

ASRS Database Report Set

Altitude Deviations

Report Set Description.....A sampling of reports referencing altitude deviations
for all types of operations

Update Number19.0

Date of UpdateOctober 11, 2012

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

Number of New Records in Report Set50

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



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

ASRS reports are submitted voluntarily. The existence in the ASRS database of reports concerning a specific topic cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System.

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

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

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

A handwritten signature in cursive script that reads "Linda J. Connell".

Linda J. Connell, 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: 1028402 *(1 of 50)*

Synopsis

EMB145 Captain describes the factors that resulted in missing a crossing restriction during the GIBBZ1 RNAV arrival to IAD.

ACN: 1027305 *(2 of 50)*

Synopsis

A CE-500 on the TEB 8 Departure failed to capture 6,000 FT because of an autopilot malfunction and additionally the First Officer failed to call approaching the assigned altitude.

ACN: 1027289 *(3 of 50)*

Synopsis

An EA50 pilot was assigned the TEB RUUDY 4 RNAV Departure which was different from his filed SID and subsequently he missed the waypoint constraints because the FMS did not load the SID.

ACN: 1027160 *(4 of 50)*

Synopsis

An ERJ flight crew on the TEB RUUDY 4 climbed directly to 2,000 FT before WENTZ because the Captain was task saturated with the unfamiliar departure and weather avoidance.

ACN: 1027155 *(5 of 50)*

Synopsis

Air carrier flight crew was questioned by Approach Control when they had failed to program an "expect to cross at" note on the WAVUN into their FMS while on descent into FLL and, as a result, failed to meet the restriction when it was given.

ACN: 1026658 *(6 of 50)*

Synopsis

Phenom 100 Captain reports that his FMC incorrectly reads the HOMER crossing restriction on the EAGUL5 RNAV to PHX as a hard altitude instead of "at or below" as depicted. This makes the VNNOM crossing restriction impossible to achieve.

ACN: 1025869 *(7 of 50)*

Synopsis

While flying the TAMMY RNAV STAR to land North at MEM, the flight crew of a CRJ-200 arrived at TAMMY too high to make the crossing restriction of 10,000 FT and 230 KTS at ROCAB, only two miles beyond TAMMY.

ACN: 1023692 (8 of 50)

Synopsis

A Captain on the TEB JAIKE 3 RNAV failed to notice that the First Officer did not descend on the arrival because he was intently monitoring the ATIS, which was difficult to hear because of bleed over.

ACN: 1023073 (9 of 50)

Synopsis

AC690 Captain reports entering a developing thunderstorm while IMC at FL240 with no indications on Radar or Nexrad. ATC communications are lost at the same time and the reporter elects to turn 180 degrees and descend to FL210.

ACN: 1022976 (10 of 50)

Synopsis

C206 pilot reports an altitude deviation while attempting to descend to 9,000 FT and deviate around buildups using a Storm scope and Nexrad with limited success. The autopilot was set to capture 9,000 FT but did not do so and the reporter was alerted by ATC at 8,200 FT.

ACN: 1022205 (11 of 50)

Synopsis

EMB500 First Officer reports exceeding the WENTZ crossing restriction during the RUUDY4 departure from TEB.

ACN: 1021965 (12 of 50)

Synopsis

Hawker 800 Captain describes an altitude deviation during the RUUDY4 departure from TEB, with the First Officer flying. The altitude placed in MCP altitude window was 2,000 FT and the departure was hand flown in NAV only.

ACN: 1021732 (13 of 50)

Synopsis

Rookie CE680 First Officer describes the factors leading up to an altitude deviation during the RUUDY 4 departure from TEB.

ACN: 1020147 (14 of 50)

Synopsis

The single pilot of a CE560 was advised by departure Controller that he had climbed to 2,000 MSL prematurely while departing TEB on the RUUDY RNAV SID

although he believed he had maintained 1,500 MSL to WENTZ as charted prior to climbing to 2,000 MSL.

ACN: 1019368 *(15 of 50)*

Synopsis

While attempting to climb above weather the pilot of a UAV lost control of his aircraft at FL210 and lost altitude to 16,500 MSL before regaining control and retarding the climb.

ACN: 1018608 *(16 of 50)*

Synopsis

While attempting to avoid a line of thunderstorms and at FL410 using NEXRAD and on board Radar, A CE650 flight crew experiences a Radar failure and severe turbulence resulting in altitude excursions. An emergency is declared and the flight is cleared to FL450 then eventually down to FL390. Upon clearing the weather the RH Chip Detector illuminates and the crew elects to divert for maintenance.

ACN: 1017650 *(17 of 50)*

Synopsis

A B737 First Officer responded incorrectly to a TCAS RA after he increased the aircraft's rate of descent when the resolution was to decrease the descent rate.

ACN: 1017483 *(18 of 50)*

Synopsis

EMB-145 flight crew missed a crossing restriction issued by ATC. First Officer, Pilot Flying, attributed the error to distraction caused by a conversation with the Captain.

ACN: 1017416 *(19 of 50)*

Synopsis

After receiving a crossing clearance 50W of BDF at FL240, the flight crew of a B737-700 failed to monitor autoflight performance and crossed at FL280.

ACN: 1017411 *(20 of 50)*

Synopsis

A B737-700 flight crew failed to properly program ATC descent clearances into their FMS and Altitude Alert window and, thus, stopped their descent from FL400 at FL370 vice FL360.

ACN: 1017341 *(21 of 50)*

Synopsis

When the autopilot failed to capture a crossing restriction altitude on a TEB SID the flight crew was forced to manually attempt to return to the charted altitude. ATC assisted by clearing them to a higher altitude.

ACN: 1016979 (22 of 50)

Synopsis

LR60 Captain reported and uncontrolled 800 FT climb from FL290 because of updraft.

ACN: 1016976 (23 of 50)

Synopsis

SD3 First Officer reports losing 400 feet from FL190 while passing between thunderstorms in IMC with some moderate down drafts. The engines were operating near their limits, delaying the return to assigned altitude.

ACN: 1016894 (24 of 50)

Synopsis

B737-800 flight crew heard and read back clearance from Center Controller to "climb to 280." During subsequent climb, Controller advised flight crew that the clearance was for "heading 280."

ACN: 1016376 (25 of 50)

Synopsis

A CE525 departed on the TEB RUDDY 4 following an extensive ATC reroute during taxi and subsequent FMS reprogramming but forgot to level off at 1,500 FT and were told by ATC at 2,000 FT to descend.

ACN: 1015988 (26 of 50)

Synopsis

A G-IV electric pitch trim failed while climbing into RVSM airspace which caused an altitude overshoot at FL283 so RVSM was canceled and the flight continued at FL280.

ACN: 1015895 (27 of 50)

Synopsis

An EMB-145 Captain reported deviating below altitude assignment on arrival to JFK when they were distracted by a wake vortex encounter.

ACN: 1015869 (28 of 50)

Synopsis

B747 First Officer describes a turbulence encounter with wave action, that results in the aircraft climbing 800 feet above FL350 while exceeding Mmo. The event occurred several hundred miles east of Japan over the Pacific ocean.

ACN: 1015526 (29 of 50)

Synopsis

A BD-700's Honeywell Primus 2000 FMS missed the TEB JAIKE 13,000 FT constraint as the aircraft slowed to 250 KTS and was apparently descending and slowing so as to comply with ILENE, the next 13,000 FT constraint.

ACN: 1015497 (30 of 50)

Synopsis

HS125 Captain reports misunderstanding the RUUDY 4 crossing restriction of 1,500 FT at WENTZ, thinking it is at or above, and continues to 2,000 FT. ATC informs the reporter of his error.

ACN: 1015343 (31 of 50)

Synopsis

An EMB145 crew on a Constant Angle Non Precision Approach (CANPA) set the Mode Control Panel at the Decision Altitude. After becoming distracted they descended early, 600 FT below the Final Approach Fix altitude.

ACN: 1014798 (32 of 50)

Synopsis

A CE750 Captain noted that his aircraft's FMS was high crossing the first in a series of RNAV waypoints which had the same altitude constraint, but correctly crossed the second waypoint. This behavior had been seen previously on other RNAV arrivals.

ACN: 1014639 (33 of 50)

Synopsis

A DC-9 Captain reported he was alerted by ATC during a visual approach of a low altitude deviation.

ACN: 1014637 (34 of 50)

Synopsis

A C182 pilot had an altitude deviation while attempting to program a G1000 which had not been completed prior to takeoff due to time constraints.

ACN: 1014457 (35 of 50)

Synopsis

ZTL Controller described a loss of in trail separation with ATL arrival aircraft, claiming the phraseology used by the RADAR Controller was a bit ambiguous.

ACN: 1014307 (36 of 50)

Synopsis

EMB-175 Captain reports encountering severe turbulence at FL350 with the First Officer flying. With large airspeed excursions occurring a call to ATC for a lower altitude is made with no response and a descent is initiated without clearance. This is noticed by ATC and the crew is informed that the initial call was missed due to being "on the land line."

ACN: 1014212 (37 of 50)

Synopsis

A GLF5/550 First Officer climbed through an altitude constraint on a TEB Runway 24 SID when the autopilot failed to level.

ACN: 1014203 (38 of 50)

Synopsis

A pilot unfamiliar with an aircraft's RNAV equipment became distracted during the approach and descended below the final approach fix altitude where ATC notified him of a low altitude warning.

ACN: 1013591 (39 of 50)

Synopsis

Although, while at 16,000 MSL, both pilots of an A320 heard "cleared to FL350" and had readback FL350 ATC was alarmed to note they were climbing out of FL187 and directed them to stop their climb at FL230 and fly a new heading to avoid traffic with which they were conflicted.

ACN: 1013541 (40 of 50)

Synopsis

A B747-400 flight crew deviated from their heading and altitude clearance while dealing with a hydraulic problem.

ACN: 1013503 (41 of 50)

Synopsis

ZFW Controller described a TCAS conflict event between an DFW Air Carrier arrival and a flight of 4 VFR military jets operating near the Brownwood MOA, the reporter suggesting changes to the airspace and operational procedures.

ACN: 1013258 (42 of 50)

Synopsis

ZID Controller described an unexpected descent by an Air Carrier at FL350 during a turbulence encounter. The controller did not hear the initial descent request because of land line coordination.

ACN: 1013204 (43 of 50)

Synopsis

A Learjet 45 flight crew flying the RUUDY RNAV SID from TEB climbed above the mandatory 1,500 FT MSL restriction prior to passing WENTZ. The pilot flying had noted TASCA as their "next" fix and unilaterally selected its 2,000 FT MSL crossing restriction in the altitude select window. When alerted by ATC the PF realized they were still 1.6 NM from WENTZ which was still the active waypoint. Worth noting in the individual narratives is the conflict as to which pilot performed which actions.

ACN: 1013078 (44 of 50)

Synopsis

CRJ700 Captain experiences dual HSI failure during approach with the autopilot attempting to follow the spinning HSI's. The Captain assumes control and levels the wings and once in VMC a visual approach is requested. Once established the HSI headings return to normal.

ACN: 1013048 (45 of 50)

Synopsis

When the pilot flying inadvertently failed to select the appropriate nav modes, a B737-500, equipped with a single FMS and without a CRT map display, failed to comply with track, altitude and minimum configuration airspeed constraints while assigned the TIPTOE CHARTED VISUAL APPROACH to Runway 28L at SFO. They had been cleared to fly the visual procedure side by side with another air carrier aircraft flying the QUIET BRIDGE CHARTED VISUAL to Runway 28R. The reporters' resultant flight path went through the extended centerline of 28L (separated by only 750 FT from 28R) and their descent prior to receipt of a low altitude alert from Approach Control was about 800 FT below their charted 1,900 crossing at BRIJJ. Both pilots stressed the inadequacy of the non-glass single FMS equipment for terminal navigation, particularly with respect to closely spaced parallel approaches which require side by side aircraft to join up from converging lateral tracks.

