thought. Once i believed Aircraft X was in the next MVA I Descended him to 024, it immediately MSAWâ€™ed but i thought well, i gave him lower right on the boundary of the 026 MVA that must be what the problem is. I gave him traffic on a VFR a/c right in front of him at 021 to assure him the bases were out there. I asked the CPC next to me for help and said am I reading the map wrong because of the MSAW. She told me to drop all map overlays which I did except for approach boundary's which there wasn't a quick button for. She told me where she thought the 024 boundary was, which was south of his position, immediately told him i busted the MVA and asked if he was in the clear, he said he broke out of the clouds at 024. i asked if he could maintain his own terrain and obstruction clearance which i knew the phraseology had nothing to do with the current situation but i figured it was something. Aircraft X then told me he could and he was in VMC conditions and that he couldn't take a climb back up because of fuel. I informed the next sector of the entire situation and handed him off for is app clearance into ZZZ which was 12 miles outside my airspace. In short I busted the MVA because 4 different map overlays all blend together and couldn't read them. I recommend to change the Map color for the MVA Map so you can differentiate between all the other maps.

Synopsis
An ARTCC Controller reported confusion between video map display overlays while controlling an aircraft with malfunctioning navigation and deicing equipment resulted in descent below MVA and a CFIT event.
**ACN: 2065439 (10 of 50)**

**Time / Day**
- Date: 202312
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: ATC Facility: ZZZ.ARTCC
- State Reference: US
- Altitude.MSL.Single Value: 12000

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

**Aircraft**
- Reference: X
- ATC / Advisory.Center: ZZZ
- Aircraft Operator: Air Carrier
- Make Model Name: Regional Jet 700 ER/LR (CRJ700)
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: GPS
- Flight Phase: Initial Approach
- Airspace.Class D: ZZZ
- Airspace.Class E: ZZZ

**Person : 1**
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Pilot Flying
- Function.Flight Crew: First Officer
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 2065439
- Human Factors: Communication Breakdown
- Human Factors: Time Pressure
- Human Factors: Workload
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: ATC

**Person : 2**
- 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 : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 2065449
Human Factors : Time Pressure
Human Factors : Workload

Events
Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Returned To Clearance

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

Narrative: 1
On our way into ZZZ we were cleared down to 12,000 feet and told to expect the RNAV XX approach. Shortly after ATC began a lengthy conversation with two stationairs that were approaching icing conditions and trying to figure out if they could continue with their flights or needed to turn back. During this time the frequency became very busy and ATC asked everyone to standby while they helped the two aircraft in icing conditions. Once ATC started helping other aircraft again the pilot monitoring asked if we were cleared for the approach yet as we were passing over ZZZZZ at 12,000 feet (3,000 feet high). They cleared us for the approach and I started down as well as attempting to lose airspeed (was still at 250 kts). Realizing we were not going to be able to make a stable approach I requested vectors or a 360. When the pilot monitoring relayed this to ATC we were cleared for the visual and frequency change approved. Knowing there was terrain closer to the right side we began a left descending turn. We were inside ZZZZZ1 and my initial thinking was we would do a 360 and intercept the approach course around a 5 mile final. In the turn I realized I had started the decent in vertical speed without a bottom altitude selected and was now at 8,000 feet. I quickly selected ALT mode to hold that altitude and continued the turn. At this point I believe the pilot monitoring could see I getting behind and began helping out with selecting an altitude and getting the approach course reset. As we completed 270 degrees of the turn I visually required the airport with the intent of counting to turn the aircraft towards the field and arming nav mode to acquire the approach course. Around this time I was also watching the glideslope guidance and notice I needed a decent to keep us on glidepath. As this was happening we never acquired the approach course and went through final which almost immediately gave us a terrain alert. Pilot Monitoring quickly disengaged the autopilot and continued the left hand turn towards the field away from the terrain. Controls were then transferred back to me and we flew the visual down to the runway. We needed to execute the 360 because we were high and fast. Doing the 360 inside 10 mile final without previously briefing it led to higher stress and an increase of workload that got the pilot flying task saturated. The first
course of action that would have helped us avoid this would have been slowing down much earlier. Especially when it became obvious ATC would not be able to get back to us for a moment, slowing down would have helped to create more time. Second I believe the best course of action was to tell ATC we needed radar vectors back around to the beginning of the approach instead of accepting the frequency change.

Narrative: 2

We were at 11000ft. from ZZZ (VOR) to ZZZZZ and were told to expect RNAV RWY XX approach clearance shortly. ZZZ CENTER had controller switch and few pop-up IFR clearances happened, so center got distracted and we were left high. I called the center and said â€œWe were told to have approach clearance shortly and we are passing ZZZZZ now.â€ The center gave us clearance for RNAV Rwy XX approach and we were too high and fast. We did not have enough time to get down and slow down. I called the center we have the runway insight and will break out to do 360 turn to make some time. The center cleared us for visual and changed the advisory frequency. The FO (First Officer) was the PF (Pilot Flying) and he was still heading towards the RWY even after we talked about our plan and I told him to start the turn and I dialed the HDG bug for left turn to initiate the turn. I was making a radio calls and prompting him to start to get configured so we can be ready for the approach. After that I looked at PFD (Primary Flight Display) and noticed he started descent without setting bottom altitude. I told him stop descending, and said you canâ€™t descend without bottom altitude set. He hit the ALT button and leveled off. I asked him how he was doing and he said he feels good and okay to continue. We were already little bit lower than 8800â€™ ZZZZZ1 and also he said he had runway insight so I told him letâ€™s keep flying and re-intercept the course on RNAV. Keep turning and he made turn on the base. I setup the FMS and I was making radio calls, keep helping him to get configured. Asked him again how he feels and he is good. Then I noticed that we passed the runway to make a turn to final. So I was reaching to the flight control to make a turn then we got â€œTERRAIN TERRAINâ€. I took the control, autopilot off and turned towards the airport and lined up with final. Then my FO had the control back and flew rest of the approach and landed in ZZZ. It was overwhelming with so much radio calls on ZZZ Center. I was trying to talked to them and didnâ€™t happen in time. I was too much focused on getting us clearance and didnâ€™t tell the FO to slow down. So I failed prioritizing the tasks. Also after we had a plan for 360 turn, we didnâ€™t have enough communication what was about to happen. We got distracted on getting configured and slowing down too much. I assumed the FO would hand flying and he was using automation to do that - also we couldâ€™ve shared the mental model. I believe that the FO was overloaded, if not getting overloaded. Uncontrolled airport - radio calls and worried about other traffics and also terrain. FO initiated descending with no bottom altitude when not on the final, Keep stop making turns. We couldâ€™ve shared the plan better. Plan better - Slow down so that we can descend when we get clearance. Request vectors to the center to rejoin the approach. Initiate go-around and try again. Priorities tasks better. Before initiate plan, share plan throughly.

Synopsis

CRJ-700 flight crew reported an unstabilized approach, requiring maneuvering, resulted in a GPWS alert and CFIT.
**Time / Day**

- Date: 202312
- Local Time Of Day: 0601-1200

**Place**

- Locale Reference: ATC Facility: ZZZ.TRACON
- State Reference: US
- Altitude.MSL.Single Value: 1800

**Environment**

- Flight Conditions: IMC
- Weather Elements / Visibility: Icing
- Weather Elements / Visibility: Rain
- Weather Elements / Visibility: Fog
- Weather Elements / Visibility: Thunderstorm
- Weather Elements / Visibility: Windshear
- Weather Elements / Visibility: Turbulence
- Weather Elements / Visibility.Visibility: 5
- Light: Daylight
- Ceiling.Single Value: 1200

**Aircraft**

- Reference: X
- ATC / Advisory.TRACON: ZZZ
- Aircraft Operator: Air Taxi
- Make Model Name: Light Transport, Low Wing, 2 Turbojet Eng
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 135
- Flight Plan: IFR
- Mission: Passenger
- Flight Phase: Final Approach
- Route In Use: Direct
- Route In Use.STAR: ZZZZZ3/ZZZZZ2
- Airspace.Class B: ZZZ

**Component**

- Aircraft Component: Navigation Database
- Aircraft Reference: X
- Problem: Malfunctioning

**Person**

- 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: Sea
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 21000
Experience.Flight Crew.Last 90 Days : 40
Experience.Flight Crew.Type : 1500
ASRS Report Number.Accession Number : 2064111
Human Factors : Workload
Human Factors : Fatigue
Human Factors : Human-Machine Interface
Human Factors : Time Pressure

Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Diverted
Result.Air Traffic Control : Issued Advisory / Alert

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

Narrative: 1

This was a Medical Donor Flight with Four Medical personnel on board. We first received notification of the flight in the mid-afternoon. The co-pilot had retired to bed early to prepare for a XA00 departure for a part 91 reposition flight. There was some confusion as to the desired departure time out of ZZZ [Airport], so the captain was not able to retire to be in preparation of the flight until around XV00 and thus did not get much sleep. During the attempted rest, the departure time was moved earlier by a

When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Diverted
Result.Air Traffic Control : Issued Advisory / Alert

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

Narrative: 1

This was a Medical Donor Flight with Four Medical personnel on board. We first received notification of the flight in the mid-afternoon. The co-pilot had retired to bed early to prepare for a XA00 departure for a part 91 reposition flight. There was some confusion as to the desired departure time out of ZZZ [Airport], so the captain was not able to retire to be in preparation of the flight until around XV00 and thus did not get much sleep. During the attempted rest, the departure time was moved earlier by an hour. The crew showed at the airport at XY30. There was thick frost and ice on the aircraft. 70 gallons de-ice was applied to the aircraft before the departure. The airframe was clear of ice when we departed. The flight to ZZZ [Airport] was uneventful. We then flew to ZZZ1 [Airport] and arrived there at around XC45 without any issues. We had reserved a sleep room for the crew at the FBO. Co-Pilot was able to get another couple of hours sleep. The captain was able to get about 1 to 1 1/2 hours sleep. The Medical staff notified the Co-pilot that they were 90 minutes out then again at 30 minutes out they said they were returning to the airport at which time the co-pilot awakened the captain. Our arrival was changed from ZZZZZ2 to the ZZZZZZ prior to ZZZZZ1 [Intersection]. In the descent there was a lot of mountain wave and moderate turbulence which was causing the Autopilot to disconnect multiple times. At XI02 when ATC vectored us off the ZZZZZ3 arrival. We were prepared to do the ILS XXR approach. The winds were very gusty in flight and there was some concern that the APCH (Approach) might not be able to be done because of excess tailwind component. If I remember correctly the winds were 060@15. I checked the ATIS multiple times and then heard that they were using RNAV YYL approach. Air traffic control changed
our approach to the RNAV Y YYL approach while we were being vectored for final. I had already put RNAV YYL approach in the FMS but was frantically trying to find the other APCH which we did not have in our database. I found the approach on my iPhone and it was an RNP 2 approach which we were not approved for. While I was busy trying to find and program the changed approach into the box, I told the SIC (Second in Command) to just fly the original RNAV YYL approach. ATC gave us a short vector to final and asked if that was too tight. I responded that it was perfect. Which at the time I felt was appropriate. We observed the proceeding aircraft call a missed approach. With the autopilot kicking off many times during the approach, the flying pilot had his hands full. My attention being diverted to trying to find the other approach, to no avail. While on final approach we received 2-3 "Low Altitude Alerts" from ATC. Each time we made altitude corrections. We ended up going missed approach and going to ZZZ2 [Airport] as our alternate airport. We were being vectored for ILS ZZZ in ZZZ2. On about late downwind ATC asked which runway we wanted. We told them we would like the RNAV YYL at ZZZ3 [Airport]. While the weather was more conducive to getting in at ZZZ3. I was on the number 2 com trying to contact the FBO to get them to communicate our divert to the ground transport team. The turbulence was still kicking off the autopilot. We were vectored through final then given a heading of 090 to intercept final. We intercepted final approach and again the auto pilot kicked off. Again, we received a "Low Altitude Alert" I believe around ZZZZZZ2 [Intersection] or ZZZZZZ3 [Intersection] from ATC. I prompted my co-pilot to follow the vertical guidance which by this time he was so rattled and beat up that that he really was sluggish in responding. We then had the field in sight and proceeded to a very smooth landing. I attribute these events to FATIGUE aggravated by auto-pilot malfunctions, weather, turbulence, delayed vectoring for both approaches, and the captain's attention diversions due to an improperly assigned approach and the need to get the donated organs into the operating Room. This was a classic accident chain that was thankfully broken by the observant approach controllers that called "low altitude alert" several times during the first approach.

**Synopsis**

Captain reported multiple low altitude alerts from ATC on approach, went missed approach and diverted to an alternate airport.
ACN: 2063914

Time / Day
- Date: 202312
- Local Time Of Day: 1201-1800

Place
- Locale Reference.Airport: RNO.Airport
- State Reference: NV

Environment
- Flight Conditions: VMC
- Light: Night

Aircraft
- Reference: X
- ATC / Advisory.TRACON: 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
- Mission: Passenger
- Flight Phase: Initial Approach

Person
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: First Officer
- Function.Flight Crew: Pilot Not Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 2063914

Human Factors
- Workload
- Situational Awareness
- Communication Breakdown
- Human-Machine Interface

Communication Breakdown
- Party1: Flight Crew
- Party2: Flight Crew

Events
- Anomaly.Deviation - Altitude: Overshoot
- Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly.Deviation / Discrepancy - Procedural: Clearance
- Anomaly.Inflight Event / Encounter: CFTT / CFIT
- Detector.Automation: Aircraft Terrain Warning
- When Detected: In-flight
- Result.Flight Crew: Took Evasive Action
Assessments

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

Narrative: 1

RNO night, weather was VMC. We set up for the 17R approach KLOCK transition. Reno Approach said that the longer Runway 17R was not available. Approach asked us what approach we wanted for 17L. We chose the RNAV 17L. By the time the Captain loaded the new approach we were already slightly above profile. We both identified this and the Captain started down while I made a PA to the passengers and finished the Before Landing Checklist. When we re-intercepted the path, we believe the pilot flying forgot to activate VNAV. So we continued slightly below path. This resulted in a caution terrain just after the fix WORTH on the RNO RNAV 17L. Captain immediately stopped the descent and the caution immediately disappeared. We continued and landed without further incident.

Cause: Late runway change at destination. Pilot monitoring â€” me â€“ failing to trap the Captain error of not re-engaging VNAV. Suggestions: Be more aware of what VNAV mode aircraft is in even during high workload phases of flight. Try to trap and correct all pilot flying errors.

Synopsis

Air carrier First Officer reported receiving an aircraft terrain caution during descent into RNO. The Captain immediately stopped the descent, the caution disappeared, and the flight crew continued the landing.
Time / Day
Date: 202312
Local Time Of Day: 1801-2400

Place
Locale Reference.ATC Facility: ZZZ.TRACON
State Reference: US
Altitude.MSL.Single Value: 2000

Environment
Flight Conditions: IMC
Weather Elements / Visibility. Visibility: 10
Light: Night
Ceiling. Single Value: 800

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
Aircraft Operator: Personal
Make Model Name: PA-28 Cherokee/Archer/Dakota/Pillan/Warrior
Crew Size. Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Flight Phase: Descent
Route In Use: Vectors
Airspace. Class C: ZZZ

Person
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: Instrument
Qualification. Flight Crew: Private
Experience. Flight Crew. Last 90 Days: 5.4
Experience. Flight Crew. Type: 182.5
ASRS Report Number. Accession Number: 2061528
Human Factors: Situational Awareness

Events
Anomaly. Deviation - Altitude: Excursion From Assigned Altitude
Anomaly. Deviation - Altitude: Overshoot
Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly. Deviation / Discrepancy - Procedural: Clearance
Anomaly. Inflight Event / Encounter: CFTT / CFIT
Detector. Automation: Air Traffic Control
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : FLC complied w / Automation / Advisory  
Result.Flight Crew : Returned To Clearance  
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Approach gave me a descent to 2500 ft. in preparation for the RNAV XX into ZZZ (Night IFR). The aircraft was flying under autopilot at the time at a slow descent rate (~600 fpm) and does not have an altitude arm mode. I did not notice I had passed my assigned altitude of 2500 until I was as low as 2000 MSL. I immediately disconnected autopilot and performed an escape maneuver back to 2500. Simultaneously, approach contacted me about my altitude and requested I climb immediately. I was back at 2500 ft within 20 seconds. This was caused by me misreading my altimeter during my instrument scans, and seeing 1000 ft higher than I actually was (analog altimeter). That being said, me noticing in time, approach, and the eventual terrain warning I would have gotten had I continued descending on both the GTN650 and Foreflight are all very good last resort safety measure that would have allowed me to recover from the situation had it gotten worse. 500 ft. deviation on any IFR flight is not acceptable given a potential Controlled Flight Into Terrain result. I will be putting significantly more time practicing scanning flows in flight as well as in simulators.