ACN: 1012977 (46 of 50)

Synopsis

After being redirected from their original approach due to weather the flight crew of an MD-88 were not fully prepared for their second, non-precision, approach to another runway and descended below their MDA. A timely low altitude alert from

the Tower both prevented further error and allowed the approach to be successfully concluded when the flight crew made visual contact with the runway.

ACN: 1012971 *(47 of 50)*

Synopsis

A Cessna 320 pilot, cleared to depart TEB via the RUUDY RNAV SID radar vectors to SBJ, instead took off and flew runway heading rather than the SID track and climbed at will.

ACN: 1012898 *(48 of 50)*

Synopsis

An A320 Captain discussed the effects of flight crew confusion and distraction associated with a malfunctioning vertical navigation programming on flight path control and situational awareness.

ACN: 1012697 *(49 of 50)*

Synopsis

BE200 Captain reports incorrectly hearing and setting his altimeter during descent, although the Copilot's altimeter was set correctly. This was not detected by ATC or either pilot through three level offs. After being cleared for a visual approach the discrepancy was detected.

ACN: 1012629 *(50 of 50)*

Synopsis

A King Air pilot, unfamiliar with the avionics in the aircraft involved, leveled 600 FT above his cleared altitude because the altitude select/capture mode was predicated on the reading from the standby altimeter, not his PFD altimeter, which he had failed to reset prior to takeoff.

Report Narratives

Time / Day

Date : 201208
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : PCT.TRACON
State Reference : VA
Altitude.MSL.Single Value : 26400

Environment

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

Aircraft

Reference : X
ATC / Advisory.TRACON : PCT
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 145 ER&LR
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use : FMS Or FMC
Flight Phase : Descent
Route In Use.STAR : GIBBZ1 RNAV
Airspace.Class A : ZDC

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1028402
Human Factors : Human-Machine Interface
Analyst Callback : Completed

Events

Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew

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

Assessments

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

Narrative: 1

The company had put out a couple of messages related to new OPD's [Optimized Profile Descent] into IAD recently, but neither of us had studied the messages at length. Basically, from what I had read, was that sometimes the descents could get away from you quick, so you have to stay on top of things. They even suggested a 'Dive-and-Drive' approach to the new procedures. We identified this as a threat when we were issued the new clearance enroute, for this arrival. We both looked at the arrival and briefed it thoroughly. I told the relatively new First Officer that all he would need to do is pretty much just fly, and monitor his descent progression. I told him that I would brief his next crossing restrictions in a set manner. I would say, "The next fix is XXXXX, cross between (or at) FLXXX and FLXXX. The lowest altitude for this fix is FLXXX." I did it in this manner because we both identified the advantage of being on the lower side of the crossing, than the higher side. As we started down, the VPI [Vertical Path Indicator] came in view, and we pretty quickly got high on that. I pointed that out, and made sure he was correcting. He did correct some, but apparently not enough. Honestly, I think that he may have gotten two of the points confused, as far as the crossing restrictions. Coupled with this, his inexperience in this aircraft showed by his reluctance to descend at much more than 2,500 FPM or so (which I can understand, if you're not used to it). We identified the crossing error, and then corrected more, and made every other altitude and speed restriction on the arrival. Nothing was said by ATC. The First Officer did a good job of recovering from this deviation and did not let it fluster him, including a nice landing!

We were going in to a new arrival that had been presented to the pilot group, by the company, as a potential threat due to multiple crossing restrictions primarily. There were both altitude and speed restrictions, but the altitudes restriction far outnumber the speeds. The First Officer's inexperience in our particular aircraft did not help the situation, with reference to his uncertainty as to what an acceptable rate of descent would be. I think that I got a little focused on what was the next point, just a little ahead of the current waypoint, and by the time I realized that we were too high, it was too late. I do appreciate the company putting out a message about the potential threat of this arrival. A little more advanced notice to allow time to review a training module that is being put together would be nice, but I understand the FAA did not allow more notice. Especially when I am with a newer First Officer, especially on an arrival like this, I need to speed my scan just a little bit. We didn't have any real weather to deal with in this scenario, but we were not filed via this arrival but were issued the change in the air. If there had been some weather, or other increased work load factors, getting this change in the air, only a few minutes out, is going to lead to more deviations. We need to be filed via this arrival, if it's what they're going to be using.

Callback: 1

The reporter states that his aircraft is equipped with a Honeywell FMC which is not VNAV certified and the aircraft is not equipped with autothrust. The FMC does compute a descent path, but it must be followed manually using vertical speed and manual thrust adjustment.

Synopsis

EMB145 Captain describes the factors that resulted in missing a crossing restriction during the GIBBZ1 RNAV arrival to IAD.

Time / Day

Date : 201207

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 6500

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 25000

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : Citation I (C500)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class B : EWR

Airspace.Class D : TEB

Component

Aircraft Component : Altitude Hold/Capture

Aircraft Reference : X

Problem : Malfunctioning

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 2500

Experience.Flight Crew.Last 90 Days : 120
Experience.Flight Crew.Type : 250
ASRS Report Number.Accession Number : 1027305
Human Factors : Training / Qualification
Human Factors : Communication Breakdown
Human Factors : Distraction
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

My crew of 2 departed Teterboro Runway 1 with the Teterboro 8 departure. Departure Control cleared my aircraft to 6,000 FT, heading 280. The next clearance was "upon reaching 6,000, cleared direct BREZY". I increased the ascent rate on the autopilot control in order to reach 6,000 FT more quickly so that I could proceed on course toward my destination. The autopilot did not level the airplane at 6,000 FT. The airplane climbed to 6,300 FT MSL before I initiated a correction. In the process of correcting, the airplane climbed to 6,500 for an instant before quickly returning to 6,000 FT. As the aircraft returned to 6,000 FT, ATC asked what altitude we were climbing to and stated that they saw a Mode C altitude read out of 6,500.

At no time during this event was the safe outcome of the flight in question. No traffic was observed by the flight crew or reported by ATC in our vicinity during the altitude deviation. Contributing factors of the event include: flight crew failure to recognize the autopilot not capturing 6,000 FT, co-pilot not making altitude call outs per the company training manual, and the crew failing to comply with the company's sterile cockpit rule.

Synopsis

A CE-500 on the TEB 8 Departure failed to capture 6,000 FT because of an autopilot malfunction and additionally the First Officer failed to call approaching the assigned altitude.

Time / Day

Date : 201208

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 8

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Taxi

Make Model Name : Eclipse 500

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : EWR

Airspace.Class D : TEB

Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Design

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 3500

Experience.Flight Crew.Last 90 Days : 20

Experience.Flight Crew.Type : 1500

ASRS Report Number.Accession Number : 1027289

Human Factors : Distraction

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

Events

Anomaly.Conflict : Airborne Conflict

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance

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 Advisory / Alert

Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Procedure

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Aircraft

Primary Problem : Human Factors

Narrative: 1

Apparently the waypoints for the departure procedure were not loaded into the flight plan by the FMS although the SID was selected and loaded. I did overlook the fact that the waypoints on the departure were missing from the FMS sequence even though I did compare the waypoints that were loaded into the FMS with the ones on my NAV Log. The obvious reason I missed it was because I had not filed the departure electronically but was assigned to it by Clearance Delivery so they were not on the NAV log and when I was comparing everything matched. When I loaded the departure procedure in the FMS now that I think about it, the waypoint list said "discontinuity" after the departure airport in the sequence. This is not abnormal but usually means that the departure or arrival procedure is simply radar vectors to a fix.

As I briefed myself on the departure procedure prior to leaving an hour later it did not occur to me that I was missing the waypoints. I just knew that I had the correct departure procedure loaded and I was just thinking that the FMS would sequence through the appropriate waypoints as usual. The main thing that I was focusing on was the two altitude restrictions on the SID, making sure that I had the altitudes memorized and ready to execute them correctly. The first was to cross WENTZ at 1,500 and then to cross TASCA at 2,000. I was also aware that these fixes were fairly close to the airport and close together. After executing the takeoff and climbing out safely I transitioned to navigating the departure procedure. I selected my command bars to navigate and started tracking the course depicted on the SID. I made sure that I got to 1,500 FT but when I did not see WENTZ on my map or flight plan sequence I assumed that I must have just passed it as I knew it was close to the airport and immediately after the climb and turn. Having thought I was behind and passed the waypoint I immediately began a climb to 2,000 as to

not miss the next altitude restriction. As I was leveling out I realized that the next waypoint on the SID did not match the one that I was attempting to navigate too and I realized that I was situationally unaware and could be at the wrong altitude.

Almost immediately the Controller was contacting me (after not answering my initial check in moments earlier) and issuing me a command to turn to a new heading in order to avoid traffic and informed me where I was in relation to the assigned course. The cause of this deviation was due to my improper brief of the departure procedure and most likely the acceptance of a departure procedure that my FMS may not be capable of. It is also my belief that the departure procedure should not be able to be selected and loaded into the FMS flight plan sequence if it does not include the appropriate waypoints for the procedure. This is not typical of my flying. I consider myself a very safe and thorough pilot. With 10 years of professional flying experience I have never had another deviation. I have reviewed the procedure and the chain of events leading up to this situation and I will certainly learn from it. I believe this will make me a better pilot and especially more aware of little things that any amount of complacency may bring about.

Synopsis

An EA50 pilot was assigned the TEB RUUDY 4 RNAV Departure which was different from his filed SID and subsequently he missed the waypoint constraints because the FMS did not load the SID.

Time / Day

Date : 201208

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 1500

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Initial Climb

Route In Use.SID : RUUDY 4

Airspace.Class B : EWR

Airspace.Class D : TEB

Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1027160

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Time Pressure
Human Factors : Workload

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
ASRS Report Number.Accession Number : 1027161
Human Factors : Confusion
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

While departing TEB on a charter the First Officer and I were reviewing the departure procedures and noise abatement procedures for our runway when I made an error in my take off briefing. We were assigned the RUDDY 4 RNAV departure that requires you to cross a fix at 1,500 FT then continue the climb to 2,000 FT. While at the terminal I briefed a climb to 2,000 FT and a crossing restriction of making sure we cross the restriction at or above 1,500 FT. Upon taxi out we were held on the ground for delays and spent our time going over an ATC reroute as well as making sure the weather was suitable when departing 24. After takeoff I continued my climb to 2,000 FT too early because I was concentrating on weather cells that lined the departure. ATC told us that we should be at 1,500 and by that time it was too late to fix our mistake. They said nothing else, and the First Officer and I realized what we had done. I was in an unfamiliar airport on a charter that had complicated noise procedures combined with weather and the standard difficulties of a charter. I briefed a chart incorrectly and then went on to concentrate on the weather and route planning without reviewing it except just before takeoff. It was my mistake in the initial briefing that led me to think I was correct in my climb to 2,000 FT.

Narrative: 2

With better CRM, and a focus put on looking for any possible areas that we could get tricked up by an unfamiliar departure procedure. I believe that this would have

never happened. I will be paying closer attention to the verbage in the departure procedures to make sure that nothing like this will ever happen again. Especially at airports that we do not do normal opperations.

Synopsis

An ERJ flight crew on the TEB RUUDY 4 climbed directly to 2,000 FT before WENTZ because the Captain was task saturated with the unfamiliar departure and weather avoidance.

Time / Day

Date : 201207

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : FLL.Airport

State Reference : FL

Altitude.MSL.Single Value : 24000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZMA

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

Flight Phase : Descent

Airspace.Class E : ZMA

Component : 1

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Aero Charts

Aircraft Reference : X

Problem : Design

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1027155

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Situational Awareness

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC
Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We were flying the transition to the WAVUUN.ONE arrival. Miami ARTCC descended us from FL400 to FL360. Later we were given "pilot's discretion" to FL240. The TOD on the FMC showed the descent would not begin for over 40 NM. It was at that time I decided to brief the approach. During the brief I admit that I did not see the note to "expect to cross DEKAL Intersection at 6,000 FT and 250 KTS."