Synopsis

Pilot flying approach reported low altitude alert from ATC during approach in IMC.
Time / Day
Date: 202312
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: SHV.Airport
State Reference: LA

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft: 1
Reference: X
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: Initial Approach
Airspace.Class C: SHV

Aircraft: 2
Reference: Y
Make Model Name: Helicopter
Mission: Ambulance
Flight Phase: Takeoff / Launch
Airspace.Class C: SHV

Person
Location Of Person.Aircraft: X
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.Type: 1230
ASRS Report Number.Accession Number: 2061209
Human Factors: Situational Awareness

Events
Anomaly.ATC Issue: All Types
Anomaly.Conflict: NMAC
Anomaly.Inflight Event / Encounter: Unstabilized Approach
Detector.Automation: Aircraft RA
Detector.Person: Flight Crew
When Detected: In-flight
Result: Flight Crew: Took Evasive Action

Assessments
Contributing Factors / Situations: Airspace Structure
Contributing Factors / Situations: Human Factors
Contributing Factors / Situations: Software and Automation
Contributing Factors / Situations: Procedure
Primary Problem: Procedure

Narrative: 1
Going ZZZ to SHV we were doing the RNAV 24 and got an RA at 1300 feet for a aircraft taking off from one of the hospitals just under the approach course. Helicopter came within 400 feet of our aircraft and RA was received stating “level off”. First Officer (FO) was Pilot Flying (PF) and disconnected auto pilot immediately and leveled off to clear the conflict. We then executed a go-around because the approach was no longer stable and we were too high. We came back around and landed with no issue. Cause: ATC. Other pilot lack of situational awareness.

Synopsis
Air carrier Captain reported a near miss with a helicopter departing a hospital under the approach course. The Captain leveled off to avoid the traffic, performed a go around, then returned to land safely.
ACN: 2060282 (15 of 50)

Time / Day
Date : 202312
Local Time Of Day : 1801-2400

Place
Locale Reference.Airport : ELP.Airport
State Reference : TX
Altitude.MSL.Single Value : 500

Environment
Light : Night

Aircraft
Reference : X
ATC / Advisory.Tower : ELP
Aircraft Operator : Air Carrier
Make Model Name : Large Transport, Low Wing, 2 Turbojet Eng
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use : FMS Or FMC
Nav In Use : GPS
Nav In Use.Localizer/Glideslope/ILS : RNP Z 26L
Flight Phase : Initial Approach
Route In Use : Direct
Airspace.Class C : ELP

Component : 1
Aircraft Component : GPS & Other Satellite Navigation
Aircraft Reference : X
Problem : Malfunctioning

Component : 2
Aircraft Component : Navigational Equipment and Processing
Aircraft Reference : X
Problem : Malfunctioning

Person
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 200
Experience. Flight Crew. Type: 200
ASRS Report Number. Accession Number: 2060282
Human Factors: Distraction
Human Factors: Situational Awareness
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Confusion

Events
Anomaly. Aircraft Equipment Problem: Less Severe
Anomaly. Inflight Event / Encounter: CFTT / CFIT
Detector. Automation: Aircraft Terrain Warning
Detector. Person: Flight Crew
When Detected: In-flight
Result. Flight Crew: Executed Go Around / Missed Approach
Result. Flight Crew: FLC complied w / Automation / Advisory

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

Narrative: 1
On short approach in VMC just below approx 500 feet AGL into El Paso Runway 26L we got a "CAUTION, TERRAIN" GPWS caution followed by GPWS warning, "TERRAIN, TERRAIN, PULL UP". Captain immediately executed terrain avoidance maneuver. We followed Tower heading and altitude assignment and then switched to Departure Control frequency. Captain engaged autopilot repeatedly followed by repeated disengagements making communications difficult due to constant aural warning. This created an additive condition. Assigned heading was to the left with the autopilot commanding right turns upon autopilot engagement. Captain made appropriate corrections and we commenced an ILS approach to Runway 22 without further incident. It was difficult to ascertain why we received the GPWS warning as we believed we were on profile for the RNAV RNP Z 26L Approach; however, upon descent for approach we had received a spurious and temporary GPS-L fail message. We speculated that it may have been possible both GPS sensors failed due to potential military activities in the area which could have caused the GPWS warning. The terrain displayed on MFD was sudden and not concurrent with actual terrain situation. More attention to NOTAMs may have given pause to attempting a GPS approach and steered us toward conducting an ILS type approach. Go-around caused by GPWS.

Synopsis
Air carrier First Officer reported a GPWS Terrain warning while on the ELP RNAV RNP Z 26L approach. The pilots believe the aircraft was on path and the warning did not coincide with the aircraft's position. During descent the crew stated they had also received a momentary GPS fail indication.
ACN: 2059482 (16 of 50)

Time / Day
Date: 202312
Local Time Of Day: 1801-2400

Place
Locale Reference.ATC Facility: PIT.TRACON
State Reference: PA
Altitude.MSL.Single Value: 3100

Aircraft
Reference: X
ATC / Advisory.TRACON: PIT
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: IFR
Flight Phase: Descent
Route In Use: Vectors
Airspace.Class B: PIT

Person
Location Of Person.Facility: PIT.TRACON
Reporter Organization: Government
Function.Air Traffic Control: Instructor
Function.Air Traffic Control: Approach
Qualification.Air Traffic Control: Fully Certified
Experience.Air Traffic Control: Time Certified In Pos 1 (yrs): 6
ASRS Report Number.Accession Number: 2059482
Human Factors: Communication Breakdown
Human Factors: Situational Awareness
Human Factors: Training / Qualification
Communication Breakdown.Party1: ATC
Communication Breakdown.Party2: Flight Crew

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

Assessments
Contributing Factors / Situations: Chart Or Publication
Contributing Factors / Situations: Environment - Non Weather Related
Contributing Factors / Situations: Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

**Narrative: 1**
Training in progress at this position. The trainee cleared Aircraft X direct to MILKY, descent to 4000 ft. and told the aircraft to expect the RNAV28 into AGC. The aircraft read back cleared RNAV 28 and descended below the MVA of 3400. The trainer (I) nor the trainee caught the bad read back. We noticed his altitude at 3200 ft. and questioned what had happened. Recommend active listening.

**Synopsis**
TRACON Controller reported they were not aware an aircraft did not read back their clearance correctly and the aircraft descended below the Minimum Vectoring Altitude.
**ACN: 2059396** (17 of 50)

**Time / Day**
- Date: 202311
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference. ATC Facility: ZZZ.TRACON
- State Reference: US
- Relative Position. Distance. Nautical Miles: .75
- Altitude. MSL. Single Value: 1800

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

**Aircraft : 1**
- Reference: X
- ATC / Advisory. CTAF: ZZZ
- Aircraft Operator: FBO
- Make Model Name: Skyhawk 172/Cutlass 172
- Crew Size. Number Of Crew: 2
- Operating Under FAR Part: Part 91
- Flight Plan: VFR
- Mission: Training
- Flight Phase: Initial Approach
- Route In Use: Visual Approach
- Airspace. Class E: ZZZ

**Aircraft : 2**
- Reference: Y
- ATC / Advisory. CTAF: ZZZ
- Aircraft Operator: Personal
- Make Model Name: Bonanza 35
- Crew Size. Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: VFR
- Flight Phase: Initial Approach
- Airspace. Class E: ZZZ

**Person**
- Location Of Person. Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: FBO
- Function. Flight Crew: Instructor
- Function. Flight Crew: Pilot Not Flying
- Qualification. Flight Crew: Commercial
- Qualification. Flight Crew: Multiengine
- Qualification. Flight Crew: Instrument
Qualification: Flight Crew: Flight Instructor
Experience: Flight Crew: Total: 517
Experience: Flight Crew: Last 90 Days: 125
Experience: Flight Crew: Type: 433
ASRS Report Number: Accession Number: 2059396
Human Factors: Confusion
Human Factors: Time Pressure
Human Factors: Communication Breakdown
Communication Breakdown: Party1: Flight Crew
Communication Breakdown: Party2: Flight Crew

Events
Anomaly: Conflict: NMAC
Anomaly: Deviation / Discrepancy - Procedural: Published Material / Policy
Detector: Person: Flight Crew
Miss Distance: Vertical: 200
When Detected: In-flight
Result: Flight Crew: Took Evasive Action

Assessments
Contributing Factors / Situations: Company Policy
Contributing Factors / Situations: Human Factors
Contributing Factors / Situations: Procedure
Primary Problem: Human Factors

Narrative: 1
Our aircraft was on RNAV XX Circle to Land Runway XY at ZZZ. The other aircraft was on RNAV XZ Circle to Land XY at ZZZ. Per company procedures our aircraft was circling at 1800 feet on left downwind. While established on downwind, the Bonanza completed their RNAV XZ approach and crossed over the field into the left downwind at approximately 1280 feet. The aircraft was well behind us but at a much quicker ground speed of 180 Knots. The aircraft was 500 feet below to begin, but began climbing and got within 200 feet directly below and behind our 172 as we started our climb out of their way. We made a radio call that we would extend our downwind since they were overtaking us and 500 feet below, but they then climbed into us and approached us further. After we climbed to 2400 ft. the traffic conflict was averted and the Bonanza landed than we landed from extended left downwind.

Synopsis
Flight Instructor reported a NMAC with another aircraft in the pattern while on initial approach to a non towered airport.
ACN: 2057637  (18 of 50)

Time / Day
Date: 202311
Local Time Of Day: 1801-2400

Place
Locale Reference. ATC Facility: HCF.TRACON
State Reference: HI
Altitude. MSL. Single Value: 3100

Aircraft
Reference: X
ATC / Advisory. TRACON: HCF
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: Final Approach
Route In Use: Vectors
Airspace. Class B: HCF

Person
Location Of Person. Facility: HCF.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): 6
ASRS Report Number. Accession Number: 2057637
Human Factors: Communication Breakdown
Human Factors: Confusion
Human Factors: Distraction
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Situational Awareness
Communication Breakdown. Party 1: ATC
Communication Breakdown. Party 2: ATC

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

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

**Narrative: 1**
I was relieving the H controller accepted the briefing and apparently I misunderstood that only the VVEGL from BOOKE was cleared for an approach and not Aircraft X who was being vectored to the RNAV Y 8L approach and appeared to be on a heading to join the final. Fortunately the V controller asked about Aircraft X and I turned them on a heading to join. However they were clearly through the final and I realized that it didn't look good and was probably below the MVA so I climbed Aircraft X to altitude that I thought was higher than the MVA in that area and vectored them back around for the approach. I'm not sure how I missed it in my scan. I may have been preoccupied trying to figure out the sequence with no LAHSO. Either way its no excuse. Pay better attention to the briefing and aircraft on final. Suggestion: Maybe not accept the position until I know for sure if the aircraft was on approach. Or suggest the controller clear the aircraft before I accepted the position.

**Synopsis**
A TRACON Controller reported an aircraft on a vector to final approach flew through the approach course and below the Minimum Vectoring Altitude.
Time / Day
Date: 202311
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Relative Position.Distance.Nautical Miles: 8
Altitude.MSL.Single Value: 700

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

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
Aircraft Operator: Personal
Make Model Name: RV-8
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace.Class E: ZZZ

Component
Aircraft Component: GPS & Other Satellite Navigation
Aircraft Reference: X
Problem: Improperly Operated

Person
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: Instrument
Qualification.Flight Crew: Private
Experience.Flight Crew.Total: 872
Experience.Flight Crew.Last 90 Days: 46
Experience.Flight Crew.Type: 295
ASRS Report Number.Accession Number: 2057001
Human Factors: Human-Machine Interface
Human Factors: Situational Awareness
Human Factors: Confusion

Events

Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural: Clearance
Anomaly.Inflight Event / Encounter: CFTT / CFIT
Detector.Automation: Aircraft Terrain Warning
When Detected: In-flight
Result.Flight Crew: Took Evasive Action
Result.Flight Crew: Returned To Clearance
Result.Flight Crew: Became Reoriented

Assessments

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

Narrative: 1

Was talking to approach, getting vectored for the RNAV XX approach at ZZZ. Was initially at 3,000 feet and then assigned 1,600 feet by the controller. Apparently I made an error in setting the new altitude in the autopilot, which caused the plane to descend at over 1,200 FPM. This descent was not noticed until several seconds later, when I saw the GPS flashing a terrain alert. The altimeter showed 700 feet at this point, and I immediately gave full throttle and pulled back on the stick. I was low enough that I didn't near radio calls from the controller nor could he hear mine. Once I gained altitude we were able to communicate; I finished the approach and landed at ZZZ without incident.

Synopsis

RV-8 pilot reported they set an incorrect altitude in the autopilot during approach which resulted in a rapid descent and terrain alert. Pilot climbed back to altitude and continue the approach.
Time / Day
Date: 202311

Place
Locale Reference. Airport: ABQ. Airport
State Reference: NM
Altitude. AGL. Single Value: 900

Environment
Flight Conditions: VMC
Weather Elements / Visibility: Turbulence
Weather Elements / Visibility: Rain

Aircraft
Reference: X
ATC / Advisory. TRACON: ABQ
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: Final Approach
Airspace. Class C: ABQ

Component
Aircraft Component: GPWS
Aircraft Reference: X
Problem: Malfunctioning

Person
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)
Qualification. Flight Crew: Instrument
Qualification. Flight Crew: Multiengine
ASRS Report Number. Accession Number: 2056687
Human Factors: Workload
Human Factors: Fatigue

Events
Anomaly. Aircraft Equipment Problem: Less Severe
Anomaly. Deviation - Speed: All Types
Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly. Inflight Event / Encounter: Unstabilized Approach
Anomaly. Inflight Event / Encounter: Weather / Turbulence
Anomaly. Inflight Event / Encounter : CFTT / CFIT
Detector. Automation : Aircraft Terrain Warning
Detector. Person : Flight Crew
When Detected : In-flight
Result. Flight Crew : Overcame Equipment Problem

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

Narrative: 1
Inside the final approach point on the RNAV (RNP) Z Runway 08 at ABQ airport at approximately 900 feet AGL, the autopilot was disengaged. The crew then experienced a gust of wind that increased indicated airspeed approximately 13 knots from the target speed of 166 knots. This exceeded the 30 flap placard airspeed of 175 knots, engaging the flap load relief function. Immediately after, the GPWS warning “Too Low, Terrain” sounded but the crew was able to visually verify terrain clearance from cultural lighting, then confirmed the aircraft was on the GPS glide path as well as having a good VASI (red over white) indication. These indications remained for the duration of the approach to touchdown. Power was reduced, the speed was brought back and the crew was able to recapture and verify stabilized approach criteria by 500 feet. The landing and ground operations were uneventful. A maintenance entry was made for the flap over-speed. Before descent, the approach had been thoroughly briefed and Runway 8 was specifically requested since the winds were directly down the runway (winds 070/20, gust 30). Decision points about wind shear and both ROW and ELP divert plans were briefed. The flaps 30 setting was deliberately chosen because gusty winds were a consideration. Cause: Fatigue. ABQ, final for Runway 8 inside 1,000 feet.

Synopsis
Air carrier pilot reported fatigue, gusts, flap overspeed and GPWS warning resulted in a CFTT event. Pilot reported during GPWS alert all terrain in sight and aircraft on glidepath.
**ACN: 2055026 (21 of 50)**

**Time / Day**
- Date: 202311
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference: Airport: DPA
- State Reference: IL
- Relative Position: Distance: Nautical Miles: 11.2
- Altitude: MSL: Single Value: 3000

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

**Aircraft : 1**
- Reference: X
- ATC / Advisory: Ground: DPA
- Aircraft Operator: Personal
- Make Model Name: Small Aircraft, Low Wing, 1 Eng, Retractable Gear
- Crew Size: Number Of Crew: 2
- Operating Under FAR Part: Part 91
- Flight Plan: IFR
- Mission: Personal
- Flight Phase: Initial Approach
- Airspace: Class D: DPA

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV: Unpiloted Aerial Vehicle
- Crew Size: Number Of Crew: 1
- Airspace: Class D: DPA
- Flying In / Near / Over (UAS): Airport / Aerodrome / Heliport
- Flying In / Near / Over (UAS): Aircraft / UAS

**Person : 1**
- Location Of Person: Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: FBO
- Function: Flight Crew: Pilot Not Flying
- Qualification: Flight Crew: Private
- Qualification: Flight Crew: Instrument
- Experience: Flight Crew: Total: 900
- ASRS Report Number: Accession Number: 2055026
- Human Factors: Time Pressure
- Human Factors: Situational Awareness
- Analyst Callback: Attempted
Narrative: 1
I was in the right seat of Aircraft X on the RNAV 2L at DPA. We were cleared for the approach in VFR conditions. We passed about 20 ft. from the drone at our altitude at the BOMER IF. The drone was reported to DuPage Ground Control.

Narrative: 2
ATC cleared us for practice RNAV GPS Runway 02L at DPA. At if BOMER, encountered a quad copter drone at 3,000 ft. MSL. Drone was at 1 o'clock position and not seen until within 30 feet of aircraft. Happened so quick, unable to take evasive action. Drone flew over cabin within five feet, otherwise it would have impacted windshield. Reported incident to DPC Ground Controller after landing.

Synopsis
General aviation flight crew reported a near miss with a UAS while at 3,000 feet on an approach to landing. UAS sighting reported to controller upon landing.
ACN: 2054361

Time / Day
Date: 202311
Local Time Of Day: 1801-2400

Place
Locale Reference: ATC Facility: ZDC.ARTCC
State Reference: VA
Altitude MSL Single Value: 3000

Aircraft
Reference: X
ATC / Advisory Center: ZDC
Aircraft Operator: Corporate
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: Descent
Airspace Class E: ZDC

Person
Location Of Person Facility: ZDC.ARTCC
Reporter Organization: Government
Function Air Traffic Control: Instructor
Function Air Traffic Control: Enroute
Qualification Air Traffic Control: Fully Certified
Experience Air Traffic Control Time Certified In Pos 1 (yrs): 4
ASRS Report Number Accession Number: 2054361
Human Factors: Confusion
Human Factors: Training / Qualification
Human Factors: Workload
Human Factors: Situational Awareness

Events
Anomaly ATC Issue: All Types
Anomaly Deviation - Altitude: Excursion From Assigned Altitude
Anomaly Deviation / Discrepancy - Procedural: Clearance
Anomaly Inflight Event / Encounter: CFTT / CFIT
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: Airspace Structure
Contributing Factors / Situations: Chart Or Publication
Contributing Factors / Situations: Environment - Non Weather Related
Contributing Factors / Situations: Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

While providing OJTI on the sector, Aircraft X requested the RNAV Runway 4 until they got the airport in sight to change to a visual approach. This was a plain language request made by the pilot which allowed ample time for coordination and planning. Traffic volume and complexity were low. When prompted, the Trainee started a track on a VFR aircraft who was essentially established inbound on the requested approach but not in communication with us as they were VFR without flight following. The Trainee called the traffic to Aircraft X and Aircraft X reported that they had the traffic in sight. Trainee responded "roger". Aircraft X then reported that they were going to do a 360 to get away from the traffic. Trainee responded "roger" instead of specifying a direction of turn (suggested because of additional VFR traffic to the left at 3100. The radar Trainee said that he had never heard such of a request and didn't know what to do, despite having seen similar requests in school scenarios. After the 360, Aircraft X climbed then descended below the MIA triggering a low altitude alert. Encourage everyone that it is okay to ask for help and admit when they don't know something.

Synopsis

A Center Controller reported an aircraft approved to make a 360 turn deviated from its assigned altitude and flew below the Minimum IFR Altitude.
Time / Day
Date: 202311
Local Time Of Day: 0001-0600

Place
Locale Reference. ATC Facility: ZZZ.TRACON
State Reference: US
Altitude. MSL. Single Value: 2000

Environment
Flight Conditions: VMC

Aircraft
Reference: X
Aircraft Operator: Air Carrier
Make Model Name: A320
Crew Size. Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Mission: Passenger
Flight Phase: Final Approach

Person: 1
Location Of Person. Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function. Flight Crew: Pilot Not Flying
Function. Flight Crew: Captain
Qualification. Flight Crew: Air Transport Pilot (ATP)
Qualification. Flight Crew: Instrument
Experience. Flight Crew. Last 90 Days: 208.45
Experience. Flight Crew. Type: 2195.75
ASRS Report Number. Accession Number: 2054102
Human Factors: Troubleshooting
Human Factors: Workload
Human Factors: Time Pressure

Person: 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)
Experience. Flight Crew. Last 90 Days: 58.7
Experience. Flight Crew. Type: 58.70
Events
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

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

Narrative: 1
On approach to ZZZ, the First Officer used improper aircraft control slowed to nearly stall speed then subsequently descended rapidly below 1 dot on the RNAV glidepath which lead to a single GPWS obstacle callout. Captain took control of the aircraft and performed an upset recovery procedure followed by a Go-Around. Subsequent approach and landing without incident

Narrative: 2
ZZZ [airport] R-Nav XX VFR Night I was Pilot Flying, 62 hours in type. We arrived from the West and requested the Rnav XX. ATC offered it from ZZZZZ or Vectors. I accepted vectors. We were told to maintain to 3200 ft; until established and cleared for approach. The next fix was in 2 miles and 2200 ft. I was fast and in selected speed at 210, Flaps 1. I armed approach and saw final app but no blue brick. By the time I realized and questioned no blue brick, the CA had the same question and pulled up the prog page and learned we were 750 ft high and fast. I spun the speed to 170 KTS and asked for gear down we slowed and got the flaps to 2 before the the FAF which was supposed to be 1600 ft but we were extremely high. I had full boards until the VLS crept up and I retracted them. I am still in Auto pilot at this point and confused by the automation when the GS didn't capture. I am becoming progressively behind the aircraft. The CA is verbally directing me to turn auto pilot off, pitch for 170 KTS, full boards and get down. The flight director is providing bad data and I am attempting to read my instruments and look outside all while listening to the Captains directives. I should have gone around long before this point. I had lost most SA (Situational Awareness) at this point and was trying to compute where we were in regards to the glide slope, the Captain believes he heard an obstacle alert. I was behind a bit while hand flying believing I could stabilize the approach by 500 ft. I was startled and
surprised and did not respond promptly thus the Captain took the aircraft and called the go around. Once climbing out he returned the controls to me. We were vectored back for the approach. I had recognized ATC was leaving us high again and better prepared by slowing and putting the flaps 2 in. I am flying with automation on. Once cleared I armed the approach however the approach was not sequenced properly in the box and was not arming. I stated I had the runway in sight and needed to disconnect the auto pilot. The Captain said to keep the auto pilot on while he was programing the box. The approach was still not arming, we were cleared visual and I flew in heading mode until established and I disconnected the autopilot to descend since the GS did not capture. We met the stabilized approach criteria and landed uneventfully. What I could have [done] better: I would request to start from the initial fix and not vectors. I would recognize and verbalize we were high on final and fast. I would call a go around at the FAF since we were still high. I would have better situational awareness to react to any possible obstacle alert. All around we could have better practiced communication and automation management.

Synopsis
Air carrier flight crew reported improper automation and aircraft control management by an inexperienced First Officer resulting in an unstable approach. The Captain took control of aircraft and performed an upset recovery maneuver followed by a go-around and landing.
**ACN: 2053244 (24 of 50)**

**Time / Day**
- Date: 202311
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: DAL.Airport
- State Reference: TX
- Relative Position.Distance.Nautical Miles: 10
- Altitude.MSL.Single Value: 4000

**Environment**
- Light: Daylight

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: D10
- 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
- Nav In Use: GPS
- Flight Phase: Initial Approach
- Airspace.Class B: DAL

**Person: 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: Multiengine
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Experience.Flight Crew.Last 90 Days: 120
- Experience.Flight Crew.Type: 22500
- ASRS Report Number.Accession Number: 2053244
- Human Factors: Communication Breakdown
- Human Factors: Confusion
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: ATC

**Person: 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: Air Transport Pilot (ATP)
Qualification: Flight Crew: Instrument
ASRS Report Number: Accession Number: 2053252
Human Factors: Communication Breakdown
Human Factors: Confusion
Communication Breakdown: Party1: Flight Crew
Communication Breakdown: Party2: ATC

Events

Anomaly: ATC Issue: All Types
Anomaly: Deviation - Track / Heading: All Types
Anomaly: Deviation / Discrepancy - Procedural: Clearance
Anomaly: Deviation / Discrepancy - Procedural: Published Material / Policy
Detector: Person: Air Traffic Control
When Detected: In-flight
Result: Flight Crew: Returned To Clearance
Result: Air Traffic Control: Issued New Clearance

Assessments

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

Narrative: 1

During RNAV arrival to [Runway] 31R ATC apparently cleared us to IAF SUMLN, but we thought we heard the alternate IAF of JALIM which was closer to our position. We read back and proceeded to JALIM. Neither we nor ATC caught the read back error, partially due to very congested communications on that frequency. After a couple of minutes ATC queried us asking us if we were proceeding to SUMLN. We responded negatively and that we thought we heard the similar sounding JALIM. ATC then immediately cleared us to JALIM and cleared us for the RNAV to 31R. We do not believe separation from other aircraft was lost. The rest of the approach went eventually. Solution: One of the two IAF waypoints needs to be renamed to a dissimilar sounding waypoint as the other IAF.

Narrative: 2

Upon arrival via RNAV RNP 31R, ATC apparently cleared us to SUMLN IF and we read back JALIM. ATC inquired if we proceeding to SUMLIN and we again read back JALIM, which ATC then cleared us to start the approach from. The similar sounding fixes in a radio traffic saturated area led us to proceeding to the incorrect fix assigned by ATC. The approach, landing and taxi to the gate was uneventful. Solution: Change one of the IF names to something that is not similar in sound to the other.

Synopsis

Air carrier flight crew reported a course deviation while being vectored for an approach to DAL airport. The flight crew indicated similar sounding fixes SUMLN and JALIM contributed to the event. The course was corrected and the flight continued to a safe approach.
ACN: 2053212 (25 of 50)

Time / Day
Date: 201311
Local Time Of Day: 0601-1200

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

Environment
Flight Conditions: IMC
Weather Elements / Visibility: Cloudy
Weather Elements / Visibility.Visibility: 5
Light: Dawn
Ceiling.Single Value: 500

Aircraft
Reference: X
ATC / Advisory.Tower: ZZZ
Aircraft Operator: Personal
Make Model Name: HS 125 Series 700
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Ferry / Re-Positioning
Flight Phase: Initial Approach
Route In Use: Vectors
Airspace.Class D: ZZZ

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

Person
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Personal
Function.Flight Crew: Pilot Flying
Function.Flight Crew: Captain
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Total: 28000
Experience.Flight Crew.Last 90 Days: 60
Experience.Flight Crew.Type: 75
ASRS Report Number.Accession Number: 2053212
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Other / Unknown
Human Factors: Troubleshooting
Events

Anomaly.Aircraft Equipment Problem: Critical
Anomaly.Deviation - Altitude: Overshoot
Anomaly.Deviation - Speed: All Types
Anomaly.Deviation - Track / Heading: All Types
Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural: Clearance
Detector.Automation: Aircraft Other Automation
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Requested ATC Assistance / Clarification
Result.Flight Crew: Overcame Equipment Problem
Result.Flight Crew: Overrode Automation
Result.Air Traffic Control: Issued New Clearance
Result.Air Traffic Control: Provided Assistance
Result.Aircraft: Equipment Problem Dissipated

Assessments

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

Narrative: 1

We were being vectored for the RNAV XX approach. We had the box (FMS) set up with a fix and extended runway centerline. It became apparent that we were going to intercept inside that fix so I went head down and resequenced the box for the waypoint in front of us. I was the Pilot Not Flying. The airplane was on AutoPilot. We were assigned 1700 MSL and cleared for the approach. We had just gone from Flaps zero to Flaps 15 as the Glide Slope became alive and began to center up. We were at 160 knots. Suddenly the glide slope portion on the NAV display just disappeared. The needle, the scale, all off it, and the airplane began a fairly significant LEFT turn away from the airport. I was unaware if the AutoPilot had tripped off or what was going on. There is no "AP tripped-off" horn on this jet. There were a few seconds of "What the hell just happened?" as we flew away from the course. All indications were NORMAL on the flight displays except for the GS. IOW (In other words), there were no FLAGS. What follows was HIGHLY compressed... The FO said something along the lines of "where is it going?" To this I said, "I don't know, but fix it". What I meant was, "Grab the controls and put the jet back on the Localizer". We were in a very slight descent and now about 30-40 off the proper heading. The airplane was slowing and now we were below 150 Knots. As a result of our speed the gear warning horn came on. This horn confused my FO who wondered if it had something to do with the Glide Slope anomaly. At this point, the tower chimed in with a "Uh...where in the hell are you going? (My words, he was polite, "You're off course, say intentions or something like that). I was super frustrated. I told the FO that it was the gear horn and told the tower that our plane had just [given] us a curve and that we were going around (GA). I then instructed my FO to GA. We went around because I didn't want to continue play stupid games in IMC weather below 2,000 feet while troubleshooting whatever had just gone haywire with the jet. Again, ALL of this happened in just a very few seconds. My NORMAL SOP is to lower the gear at Glide Slope intercept and then set the Missed Approach Altitude in the window. We had previously briefed the Missed Approach, but had just SKIMMED over it since the reported weather was 500 Over and Ten Miles VIS. Who's going to fly a MAP with 500 and 10 miles? YOU ARE SUCKER! As a result, I thought the MAP alt was 3000 when it in fact was 2000. [expletive]! We started a GA as we turned back toward the course and in a
NANO second we were at 3000 feet. The confusion about WHY the plane had LOST the GS and WHY it was veering away from the centerline completely overwhelmed us. It shouldn't have, but it did. My expectation bias allowed me to sit back and think...."This will be a piece of cake, it's 500 and TEN!" ATC said, don't worry, maintain 3K but he sounded pissed. I don't blame him. I then told him what had happened and asked him to re-vector us for the APP. He did. This time everything worked as advertised and we landed without incident. I called the tower to explain what had happened. He didn't seem upset, but ZZZ1 is right next to ZZZ and we popped up like an unwelcome party guest right into their airspace. I've been doing this XX years. Just retired from the airlines and am pretty much amazed at how quickly things turned sour and disappointed with my performance throughout ALL of it. My FO is "rough". This NOT an excuse, but I was apoplectic when he just sat there as we flew away from both the inbound course and Glide Path. I consider him "[inexperienced]" with the way he handles the jet. "If the FD tells me to do something, then it's GOT to be right, right?" NO!!! You don't follow the Magenta Line to the point of impact. He and a LOT of the new guys I fly with are looking for that ONE MAGIC BUTTON to push when things go wrong instead of grabbing the yoke and throttles and turning the AP and/or FD OFF. I see it over and over in both of my jobs. As a result, I am probably not the best mentor, particularly when things go wrong. I try like hell to encourage hand flying and turning the FD OFF when the workload is low. When I try and offer advice, a lot of young guys don't want to hear it. Particularly those who have a lot more time in the jet than I do. So, I get frustrated when I see stuff unfold. To sum it up, We lost guidance and automation at a very bad time. We QUICKLY got off course below 2000 ft. We then got huge distractor, the gear horn. There was confusion about the FMS and FD status. The corrective actions were applied MUCH too late and improperly. He thought the gear horn was some type of warning about the FMS and the loss of Glide Slope. I was frustrated that he just allowed the jet to wander off course. It sucked across the board and I am embarrassed by the way we handled it but more importantly, the way I handled it. This is an easy job. Till its not.