Since neither the pilot nor I noticed the restriction we neglected to enter it into the FMS. Shortly thereafter, Miami gave us a "descend now" clearance to FL240, which we began to execute. During the descent Miami changed the instructions to "expedite through FL260 and descend to FL180, then cross DEKAL Intersection at 6,000 FT and 250 KTS." It was then that we realized our error.

Immediately upon entering the restriction in the FMS we knew we were high and would be unable to make the restriction. Just as immediately (passing through FL240) we notified Center of our error and that we'd be unable to make the restriction. I was personally shocked when the ARTCC Controller actually went on a rant stating that (among other things) "it's the same thing everyday with (you guys) ... you should know this by now!", and "you guys miss this restriction every day" (paraphrased). We remained professional on the radio and reiterated to him we could not comply with instructions. He told us to expect "off course vectors if it became obvious we could not make it by the time we were at 8,000 FT." We told him that would be OK with us, we'd even take the off course vector immediately. Again after that the Controller -- and there is no better word for this -- 'berated' us for not being able to make the restriction.

A few minutes later, as the aircraft was descending through 11,000 FT, we tried to contact the same Controller to again notify him that we could not make the restriction at DEKAL. No answer. We made a second call; again, no answer from Miami. He was non-responsive to us, as we were rapidly descending through 8,500

FT Miami curtly switched us over to another Controller. At 8,000 FT we told the subsequent Controller we could not make DEKAL at 6,000 FT and 250 KTS at which time she gave us a descent to 5,000 FT. At the DEKAL Intersection we were passing through 7,000 FT.

Obviously, the number one item is that I missed the notation of the "expect to cross DEKAL at 6,000 and 250 KTS." I make no excuse for that. However, IMMEDIATELY upon noticing this error we admitted our mistake and notified Miami that we were unable to comply. The Controller had plenty of time to either relieve us from the restriction, or give us off course vectors so that we could comply. Instead he spent his time both berating us, and then being completely unwilling to help us with relief. It was shocking and completely unprofessional in my opinion.

In the realm of CRM, the First Officer and I had to agree to not be angry with this devolving situation, and remain professional. The situation was affecting our airmanship on the arrival. At one point, I remember asking my First Officer to not accept any more of that Controller's behavior and ask for a supervisor and phone number if he did it again. If I'd have been the only flight unable to comply then we wouldn't have had to endure the rant we received. In my opinion, despite whether this was an ongoing issue; we gave ample time to get relief. We were given none.

Synopsis

Air carrier flight crew was questioned by Approach Control when they had failed to program an "expect to cross at" note on the WAVUN into their FMS while on descent into FLL and, as a result, failed to meet the restriction when it was given.

Time / Day

Date : 201207

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : PHX.Airport

State Reference : AZ

Altitude.MSL.Single Value : 16000

Aircraft

Reference : X

ATC / Advisory.TRACON : PHX

Aircraft Operator : Air Carrier

Make Model Name : Embraer Phenom 100

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use.STAR : Eagul5

Airspace.Class E : PHX

Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 3400

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 350

ASRS Report Number.Accession Number : 1026658

Human Factors : Human-Machine Interface

Human Factors : Training / Qualification

Analyst Callback : Attempted

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation - Altitude : Undershoot

Anomaly.Deviation - Procedural : Published Material / Policy

Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

The EAGUL5 arrival can be misleading for aircrew and could result in an unsafe position. If an aircrew were to pass HOMRR just below 16,000 FT, in accordance with the arrival procedure, and then be required to be between 11,000 and 10,000 FT within four miles, an unsafe descent rate could ensue (1,500 FT/NM or > 6,000 FT/min). Avionics systems read "HOMRR at or below 16,000 FT" to be "16,000," and when calculating ability to be between 11,000 and 10,000 FT in four miles, determines that it cannot be done and thus reads unable. Please consider altering the STAR to allow a more gradual descent.

Synopsis

Phenom 100 Captain reports that his FMC incorrectly reads the HOMER crossing restriction on the EAGUL5 RNAV to PHX as a hard altitude instead of "at or below" as depicted. This makes the VNNOM crossing restriction impossible to achieve.

Time / Day

Date : 201207

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : MEM.Airport

State Reference : TN

Altitude.MSL.Single Value : 14000

Environment

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : MEM

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Route In Use.STAR : TAMMY4

Airspace.Class E : MEM

Component

Aircraft Component : FMS/FMC

Problem : Design

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1025869

Human Factors : Workload

Human Factors : Confusion

Human Factors : Fatigue

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Analyst Callback : Completed

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Commercial
ASRS Report Number.Accession Number : 1025867
Analyst Callback : Completed

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We were on the TAMMY4 arrival ELD transition into MEM. We were given a "descend via" clearance. Everything was going fine until the descent to cross TAMMY between 16,000 and 10,000 FT, followed 2 miles later by ROCAB at 10,000 FT and 230 KTS. Three things happened in fairly quick succession that contributed to me missing the crossing restriction. I was looking at the vertical guidance supplied on the MFD (the green data) and it was showing the descent rate that I was currently doing. It didn't seem right so I did some mental math and increased my descent rate also checking for the snowflake which wasn't showing (found out later that it had fallen out when the FMS had briefly gone into roll mode).

Then ATC gave us a runway change which distracted us and when we had answered we both realized that we would not make the crossing restriction and notified ATC immediately. I believe the root of the problem was that: 1) I didn't realize the snowflake was disabled, 2) I originally thought the green VNAV info on the MFD would give me the bottom of the 16,000 to 10,000 FT envelope since ROCAB is so close to TAMMY and 3) I was distracted with the runway change and lost awareness for enough time to not make the restriction.

Contributing factors included: hurrying because we had been delayed; there were new arrivals in Memphis--this was our first time on this arrival landing to the North; some weather deviations; and an early morning report for duty. Our errors

included: not remembering that the snowflake will become disabled if the aircraft goes into the roll mode; not catching that the snowflake wasn't coming up because it was disabled; not using the range to altitude (banana bar) to it's fullest extent; not holding off on worrying about the runway change until past the crossing restriction; not realizing that the green VNAV data on the MFD wouldn't necessarily give me the bottom of the altitude envelope at TAMMY even with ROCAB being so close; finally, not backing up the automation with good old math. As a result we crossed ROCAB on speed but about 4,000 FT high.

I do not believe that our briefing was to blame because we completely briefed and cross checked the arrival with the FMS but the automation was where I made my mistake. In the future I will make sure that the primary sources for descending via an arrival are the snowflake and mental math--not the green MFD VNAV--because that is giving information for the next fix only and with an altitude block not necessarily the bottom of said block.

Callback: 1

The Captain advised she had been commuting into MEM on another air carrier jump seat shortly after this event and was told that carrier had bulletined the flight crews not to accept the TAMMY arrival because of the same issue, the FMS' failure to "look ahead" to the more restrictive fix and instead simply provide guidance to the higher altitude in the "crossing window."

Narrative: 2

On descent into MEM we were assigned to descend via the TAMMY ONE arrival. The Captain placed 10,000 FT in the altitude alerter so that we would have vertical guidance on the way down. Approaching TAMMY Intersection to cross between 16,000 and 10,000 FT we noticed that we were going to be too high to cross ROCAB Intersection at 10,000 FT. We immediately advised ATC and were told that it was no problem and to further descend for the approach into MEM. The descent info provided to us via the green descent box on the MFD only gave us descent info to reach TAMMY at 16,000 and not ROCAB at 10,000 FT.

We believe the major contributing factor to this event was the complexity and vagueness of the arrivals into MEM. The descent info provided to the crew was inaccurate due to the FMS wanting to cross TAMMY at 16,000 and not ROCAB at 10,000 FT. These arrivals are unlike any descend via's I have flown as they allow too much leeway and too many areas to mess up. Also on the MFD the Green Attitude information next to TAMMY Intersection seems to cover up the altitude information next to ROCAB. These charts are difficult to read as well and with the controllers having issues as well it is causing a much higher workload than should be required to achieve a successful outcome.

Callback: 2

The First Officer advised the fleet utilizes a Collins FMS but was unaware of the exact model. He also suggested there were ongoing anomalies and/or "unfamiliarities on the part of the flight crews" with the operation of the system that have gone unaddressed by either the manufacturers or the airline. He was "reasonably certain" that any runway change they received was simply another northbound runway parallel to the one in their original clearance and not "from a southbound to a northbound" runway that would have affected the necessary altitude at which they would have had to cross TAMMY to meet the restrictions at

ROCAB. He clarified the "snowflake" as being a descent path indicator similar to a glideslope which, had it been activated, should have shown their relationship to the vertical path necessary to meet the crossing at ROCAB. The "banana bar" provides the point along their LNAV path where they would reach the altitude in their altitude alerter. He further advised the aircraft is not equipped with autothrottles which makes flight crew awareness of their descent path more critical in that full VNAV autoflight capability is not available. This lack also illuminates why the presence of the "snowflake" becomes a critical factor.

Synopsis

While flying the TAMMY RNAV STAR to land North at MEM, the flight crew of a CRJ-200 arrived at TAMMY too high to make the crossing restriction of 10,000 FT and 230 KTS at ROCAB, only two miles beyond TAMMY.

Time / Day

Date : 201207

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 19000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : PHL

Aircraft Operator : Fractional

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use.STAR : JAIKE 3 RNAV

Airspace.Class E : ZNY

Component

Aircraft Component : Altitude Alert

Aircraft Reference : X

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1023692

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Other
Analyst Callback : Completed

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Landing TEB on JAIKE arrival; ATC assigned direct JAIKE at 13,000 FT. I left frequency to obtain the ATIS, but had to listen to it 3 times to copy all the info due to the usual problem of frequency "bleed-over". Just as I came back to our primary frequency, ATC asked if we had checked on. The pilot flying replied 'yes' that we had to the Controller. At about that instant I noticed our position and altitude. JAIKE was just behind us and we were passing approximately 19,000 FT in a slow decent. ATC then turned us 20 degrees to the right and I noticed traffic passing 6 miles off our left 1,000 feet below that would have been a factor if not for the turn. A few seconds later ATC issued us "direct ILENE at 13,000 FT. The Controller was quite busy and never mentioned anything about our mistake. I think in retrospect that the ATIS frequency bleed issue is a major cause of distraction for crews landing TEB. It takes an inordinate amount of time to obtain at a very critical phase of the arrival procedure. I also realize that even when I am busy off-frequency I need to remain more aware of the entire situation.

Callback: 1

The Reporter stated that the ATIS frequency in use was 132.85. The bleed over appeared to be from an Approach Control frequency, but he is not certain. Also, on that particular day there was solar flare activity which may have contributed to the poor reception, which even on a good day is not good. Crews arriving into TEB are aware of the issue and because they know ATC will be asking for the ATIS Code, they take the time to get it correct. That is a huge distraction and always takes one pilot out of the loop during a very busy period.

Synopsis

A Captain on the TEB JAIKE 3 RNAV failed to notice that the First Officer did not descend on the arrival because he was intently monitoring the ATIS, which was difficult to hear because of bleed over.

Time / Day

Date : 201207

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZLC.ARTCC

State Reference : UT

Altitude.MSL.Single Value : 24000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Turbulence

Light : Daylight

Ceiling.Single Value : 17000

Aircraft

Reference : X

ATC / Advisory.Center : ZLC

Aircraft Operator : Air Taxi

Make Model Name : Turbo Commander 690 Series

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZLC

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4700

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 200

ASRS Report Number.Accession Number : 1023073

Human Factors : Situational Awareness

Human Factors : Training / Qualification

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

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

While in cruise at FL240, Radar showed a line of precipitation as scattered. Center did not report any significant weather ahead. The flight had included route deviations for thunderstorms here and there. We entered clouds at FL240 and in about 30 seconds sustained significant altitude changes and airspeed fluctuations. I also temporarily lost radio communications with Center. I made a 180 degree heading change and descended to FL210. The aircraft had accumulated approximately 1/4 inch of ice. I was able to re-contact Center who provided vectors and altitudes. It is my belief that we entered an embedded, rapidly developing thunderstorm that was not painted on our radar and not shown on the weather radar. I took necessary actions to protect the crew and aircraft.

Synopsis

AC690 Captain reports entering a developing thunderstorm while IMC at FL240 with no indications on Radar or Nexrad. ATC communications are lost at the same time and the reporter elects to turn 180 degrees and descend to FL210.

Time / Day

Date : 201207

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZMP.ARTCC

State Reference : MN

Relative Position.Angle.Radial : 355

Relative Position.Distance.Nautical Miles : 50

Altitude.MSL.Single Value : 9000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Windshear

Light : Daylight

Ceiling.Single Value : 8000

Aircraft

Reference : X

ATC / Advisory.Center : ZMP

Aircraft Operator : Personal

Make Model Name : Cessna Stationair/Turbo Stationair 6

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZMP

Component

Aircraft Component : Altitude Hold/Capture

Aircraft Reference : X

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 1660
Experience.Flight Crew.Last 90 Days : 38
Experience.Flight Crew.Type : 1020
ASRS Report Number.Accession Number : 1022976
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Direct IFR to MSN at 11,000 FT. The buildups were going higher than 11,000 FT. I requested and was assigned 13,000 due to cloud buildups. The buildups were getting bigger and more numerous as the flight progressed. The top of the cloud deck was also rising. Nexrad showed small areas of moderated precipitation about 40 NM ahead, Storm Scope showed no discharges nearby. I entered one relatively benign looking build up. The turbulence was more than expected. One of bumps upset the contents of the cabin. I requested descent to 7,000 to get out of the clouds. MSP Center assigned me 9,000 and I set 9,000 FT in the C206 auto pilot and programmed the descent rate and slowed the plane down. During the descent, I asked for and was given deviations left and right of course to stay out of the darker more turbulent clouds. I was looking at the Nexrad and Storm Scope displays to avoid additional surprises. There were notable updrafts and down drafts. The auto pilot made moderate changes to the pitch attitude to maintain the descent rate. I was transferred to Volk approach. Shortly after the transfer, Volk reiterated 9,000 was my assigned altitude. I looked at the altimeter and my altitude was 8,200 FT. The autopilot did not capture the 9,000 FT setting. I immediately disconnected the auto pilot and initiated a climb back to 9,000 FT. I did not monitor the altitude adequately, due turbulence and preoccupation using the Nexrad and Storm Scope to avoid further upsets. The auto pilot did have 9,000 FT set. I do not know why it did not capture 9,000 FT. I have many hours using the C206. Occasionally it will not arm when climbing to a pre-selected altitude and this is something I watch for. I had not ever had it fail to arm and capture a descent altitude. The autopilot seemed to function fine for the duration of the flight. Perhaps I double pressed or hit another button during the set due to turbulence? Switching frequencies happened during a high workload part of the flight, while I was assessing the clouds (did not want to be surprised again). Check, check and recheck even in high workload phases of flight.

Synopsis

C206 pilot reports an altitude deviation while attempting to descend to 9,000 FT and deviate around buildups using a Storm scope and Nexrad with limited success. The autopilot was set to capture 9,000 FT but did not do so and the reporter was alerted by ATC at 8,200 FT.

Time / Day

Date : 200707

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 1500

Environment

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 8000

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : Embraer Legacy 450/500

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Flight Phase : Initial Climb

Route In Use.SID : RUUDY 4

Airspace.Class B : EWR

Airspace.Class D : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : First Officer

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 7500

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 70

ASRS Report Number.Accession Number : 1022205

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation - Altitude : Crossing Restriction Not Met

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

When flying the departure WENTZ intersection had an altitude of 1,500 FT which was exceeded by 200 - 300 FT. New York told us not to descend, there was no conflict.

Synopsis

EMB500 First Officer reports exceeding the WENTZ crossing restriction during the RUUDY4 departure from TEB.

Time / Day

Date : 201207

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Relative Position.Distance.Nautical Miles : 3

Altitude.MSL.Single Value : 1800

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Dawn

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Taxi

Make Model Name : BAe 125 Series 800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Ferry

Flight Phase : Initial Climb

Route In Use.SID : RUUDY 4

Airspace.Class B : EWR

Airspace.Class D : TEB

Component

Aircraft Component : Flight Director

Aircraft Reference : X

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 6000

Experience.Flight Crew.Last 90 Days : 200

Experience.Flight Crew.Type : 450
ASRS Report Number.Accession Number : 1021965
Human Factors : Situational Awareness

Events

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

Assessments

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

Narrative: 1

Departure from TEB on the RUUDY 2 departure with BREZY transition was assigned for an empty ferry flight. My First Officer was to fly the leg. The departure was loaded in the FMS and the flight director was to be used in NAV mode. The pilot flying had set 2,000 FT in the altitude selector. Our airplane uses the Proline21 system. The departure calls for 1,500 FT at WENTZ then 2,000 FT at TASCA (or assigned by ATC). After a normal takeoff I ran the checklist while the SIC was hand flying the airplane following the flight director. 1,500 FT was reached before WENTZ and I realized that he was not leveling off. I called it ("Altitude, go back to 1,500!") but by the time he reversed the trend and descended we had reached 1,800 FT. New York Approach made a friendly (I think) statement: "for future reference do not climb to 2,000 FT until passing WENTZ."

After our short flight we debriefed what had happened. He was blindly following the flight director and forgot to level off at 1,500 FT even though he knew the altitude restriction. I believe that multiple factors contributed to the event. I have flown many times with this crew member, including that particular departure. Knowing the departure, before the takeoff a preselection of 1,500 FT was a safer approach with VNAV preselected. Even though we briefed the departure, including the altitude restriction, the event took place. This shows that the flying pilot was not fully competent in the automation on this airplane and relies too much on the Flight Director on the departure phase of the flight. We talked about the event and I explained to him that the FMS and flight directors as well as autopilots are tools that we have for more efficient and safer flights but that you need to fully understand their limitations and constantly check that they are doing what they are supposed to do. When approaching an assigned altitude (or course or heading) it should be checked that the flight director (or autopilot) shows a trend of leveling off and if not, immediate action must be taken. I explained to him that the best way to set up the departure is to have the flight director set on NAV and VNAV with 1,500 preselected. Being set on NAV only provides lateral guidance and requires much more attention when approaching the altitude restriction with a greater risk of overshooting the altitude. Even though the FMS points were verified before takeoff

with 1,500 at WENTZ the Flight Director cannot be blindly followed. In this case the flight director would have leveled off at 2,000.

During my next recurrent training I will mention the event so that maybe they can incorporate this type of automation issue in their training. Also knowing my crewmember and having flown with him before multiple times, including this departure, gave me I guess an overconfidence of his skills and his understanding of the flight director potential issues. He had told me that that he understood the 1,500 restriction and had setup 2,000 as the final altitude on the departure. I should have suggested the 1,500 preselection. Allowing the SIC to fly a leg, should always be treated with extra attention and much more lengthy briefs as they often spend a lot of time observing the Captain from the right seat but spend less hands on flying time.

Synopsis

Hawker 800 Captain describes an altitude deviation during the RUUDY4 departure from TEB, with the First Officer flying. The altitude placed in MCP altitude window was 2,000 FT and the departure was hand flown in NAV only.

Time / Day

Date : 201207

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 1700

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Ceiling.Single Value : 6000

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Personal

Make Model Name : Cessna Citation Sovereign (C680)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Training

Flight Phase : Initial Climb

Route In Use.SID : RUUDY FOUR

Airspace.Class B : EWR

Airspace.Class D : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Private

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 420

Experience.Flight Crew.Last 90 Days : 56

Experience.Flight Crew.Type : 30

ASRS Report Number.Accession Number : 1021732

Human Factors : Training / Qualification

Human Factors : Situational Awareness

Human Factors : Human-Machine Interface

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

While on the RUUDY Four departure out of TEB, I made the inadvertent error of allowing my altitude to deviate above the 1,500 FT floor restriction on the first part of the departure procedure. The first part of the departure procedure is clear in stating "Climb heading 240 degrees to intercept course 260 degrees to WENTZ, cross WENTZ at 1,500..." I crossed WENTZ at about 1,700+-, while recognizing my error. I quickly arrested my ascent at which time ATC then cleared us to climb to 6,000 and turn on course to our initially assigned fix along our flight. There were not any ATC or TA alerts that I was aware of from this inadvertent altitude deviation. This is a clear cut case of positive aircraft control, staying ahead of the aircraft, and not rushing. The first two items are easier to justify in this case than the last contributing factor of being rushed. Being new to this airplane it does take some getting used to. People who fly the CE680 know it is a rocket ship for lack of better term; it really wants to fly. The TEB airspace is difficult and demanding; one must be on top of their game. Therefore it is necessary to stay on top on the aircraft, reduce power, and arrest climb rates sooner.

I think that nerves combined with relatively low time in type were the main factors causing loss of positive aircraft control, contributing ultimately to the busted altitude. Finally, we were rushed out onto the runway while only briefing the SID quickly. Even though we had done it many times, in this case we should have delayed our departure and completed a full brief considering the many involved steps in this SID. This factor certainly did not help our case and made it a more difficult situation to contest with. Factors to take away from this are and prevent further mishaps are simple; staying ahead of the plane, briefing the SID properly even if that means delaying, and maintaining positive aircraft control. The Captain flying with me (I was pilot flying) was certainly on top of things and assisted in quickly pointing out the error and helping arrest the climb. He taught me more about trim use when flying the plane which is a very big component to maintaining positive aircraft control with regards to CE680. In the future, combined with the other aspects discussed above, trim will certainly be on the top of my list.

Synopsis

Rookie CE680 First Officer describes the factors leading up to an altitude deviation during the RUUDY 4 departure from TEB.

Time / Day

Date : 201206

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : Citation V/Ultra/Encore (C560)

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use.SID : RUUDY4

Airspace.Class B : EWR

Airspace.Class D : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 5000

Experience.Flight Crew.Last 90 Days : 90

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 1020147

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

My original clearance was to depart TEB on Runway 1 via the Teterboro 8 SID but, after receiving taxi clearance, my departure was switched to Runway 24 RUUDY 4 (RNAV). I briefed the SID to myself and noted the altitude restrictions....WENTZ at 1,500 FT and TASCA at 2,000 FT. I am sure I crossed WENTZ at 1,500 FT and then climbed to 2,000 FT. After the Departure Controller radar identified me and gave me a climb to 5,000 FT, he informed me I was supposed to maintain 1,500 FT until crossing a point that I was not familiar with. It was not clear to me if he was referring to a radial of a navaid or a DME fix. All I could make out was "just so you know, you are to maintain 1,500 FT until 160". I did not think it was appropriate to debate the controller at that time; I just apologized and continued on the Controller's instructions. The RUUDY4 SID does not contain any instructions like that of what the Controller said. I think there may have been some misunderstanding between all of the last minute clearance changes.

To my knowledge there were no other aircraft affected by my departure and neither myself nor the Controller made a major issue out of it. In the future I will ask for clarification to everything I have not heard or understood 100%.

Synopsis

The single pilot of a CE560 was advised by departure Controller that he had climbed to 2,000 MSL prematurely while departing TEB on the RUUDY RNAV SID although he believed he had maintained 1,500 MSL to WENTZ as charted prior to climbing to 2,000 MSL.

Time / Day

Date : 201206

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZAB.ARTCC

State Reference : NM

Altitude.MSL.Single Value : 16500

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility.Visibility : 5

Light : Night

Ceiling.Single Value : 21000

Aircraft

Reference : X

ATC / Advisory.Center : ZAB

Aircraft Operator : Government

Make Model Name : UAV - Unpiloted Aerial Vehicle

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Utility

Flight Phase : Climb

Route In Use : Direct

Airspace.Class E : ZAB

Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Government

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 2300

Experience.Flight Crew.Last 90 Days : 60

Experience.Flight Crew.Type : 100

ASRS Report Number.Accession Number : 1019368

Human Factors : Human-Machine Interface

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Miss Distance.Vertical : 1500
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

I requested a climb from FL190 to FL250 to climb above weather. Before entering into a climb I asked the Second Officer to perform a full sweep with the camera to look for cloud location and adverse weather. None was noted.