Synopsis

HS125 Captain reported an FMS failure during approach resulting in a course and altitude deviation. The Captain executed a go-around, reset the FMS and was re-vectored for another approach to a safe landing.
**Time / Day**
Date: 202311
Local Time Of Day: 0001-0600

**Place**
Locale Reference.Airport: SFO.Airport
State Reference: CA
Altitude.MSL.Single Value: 1500

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

**Aircraft : 1**
Reference: X
ATC / Advisory.Tower: SFO
Aircraft Operator: Air Carrier
Make Model Name: Commercial Fixed Wing
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Mission: Passenger
Flight Phase: Final Approach
Route In Use.Other
Airspace.Class B: SFO

**Aircraft : 2**
Reference: Y
ATC / Advisory.Tower: SFO
Make Model Name: Any Unknown or Unlisted Aircraft Manufacturer
Crew Size.Number Of Crew: 2
Flight Phase: Final Approach
Airspace.Class B: SFO

**Person : 1**
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)
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiengine
ASRS Report Number.Accession Number: 2052888
Human Factors: Time Pressure

**Person : 2**
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Flew an uneventful trip up the coast to SFO on a clear VMC morning. I was PM and CA (Captain) was PF (Pilot Flying). We did a full arrival briefing to include all threats—personal, environmental and technical. We line selected, briefed, and flew the RNAV-T 28L which constitutes the Tipp Toe Charted Visual for 28L. Prior to top of descent during our arrival briefing we talked extensively about using TCAS in the terminal area of SFO and that my choice would be to leave it in TA/RA, so as to be alerted to any threats. I briefed the First Officer that if we received an RA on the closely spaced parallel approach we would respond and execute a go-around. Joining the Tipp Toe from the SERFR 4 arrival, ATC began slowing us first to 250, then 210, then 180. We were alerted to approaching parallel traffic from the east who would join final for 28R near us. We called the traffic in sight. We were told to maintain visual, cleared Tipp Toe 28L, 180 knots. I was hand flying the aircraft, with the autothrottles on. I called for the landing gear and flaps 15 in order to slow to 180 knots as I slowly rolled into a left turn to join the final approach segment. LNAV and VNAV were both giving us guidance and the speed window was open. I looked at the wind vector as I was watching the parallel traffic join their final for 28R. I noticed they had a tailwind. It appeared visually to me they overshot their final approach course, right as we received a TCAS RA descend descend. CA was hand flying and also disconnected the autothrottles and told the Tower that we were responding to an RA. CA lowered the nose to remain clear of the RA pitch command area. The TCAS traffic target turned to a solid red box and showed a distance of +01. As we descended that red
box and the +01 stayed with us, as the target aircraft continued to descend over the top of us. We continued to descend with the red target box descending with us, but while following the guidance of the TCAS. We maintained the assigned lateral course. As we were descending through 1100 ft. I briefly tried to level off slightly and the TCAS immediately said "monitor vertical speed" so CA continued the descent. I began trying to figure out if we could safely execute a slight left turn, exit the danger area and commence a go-around. We had the airplane in sight the whole time but they were just so close and slightly above us, I continued following the guidance of the RA. At roughly 900 ft. the SFO Tower gave us a "low altitude warning". Right around that same time the RA pitch command area disappeared, and the TCAS traffic target turned yellow with a distance of +02 then +03. We slowed to target speed, extended the flaps to 30 degrees, and completed the Before Landing Checklist. We were stable by 500 ft. and executed an uneventful landing and taxied to the gate. The aircraft was never in an undesirable state. The CA and I communicated well throughout the event. We met each of the stability gates. The CA and I debriefed the experience from beginning to end. We are grateful for the direction the company had given us on the use of TA/RA on closely spaced parallel approaches. Had we been in TA ONLY we would have lacked clear direction which could have been catastrophic. What the CA and I found troubling once we had time to think about it, was being sandwiched between an airplane and the water with no clear exit path. We don't practice those types of low altitude RAs in the training. I know there has always been an issue with the closely spaced parallel approaches, but it seems to have risen to a new level of threat. We used to be more concerned with encountering wake turbulence from the preceding aircraft on the other final approach course. Now we are more concerned about actually impacting the airplane on the other final approach course. Turning the TCAS to TA ONLY seems like the worst possible thing we could do. Why would we remove that particular protection in a threatening situation? In our case today the RA response made all the difference.

**Narrative: 2**

[Report provided no additional narrative.]

**Synopsis**

Air carrier flight crew reported NMAC with another aircraft on approach. Flight crew followed TCAS commands and landed uneventfully.
**ACN: 2051526 (27 of 50)**

**Time / Day**
- Date: 202311
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.
- ATC Facility: S46.TRACON
- State Reference: WA
- Altitude.MSL.Single Value: 1400

**Environment**
- Flight Conditions: IMC
- Weather Elements / Visibility: Rain
- Weather Elements / Visibility: Turbulence
- Weather Elements / Visibility. Visibility: 1
- Light: Dusk
- Ceiling.Single Value: 800
- RVR.Single Value: 5000

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: S46
- Aircraft Operator: Personal
- Make Model Name: Small Aircraft, High Wing, 1 Eng, Retractable Gear
- Crew Size.Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: IFR
- Mission: Personal
- Flight Phase: Initial Approach
- Route In Use: Direct
- Route In Use: Vectors
- Airspace.Class D: OLM

**Person**
- 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: Instrument
- Qualification.Flight Crew: Private
- Experience.Flight Crew.Total: 300
- Experience.Flight Crew.Last 90 Days: 87
- Experience.Flight Crew.Type: 68
- ASRS Report Number.Accession Number: 2051526
- Human Factors: Situational Awareness

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

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

Narrative: 1
I was on a planned IFR practice flight in IMC. I was in communication with ATC and receiving vectors to the Final Approach Fix. The aircraft was in clouds, rain, and light-moderate turbulence for the entire approach. The autopilot had indicated a temporary autopilot failure condition (possibly due to delayed initialization) earlier in the flight, so I decided to fly the aircraft without autopilot. After being given vectors to final and cleared for the RNAV (GPS) approach, I was told to contact the Tower. I was close to the Final Approach Fix and approximately at the minimum required altitude (2400 MSL) to cross it. The short flight, turbulent IMC, and temporary autopilot failure had prevented me from completing my destination briefing earlier, so I began looking up the Tower frequency while hand-flying the plane and updating the GPS unit to sequence to the Final Approach Fix. A minute or so later, ATC called me with an altitude alert. I realized I had descended approximately 1000 feet below the minimum crossing altitude as I crossed the fix. I let ATC know that I was okay and immediately slowed the descent and carefully gained some altitude back to intercept the glide slope. I emerged from the clouds and was able to confirm the airport in sight and switch to Tower. The factors contributing to the altitude discrepancy included the workload, weather and lighting conditions, and possibly not choosing a more appropriate scale for the GPS navigation map near the Final Approach Fix. My relatively low time in actual IMC may have also contributed in terms of stress. I believe the altitude discrepancy could have been mitigated by making flying the plane the first priority, navigation the second, and ATC communications the third. Engaging the autopilot later in the flight could also have reduced workload, as well as updating the GPS map scale for different phases of the flight. Completing a full destination briefing before leaving the ground and noting important frequencies would also have helped with such a short flight.

Synopsis
Light aircraft pilot reported receiving a low altitude alert from ATC on approach to OLM airport when they descended below charted altitude in instrument conditions.
ACN: 2050801 (28 of 50)

Time / Day
Date: 202311
Local Time Of Day: 0601-1200

Place
Locale Reference.ATC Facility: ZZZ.TRACON
State Reference: US
Altitude.MSL.Single Value: 3400

Environment
Light: Daylight

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
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 B: ZZZ

Person
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
ASRS Report Number.Accession Number: 2050801
Human Factors: Situational Awareness
Human Factors: Human-Machine Interface

Events
Anomaly.Deviation - Altitude: Crossing Restriction Not Met
Anomaly.Deviation - Altitude: Overshoot
Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural: Clearance
Anomaly.Inflight Event / Encounter: CFTT / CFIT
Detector.Person: Air Traffic Control
When Detected: In-flight
Result.Flight Crew: Became Reoriented
Result.Air Traffic Control: Issued Advisory / Alert
Result.Air Traffic Control: Provided Assistance
Assessments
Contributing Factors / Situations: Airspace Structure
Contributing Factors / Situations: Chart Or Publication
Contributing Factors / Situations: Software and Automation
Contributing Factors / Situations: Human Factors
Primary Problem: Human Factors

Narrative: 1

On approach into ZZZ, Approach Control notified us of a low altitude alert. Controller also stated we should have crossed ZZZZZ a fix on all approaches to Runway XX at or above 3,600 ft. We had loaded the RNAV Z to Runway XX, and at the time of notification the next fix in sequence for us was ZZZZZ1 at or above 3,200 ft. If I remember correctly, we were at approximately 3,400 ft. at the time, in VNAV PATH with autopilot engaged. I don’t recall what altitude we crossed ZZZZZ at. Conditions were clear skies and airport was in sight. A contributing factor to the situation was a similar callsign we had been following for the last hour directly in front of us, other carrier flight. In the future, I will pay greater attention to extending final off the appropriate waypoint, and double checking crossing altitudes.

Synopsis

Air carrier Captain reported receiving a low altitude alert from ATC due to descending below a crossing restriction on the approach.
ACN: 2050790 (29 of 50)

Time / Day
Date : 202311
Local Time Of Day : 1201-1800

Place
Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 20
Altitude.MSL.Single Value : 24000

Environment
Light : Daylight

Aircraft
Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 MAX 8
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Mission : Passenger
Flight Phase : Descent
Airspace.Class A : ZZZ

Component
Aircraft Component : Horizontal Stabilizer Trim
Aircraft Reference : X
Problem : Failed

Person : 1
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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 212
Experience.Flight Crew.Type : 325
ASRS Report Number.Accession Number : 2050790

Person : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Narrative: 1

We were descending on the ZZZZZ Arrival into ZZZ [Airport]. The Captain was Pilot Flying and I was PM. ATC gave us a clearance, fly direct to ZZZ VOR, and cross it at FL270, the further descent to FL240. We complied with this clearance. As the aircraft leveled at FL240, it dipped below this altitude and then began a slow climb. The Captain immediately intervened, as the aircraft had maybe climbed a couple hundred feet. The autopilot was disconnected, and he used manual inputs to bring the aircraft back into a descent. In this moment we were both trying to figure out why the aircraft had begun to climb. Airspeed was increasing and the Captain attempted to trim the nose up, which he was unable to do. He asked me if my pitch trim worked, which it did not. He then asked if I could see any circuit breakers popped, which I could not. He called for the PITCH TRIM FAIL QRH procedure, which led us through the various steps. We informed ATC of this, and further requested priority handling. The Captain hand-flew the aircraft to the airport, we requested a long final to configure for a Flaps 15 landing. We landed and taxied off the runway, were inspected by ARFF (Airport Rescue and Firefighting), where the brakes were inspected, and then continued on to the gate. Given the high workload, ATC, Passengers, F/As, and Dispatch were all informed of the events taking place, as time permitted. Very thankful for this successful outcome. Iâ€™m not sure that anything could have been done to prevent this. Possible closer Maintenance inspection on intervals of motors. It was informed to me the day after this event that this occurred due to an electric trim motor failure.

Narrative: 2

During descent into ZZZ on the ZZZZZ RNAV Arrival, we were assigned a clearance to cross ZZZ [VOR] at FL270 then continue descent to FL240. We crossed ZZZ [VOR] at FL270 in VNAV PATH. I hit ALT INTERVENTION to continue descent. As we approached FL240 the aircraft descended below FL240 to approximately FL238 then began a recovery to FL240. During this recovery the aircraftâ€™s pitch increased and climbed above FL240.
to approximately FL243. I disengaged the autopilot and manually flew the aircraft (during this time we were given a clearance to descend via the ZZZZZ). Once I had control of the aircraft, I began the descent and noticed the speed began to increase quickly. I attempted to trim the nose up slightly and noticed my trim switch was not working. I then informed the FO (First Officer) and asked him to try his trim switch. His switch did not work either. I realized we had a Stabilizer Trim inop, and called for the QRC “Stabilizer Trim inoperative”. We successfully completed the QRC and requested vectors for a long final to get the aircraft configured and stabilized for the Flaps 15 landing. After we were configured, we used the trim wheel to manually trim off any additional pressure. We made an uneventful Flaps 15 landing with autobrakes MAX. We cleared the runway and had crash, fire, and rescue personnel do a visual inspection of the aircraft before proceeding to the gate. After completing the QRC I notified the Flight Attendants and informed them that we had requested priority handling, landing should be normal but slightly faster than what they are used to on the touchdown and that we would be landing within the next 10 minutes. We notified Dispatch via ACARS. We also made an announcement to the Passengers before landing informing them that out of an abundance of caution, we have advised ATC and that after landing fire trucks would be seen following us to the gate. Electric stabilizer trim failed during descent. This was a mechanical event. I’m not sure much could have been done to prevent this event. I am glad that we trained in a very similar scenario during training a few years back and I was able to use knowledge learned during that training cycle.

Synopsis

B737 MAX 8 flight crew reported electric stabilizer trim failed during descent. Flight crew used manual trim for approach and landed uneventfully.
ACN: 2048511 (30 of 50)

Time / Day
Date: 202310

Place
Locale Reference: Airport: PHX.Airport
State Reference: AZ
Altitude.MSL.Single Value: 6000

Environment
Light: Daylight

Aircraft
Reference: X
ATC / Advisory: TRACON: P50
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
Nav In Use: FMS Or FMC
Nav In Use: GPS
Nav In Use.Localizer/Glideslope/ILS: RNAV 8
Flight Phase: Descent
Route In Use.STAR: BRUSR1
Airspace.Class B: PHX

Person: 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: Multitasking
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Instrument
Experience.Flight Crew.Last 90 Days: 270
Experience.Flight Crew.Type: 13500
ASRS Report Number.Accession Number: 2048511
Human Factors: Workload
Human Factors: Troubleshooting
Human Factors: Situational Awareness
Human Factors: Time Pressure

Person: 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)
Experience: Flight Crew: Last 90 Days : 75
Experience: Flight Crew: Type : 1000
ASRS Report Number: Accession Number : 2048520
Human Factors : Troubleshooting
Human Factors : Time Pressure
Human Factors : Situational Awareness
Human Factors : Workload

Events
Anomaly: ATC Issue : All Types
Anomaly: Inflight Event / Encounter : Unstabilized Approach
Anomaly: No Specific Anomaly Occurred : Unwanted Situation
Detector: Person : Flight Crew
When Detected : In-flight
Result: Flight Crew : FLC complied w / Automation / Advisory
Result: Air Traffic Control : Provided Assistance

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

Narrative: 1
VNAV calculates Top of Descent from 6000 ft. at TLMAN waypoint on the BRUSR1 RNAV Arrival, based on overflying JAMIL waypoint (at or above 4000 ft.) to a vector to final, rather than intercepting the final approach course at JAMIL for the ILS to Runway 8. This left the aircraft very high on approach when ATC issues a turn to final and the clearance for (usually) a visual approach. There was plenty of distance to return to the correct glidepath after aggressively slowing and configuring the aircraft. (This descent problem would also happen on the Runway 7L and 7R transitions.) Approach Control told us that many aircraft turn final at the same excessive height, and that ATC had been trying to change the STAR to put aircraft at a better altitude for intercepting the final approach course and glidepath. VNAV descent profile did not match ATC expectation. Change JAMIL crossing restriction to â€œAt 4,000 ft.,â€• on the BRUSR1 rather than â€œAt or above 4,000 ft.,â€• as currently published, or eliminate the vector after JAMIL and allow the FMS discontinuity with the ILS 8 to close, as it does on the HYDRR Arrival. (Also correct the Runway 7L and 7R transitions on the BRUSR Arrival.) In the mean time, publish a company note directing the the Crew to manually intervene in the descent profile after TLMAN to cross JAMIL at 4,000 ft. to establish a normal glidepath after intercepting final, or set the STARâ€™s JAMIL crossing altitude to a â€œHardâ€• 4,000 ft. to accomplish the same goal."