Climbing through FL210 conditions were encountered that affected the performance of the aircraft and resulted in a loss of altitude from FL210 to 16,500 MSL. Due to my efforts to fully regain positive control of the aircraft I was unable to declare an emergency as the main concern was to regain positive control of the airplane and prevent further descent. As soon as I regained positive control I initiated an immediate climb to the cleared altitude of FL250. ATC advised of the deviation in altitude. I advised ATC that the descent was due to weather and the aircraft currently in a climb to FL250. The flight level request was amended to FL290 in order to fly above weather.

Synopsis

While attempting to climb above weather the pilot of a UAV lost control of his aircraft at FL210 and lost altitude to 16,500 MSL before regaining control and retarding the climb.

Time / Day

Date : 201206

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 41000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Windshear

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

Make Model Name : Citation III, VI, VII (C650)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Weather Radar

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Accessory Drive Section

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 8920
Experience.Flight Crew.Last 90 Days : 94
Experience.Flight Crew.Type : 839
ASRS Report Number.Accession Number : 1018608
Human Factors : Human-Machine Interface

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 3500
Experience.Flight Crew.Last 90 Days : 100
Experience.Flight Crew.Type : 330
ASRS Report Number.Accession Number : 1018618

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Declared Emergency
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

We were flying north-east bound at FL410, flying from the southwest. I was the Captain, and the First Officer was flying. We were above an under cast flying toward a rapidly developing line of weather that stretched from the Southwest through Western Midwest [and then] from the West turned south and continued. Our aircraft is equipped with both on-board weather radar as well as NEXRAD radar imagery provided via XM through a Garmin GPS. Our weather briefing before takeoff showed the tops of the weather at around FL250, an altitude that we could easily top. By the time we reached the area about an hour later, convective SIGMETs had been issued report the tops approaching FL450. As we approached the line, we were able to visually see tops of the individual cells. Comparing our

visual analysis, both radars, and suggestions from ATC, we came up with our plan for getting to the east side of the weather. The southern line of weather was several miles behind the southwest line, so we decided the safest plan was to fly east, past the southern line, then turn to the south-southwest to pass through the gap between the two lines. While we were flying east, the on board radar showed a gap between two cells directly ahead. We could see both cells visually as well. We considered continuing straight ahead, versus our original plan. About that time we entered the under cast and visibility became nil. We requested FL430 multiple times, but were unable to climb due to traffic. Neither the NEXRAD nor ATC radar showed the gap we were seeing, so we decided to continue with our original plan and began a turn to the southwest. As we took up our southwesterly heading, the on board weather radar failed. During the next few minutes, we flew west-southwest, to get to the gap based on the NEXRAD and ATC advice. We requested a climb to FL430 or FL450, but were denied again due to traffic. Also, as a result of the weather and multiple aircraft deviating, the center frequency was very congested. After getting handed off to Center, it took between 5-10 minutes to check-in with Center

As we approached the gap on the NEXRAD, we began a turn back to the south. Suddenly we encountered increasing turbulence, with 3 to 4 hard jolts of turbulence, followed by a strong updraft. The autopilot disconnected due to its inability to overcome a strong updraft. I assumed control of the airplane and hand flew the aircraft throughout the remainder of the event. We encountered possible severe turbulence and began an uncommanded, uncontrolled climb. We advised ATC, declared an emergency due to our inability to control altitude. We were granted clearances to FL430 and FL450. We climbed to FL450 in under a minute. Immediately we encountered a downdraft, and were cleared to a lower altitude. In addition to the altitude fluctuation, the turbulence continued to be moderate verging on severe. The episode took only two to three minutes, and we ended up flying eastbound and were cleared to descend to FL390. A couple of airliners followed our rough track, and also reported severe turbulence. As we exited the weather, the right-hand Chip Detector annunciator illuminated. According to the checklist, it is an advisory indication and suggests shutting down the engine if the conditions allow. All other engine instruments indicated normal, so we elected not to secure the engine. At this time we were approximately 150 miles to an en route airport, and decided to land there to have the engine looked at. Post flight examination revealed minor lightning strike damage to the radome, both wing tips, and the fuselage fuel tank drain mast. In all there were about half a dozen dime size or smaller spots evident of lightning.

Having discussed the flight with the First Officer, we agreed that there were several circumstances that contributed to our weather encounter. The most obvious was the failure of the on board radar. The on board radar is the best source of information about the location of storm cells. Losing it left us effectively blind. Frequency congestion, virtually everyone in the controller's sector was deviating, leading to an abnormal amount of radio chatter. This delayed our ability to make course changes and collaborate with ATC about the weather their radar was painting. Also, it made it difficult to report the loss of radar, and get extra assistance in circumnavigating the weather. Inability to climb to a higher altitude, we were weight limited to FL410 on takeoff. As we burned fuel, we requested FL430. Unfortunately due to other traffic, we weren't able to climb. Had we been able to climb to FL430 or 450 we most likely could have maintained visual separation from the storm cells, NEXRAD lag. Knowing that NEXRAD data is not

current, we had to make our best educated guess as to where the well defined gap showing on the NEXRAD actually was located. It's also possible that if part of the line in front of us was dissipating, the on board radar showed the gap before the NEXRAD. The NEXRAD showing the solid line contributed to our decision to turn rather than fly straight ahead as described earlier in the narrative. There were no injuries to any of the three passengers, just a few spilled drinks. The Citation Service Center found a bearing casing in the accessory gearbox that had half of the case coming apart. It was their belief that this was not caused by lightning and had likely started at an earlier date. Whether or not the deterioration was sped up by turbulence is inconclusive. As a precautionary measure the Service Center also inspected the aircraft for severe turbulence and found NO damage. The engine has been repaired, the minor lightning damage repaired, radar replaced, and aircraft has returned to service.

Narrative: 2

[Narrative #2 contained no additional information.]

Synopsis

While attempting to avoid a line of thunderstorms and at FL410 using NEXRAD and on board Radar, A CE650 flight crew experiences a Radar failure and severe turbulence resulting in altitude excursions. An emergency is declared and the flight is cleared to FL450 then eventually down to FL390. Upon clearing the weather the RH Chip Detector illuminates and the crew elects to divert for maintenance.

Time / Day

Date : 201206
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737-300
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class A : ZZZ

Component

Aircraft Component : Traffic Collision Avoidance System (TCAS)
Aircraft Reference : X
Problem : Improperly Operated

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 200
ASRS Report Number.Accession Number : 1017650
Human Factors : Confusion
Human Factors : Human-Machine Interface
Human Factors : Communication Breakdown
Human Factors : Situational Awareness
Human Factors : Training / Qualification
Human Factors : Time Pressure

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

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Experience.Flight Crew.Last 90 Days : 187
Experience.Flight Crew.Type : 3000
ASRS Report Number.Accession Number : 1017409

Events

Anomaly.Conflict : NMAC
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

ATC gave us a descent clearance from our cruise altitude of FL360 to FL340. The Copilot started the descent using the Vertical Speed mode of the autopilot. I was the pilot not flying. As the aircraft passed through FL350, we received a TCAS Traffic Alert. Because the Copilot had selected a high rate of descent on the Vertical Speed selector, our traffic alert quickly change to a TCAS Resolution Advisory (RA), telling us to "Monitor Vertical Speed." At that time, the Copilot turned off the autopilot and responded to the RA. We were still in a steep descent. Events were starting to take place rapidly. ATC called us and told us of traffic below at FL330. He must have asked what we were doing and I told him we were responding to a TCAS RA. He questioned my response and again I told him that we were responding to a RA. I responded to the ATC call while monitoring the Copilot's actions. This is where we probably descended through our clearance altitude of FL340. When I looked at the TCAS information on the Vertical Speed indicator, it seemed to me the Copilot was not reacting properly for the information displayed. The green arc was a band about 500 FPM wide starting at about minus 2,000 FPM and ending at about 2,500 FPM. The red arc started at minus 2,500 FPM and went below that. I told the Copilot he had to reduce his descent rate, but he believed he needed to increase his rate of descent; that made me hesitate and rethink my interpretation of the display. I again told him we needed to stop descending. I believe the aircraft was descending 3,000 FPM or more. The Copilot still believed he needed to continue this descent. I told the Copilot I had the aircraft while I grabbed

the control yoke and pulled up. This action stopped the aircraft's descent and started a shallow climb. I remember seeing a solid red colored traffic symbol with a -300 next to it. The traffic passed under us and slightly to our right. For a two thousand foot descent, the Copilot selected a high rate when first descending out of FL360 for the altitude loss required (2,000 FT). That probably is what triggered the TCAS Alert. I should have taken over aircraft control earlier. My decision was delayed because of my expectation that my experienced Copilot would respond correctly to the TCAS display; that made me hesitate and question my correct interpretation. That cost valuable time and critical loss of altitude. Also the calls from ATC distracted me and delayed my processing of the situation.

Narrative: 2

I was the First Officer and pilot flying. We were at FL360 and given a clearance to descend to FL340. I went to the Descent page and executed Descend Now. The aircraft started a 1,000 FPM descent until approximately FL355 when it reached the descent path and pitched over to a 3,000 FPM descent. An RA was triggered approximately three seconds later, saying, "Monitor Vertical Speed."

I immediately kicked off the autopilot and referenced the TCAS. There was a huge red band from approximately -700 FPM to -4000 FPM. There was a very small green band from about 500 FPM to 700 FPM. I mistakenly read the TCAS and initially increased the descent. I tried to tell the Captain to notify ATC of our RA and that we would be descending below FL340. He was trying to tell me to level off, but I was trying to tell him I was trying to comply with the RA. We were talking over one another with little or no time to spare to fix the problem. He started to pull back on the yoke about the time I realized that I needed to shallow the descent. We leveled off at FL334, 600 FT below our assigned altitude.

After the event, I heard ATC asking if we had heard him calling out the traffic at FL330. I never heard the call. I learned after the event that they had called after the RA had gone off. At that point, I was fully trying to comply with the RA and tuning the radio out so I didn't hear the traffic call. By the [time the] Captain answered the traffic call, precious seconds were lost instead of him trying to correct my mistake. Another threat was this event happened VERY fast. At the descent rate we were at and the short descent, there was no room to make the error I did. A lot of time we get the luxury of time to catch our error and rectify it. Not in this case. Another threat was being startled. It is a fairly low work environment in the mid FL300s and an RA at that altitude gets your attention. I was startled and it took a few seconds to realize what was happening. I happened to misinterpret what I saw.

Another threat was the TCAS instrument itself. In the -300 it is a round dial. When the RA occurred, we were at -3,000 FPM, which is about the four to five o'clock position on the dial. It was all red until about the eight o'clock position. It was not immediately apparent to me that the TCAS wanted me to shallow the descent looking at the instrumentation. I think in the heat of the moment I looked down and swapped the dial from the left being zero to the right being zero and felt the urge to push through the red to the green on the left. I recommend that all TCAS instruments in the future be vertical so pilots, in the heat of the moment, would see clearer pictures of what to do.

Another threat is the lack of communication of the threatening aircraft prior to the event. In most of my other RA events, I could see a situation developing. In this case, I was startled and made a wrong decision.

Synopsis

A B737 First Officer responded incorrectly to a TCAS RA after he increased the aircraft's rate of descent when the resolution was to decrease the descent rate.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : IAH.Airport

State Reference : TX

Altitude.MSL.Single Value : 10800

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : I90

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Nav In Use : FMS Or FMC

Flight Phase : Descent

Airspace.Class E : I90

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

ASRS Report Number.Accession Number : 1017483

Human Factors : Human-Machine Interface

Human Factors : Distraction

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met

Anomaly.Deviation - Procedural : Clearance

Detector.Person : Flight Crew

Detector.Person : Air Traffic Control

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

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

Narrative: 1

Inbound to IAH at FL330, the Houston Center Controller issued a clearance to cross HAMMU at 10,000 ft and 280 KIAS. According to the FMS, the aircraft was about 13 minutes away from HAMMU when the clearance was given. The clearance was accepted, read back by the PM, verbalized by the PF and entered into the FMS and PFD and confirmed by both pilots. A descent was not initiated at this point. About 7 minutes away from HAMMU the Controller queried us about whether we were going to be able to comply with our clearance. The PM indicated that we probably could, the PF immediately initiated a descent at just below MMO/VMO with the speed brakes deployed and the thrust levers at idle. About 3 or 4 minutes from HAMMU the Controller queried us again and the PM indicated that we were doing our best. We were instructed to contact the next Controller and given a new frequency. We checked in with new Controller and crossed HAMMU at about 10,800 ft and 290 KIAS.

In this case the sole cause of this deviation was the PF, me, not paying close enough attention to the task at hand. The PM and I were engaged in a conversation and I allowed myself to become distracted from my primary responsibility...flying the airplane. Normally when given a clearance like this, with a delayed initiation of the descent, I pull the tray out from the glareshield and articulate to the PM how many minutes it will be when the descent will be initiated and, sometimes, at what descent rate. In this case I did none of that and the result was an altitude and speed deviation. It could be articulated that the PM could have "monitored" more closely, and that likely that is true, but ultimately it is my responsibility to do my job. If I had done that this would not have occurred.

Suggestions: In the future, I will be more diligent in ensuring that I comply with the company's SOP, suggested best practices, as well as my own standards of conduct to ensure that this never happens again. There is no conversation that is that interesting that it can't be delayed until we are safely at the gate with the parking brake set. Lesson learned.

Synopsis

EMB-145 flight crew missed a crossing restriction issued by ATC. First Officer, Pilot Flying, attributed the error to distraction caused by a conversation with the Captain.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : MDW.Airport

State Reference : IL

Altitude.MSL.Single Value : 28000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZAU

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use.STAR : MOTIF4

Airspace.Class A : ZAU

Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Experience.Flight Crew.Last 90 Days : 166

ASRS Report Number.Accession Number : 1017416

Human Factors : Communication Breakdown

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Communication Breakdown.Party2 : ATC

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1017414
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - 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 : Human Factors
Contributing Factors / Situations : Aircraft
Primary Problem : Human Factors

Narrative: 1

We had the FMC programmed with the correct altitudes for the MOTIF 4 Arrival into MDW. We were given our initial descent from FL390 to FL330. During the descent, we were given a crossing restriction of 50 west of BFD at FL240. I put FL240 in the MCP and programmed the crossing restriction in the FMC. The aircraft was in a 1000 fpm descent as we were still below the path. At FL280 Chicago Center called and asked where we were. We responded FL280 with the restriction of FL240 50 west of BFD. I then noticed that we had left VNAV PATH and had arrived at the restriction of 50 west of BFD 4,000 FT high.

Narrative: 2

VNAV must have gone to Speed and we did not catch the change.

Synopsis

After receiving a crossing clearance 50W of BDF at FL240, the flight crew of a B737-700 failed to monitor autoflight performance and crossed at FL280.

Time / Day

Date : 201206

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : PHX.Airport

State Reference : AZ

Altitude.MSL.Single Value : 37000

Environment

Flight Conditions : VMC

Light : Dusk

Aircraft

Reference : X

ATC / Advisory.Center : ZAB

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use.STAR : EGUL6

Airspace.Class A : ZAB

Component : 1

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Altitude Alert

Aircraft Reference : X

Problem : Improperly Operated

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Last 90 Days : 221

ASRS Report Number.Accession Number : 1017411

Human Factors : Communication Breakdown

Human Factors : Training / Qualification
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
ASRS Report Number.Accession Number : 1017421

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Undershoot
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

We were at FL400 before given a step-down to start the EAGUL 6 Arrival to PHX. At one point, we were given descent to FL370 and soon after to continue to FL360. I entered FL370 in the Cruise page and selected VNAV. FL360 was in the MCP Altitude window, but we did not descend. Checking in with ABQ Center, we gave them our current altitude, and he asked us if we were given a restriction. At this point, we got confused after seeing FL360 in the MCP Altitude window. Center again queried us and we admitted that we weren't sure exactly what altitude we were to descend to. He then gave us the "descend via" clearance and we proceeded uneventfully to Sky Harbor.

Narrative: 2

[No substantive additional information was included in the secondary report.]

Synopsis

A B737-700 flight crew failed to properly program ATC descent clearances into their FMS and Altitude Alert window and, thus, stopped their descent from FL400 at FL370 vice FL360.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Relative Position.Distance.Nautical Miles : 5

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 30

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : BAe 125 Series 800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use.SID : TEB8

Airspace.Class B : EWR

Airspace.Class D : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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.Total : 6450

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 1500

ASRS Report Number.Accession Number : 1017341

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Distraction
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : FLC Override Automation
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

We were on [TEB8] departure from TEB. When the pilot flying engaged the autopilot it did not capture the imminent charted altitude restriction. The autopilot was immediately disengaged, and corrective action was taken. During that corrective action, ATC assigned a higher altitude of 3,000 MSL.

To prevent this from happening again I will reduce the climb rate on initial departure prior to engaging autopilot [when I am the pilot flying]. When performing pilot not flying duties I will only complete the essential after take-off checklist items when there is a low altitude restriction and will monitor more closely aircraft condition before completing the checklist.

Synopsis

When the autopilot failed to capture a crossing restriction altitude on a TEB SID the flight crew was forced to manually attempt to return to the charted altitude. ATC assisted by clearing them to a higher altitude.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 29000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Learjet 60

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Air Traffic Control.Radar : 20

Experience.Air Traffic Control.Non Radar : 20

Experience.Air Traffic Control.Military : 27

Experience.Flight Crew.Total : 13000

Experience.Flight Crew.Last 90 Days : 95

Experience.Flight Crew.Type : 2500

ASRS Report Number.Accession Number : 1016979

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

Miss Distance.Vertical : 800

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

[We were] flying through an area of weather at FL290. Without warning aircraft was caught in an updraft. Immediate call to Center to advise of the uncontrollable ascent; aircraft vertical ascent of about 700 to 800 FT. Once the aircraft was under control [we] returned to assigned altitude. Center immediately asked if all passengers were okay. They were and we continued to destination without further incident.

Synopsis

LR60 Captain reported and uncontrolled 800 FT climb from FL290 because of updraft.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZFW.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 19000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility.Visibility : 0

Light : Daylight

Ceiling.Single Value : 2000

RVR.Single Value : 0

Aircraft

Reference : X

ATC / Advisory.Center : ZFW

Aircraft Operator : Air Carrier

Make Model Name : Shorts SD-360

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Cargo / Freight

Flight Phase : Cruise

Route In Use : Vectors

Airspace.Class A : ZFW

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 4700

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 380
ASRS Report Number.Accession Number : 1016976
Human Factors : Other / Unknown

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

On a typical, hot, Texas day I was flying a relatively light payload of cargo with building thunderstorms near Dallas and Houston. Our original flight plan was scheduled to make a fuel stop in Houston Hobby, then continue to destination. Upon looking at the current radar summary and satellite, the captain and I decided to change our flight plan to Shreveport as the cells appeared to be moving in separate directions. Houston appeared to be in the path of the largest part of the storm. I had an XM weather display as well as the on-board WX radar to monitor the storms as we approached. The movement of the storms changed as they were growing rapidly, and the gap between them was getting smaller. About 50 miles to the south of the storms Houston Center advised that the gap was closed and aircraft had not penetrated the line for almost an hour. After discussing with the Captain, the on-board radar still showed almost a 15 mile gap in the cells with heavy precipitation. The tops in all the adjacent areas were reported 24,000 FT and lower. We were cruising at 17,000 FT and requested a block altitude of 16,000 to 18,000 FT in case of turbulence. Houston Center handed us off to Ft. Worth Center, who subsequently climbed us to FL190, deleting our block altitude clearance. We were told that the area was clear and we were given "Deviations as necessary for Weather". I slowed the plane to our turbulence penetration speed before entering the area between the cells "painted" on the radar. The flight conditions included some light and moderate precipitation, trace rime ice, and light to moderate chop. The captain issued a PIREP to the Controller as light chop, however, for just a moment or two we were caught in a moderate down draft and lost about 400 feet of altitude. We were close to the company limit on our Turbine Temps, and I elected that it was not necessary to add power. This resulted in slightly more time spent in our altitude deviation. Fort Worth acknowledged our deviation and advised us to return to FL190 when able. I returned to FL190 as soon as the aircraft was able, and within 15 more minutes we were out of IMC and descending for Shreveport. We continued the rest of the way to destination without further incident and delivered out freight.

Synopsis

SD3 First Officer reports losing 400 feet from FL190 while passing between thunderstorms in IMC with with some moderate down drafts. The engines were operating near their limits, delaying the return to assigned altitude.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 17000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class E : ZZZ

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Air Traffic Control : Enroute

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

ASRS Report Number.Accession Number : 1016894

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Air Traffic Control : Enroute

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

ASRS Report Number.Accession Number : 1016895

Human Factors : Communication Breakdown

Human Factors : Training / Qualification

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

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Overshoot
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

During climb, received climb clearance to 17,000 FT. While climbing with autopilot engaged (as pilot flying) we received clearance to "Climb to 280." I believe First Officer readback "Climb 17 for 280." First Officer reset altitude set window and pointed; I confirmed FL280 by pointing and [stating] verbally "280". As we were climbing through FL180 ATC called with "[Company] say altitude climbing to." First Officer responded "FL280." ATC said "Stop your climb, descend to 17,000. Then Controller said, "I said turn to heading 280." First Officer reset altitude to 17,000. I stopped climb at 18,200 FT. We reset our altimeters to last setting and descended to 17,000. After level, First Officer queried ATC with "Are we having or going to have any issues?" ATC controller said "No." At no time was there any doubt in either of our minds that we were cleared to FL280 by this controller. This was a correctly applied procedure with readback of our ATC instructions by this crew to this controller, and we were professional in all of our procedures and techniques.

Narrative: 2

[Narrative 2 contains no additional information.]

Synopsis

B737-800 flight crew heard and read back clearance from Center Controller to "climb to 280." During subsequent climb, Controller advised flight crew that the clearance was for "heading 280."

Time / Day

Date : 201206

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 3

Light : Night

Ceiling.Single Value : 3700

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Fractional

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.SID : RUUDY 4

Airspace.Class B : EWR

Airspace.Class D : TEB

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1016376

Human Factors : Time Pressure

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Workload

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Fractional
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1016377
Human Factors : Workload
Human Factors : Distraction
Human Factors : Physiological - Other
Human Factors : Situational Awareness
Human Factors : Time Pressure

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Weather
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Chart Or Publication
Contributing Factors / Situations : Airspace Structure
Primary Problem : Ambiguous

Narrative: 1

Departing Runway 24 TEB on the RUUDY 4, we crossed WENTZ Intersection at 2,000 FT instead of 1,500. The incorrect altitude had been set. Upon checking in with NY Center we realized the mistake and Center issued instructions to descend to 1,500. Once at 1,500 we were immediately given instructions to climb to 6,000. In giving the instructions ATC said we needed to be more careful flying the departure. We noticed immediately followed by ATC instructions to descend. During taxi we were instructed to contact clearance delivery for a reroute. The reroute was quite different and required a fair amount of changes to the FMS. As we reached the hold short line Tower immediately cleared us for takeoff. We did not take adequate time to brief the departure and misinterpreted the altitude. Never allow yourself to be rushed; especially after last minute changes given to your flight plan.