Narrative: 2
On the BRUSR1 Arrival to Runway 8 VNAV kept us at 6,000 ft., until way too late to make a normal descent. JAMIL was depicted as above 4,000 ft. on the STAR and VNAV kept the descent point out of 6,000 ft. just before JAMIL. The ILS 8 did not automatically tie into
the STAR at JAMIL. When we got the Approach Clearance and connected the arrival to the approach, all of a sudden we were way above VNAV glidepath. We had to fully configure level and come down at a high rate of descent in order to meet stabilized approach criteria. The Approach Controller stated that crews consistently find themselves very high at that point, and that the local Controllers have been requesting a change for years. VNAV put us very high on the arrival. Make JAMIL a mandatory 4,000 ft. point on the BRUSR Arrival so that VNAV commands a descent out of 6,000 ft. and keeps the aircraft on a normal glideslope. Add a note to the company information recommending Crews make JAMIL a hard altitude on the BRUSR until the chart can be changed. FOWLE and BALTE probably have the same issue.

**Synopsis**

Air carrier flight crew reported while using VNAV on the BRUSR1 STAR into PHX published crossing altitudes resulted in energy management challenges. The crew suggested a hard crossing altitude of 4,000 ft at JAMIL would mitigate these issues. ATC informed other crews have encountered similar challenges.
ACN: 2047819 (31 of 50)

**Time / Day**
Date: 202310
Local Time Of Day: 1201-1800

**Place**
Locale Reference.ATC Facility: ELP.TRACON
State Reference: TX
Altitude.MSL.Single Value: 6300

**Environment**
Flight Conditions: VMC

**Aircraft**
Reference: X
ATC / Advisory.Tower: ELP
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
Nav In Use: FMS Or FMC
Nav In Use: GPS
Nav In Use.Localizer/Glideslope/ILS: RNAV 22
Flight Phase: Final Approach
Route In Use.STAR: SAMMR3
Airspace.Class C: ELP

**Person**
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: Instrument
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days: 227.22
Experience.Flight Crew.Type: 6541.92
ASRS Report Number.Accession Number: 2047819
Human Factors: Communication Breakdown
Human Factors: Situational Awareness
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Confusion
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

**Events**
Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Overrode Automation

Assessments

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

Narrative: 1

As I recall, We were on the SAMMR3 Arrival and set up for and briefed the RNAV RNP Z 22. Cleared direct FISPI, RNAV GPS Y cleared visual approach Runway 22. I believe the FO (First Officer) changed approaches in the FMS from â€œZâ€• to â€œYâ€•. It was a short approach vector, we accepted it obviously but now we were too high. Gear down, flaps 15, approx 5700 MSL. I called â€œunstable, going aroundâ€•, which we executed. Vectors off the missed approach to the same approach, climb to 6500 MSL per ATC. Base leg was at 6500 MSL I believe, cleared visual approach Runway 22. FAF min altitude was 5100 MSL, so we were high again. Gear down, flaps 15, then fully configured by 700-800 AGL. VNAV would not engage as we did not re cruise from 8000 MSL on the missed to 6500 MSL. We were stable by 600 AGL, Aircraft X RAAS (Runway Awareness and Advisory System) audible was â€œToo high, Too highâ€• which I believe was based on a descent from 8000 MSL. I was comfortable landing from a stable approach, touch down and landing were in the touchdown area with a short roll out. I havenâ€™t been to ELP in quite a while, we were getting GPS jamming on the descent which was a distraction. I think the ATIS was advertising the â€œZâ€• approach, we were cleared the â€œYâ€• version.

Synopsis

Air carrier Captain reported GPS jamming on the descent into ELP. Captain stated there was a late approach change, by ATC, contributing to an unstable approach.
ACN: 2047814 (32 of 50)

Time / Day
Date: 202310
Local Time Of Day: 1801-2400

Place
Locale Reference.Airport: GUM.Airport
State Reference: GU
Altitude.MSL.Single Value: 3000

Environment
Flight Conditions: IMC

Aircraft
Reference: X
ATC / Advisory.Tower: GUM
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
Nav In Use: FMS Or FMC
Flight Phase: Initial Approach
Airspace.Class E: GUM

Person
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.Last 90 Days: 144.5
Experience.Flight Crew.Type: 516.33
ASRS Report Number.Accession Number: 2047814
Human Factors: Human-Machine Interface
Human Factors: Workload
Human Factors: Distraction

Events
Anomaly.ATC Issue: All Types
Anomaly.Inflight Event / Encounter: Other / Unknown
Detector.Automation: Aircraft TA
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Requested ATC Assistance / Clarification
Result.Air Traffic Control: Provided Assistance
Assessments
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Human Factors
Primary Problem : Environment - Non Weather Related

Narrative: 1
In IMC 5 miles from ADEDE in RNAV 6L we were switched to tower. At the same time a traffic yellow circle appeared with no altitude and we got "traffic, traffic" verbal. I asked tower and while they were answering we received two additional yellow circles appear and more "traffic" alerts. Tower said they have had similar reports and it was ships at Navy but obviously their requests to have them turned off were not effective. This was very distracting especially while IMC and dealing with weather.

Synopsis
Air carrier Captain reported receiving multiple TCAS traffic alerts while on an RNAV approach to GUM airport. Tower reported that they had similar multiple reports attributed to Navy ships and were unable to prevent the issue from occurring.
Aircraft X was cleared RNAV 12 approach at SUA and requested to switch to SUA tower. I exchanged traffic for a VFR in vicinity and switched aircraft. I noticed the aircraft off the approach course and going through MVA, advised SUA to cancel approach clearance and give him back to me on H360 and 2000 feet. I reestablished communication and vectored
the aircraft back to a downwind, issued brasher warning, and vectored to approach. After aircraft was noticed established on approach course I switched to tower. I noticed the aircraft then tracking south of the approach course and called SUA to advise the aircraft to correct and to ensure aircraft complying with the approach. Pilot advised PBI management they overlooked the procedure and made an error.

**Synopsis**

PBI TRACON Controller reported aircraft deviated from approach course twice, resulted in descent below MVA and a CFIT event.
Time / Day
Date: 202310
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: PHX.Airport
State Reference: AZ

Aircraft
Reference: X
ATC / Advisory.TRACON: P50
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
Nav In Use: FMS Or FMC
Nav In Use: GPS
Nav In Use.Localizer/Glideslope/ILS: RNAV 8
Flight Phase: Initial Approach
Route In Use.STAR: BRUSR 1
Airspace.Class B: PHX

Person
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: Multiengine
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 2047145
Human Factors: Confusion
Human Factors: Situational Awareness
Human Factors: Time Pressure
Human Factors: Troubleshooting
Human Factors: Communication Breakdown
Communication Breakdown.Party1: Flight Crew
Communication Breakdown.Party2: ATC

Events
Anomaly.ATC Issue: All Types
Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
Anomaly.No Specific Anomaly Occurred: Unwanted Situation
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Became Reoriented
### Assessments

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

### Narrative: 1

PHX WX (Weather) day VFR CAVU, on east flow. Aircraft on BRUSR 1 RNAV STAR for Runway 08. ILS [Runway] 8 NOTAMd OTS (Out of Service). Crew loaded, briefed, and planned RNAV GPS Y Runway 8 prior to TOD (Top of Descent), as backup for visual approach, expecting vectors to final as standard between TLMAN and JAMIL. Instead controller, gave an unfamiliar sounding clearance to (paraphrased) â€œremain on the BRUSR, cleared for the visual approach Runway 8.â€ Both the First Officer as PF (Pilot Flying) and myself as Captain/PM (Pilot Flying) remarked to each other that that was an unusual sounding clearance in general, that there was no proximate traffic ahead to delay vectoring us towards the runway, and because this STAR and IAP share no common fix. The more commonly used ILS 8 does share JAMIL with the BRUSR however, yet even then vectors are always given in our experience. As we had already called the field in sight and were at the point where a standard rate turn from base to final was required, we just accepted the visual approach clearance, joined the FAC (Final Approach Course) normally without overshoot, and landed normally without any difficulty or ATC query. A less familiar crew, both of us being based at PHX, perhaps with night, WX, etc., might have fared differently. It is especially confusing because JAMIL sits right on the FAC as displayed on the Aircraft navigation display, but it is most assuredly NOT part of the RNAV 8 IAP. Had we done as a crew is trained to do, arm the approach mode and monitor for FAC interception, we would have blown right through the FAC, with a potential loss of separation for [Runway] 7R traffic, of which there was none for us, but commonly are there. Poor design of RNAV GPS Y Runway 8 IAP, in that it shares no common fix with the RNAV STAR, coupled with the controllerâ€™s unusual clearance, rather than the typical vectors to final. Recommend the RNAV (GPS) 8 be redesigned to use the same fixes as the ILS 8, both for commonality/familiarity, and to link both to the STAR to prevent an overshoot. As it is structured now, now it is an accident waiting to happen. The RNAV GPS Y Runway 8 should be reconfigured to used the same waypoints of JAMIL and WAZUP as the ILS 8, both for commonality and so that the RNAV STAR can link to the RNAV IAP. Until then, controllers must issue vectors to final. Airports such as LAX are now issuing blanket approach clearances to given runways, because whether ILS, RNP, or RNAV, they all use the same fixes and FACs.

### Synopsis

Air carrier Captain reported during arrival on PHX BRUSR 1 STAR they were given a confusing clearance for a visual approach for Runway 8. Flight crew was using RNAV Runway 8 approach which reportedly does not share a common fix with BRUSR 1 STAR to provide continuity, but the ILS Runway approach 8 does. The Captain stated the approaches are so similar, the inbound fixes should be the same.
ACN: 2044237 (35 of 50)

Time / Day
Date: 202310
Local Time Of Day: 1201-1800

Place
Locale Reference.ATC Facility: ZZZ.TRACON
State Reference: US
Altitude.MSL.Single Value: 2300

Environment
Flight Conditions: IMC
Weather Elements / Visibility: Rain
Weather Elements / Visibility: Turbulence
Weather Elements / Visibility. Visibility: 8
Light: Daylight
Ceiling. Single Value: 900

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZ
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: FMS Or FMC
Flight Phase: Final Approach
Route In Use: Direct
Route In Use.STAR: ZZZZZ
Airspace. Class B: ZZZ

Component: 1
Aircraft Component: Autopilot
Aircraft Reference: X
Problem: Malfunctioning

Component: 2
Aircraft Component: FMS/FMC
Aircraft Reference: X
Problem: Malfunctioning

Person
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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 4600
Experience.Flight Crew.Last 90 Days : 151
Experience.Flight Crew.Type : 151
ASRS Report Number.Accession Number : 2044237
Human Factors : Training / Qualification
Human Factors : Human-Machine Interface

Events
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Overrode Automation
Result.Air Traffic Control : Issued Advisory / Alert

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

Narrative: 1
Rainy with low ceilings in ZZZ all day. ZZZ was landing north so we planned the ILS X. At one point on the ZZZZZZ arrival, the airplane began to descend through an altitude constraint but the captain caught it right away and corrected. As we were getting close to the transition to the ILS X (maybe around ZZZZZZ?), ATC started vectoring airplanes as they turned the airport around to land south. We set up for the RNAV/RNP to Runway XX. Changed the runway and approach in the FMS. The airspace was busy, we were in IMC, and at least light chop/turbulence. Workload was increasing and it was getting hectic. Once I loaded the new approach, I did a quick review. As we were being vectored for the approach, we received direct ZZZZZZ1 from ATC. After crossing ZZZZZZ1 at 3,000, the plane started its descent to continue the approach. We then got a low altitude alert from ATC, and I suddenly realized that the fix after ZZZZZZ1, ZZZZZZ2, had dropped out of the FMS and was not visible on the navigational display. I am certain it was there when I reviewed the approach. Closer to the airfield, right around ZZZZZZ3, the A/C again began descending below glide path, even with the fix and constraint visible. ATC began to issue another low altitude alert just as we were getting the airport in sight so the captain disengaged the autopilot and hand-flew the rest of the approach visually. We landed without further incident.

Synopsis
A319 First Officer reported the auto-flight system missed two altitude restrictions resulting in the flight crew receiving ATC low altitude alerts. Captain disengaged autopilot and flew approach manually.
ACN: 2043851

**Time / Day**
- Date: 202310
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: ATC Facility: ZZZ.ARTCC
- State Reference: US
- Altitude: MSL. Single Value: 12400

**Aircraft**
- Reference: X
- ATC / Advisory. Center: ZZZ
- Aircraft Operator: Personal
- Make Model Name: Small Transport
- Crew Size: Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: IFR
- Mission: Training
- Flight Phase: Final Approach
- Airspace: Class E: ZZZ

**Person: 1**
- Location Of Person. Facility: ZZZ.ARTCC
- Reporter Organization: Government
- Function: Air Traffic Control: Enroute
- Qualification: Air Traffic Control: Fully Certified
- Experience. Air Traffic Control. Military: 1
- Experience. Air Traffic Control. Time Certified In Pos 1 (mon): 6
- ASRS Report Number. Accession Number: 2043851
- Human Factors: Workload
- Human Factors: Confusion

**Person: 2**
- Location Of Person. Facility: ZZZ.ARTCC
- Reporter Organization: Government
- Function: Air Traffic Control: Enroute
- Qualification: Air Traffic Control: Fully Certified
- Experience. Air Traffic Control. Military: 10
- ASRS Report Number. Accession Number: 2043852
- Human Factors: Confusion

**Events**
- Anomaly. ATC Issue: All Types
- Anomaly. Deviation - Altitude: Crossing Restriction Not Met
- Anomaly. Deviation - Altitude: Overshoot
- Anomaly. Deviation - Track / Heading: All Types
- Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly. Inflight Event / Encounter: CFTT / CFIT
- Detector. Person: Air Traffic Control
When Detected: In-flight
Result. Flight Crew: Requested ATC Assistance / Clarification
Result. Flight Crew: Executed Go Around / Missed Approach
Result. Flight Crew: Became Reoriented
Result. Air Traffic Control: Issued New Clearance
Result. Air Traffic Control: Issued Advisory / Alert
Result. Air Traffic Control: Provided Assistance

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

Narrative: 1
Sectors 3 and 4 were being split due to traffic count. During the briefing of splitting Sector 3 from 4 I was informed that Aircraft X was cleared over ZZZZZ for the RNAV XX into ZZZ and that he was going to shoot a missed approach and then fly the approach again for a full stop. The aircraft reaffirmed this during the briefing. After the split I noticed the aircraft was not on course with RNAV XX but appeared to be going direct to the wrong fix. I confirmed with the controller that initially cleared the aircraft what the clearance was and then questioned the aircraft. I cleared the aircraft directly to ZZZZZ1 to cross at 13000 ft. and then begin the RNAV XX approach. Moments later I noticed the aircraft descending down to a lower altitude in a 13000 ft. MIA (Minimum IFR Altitude), I issued a low altitude alert and restated the aircraft's clearance. I then finished the briefing to give the sector to a different controller. The main factor to this incident was the pilot's error. However, other contributing factors were poor staffing and poor timing. Management has to juggle unsafe staffing levels with unsafe traffic congestion. The supervisor was balancing this as best as possible, but I was still paged back in order to split a sector from a training team to try and stay ahead of a red sector because the staffing is poor. The staffing is poor because the facility staffing number is wrong. Nobody is willing to address or change the staffing number. While I know everywhere is low staffed, the number of controllers required to staff a facility is a calculable number and it is wrong. Even if we were at this facility's staffing goal we would still be short.

Narrative: 2
As I was taking over the sector, Aircraft X had already been cleared for the approach over ZZZZZ. During the briefing the aircraft flew from ZZZ toward ZZZZZ1, which is an IAF that starts from the west. The aircraft had filed that. The controller restated the aircraft was cleared present position direct ZZZZZ, and to maintain 13000 ft. until ZZZZZ cleared approach. The controller noticed the aircraft descending out of 12800 ft. while in a 13000 ft. MIA (Minimum IFR Altitude). The controller issued a low altitude alert and told the aircraft to maintain 13000 ft. The aircraft responded and climbed back up. At that point I took over the sector. I observed the aircraft make a 180-degree turn, maybe 6 miles south of ZZZZZ, rather than flying over the fix and doing a procedure turn. I changed him to advisories and told him to call me on the missed approach. At this point I decided that this pilot needed to call us to have a conversation about what he was thinking/doing. When he came back on the frequency I issued him a brasher warning and advised my supervisor of the situation. ZZZ is a high altitude, short runway in the middle of the mountains. It was never designed to accommodate the traffic that goes in to it. The airport needs to be moved and redesigned. Good luck with that.
Synopsis

Center controllers reported an aircraft on approach flew below the minimum IFR altitude when it deviated off course and descended below published altitudes.
**ACN: 2043381 (37 of 50)**

**Time / Day**
- Date: 202310
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: ZZZ.Airport
- State Reference: US
- Altitude.MSL.Single Value: 12800

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: ZZZ
- 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
- Flight Phase: Initial Approach
- Airspace.Class B: ZZZ

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

**Person**
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Pilot Flying
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- ASRS Report Number.Accession Number: 2043381
- Human Factors: Confusion
- Human Factors: Situational Awareness
- Human Factors: Time Pressure
- Human Factors: Training / Qualification

**Events**
- Anomaly.Aircraft Equipment Problem: Less Severe
- Anomaly.Deviation - Altitude: Overshoot
- Anomaly.Deviation - Altitude: Crossing Restriction Not Met
- Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly.Inflight Event / Encounter: CFTT / CFIT
- Anomaly.Inflight Event / Encounter: Weather / Turbulence
- Anomaly.Inflight Event / Encounter: Unstabilized Approach
Detector.Automation : Aircraft Terrain Warning
Detector.Automation : Air Traffic Control
Detector.Person : Air Traffic Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments
Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Software and Automation
Primary Problem : Software and Automation

Narrative: 1
Starting on the ZZZZZ STAR we first noticed the airplane descending below an altitude constraint at ZZZZZ1. Aircraft descended to 12800 ft. before I caught it and leveled off. ZZZZZ1 is 16000 â€“ 13000. No explanation as to why the airplane didn’t respect the STAR altitudes. Next, ZZZ turned the airport around and gave us vectors off the arrival and told us to set up for Runway XX. We requested the RNAV RNP XX and set up and verified the approach. Everything looked correctly set up. We were vectored around and cleared the approach when I depressed the approach button and confirmed all correct indications. APP NAV and â€œstick and a brickâ€ The airplane started descending but wouldn’t level off at the appropriate constraint. Tower called us with a low altitude alert at which time I turned off the autopilot and hand-flew the altitudes. At no time were we near restricted airspace. Again the indication was trying to get us to descend and we received an â€œobstacle alert.â€ We still have no idea what the RNAV was trying to do as it was set up correctly. At this point, we noticed it dropped out a point on the arrival and the approach mode was off. Upon hand-flying and descending to the proper altitudes on the arrival, we broke out at 1000 ft. and we landed normally. Cause: Bad weather. Last-minute runway way change. RNAV confusion and possible malfunction. New FO (First Officer) with 140 hours. Suggestion: Go around and figure it out.

Synopsis
A319 pilot flying reported the aircraft did not level off on the glidepath of the STAR and the approach, even though everything looked to be set up properly. ATC issued a low altitude alert and the aircraft issued an obstacle alert.
**ACN: 2043213 (38 of 50)**

**Time / Day**
- Date: 202310
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: HXD.Airport
- State Reference: SC
- Altitude.MSL.Single Value: 1500

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility: Windshear
- Weather Elements / Visibility: Turbulence

**Aircraft**
- Reference: X
- ATC / Advisory.Tower: HXD
- 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: Initial Approach
- Airspace.Class D: HXD

**Person: 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: 2043213

**Person: 2**
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: First Officer
- Function.Flight Crew: Pilot Not Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 2043214

**Events**
Anomaly.Deviation - Altitude: Overshoot
Anomaly.Deviation - Speed: All Types
Anomaly.Deviation / Discrepancy - Procedural: Clearance
Anomaly.Inflight Event / Encounter: Weather / Turbulence
Anomaly.Inflight Event / Encounter: Loss Of Aircraft Control
Detector.Person: Flight Crew
When Detected: In-flight
Result.Flight Crew: Executed Go Around / Missed Approach

Assessments
Contributing Factors / Situations: Weather
Primary Problem: Weather

Narrative: 1
During our approach on the RNAV 03 into HXD, we encountered continuous severe turbulence. We broke out around 1800 [ft.] MSL, and were advised by Tower to the presence of rotor clouds over the field. Shortly after reaching 1500, we received a wind shear warning and immediately executed a missed approach. Tower instructed us to climb to 3000 and turn right to 090. I turned off all automaton and hand-flew the go-around. We were in severe turbulence and strong updrafts. During the clean-up phase, the updrafts caused a plus and minus 30 kt., and as a result I overspeeded the flaps in the flaps one configuration. The overspeed situation was no more than 5 kt. for 5 seconds. The updrafts also caused our altitude to go to 4000 ft. as we are assigned 3000. After I got the airspeed under control, I descended to 3000 ft. and we immediately diverted to our alternate of ZZZ. The cause of our deviations can be attributed to the meteorological conditions on the approach. Severe turbulence and strong updrafts. I really don’t know what we could have done differently, other than get advanced warning about the wind shear from the Tower before commencing the approach.

Narrative: 2
ATC was vectoring us around light to moderate precipitation as we descended to join the RNAV 03 into HXD. The ride was light to moderate turbulence. As we got lower, we could see breaks in the ceiling and could periodically see the ground. After being cleared for the approach and joining final approach course, we were given the switch to Tower. I checked in with Tower, and was given, “Cleared to land Runway 03,” followed by an advisory of some clouds that had just passed over airfield. As that advisory was being given, we broke out of the clouds and the airfield came into view. I called the “runway in sight.” I read back our clearance to land. Within seconds, we got a “wind shear” caution. The Captain, pilot flying, called for a go-around, and we started our procedures from a flaps full approach. I notified Tower and was given an easterly heading, 2,000 ft., and Departure frequency. In the process with go-around power, the red barber poles were near our aircraft speed. I noticed we were above the assigned 2K, checking in with Departure, asked for 4,000 and additional heading to keep us in a break in the clouds, and was quickly accommodated. During the last flap retraction, 1 to 0, I noticed an overspeed in the red barber poles with audio of approximately 2 “,” 3 seconds. We leveled at 4,000 ft, got vectored as I set up for the ILS XX into ZZZ. We landed with further incident. Wind shear caution. Always be ready!

Synopsis
Air carrier flight crew reported encountering severe turbulence on approach and a wind shear warning went off. This Captain performed a go-around and the flight landed at an alternate airport.
ACN: 2042480 (39 of 50)

Time / Day

Date: 202310
Local Time Of Day: 0001-0600

Place

Locale Reference, ATC Facility: ZZZ.TRACON
State Reference: US
Altitude, MSL, Single Value: 11200

Environment

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

Aircraft

Reference: X
ATC / Advisory, TRACON: ZZZ
Aircraft Operator: Air Taxi
Make Model Name: Gulfstream IV / G350 / G450
Crew Size, Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Passenger
Flight Phase: Descent
Route In Use: Visual Approach
Airspace, Class B: ZZZ

Person

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: Instrument
Qualification, Flight Crew: Air Transport Pilot (ATP)
Qualification, Flight Crew: Flight Instructor
Experience, Flight Crew, Total: 17700
Experience, Flight Crew, Last 90 Days: 30
Experience, Flight Crew, Type: 3680
ASRS Report Number, Accession Number: 2042480
Human Factors: Situational Awareness
Human Factors: Time Pressure
Human Factors: Workload
Human Factors: Communication Breakdown
Communication Breakdown, Party1: Flight Crew
Communication Breakdown, Party2: Flight Crew

Events
This one report includes three separate parameter-deviations that happened in quick succession by the pilot flying. I was the assigned PIC (Pilot In Command)/PNF (Pilot Not Flying). We were on ZZZZZ X RNAV Arrival into ZZZ. We both are very experienced pilots with over 30000 hours between the two of us and around 10000 in the make and model of the airplane. We both are very conscientious too. Further, we know each other for about XX years and flown together extensively on and off. Yet, on this particular flight, the PF (Pilot Flying) crossed the ZZZZZ1 intersection about 200 feet high he then accelerated to 250 knots (assigned speed was 210 KIAS) while trying to keep up with the descend-via clearance. Right after that, while on Visual Approach to Runway XXR (backed up by RNAV/GPS XXR), he got too low on final. I kept announcing that we were low and slow, but his corrections were very minimal. We then got a “too low, obstacle!” alert. We were in perfect VMC and did not see any obstacles, but, now he made a more assertive correction and returned to the glide path. The landing was uneventful. I could conclude with complex analysis of why and how, but, given our background together and my knowledge of this pilot's skills, I can tell you that he just had a bad day. He was very displeased with himself afterwards and tried to analyze what had happened. On my part, when I was telling him that we were low and slow and not getting the desired reaction, I should have changed my verbiage to something like "push the throttles".

Synopsis

Corporate jet pilot reported the pilot flying descended too low on a visual approach and they received a terrain alert.
**ACN: 2041011 (40 of 50)**

**Time / Day**
- Date: 202310
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference.ATC Facility: F11.TRACON
- State Reference: FL
- Altitude.MSL.Single Value: 1600

**Environment**
- Flight Conditions: VMC
- Light: Night
- Ceiling.Single Value: 2500

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: F11
- Aircraft Operator: Air Carrier
- Make Model Name: Medium Large Transport, Low Wing, 2 Turbojet Eng
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Mission: Passenger
- Flight Phase: Initial Approach
- Airspace.Class B: F11

**Person: 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: Multiengine
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Commercial
- ASRS Report Number.Accession Number: 2041011
- Human Factors: Communication Breakdown
- Human Factors: Situational Awareness
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: ATC

**Person: 2**
- 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: Multiengine
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Air Transport Pilot (ATP)
Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : CFIT / CFIT
Detector.Automation : Air Traffic Control
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : FLC complied w / Automation / Advisory
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Event occurred while flying the GRNCH5 / BRICE transition into MCO for a Runway 36L arrival. Weather was VMC. The ATC Controller informed us to expect and plan for the RNAV (GPS) Runway 36L approach while on the GRNCH5. The RNAV 36L was correctly loaded into the FMS with LNAV and VNAV PATH active. Once we were past the last waypoint on the GRNCH5 (BRICE), the Controller began to give us short vectors to the final approach course and was late on providing descent altitudes. The base leg vector provided by the Controller put us inside the final approach fix (BERDY) and did not provide enough space for the approach to engage and for the aircraft to reach 1600 ft. MSL at BERDY as per the approach. The final approach course was not captured and autopilot was disengaged. I manually flew the aircraft on to the 36L final approach course. At this time, we received a "low altitude warning" from the Controller. I leveled the aircraft out and transitioned to the 36L PAPI indicators for glideslope guidance. We were in a stable flight regime and did not require a go-around. The aircraft landed without further incident. I was expecting to fly the RNAV 36L with an extended left downwind leg that would lead to a left base turn to final with plenty of space to capture the final approach course and be at the correct approach altitudes prior to BERDY. I did not expect the short vectors that put us high and inside BERDY. Tell the Controller that we are unable to accept the short vector inside of BERDY and would like to fly the RNAV 36L as previously informed to plan for.

Narrative: 2

Plan was a visual approach 36L. We had the RNAV 36L set up for guidance, it was night, good visibility and approximately 2500 overcast. ATC gave us radar vectors for the visual approach and descent to 1600 ft. ATC turned us inside the FAF and we picked up the airport then the runway. We lost the RNAV guidance but picked up the PAPI. The PAPI was all red lights, at the same time Tower advised us of a low altitude alert, we were already climbing up to get back on the PAPI. The First Officer (FO) returned the aircraft to two white and two red on the PAPI and we landed uneventfully. We should have requested the
full approach or at least a turn into the airport outside the FAF but were expecting to pick up the airport sooner than we did. ATC should not have turned us in so tight. We should have requested the full approach or done a go-around and started it again.