Narrative: 2

Late night flight, IMC, weather, feeling the pressure to get off on time, given new ATC clearance on taxi out. We became pre-occupied with getting the new clearance into the FMS. Although we reviewed the departure, it was brief and it was a little difficult to see chart with night vision being interrupted by cockpit lighting. I also felt rushed by Tower and my own personal pressure to depart on time.

Synopsis

A CE525 departed on the TEB RUDDY 4 following an extensive ATC reroute during taxi and subsequent FMS reprogramming but forgot to level off at 1,500 FT and were told by ATC at 2,000 FT to descend.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 28000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Corporate

Make Model Name : Gulfstream IV / G350 / G450

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZZZZ

Component

Aircraft Component : Horizontal Stabilizer Trim Motor

Aircraft Reference : X

Problem : Failed

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Engineer

Experience.Flight Crew.Total : 5600

Experience.Flight Crew.Last 90 Days : 40

Experience.Flight Crew.Type : 850

ASRS Report Number.Accession Number : 1015988

Human Factors : Workload

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Altitude : Overshoot

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : FLC Overrode Automation

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

During climb with the autopilot engaged, the aircraft attempted to level off at assigned altitude of FL280. The aircraft began to porpoise and the electric pitch trim failed. The autopilot disconnected and the aircraft climbed to 28,300 FT. Evasive action was immediately taken to correct the altitude deviation by hand flying the aircraft. The electric pitch trim was reset and autopilot was re-engaged. We were then given a higher altitude assigned and began to climb to it when the electric trim failed again and the autopilot disconnected. We informed ATC that we were no longer RVSM equipped due to equipment failure. We requested decent to FL280 to leave RVSM airspace and continued the flight at that altitude until decent.

Synopsis

A G-IV electric pitch trim failed while climbing into RVSM airspace which caused an altitude overshoot at FL283 so RVSM was canceled and the flight continued at FL280.

Time / Day

Date : 201206

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : JFK.Airport

State Reference : NY

Aircraft : 1

Reference : X

ATC / Advisory.Tower : JFK

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

Route In Use.Other

Airspace.Class B : JFK

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : JFK

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Flight Phase : Final Approach

Airspace.Class B : JFK

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1015895

Human Factors : Distraction

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Environment - Non Weather Related

Primary Problem : Human Factors

Narrative: 1

On VOR 13L approach in JFK we might have gone below altitude at DMYHL due to wake turbulence encounter with proceeding aircraft. When I looked we might have been off altitude by about 150 FT to 200 FT. It was very close to DMYHL. We had a visual on the airport, and did not get a visual on aircraft ahead until about 1 NM before DMYHL. I was pilot not flying during the flight.

Synopsis

An EMB-145 Captain reported deviating below altitude assignment on arrival to JFK when they were distracted by a wake vortex encounter.

Time / Day

Date : 201206

Place

Locale Reference.ATC Facility : RJJJ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : IMC

Aircraft

Reference : X

ATC / Advisory.Center : RJJJ

Aircraft Operator : Air Carrier

Make Model Name : B747-400

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 : Cruise

Route In Use : Oceanic

Airspace.Class A : RJJJ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1015869

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Speed : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

Cruising 35000 experienced moderate turbulence+; of such intensity also accompanied by extreme wave action that the acft deviated from assigned FL by 800 feet above FL350. The Captain disconnected the autopilot to avert exceeding structural limits. The acft also exceeded Mmo momentarily. The event lasted approx 40 to 60 seconds. The Captain was able to return to altitude. The remainder of the flight was uneventful.

Synopsis

B747 First Officer describes a turbulence encounter with wave action, that results in the aircraft climbing 800 feet above FL350 while exceeding Mmo. The event occurred several hundred miles east of Japan over the Pacific ocean.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 15000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : Global Express (BD700)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use.STAR : JAIKE 3

Airspace.Class E : ZNY

Component

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Design

Problem : Malfunctioning

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 3300

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 700

ASRS Report Number.Accession Number : 1015526
Human Factors : Workload
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface
Human Factors : Confusion
Analyst Callback : Completed

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

On the JAIKE 3 RNAV arrival into TEB, we were told to cross JAIKE at 13,000 FT as depicted on the STAR. Left our assigned altitude of FL190; inputted direct to the 13,000 FT on the FMS and set VNAV to allow the autopilot to descend. 4 miles from JAIKE, we noticed we were still high (about 2,000 FT) and then increased our decent rate to make the crossing restricting. Approximately one mile later our FMS sequenced to the next waypoint ILENE and then the Controller asked to increase our descent rate which I acknowledge. Soon after, the Controller handed us off to the next sector. Careful watch over the FMS computer would have prevented us from having to hurry up and increase our rate of descent. The computer calculations from the FMS were off and it would have had us approximately 1,000 FT high at the location of JAIKE if we didn't turn off VNAV and go into VS. The Controller may have seen we were not going to cross at 13,000 FT and that is why they asked us to increase our rate of descent.

Callback: 1

The Reporter stated that his aircraft has the Honeywell Primus 2000 FMS. The FMS was properly programmed and flying the profile correctly until approaching JAIKE. During that phase of flight the aircraft was slowing to 250 KTS and was apparently intending to comply with the ILENE constraint, but not the JAIKE constraint. The Reporter confirmed, when asked about the behavior, that he had seen the FMS fly other arrivals and also disregard same altitude constraints which were closely spaced but he had not realized that the behavior was repeating in such a predictable manner.

Synopsis

A BD-700's Honeywell Primus 2000 FMS missed the TEB JAIKE 13,000 FT constraint as the aircraft slowed to 250 KTS and was apparently descending and slowing so as to comply with ILENE, the next 13,000 FT constraint.

Time / Day

Date : 201206

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Fractional

Make Model Name : HS 125 Series

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry

Flight Phase : Initial Climb

Route In Use.SID : RUDDY4

Airspace.Class D : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 5400

Experience.Flight Crew.Last 90 Days : 60

Experience.Flight Crew.Type : 900

ASRS Report Number.Accession Number : 1015497

Human Factors : Confusion

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation - Altitude : Crossing Restriction Not Met

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Upon departure from TEB we were flying our clearance which was the RUUDY 4 departure from Runway 24. The departure was briefed by both crew members prior to engine start and then reviewed again during taxi out for takeoff. After takeoff we began our climb and were following the course as depicted for the RUUDY 4 SID. Less than 1/2 mile prior to WENTZ we were at 1,500 FT MSL and I continued to the climb to 2,000 FT MSL. Upon reaching 2,000 FT MSL and just as the pilot not flying noticed the altitude and began to query me about it, ATC informed us that the initial altitude for the departure was 1,500 FT and to go ahead and stay at 2,000 FT no problem. We continued the SID with no further deviations. After further review with the pilot not flying we agreed that I had misinterpreted the departure instructions. At the time I believed we were to climb to 2,000 FT MSL as long as we made WENTZ by 1,500 FT MSL. After reviewing it I see where this mistake came from, which was reading and letting my mind see what it wanted to see and not actually what was in print. To prevent this in the future I think a more thorough pre-departure briefing between crew members is imperative and must occur every time even during VMC departures and not on a depicted SID. Although these briefings are a part of our SOP's there is obviously still room for improvement and will definitely be addressed internally in our flight department.

Synopsis

HS125 Captain reports misunderstanding the RUUDY 4 crossing restriction of 1,500 FT at WENTZ, thinking it is at or above, and continues to 2,000 FT. ATC informs the reporter of his error.

Time / Day

Date : 201206
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZZ.Airport
State Reference : FO
Altitude.MSL.Single Value : 900

Environment

Flight Conditions : IMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 145 ER&LR
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use.VOR / VORTAC : ZZZZ
Flight Phase : Initial Approach
Airspace.Class D : ZZZZ

Component

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

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
ASRS Report Number.Accession Number : 1015343
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Training / Qualification
Human Factors : Workload
Human Factors : Distraction

Events

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

Assessments

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

Narrative: 1

We had thoroughly briefed the approach for the VOR/DME-2 Runway 13 before commencing the approach. The current weather included a scattered layer of clouds reported at 1,500 FT AGL and good visibility. We had begun the 10 DME arc to intercept the final approach course and were stepping down in altitude as depicted on the approach. The PF had briefed the approach as a Continuous Angle Non Precision Approach (CANPA) and had determined a descent rate of 800 FPM once we passed the 8.0 DME position on the final approach course. We had leveled at 2,000 FT prior to reaching the 8 DME fix and the PF set the descent altitude in the altitude selector on the Flight Guidance Control Panel FGCP since we had agreed to monitor our progress with regards to both altitude and distance as there was an altitude constraint of 1,500 FT at the 5 DME fix from the VOR. However, during the segment from 8 DME to 5 DME, the VOR CDI began to swing well to the left of center without any change in aircraft heading. The PF and PM were both focused on the VOR needle and neglected to notice the airplane descending below the 1,500 FT floor as the airplane had not yet reached 5 DME. By the time the deviation was noticed, the aircraft had descended to 900 FT MSL at the 5 DME point. By this point we had been in VMC for approximately 400-500 FT. The PF continued on a "visual" approach since we had acquired the airport and landed without further incident. The threats encountered were a rushed descent as ATC had left us high until a relatively close distance to the airport. This shortened the time available to prepare for the approach. A second threat was an unfamiliar approach to an airport that the PM had never flown into before. It was also the first time that the PM had flown a CANPA approach since completing initial new-hire training. Further threats were numerous step downs on the approach, a lack of recommended altitudes and distances on the approach plate, and finally, the VOR signal that began wandering for no apparent reason during the final portion of the approach which served as a major distraction to the flight crew. An error on the part of both pilots was focusing too much attention on the VOR CDI deflection and neglecting the vertical progress of the aircraft which led to an undesired aircraft state of being 600 FT below the altitude restraint at the FAF. As the PM, I should have been more vigilant to monitor the descent progress of the aircraft. I could have asked the PF what he would have liked me to focus on: troubleshooting the faulty VOR signal, or monitoring the aircraft's progress. After discussing the event, the PF and I both decided that the appropriate course of action that SHOULD have been taken was to set the altitude to 1500 FT until passing the 5.0 DME fix THEN setting the MDA in the altitude selector. This would have arrested the aircraft's descent at 1500 FT preventing us from descending below the minimum altitude for

that segment of the approach. For future approaches similar to this example I plan to verify each step-down with the PF and verify that it is set appropriately in the altitude selector so as to prevent another incident similar to this one.

Synopsis

An EMB145 crew on a Constant Angle Non Precision Approach (CANPA) set the Mode Control Panel at the Decision Altitude. After becoming distracted they descended early, 600 FT below the Final Approach Fix altitude.