**Synopsis**

Air carrier flight crew received a low altitude alert from ATC while on approach. Flight crew complied with alert and landed uneventfully.
ACN: 2015250 (41 of 50)

Time / Day

Date: 202307
Local Time Of Day: 1801-2400

Place

Locale Reference.Airport: ZZZ.Airport
State Reference: US
Relative Position.Distance.Nautical Miles: 3
Altitude.MSL.Single Value: 1800

Environment

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

Aircraft: 1

Reference: X
ATC / Advisory.CTAF: ZZZ
ATC / Advisory.TRACON: ZZZ
Aircraft Operator: Air Taxi
Make Model Name: PC-12
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 135
Flight Plan: IFR
Mission: Passenger
Nav In Use: GPS
Nav In Use: FMS Or FMC
Flight Phase: Final Approach
Route In Use: Visual Approach
Airspace.Class G: ZZZ

Aircraft: 2

Reference: Y
ATC / Advisory.CTAF: ZZZ
Make Model Name: Any Unknown or Unlisted Aircraft Manufacturer
Airspace.Class G: ZZZ

Person

Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Taxi
Function.Flight Crew: Captain
Qualification.Flight Crew: Flight Instructor
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Commercial
Experience.Flight Crew.Total: 2600
Experience.Flight Crew.Last 90 Days: 165
Experience.Flight Crew.Type: 330
ASRS Report NumberACCESSION NUMBER: 2015250
HUMAN FACTORS: COMMUNICATION BREAKDOWN
HUMAN FACTORS: DISTRACTION
HUMAN FACTORS: TIME PRESSURE
HUMAN FACTORS: WORKLOAD
HUMAN FACTORS: OTHER / UNKNOWN
HUMAN FACTORS: SITUATIONAL AWARENESS
COMMUNICATION BREAKDOWNPARTY 1: FLIGHT CREW
COMMUNICATION BREAKDOWNPARTY 2: FLIGHT CREW

EVENST
ANOMALY: CONFLICT - NMAC
ANOMALY: DEVIATION - TRACK / HEADING: ALL TYPES
ANOMALY: DEVIATION / DISCREPANCY - PROCEDURAL: PUBLISHED MATERIAL / POLICY
DETECTOR: AUTOMATION - AIRCRAFT TA
DETECTOR: PERSON: FLIGHT CREW
MISS DISTANCE: HORIZONTAL: 0
MISS DISTANCE: VERTICAL: 400
WERE PASSENGERS INVOLVED IN EVENT: N
WHEN DETECTED: IN-FLIGHT
RESULT: FLIGHT CREW: REQUESTED ATC ASSISTANCE / CLARIFICATION
RESULT: FLIGHT CREW: TOOK EVASIVE ACTION
RESULT: AIR TRAFFIC CONTROL: PROVIDED ASSISTANCE

ASSESSMENTST
CONTRIBUTING FACTORS / SITUATIONS: AIRPORT
CONTRIBUTING FACTORS / SITUATIONS: ENVIRONMENT - NON WEATHER RELATED
CONTRIBUTING FACTORS / SITUATIONS: HUMAN FACTORS
PRIMARY PROBLEM: HUMAN FACTORS

NARRATIVE: 1

We were arriving into ZZZ, RNAV Z Runway XX. Conditions were VMC. The First Officer (FO) was Pilot Flying (PF). I was Pilot Monitoring (PM). Approximately 15 miles from the airport outside ZZZZZ (IF) I noticed ADS-B traffic paralleling the final approach course. The tower was closed and I was monitoring CTAF while communicating with ZZZ Approach. We were cleared for the approach after which ATC issued their first traffic alert. We continued the approach while scanning for traffic. We were unable to establish visual contact with the other aircraft but continued to monitor their position on TCAS. The other aircraft did not make any announcement on CTAF. ATC issued additional traffic alerts (2 or 3 more times) each time with closing proximity. Once established on final, ATC asked us if we could accept a VISUAL approach so that we could maneuver to avoid the traffic. We accepted the VISUAL. It became clear that we were on the same course with the other airplane and as we began to gain and close on them, we decided to maintain our current altitude to avoid descending into them. ATC had kept us with them longer than usual and I decided to ask for a frequency change so I could attempt to communicate with the other aircraft. As I changed frequency we realized we were directly over the other aircraft approximately 400 feet above. We were also close to the airport and unable to make a normal descent for a landing. I returned to ATC requested a left 360. As we circled, I broadcasted on CTAF directly to the other aircraft at which time he made his first transmission stating that he was about to land. He landed and failed to report clear of the runway until queried by me. This type of VFR NORAD operation is increasingly common under the class Bravo shelf. It is not in violation of any regulation but is not safe. The
presence of a class D airspace at least mandates two-way radio communication. After landing we informed the passengers that the circling maneuver was executed to allow another aircraft to land before us. They were all aware of this unusual maneuver and appreciated the explanation. There was never an immediate danger during this incident but there certainly could have been. It is clear to me that the potential for a disaster exists. These occurrences at ZZZ have become more frequent and are happening more than occasionally. It is not an exaggeration to say that the frequency of these occurrences combined with the potential outcome being catastrophic make continued operation into ZZZ a significant safety risk, especially with the tower closed and no regulation requiring two-way communication.

**Synopsis**

PC-12 Captain reported a NMAC at an airport after the tower was closed. The slower aircraft was not communicating their intentions until final approach. The crew executed a 360 degree turn with the concurrence of ATC, then landed.
ACN: 2014798 (42 of 50)

Time / Day
Date: 202307
Local Time Of Day: 0601-1200

Place
Locale Reference.ATC Facility: ZZZZ.TRACON
State Reference: FO
Altitude.AGL.Single Value: 4200

Environment
Weather Elements / Visibility: Thunderstorm
Weather Elements / Visibility: Rain

Aircraft
Reference: X
ATC / Advisory.TRACON: ZZZZ
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
Nav In Use.Localizer/Glideslope/ILS: ILSXXR
Flight Phase: Initial Approach
Route In Use.Other

Component
Aircraft Component: MCP
Aircraft Reference: X
Problem: Improperly Operated

Person: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Air Carrier
Function.Air Traffic Control: Approach
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Air Transport Pilot (ATP)
Experience.Flight Crew.Total: 14000
Experience.Flight Crew.Last 90 Days: 120
ASRS Report Number.Accession Number: 2014798
Human Factors: Communication Breakdown
Human Factors: Human-Machine Interface
Human Factors: Situational Awareness
Human Factors: Confusion
Communication Breakdown.Party1: ATC
Communication Breakdown.Party2: ATC
**Narrative: 1**

The ZZZZZXX Arrival, RNAV Transition to ILS Runway XXR & the ILS XXR approach were programmed and briefed prior to TOD (top of descent) and weather at the field was deteriorating due to TSTMs (thunderstorms). On descent we received an amended release advising us that our destination alternate had changed to ZZZZ1 from ZZZZ2 due to TSTMS and deteriorating weather conditions there as well. We determined that we would only have one attempt at landing at our destination before we would have to proceed to our new alternate in Country due to the new increased fuel burn. While on the ZZZZZXX arrival, our radar was indicating cells with moderate to heavy precipitation along the arrival and approach corridors to the airfield. We began to receive multiple radar vectors and airspeed assignments from ATC as we heard the controller state to our preceding traffic that previous flights had landed successfully but that heavy winds were reported over the airfield. Although I had previously briefed that my preferred method of descent was using VNAV, I decided to use V/S mode to comply with the altitudes assigned by ATC to better position the aircraft for a successful approach and landing and avoid being too high from shortened vectors and rapidly changing weather conditions. This had happened to me on my previous approach some weeks before under similar, but somewhat worse weather conditions in to ZZZZ. While complying with multiple radar vectors and speed assignments, and approximately 20nm from the field, we were given an altitude assignment of 4,500 feet then switched to ZZZZ director. After another speed assignment
and radar vector, we were cleared to proceed direct to ZZZZZ1 and descend via the RNAV Transition to ILS Runway XXR. Even though I had previously briefed the transition and approach, I was not certain of the final descent altitude on the RNAV transition chart although the FO (First Officer) and relief pilot confirmed that it was 1700 feet. I selected the altitude in the ALT window on the MCP (Mode Control Panel), but then toggled between the ILS approach plate and RNAV Transition plate on my EFK to verify that I was looking at the correct altitude myself which was not obvious to me since both plates shared two common waypoints on the ILS approach. As I looked back up, the aircraft was just about to enter one of the smaller cells on the arrival and I then realized that I was still in V/S mode. The FO pointed out almost simultaneously that I should be at 4500 ft. until ZZZZZ1 and I was at 4200 ft. I immediately began to correct the altitude and while climbing at approximately 4300 ft., ZZZZ director issued a low altitude alert and advised us to check our altitude to which we replied correcting. Regrettably, I had allowed myself as PF (pilot flying) to become distracted by an unfamiliar approach and the deteriorating weather conditions just long enough to violate the altitude assignment. Had I more thoroughly reviewed and briefed the handling section of the somewhat unique RNAV Transition to ILS Runway XXR approach plate, I may have been better prepared for the clearance to descend via and may have avoided taking my eyes off the altitude until I was back in the VNAV mode to assure altitude compliance. The weather and internal imposed pressure of desiring to descend to the assigned altitude of 4500 ft. quickly to foster a more successful approach and landing should have been better managed by me. Even though I am aware of the many pitfalls of using the V/S mode in this situation, I will endeavor to be more vigilant of its use in the future and always reaffirm the vertical mode when changing the altitude in the altitude window.

**Narrative: 2**

We were conducting the ZZZZZ XX Arrival RNAV transition to ILS XXR. The Captain was PF (pilot flying) and I was PM (pilot monitoring). We were notified on initial descent of our alternate changing from ZZZZ2 to ZZZZ1, which would drive us having to proceed to our alternate if we went missed based on fuel for the further alternate. Prior to TD (Top of descent) we began getting vectors and speed changes taking us off the arrival. There was moderate to heavy rain along the arrival and approach corridor. Following vectors we were cleared direct ZZZZZ1 and descend via the RNAV to ILS XXR, so we put that in the FMS and 1,700 in the altitude window. PF then elected to join path using V/S. Then I looked at the weather ahead on the corridor and was checking to see if we might need to request alternate missed approach instructions due to potential weather in the missed corridor. I then noticed we were at 4,300 feet which was below the 4,500 foot altitude constraint at ZZZZZ1. I stated to PF we needed to be at 4,500 here and you need to climb back up now. During the transition back to climb I noticed a lowest altitude of 4,200 feet. Climbing back through 4,300 feet. ATC called us with a low altitude alert. We leveled at 4,500 feet and flew the rest of the arrival, approach and landing normally. Instead of the other tasks I was attending to as PM I should have been more actively making sure the PF was on the correct path earlier in the sequence, which would have trapped this earlier than I did.

**Synopsis**

Air carrier crew reported an altitude deviation and ATC low altitude alert while on approach to a foreign airport over terrain in moderate rain conditions. The pilot flying incorrectly determined and set a lower altitude than assigned from the approach chart while the pilot monitoring was distracted, and ATC alerted the crew of the deviation. The flight crew quickly corrected the altitude deviation and completed the approach and landing safely.
Time / Day
- Date: 202306
- Local Time Of Day: 1201-1800

Place
- Locale Reference
- ATC Facility: ZZZ.Tower
- State Reference: US
- Relative Position.Distance.Nautical Miles: 1
- Altitude.MSL.Single Value: 500

Environment
- Flight Conditions: VMC
- Light: Daylight

Aircraft: 1
- Reference: X
- ATC / Advisory.Tower: ZZZ
- Aircraft Operator: Personal
- Make Model Name: SR20
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 91
- Flight Plan: IFR
- Mission: Personal
- Flight Phase: Final Approach
- Route In Use: Vectors
- Airspace.Class D: ZZZ

Aircraft: 2
- Reference: Y
- ATC / Advisory.Tower: ZZZ
- Aircraft Operator: Personal
- Make Model Name: DA40 Diamond Star
- Operating Under FAR Part: Part 91
- Flight Phase: Taxi
- Airspace.Class D: ZZZ

Person
- 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.Last 90 Days: 19
- ASRS Report Number.Accession Number: 2014045
- Human Factors: Situational Awareness
**Events**
Anomaly.Conflict : Ground Conflict, Critical  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Incursion : Runway  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
Miss Distance.Horizontal : 0  
Miss Distance.Vertical : 500  
When Detected : In-flight  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Took Evasive Action

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

**Narrative: 1**
I was flying from ZZZ1 to ZZZ on an IFR flight plan. I was inbound on the RNAV XX in visual meteorological conditions (VMC) at this point and was cleared for landing. While on short final (within a mile or so of the threshold) a Diamond Star took the runway after being issued a Hold Short instruction from Tower. The Tower tried to raise the pilot but having no joy, issued me a go-around. I had previously completed my missed approach procedure briefing and the airplane was configured with the missed approach (MA) altitude bugged and repeating the mantra in my head of how to execute the missed even though I had no reason to believe I would have to do one based upon the visual meteorological conditions (VMC); I try to be consistent for safety reasons. I saw the Diamond Star pull onto the runway when the Tower told me to execute a go-around. At this point, I started my missed approach procedure of applying full power, simultaneously hitting my takeoff/go around (TOGA) button for flight director (FD) pitch visual clues, and began my climb on runway heading to 1400 feet while anticipating a turn direct ZZZ Vortac at 3000. ATC then asked if I wanted to execute the missed approach or go visual. Unfortunately, I chose visual which, in retrospect, was a mistake on my part. At this point I was in a nose up attitude and was not paying attention to the ground traffic as I *assumed* the Diamond Star had just blown his Hold Short instruction and it was a "standard" runway incursion incident. My passenger was seated next to me and was leaning over the dash to see out over the cowling when she said "He's rolling!". I called Tower as they had not mentioned anything yet to confirm what my passenger was seeing. Tower confirmed and immediately approved a right cross-wind turn. I immediately executed while simultaneously registering my dissatisfaction with the Diamond to ATC. I then turned downwind but had not correctly monitored my reciprocal runway heading for right traffic and was extended out further from the pattern than I should have been. ATC gave me a heads-up and I told them I was not entirely familiar with the airspace; i.e. visual reference points and local customs. They were great and tucked me back in and the subsequent landing was uneventful. The ground controller suggested I call them to register a complaint. After shutting down, I spoke with the ground controller on the phone (who was actually the supervisor in the Tower that day) and he told me that in his 10 years at ZZZ1, this was by *far* the most dangerous pilot deviation he had seen. My Takeaways: What I think I did wrong: anticipating the unexpected and then not keeping to my plan in unfamiliar airspace. I learned to fly vast majority of my time at ZZZ2, which is just south of ZZZ3 Bravo [airspace]. Thus, I am very comfortable on the radios and in highly complex airspace. Prior to our trip, I studied the charts of the airspace in and around ZZZ
and *thought* I was good with it. Whelp... that can go right out the window when the unexpected happens. In this case, my first error was accepting the visual in an unfamiliar area. What I should have done was execute the missed approach as that was what was in my mind and what I was preparing for. Deviating from that in a highly dynamic, high stress, unfamiliar environment is a recipe for mistakes as evidenced by my non-standard pattern. I will make sure to also brief a visual go-around in anticipation of similar, future events. Letting my emotions potentially cloud judgment. I'm not gonna lie; I was pissed off. I looked at the ADS-B data and it shows my altitude somewhere between "surface/near surface" to 575 feet at the time I executed the go-around. Needless to say, that's concerning and I unfortunately let my reaction spill over to comms when I asked Tower "Tell me you're taking a number on this guy?!" to which they answered in the affirmative. While I don't *think* my heightened emotional state translated into unsafe airmanship, as we all know, it is the *cumulative* effect of x-factors (here a Black Swan event of a guy taking off without a clearance at a busy controlled airfield, unfamiliarity with the airspace and heightened emotions) that is the problem. At a minimum, it was a net-neutral but also as likely a net-negative. One can't control how their mind and body instinctively reacts emotionally to a highly stressful situation, but one can control how they act once realizing the heightened emotional state they are in. I teach college and I constantly harp on my students that it is *never* a sign of weakness to admit when you don't know something or ask for help. Here, although uncomfortable to ask considering I had studied the space earlier, I told ATC I was unfamiliar with the airspace and, as expected, they were tremendously helpful. I did fully concentrate on flying the airplane first and foremost and never felt like I was not in control of the aircraft. My initial missed approach routine was spot on just as I've practiced a million times. Even after deviating by going visual and doing a wider-than-I-should pattern, I had a smooth remainder of the flight evidenced by my not-generally-thrilled-to-fly passenger saying that she was never nervous.

**Synopsis**

SR-20 pilot reported a ground conflict while on approach due to another aircraft on the runway. Pilot executed an ATC-directed go around and returned to land.
ACN: 2011966 (44 of 50)

Time / Day
Date: 202306
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: IWA.Airport
State Reference: AZ
Relative Position.Distance.Nautical Miles: 5
Altitude.MSL.Single Value: 3000

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

Aircraft: 1
Reference: X
ATC / Advisory.Tower: IWA
Aircraft Operator: Personal
Make Model Name: Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: VFR
Mission: Training
Flight Phase: Final Approach
Route In Use.Other
Airspace.Class D: IWA

Aircraft: 2
Reference: Y
ATC / Advisory.Tower: IWA
Aircraft Operator: Military
Make Model Name: Large Transport, Low Wing, 3 Turbojet Eng
Airspace.Class D: IWA

Person
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Personal
Function.Flight Crew: Instructor
Qualification.Flight Crew: Flight Instructor
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiengine
Qualification.Flight Crew: Commercial
Experience.Flight Crew.Total: 654
Experience.Flight Crew.Last 90 Days: 120
Experience.Flight Crew.Type: 576
**Events**

- Anomaly.ATC Issue : All Types
- Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
- Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
- Detector.Person : Flight Crew
- When Detected : In-flight
- Result.Flight Crew : Regained Aircraft Control

**Assessments**

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

**Narrative: 1**

Student and Instructor conducting an IFR cross-country training flight to IWA on an IFR flight plan. Requested the RNAV 30R IWA and subsequently cleared for the approach from Phoenix Approach. During the procedure inbound from WOGMA to WUMIX at roughly 3000~ MSL, IWA Tower instructed Tanker "Heavy" to overfly us on the approach at 1000 ft. above. They then notified us that the tanker would be overflying and to be aware of its wake turbulence. The tanker overflew us by 1000~ ft. and was then cleared to descend, and that the Cessna behind was 1/2 mile back. They would begin their descent, and IWA Tower would notify us that he was descending and to be aware of wake turbulence. As quick as them saying that, our plane was thrown into a hard 60+ degree uncontrollable left turn followed by several uncontrollable seconds stuck in the wake of the tanker. The wake and the abruptness would knock our aircraft's G1000 AHRS system out momentarily until we were eventually able to level out and recover from the upset. The AHRS system would come back, and we would go on to land with no other issues and complete the flight.

**Callback: 1**

Reporter stated the encounter was quite severe and potentially dangerous.

**Synopsis**

C172 Instructor Pilot reported wake turbulence from a military tanker overflying their aircraft resulted in an upset.
ACN: 2011565 (45 of 50)

**Time / Day**
- Date: 202306
- Local Time Of Day: 0001-0600

**Environment**
- Flight Conditions: VMC

**Aircraft**
- Reference: X
- ATC / Advisory, TRACON: 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
- Mission: Passenger
- Nav In Use: FMS Or FMC
- Nav In Use: GPS
- Nav In Use, Localizer/Glideslope/ILS: RNAV 23
- Flight Phase: Initial Approach
- Flight Phase: Final Approach
- Route In Use: Direct

**Component**
- Aircraft Component: GPS & Other Satellite Navigation
- Aircraft Reference: X
- Problem: Malfunctioning

**Person**
- 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)
- Qualification, Flight Crew: Instrument
- Qualification, Flight Crew: Multiengine
- ASRS Report Number, Accession Number: 2011565
- Human Factors: Troubleshooting
- Human Factors: Situational Awareness

**Events**
- Anomaly, Aircraft Equipment Problem: Less Severe
- Anomaly, ATC Issue: All Types
- Anomaly, Inflight Event / Encounter: Other / Unknown
- Detector, Automation: Aircraft Other Automation
- Detector, Person: Flight Crew
- Detector, Person: Air Traffic Control
- When Detected: In-flight
- Result, Flight Crew: Requested ATC Assistance / Clarification
Result. Air Traffic Control: Provided Assistance
Result. Aircraft: Equipment Problem Dissipated

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

Narrative: 1
Proceeding to IAF (ZAMUV) as per ATC clearance for RNAV 23 approach. GPS coverage momentarily was lost, ATC acknowledged and said previous aircraft had experienced exactly the same issue as coverage loss for the same fix (ZAMVU) at exactly the same geographical position. ATC vectored the flight to intercept the final approach course. ATC also said they would log and report the loss. Suggestion - Monitoring GPS COVERAGE as it may become inadequate. GPS loss, could be a satellite issue at a specific position in a given period of time that is not supposed to be occurring for that time.

Synopsis
Pilot flying reported a GPS malfunction or failure at the IAF, ZAMUV on the RNAV 23. ATC told the pilot that previous aircraft had experienced exactly the same issue at the same location.
**ACN: 2011432 (46 of 50)**

**Time / Day**
- Date: 202306
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference: Airport: MSO.Airport
- State Reference: MT
- Altitude.MSL.Single Value: 8800

**Environment**
- Flight Conditions: VMC

**Aircraft**
- Reference: X
- ATC / Advisory.TRACON: GEG
- 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: Final Approach
- Route In Use: Visual Approach
- Route In Use: Vectors
- Airspace.Class E: GEG

**Person**
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: First Officer
- Function.Flight Crew: Pilot Not Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- Experience.Flight Crew.Total: 701
- Experience.Flight Crew.Last 90 Days: 46
- Experience.Flight Crew.Type: 701
- ASRS Report Number.Accession Number: 2011432
- Human Factors: Workload
- Human Factors: Confusion
- Human Factors: Time Pressure

**Events**
- Anomaly.ATC Issue: All Types
- Anomaly.Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly.Inflight Event / Encounter: Unstabilized Approach
- Detector.Person: Flight Crew
When Detected: In-flight
Result: Flight Crew: Executed Go Around / Missed Approach

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

Narrative: 1

We were vectored off of the descent and told to expect a visual approach to Runway 30 into MSO behind an Air Carrier Y flight. Rather than clear us for the RNAV visual or the RNP approach, Spokane Approach wanted to give us vectors. He vectored us to a base leg that was 7.5 miles from the end of the runway in significant terrain, left us at 8800 ft. (5,600 ft. AGL) and cleared us for the visual. I slowed and configured the plane as fast as I could but could not descend fast enough to achieve a stabilized approach by 1,000 feet so I initiated a go-around. These unsafe vectors have happened to me several times in the past going into MSO. Approach puts pilots in precarious positions and then clears them for the visual approach expecting the pilots to fix the situation that Approach created.

Synopsis
An Air Carrier pilot reported GEG TRACON vectored them to base leg for a Visual Approach to MSO at a position and altitude that prevented them from flying a stabilized approach. Reporter states this is a recurring issue at this airport.
**ACN: 2010745 (47 of 50)**

**Time / Day**
- Date: 202306
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference. ATC Facility: ZZZ.TRACON
- State Reference: US
- Altitude.MSL.Single Value: 2000

**Aircraft**
- Reference: X
- ATC / Advisory. TRACON: ZZZ
- 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: IFR
- Mission: Passenger
- Flight Phase: Descent
- Route In Use. Other
- Airspace. Class C: ZZZ

**Person**
- Location Of Person. Facility: ZZZ.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): 13
- ASRS Report Number. Accession Number: 2010745
- Human Factors: Communication Breakdown
- Human Factors: Confusion
- Human Factors: Time Pressure
- Human Factors: Workload
- Human Factors: Distraction
- Communication Breakdown. Party1: ATC

**Events**
- Anomaly. ATC Issue: All Types
- Anomaly. Deviation - Altitude: Overshoot
- Anomaly. Deviation / Discrepancy - Procedural: Clearance
- Anomaly. Inflight Event / Encounter: CFTT / CFIT
- Detector. Person: Air Traffic Control
- When Detected: In-flight
- Result. Flight Crew: FLC complied w / Automation / Advisory
- Result. Flight Crew: Became Reoriented
- Result. Air Traffic Control: Issued New Clearance
- Result. Air Traffic Control: Issued Advisory / Alert
Assessments
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1
Aircraft X was cleared for the RNAV Runway XX approach starting at ZZZZZ at or above 2500 ft. The aircraft descended to 2400 ft. and I issued them the altimeter and told them to check their altitude. The pilot asked to verify a descent clearance to 2000 ft. I responded negative that they were cleared to 2500 ft. Upon hearing this the aircraft climbed back to the assigned altitude of 2500 ft. The MVA in the area is 2300 ft. and the aircraft descended to 2000 ft. for around 2 miles. I checked the audio and 2500 ft. was issued and read back by the pilot.

Synopsis
A TRACON Controller reported an aircraft descended below their assigned altitude at the Initial Approach Fix and flew below the Minimum Vectoring Altitude.
**Time / Day**
Date: 202306
Local Time Of Day: 1201-1800

**Place**
Locale Reference.ATC Facility : AMA.TRACON
State Reference : TX
Relative Position.Angle.Radial : 270
Relative Position.Distance.Nautical Miles : 5
Altitude.MSL.Single Value : 5400

**Environment**
Light: Daylight

**Aircraft**
Reference : X
ATC / Advisory.TRACON: AMA
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
Nav In Use: FMS Or FMC
Nav In Use: GPS
Flight Phase: Initial Approach
Route In Use: Direct
Airspace.Class C : AMA

**Person**
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)
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiengine
ASRS Report Number.Accession Number: 2009903
Human Factors: Troubleshooting
Human Factors: Situational Awareness
Human Factors: Communication Breakdown
Human Factors: Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

**Events**
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Software and Automation
Contributing Factors / Situations : Chart Or Publication
Primary Problem : Airspace Structure

Narrative: 1

On arrival to AMA, PF (Pilot Flying) requested the RNP Z 22. Approach Control cleared us to fly the approach with the initial fix ZATRO. PF had FMS loaded with the initial fix PULBE. PF had PM (Pilot Monitoring) request initial fix PULBE. ATC then cleared us initial fix TELVE. Similar sounding and we couldn't decipher the difference between "TELVE" and "PULBE" over the radio and proceeded to initial fix PULBE. ATC queried us approximately five miles before PULBE and indicated we weren't heading to TELVE. That's when the miscommunication was discovered, and ATC allowed us to continue the approach via PULBE. The rest of approach and landing were uneventful. RNAV/RNP Approaches should not have similar sounding initial fixes.

Synopsis

Air carrier Captain reported similar sounding fixes on the AMA RNP Z 22 approach, PULBE and TELVE, which caused a clearance and heading deviation.
**Time / Day**
- Date: 202306
- Local Time Of Day: 0001-0600

**Place**
- Locale Reference: ATC Facility: ZZZ. Tower
- State Reference: US

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

**Aircraft**
- Reference: X
- ATC / Advisory. Tower: ZZZ
- Aircraft Operator: Fractional
- Make Model Name: EMB-505 / Phenom 300
- Crew Size. Number Of Crew: 2
- Operating Under FAR Part: Part 91
- Mission: Ferry / Re-Positioning
- Flight Phase: Descent
- Airspace. Class B: ZZZ

**Person**
- Location Of Person. Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Fractional
- Function. Flight Crew: First Officer
- Function. Flight Crew: Pilot Flying
- ASRS Report Number. Accession Number: 2009800
- Human Factors: Confusion
- Human Factors: Situational Awareness
- Human Factors: Communication Breakdown
- Communication Breakdown. Party1: Flight Crew
- Communication Breakdown. Party2: ATC

**Events**
- Anomaly. ATC Issue: All Types
- Anomaly. Deviation / Discrepancy - Procedural: Published Material / Policy
- Anomaly. Deviation / Discrepancy - 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: FLC complied w / Automation / Advisory
- Result. Flight Crew: Returned To Clearance

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

Narrative: 1

Short flight from ZZZ1 to ZZZ. Both airports were departing/landing to the North. There was a non-convective weather cell with precipitation, just West of both airports. 100 OVC, 10 SM in the general area, with reduced visibility near the precipitation cell. We departed Runway XXL at ZZZ1 with a right downwind vector towards ZZZ. Departure took place after sunrise, all terrain was visible and identifiable. 6 NM from ZZZ we reported field in sight and were cleared visual approach XYL via right downwind. Leveling at 4000 pattern altitude on downwind, the Captain and I decided that due to surrounding terrain, a right pattern may not be doable without triggering warnings and requested vectors for the RNAV visual XYL. ATC advised that we were under MVA, issued a low altitude alert, and we climbed uneventfully to the assigned altitude. Few minutes later, ATC cleared us for the "RNAV XYL approach", told us that ZZZ Tower just opened and handed us off. On TWR/CTAF frequency, ATC told us that ZZZ Tower will be closed for another 4.5 minutes, but continued to communicate with us. Shortly after, Tower Controller advised us "for informational purposes" that approach told them that we were cleared RNAV-B approach, but were instead flying RNAV visual XYL (different lateral track). We advised Tower Controller that we actually requested the RNAV visual, which we in fact did, and continued to uneventful landing XYL. On our landing rollout, ZZZ Tower opened, and class D airspace went into effect. It appears that both us and Approach Controller experienced expectation bias with respect to the approach clearance, and ultimately miscommunicated. As a flight crew, we briefed and expected to fly the RNAV visual XYL inbound, but never ruled out the traffic pattern, despite high terrain nearby. When ATC cleared us for the visual, right traffic, we followed that instruction, even though that was the inferior plan. Per ZZZ [informational safety bulletin], most of our Terrain Avoidance Warning System (TAWS) events occur when attempting to maneuver in the pattern, in close proximity to surrounding terrain. I suggest including instructions into ZZZ, pages recommending a straight in approach via the RNAV visual, and discouraging the right downwind Runway XY, due to potentially unstable approach and a TAWS event triggered by the 4174 ft. obstacle. Additionally, I suggest part-time ATCT Controllers refrain from providing instructions to/communicating with aircraft on CTAF, as it created some confusion regarding whether the Tower was already open and if we should expect ATC services. Regarding the approach clearance miscommunication, we should have queried the Controller for the full clearance phraseology, as "Cleared RNAV XYL" was ambiguous. Lastly, it was a XA00 LCL show to ferry the airplane to ZZZ into position for next morning departure, we were undoubtedly less alert due to operating during the window of circadian low. If we positioned the aircraft the evening prior, we could have avoided that.

Synopsis

EMB-505 flight crew reported receiving a low altitude alert on approach and confusion regarding an approach clearance.
ACN: 2009309  (50 of 50)

**Time / Day**

Date: 202306

**Place**

Locale Reference: Airport: ZZZ.Airport
State Reference: US
Relative Position: Distance: Nautical Miles: 1
Altitude: MSL: Single Value: 1700

**Environment**

Flight Conditions: VMC
Weather Elements / Visibility: Haze / Smoke
Weather Elements / Visibility: Visibility: 7
Light: Daylight
Ceiling: Single Value: 12000

**Aircraft: 1**

Reference: X
ATC / Advisory: CTAF: ZZZ
Aircraft Operator: FBO
Make Model Name: Skyhawk 172/Cutlass 172
Crew Size: Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: None
Mission: Training
Flight Phase: Takeoff / Launch
Airspace: Class G: ZZZ

**Aircraft: 2**

Reference: Y
ATC / Advisory: CTAF: ZZZ
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
Mission: Training
Flight Phase: Initial Approach
Airspace: Class G: ZZZ

**Person**

Location Of Person: Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: FBO
Function: Flight Crew: Instructor
Function: Flight Crew: Pilot Not Flying
Qualification: Flight Crew: Flight Instructor
Qualification: Flight Crew: Instrument
Qualification: Flight Crew: Multiengine
Qualification: Flight Crew: Commercial
Experience.Flight Crew.Total : 580
Experience.Flight Crew.Last 90 Days : 60
Experience.Flight Crew.Type : 540
ASRS Report Number.Accession Number : 2009309
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events
Anomaly.Conflict : NMAC
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Miss Distance.Horizontal : 200
Miss Distance.Vertical : 200
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

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

Narrative: 1
Had just departed runway XX @ ZZZ. 3-4 other airplanes in the pattern properly making traffic calls. After a touch and go landing we made an "upwind of runway XX" call. I noticed on our ADS-B-IN system, an aircraft with a head on trajectory about 3 miles South, but due to the haze, did not have the aircraft in sight. I advised my student to turn crosswind and made the call to CTAF "on crosswind for runway XX". There were two other aircraft doing simulated instrument approaches. Piper Archer decided to practice a RNAV XY, circle to land. I did not hear a circling or joining downwind call from the Archer. My ADSB indicated this was the aircraft inbound circling, and I was vigilantly visually searching for this aircraft as we were climbing. At about 500 feet laterally, I saw we were on an imminent collision path with the Archer. I took the controls from my student and pitched up significantly to avoid collision. We passed above at about 200 feet. I then asked on CTAF why they did not make a call about joining the downwind on a straight in and expressed how dangerous the situation was. Their response was that they had made an approach call some 8 miles out and "were on a checkride and had to circle within 1.3 miles of the airport". We promptly left the area.

Synopsis
Flight instructor with student reported taking evasive action to avoid a near midair collision in the traffic pattern at a non-towered airport.