Time / Day

Date : 201206
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SLC.Airport
State Reference : UT
Altitude.MSL.Single Value : 11300

Environment

Flight Conditions : VMC
Light : Dawn

Aircraft

Reference : X
ATC / Advisory.TRACON : S56
Aircraft Operator : Fractional
Make Model Name : Citation X (C750)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Route In Use.STAR : DELTA3
Airspace.Class E : SLC

Component

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

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Fractional
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1014798
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Distraction
Human Factors : Human-Machine Interface
Human Factors : Troubleshooting
Analyst Callback : Completed

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

Flying into SLC on the DELTA THREE RNAV arrival (DELTA.DELTA3). Somewhere prior to MLF, we were told to descend via the arrival and delete speed restrictions. We already were descending in VNAV to JAMMN at 17,000 FT so we selected 11,000 FT (lowest crossing altitude). We had thoroughly briefed the descent/arrival and approach prior to top of descent. We were monitoring the descent at each point and the aircraft was doing a crossing JAMMN at 17,000 FT, DRAPR at 4,000 FT, SPIEK at 13,000 FT, next was HEIRY at 12,000 FT and the aircraft was set up perfectly, after HEIRY I realized we were not going to make PITTT at 11,000 FT. I immediately initiated a non-VNAV descent and missed the altitude by a few hundred feet. 11,000 FT was set in the FMS at PITTT and also at MAGNE, 11,000 FT was set in the preselect and VNAV was armed the whole time with the VGP centered. This event really bothered me and I spent the next few hours thinking about it. I was involved in a similar situation before and caught it at about the same time. I also know there have been multiple instances of this type in recent months and I think I know why this may be happening as both events I have now been involved with share ONE very similar characteristic. On this occurrence PITTT was supposed to be crossed at 11,000 FT. "AT 11,000" the next waypoint 7.1 miles following PITTT was MAGNE and also had a hard altitude "AT 11,000". The FMS tried to cross MAGNE at 11,000 FT and ignored the crossing restriction of 11,000 at PITTT. The other situation I was in was on the JAIKE THREE RNAV ARRIVAL (JAIKE.JAIKE3) into TEB. I crossed JAIKE Intersection high (supposed to be 13,000) while descending in VNAV per ATC instructions and the arrival (VNAV engaged bottom altitude of 7,000 set and all altitudes verified in the FMS). I realized the aircraft was descending to cross the following fix, ILENE at 13,000 FT and ignored JAIKE at 13,000. The commonality between both of the arrivals is that there were two consecutive FIXES with common crossing Altitudes. I truly believe there is a problem with the FMS on arrivals like this and VNAV can not be trusted or possibly the second restricting altitude need be deleted to capture the first restriction. By no means is this an excuse, I, in both cases, should have caught these earlier. In the future, until I am completely confident that I know what I did wrong or the FMS did wrong I will plan on descending on a conservative path in VS to assure these restrictions are met.

Callback: 1

The Reporter stated that his aircraft is equipped with a Honeywell 5000 (Primus 2000) FMS which is standard equipment on the Citation 10. This is the not first time this type anomaly has been seen and because other pilots are also discussing the issue, his Company has published guidelines stating that the automation should

be used with caution. He was not certain if the manufacturer is involved in the investigation of this type altitude deviation. While the altitude constraint was only missed by about 200 FT the Reporter thought it was important to get the word out that because this may be a larger issue than just the two events he has witnessed.

Synopsis

A CE750 Captain noted that his aircraft's FMS was high crossing the first in a series of RNAV waypoints which had the same altitude constraint, but correctly crossed the second waypoint. This behavior had been seen previously on other RNAV arrivals.

Time / Day

Date : 201206

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : DAY.Tower

State Reference : OH

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Light : Night

Ceiling : CLR

Aircraft

Reference : X

ATC / Advisory.Tower : DAY

Aircraft Operator : Air Carrier

Make Model Name : DC-9 10

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Ferry

Flight Phase : Final Approach

Route In Use : Visual Approach

Airspace.Class B : DAY

Person

Reference : 1

Location Of Person.Aircraft : X

Location Of Person.Facility : DAY.TOWER

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 2500

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 1800

ASRS Report Number.Accession Number : 1014639

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Procedural : Published Material / Policy

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

Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

During visual approach Tower advised us of a low [altitude] warning alert. We climbed back up to get on glide [path]. Normal landing occurred.

Synopsis

A DC-9 Captain reported he was alerted by ATC during a visual approach of a low altitude deviation.

Time / Day

Date : 201205
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : N90.TRACON
State Reference : NY
Altitude.MSL.Single Value : 5000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 20
Light : Daylight
Ceiling.Single Value : 5500

Aircraft

Reference : X
ATC / Advisory.Center : ZNY
Aircraft Operator : Personal
Make Model Name : Skylane 182/RG Turbo Skylane/RG
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Personal
Nav In Use : GPS
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class E : ZNY

Component

Aircraft Component : GPS & Other Satellite Navigation
Aircraft Reference : X

Person

Reference : 1
Location Of Person.Aircraft : X
Reporter Organization : Personal
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Private
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 1080
Experience.Flight Crew.Last 90 Days : 35
Experience.Flight Crew.Type : 30
ASRS Report Number.Accession Number : 1014637
Human Factors : Workload
Human Factors : Human-Machine Interface

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Aircraft

Primary Problem : Human Factors

Narrative: 1

Departed with IFR flightplan for SBY with a substantial rerouting. Due to wanting to get launched as we were being met at destination, and knowing the rerouting would cost extra time, I decided to enter only the first intersection (WEARD) in the flight plan and program the balance enroute. This plan was compromised by not having familiar paper charts at hand (current charts were available on an iPad which was available to me, expired paper charts were in the airplane, but not at hand), and hesitation programming the G1000 under the pressure of a hand-flown climb with a request for expedited climb from NY Approach. At the time I had about 23 hour in type. I had reached the cleared altitude of 5,000 direct WEARD with LHY next, and was in VMC close to cloud bottoms. Either shortly before or possibly shortly after WEARD intersection, I noticed an altitude deviation (approximately 300 FT low). About the same time my clearance via LHY was amended to Direct ETX, which put me back closer to the planned route. The deviation was immediately corrected without complaint from ATC, but certainly not something I am familiar with, having successfully flown approximately 600 hours IFR in a C172 equipped with KLN94 and KAP140 over the past six years.

Contributing factors: - lack of experience with G1000 (at the time about 23 hour, about ten of those solo)- failure to enter the reroute before departure increased workload in visual climb- some unfamiliarity with iPad charts that were available (Foreflight) - failure to activate autopilot altitude hold immediately on reaching cleared altitude.

Correctives: - add G1000 experience before flying in complex airspace- take time to do flight plan entry before departure - use autopilot for both climb and enroute when IFR. I am certain that this would not have happened had I been flying my previous aircraft even though it did not have altitude hold on its autopilot. My familiarity with programming the KLN94 would have meant a much lower workload at the time. The altitude deviation likely had no safety implication, but it could have. After another ten hours solo with the G1000 on that same trip, I am already much more confident with its operation.

Synopsis

A C182 pilot had an altitude deviation while attempting to program a G1000 which had not been completed prior to takeoff due to time constraints.

Time / Day

Date : 201206

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ATL.Airport

State Reference : GA

Altitude.MSL.Single Value : 14000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZTL

Aircraft Operator : Air Carrier

Make Model Name : B757-200

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Route In Use.STAR : HONIE

Airspace.Class E : ZTL

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZTL

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class E : ZTL

Aircraft : 3

Reference : Z

ATC / Advisory.Center : ZTL

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class E : ZTL

Person

Reference : 1
Location Of Person.Facility : ZTL.ARTCC
Reporter Organization : Government
Qualification.Air Traffic Control : Fully Certified
ASRS Report Number.Accession Number : 1014457
Human Factors : Situational Awareness
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : ATC
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

I was on D9. R9 was working about 6 inbounds to ATL on the HONIE arrival with minimal in trail requirement. The first aircraft in line, Air Carrier X descended early, and that plus his loss of the higher altitude tailwind caused the second aircraft in line to begin to overtake. The R-Side slowed the second aircraft (Air Carrier Y) to 250 KTS and turned them 15 [degrees left] to counteract the overtake. This then caused the third aircraft (Air Carrier Z) to begin to overtake by a 130 KTS difference. Air Carrier Z was told "begin your speed reduction" referring to the 250 KTS assignment at HONIE. Air Carrier Z's speed did not change much and when he began to get close to Air Carrier Y, R9 issued "Air Carrier Z just maintain one six thousand." His Mode C showed 16,800 FT at that time and he did not respond. R9 again said, "Air Carrier Z, just maintain one six thousand." He responded, "Unable." I said to R9, "Unable? What does that mean?" R9 transmitted, "Air Carrier Z, unable?" He responded, "Unable, we are through 15,600 FT," and he continued descending, intending to cross HONIE at 14,000 FT. R9 issued, "Air Carrier Z stop your descent and turn 20 degrees right." About that time the aircraft lost separation. "Begin your speed reduction" is an ambiguous clearance; should use "reduce to 250 KTS."

Synopsis

ZTL Controller described a loss of in trail separation with ATL arrival aircraft, claiming the phraseology used by the RADAR Controller was a bit ambiguous.

Time / Day

Date : 201205

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZOB.ARTCC

State Reference : OH

Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Aircraft

Reference : X

ATC / Advisory.Center : ZOB

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZOB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1014307

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

While level at FL350 during cruise we encountered severe turbulence leading to the inability to maintain airspeed and altitude of the aircraft. While the pilot flying, was trying to maintain control of the aircraft, I called ATC and notified them that we were unable to maintain flight at FL350 and needed FL330, ATC did not respond. While trying to keep the aircraft from over speeding and entering a low airspeed stall from the airspeed fluctuations, immediate action was required. The pilot flying intervened with the automation, reducing thrust and starting a decent. ATC responded with an altitude verification call and I responded with telling him we called and received no response. We reported the turbulence we had and the fluctuations on the airspeed indicator and VSI. He asked if we wanted to declare an emergency and we declined, due to having control of the aircraft at that time and having no injuries in the cabin. He apologized and told me he was on a "land line" and didn't hear my call, then gave me a phone number to Quality Assurance. I explained that I had to maintain the safety of the aircraft and had to react appropriately to the condition. The remainder of the flight was uneventful. Upon landing I spoke to ATC via the phone number I received. ATC understood and explained to me that they filed the deviation under a weather anomaly. I wrote the aircraft up for encountering severe turbulence in the maintenance log and was informed by the Mechanic that a fuel leak was found on the left, lower wing outside the engine during the inspection. I don't believe the turbulence could have been prevented, however having an "over seeing" manager to listen to the radio, while the Air Traffic Controller was on the land line, would have kept us from having to make a decision without ATC knowing what was happening.

Synopsis

EMB-175 Captain reports encountering sever turbulence at FL350 with the First Officer flying. With large airspeed excursions occurring a call to ATC for a lower altitude is made with no response and a descent is initiated without clearance. This is noticed by ATC and the crew is informed that the initial call was missed due to being "on the land line."

Time / Day

Date : 201205
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : TEB.Airport
State Reference : NJ
Altitude.MSL.Single Value : 1500

Environment

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

Aircraft

Reference : X
ATC / Advisory.TRACON : N90
Aircraft Operator : Air Carrier
Make Model Name : Gulfstream V / G500 / G550
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Route In Use.SID : RUUDY4
Airspace.Class B : EWR
Airspace.Class D : TEB

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 9080
Experience.Flight Crew.Last 90 Days : 60
Experience.Flight Crew.Type : 3000
ASRS Report Number.Accession Number : 1014212
Human Factors : Situational Awareness

Events

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

Assessments

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

Narrative: 1

After departure from TEB Runway 24 the crew brief/actions were: positive rate of climb, retract landing gear, 400 FT AGL retract flaps, set climb power with autothrottles and engage the autopilot. With FMS LNAV, VNAV and autopilot engaged with the altitude capture mode annunciated on the RNAV 1 departure, the aircraft overshoot the level off altitude of 1,500 MSL by 120 FT (1,620 MSL). As the pilot flying I used the "touch control steering" mode to descend to and re-capture the correct altitude. ATC made no mention of the slight altitude deviation and there were no traffic conflicts.

The previous model GLF 5/V model I flew did not have any overshoot problems on this departure. It was a night departure and I had to engage the LNAV lateral mode after takeoff instead of having it selected before the takeoff roll. The aircraft was at a light weight and we used a high climb angle to alleviate noise at this noise sensitive airport. In the future I will more closely monitor vertical performance when using the VNAV mode.

Synopsis

A GLF5/550 First Officer climbed through an altitude constraint on a TEB Runway 24 SID when the autopilot failed to level.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : FLO.Airport

State Reference : SC

Relative Position.Distance.Nautical Miles : 6

Altitude.MSL.Single Value : 1600

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 6

Light : Daylight

Ceiling.Single Value : 700

Aircraft

Reference : X

ATC / Advisory.Tower : FLO

Aircraft Operator : Personal

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

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class D : FLO

Component

Aircraft Component : Flight Dynamics Navigation and Safety

Aircraft Reference : X

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 5000

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 2300
ASRS Report Number.Accession Number : 1014203
Human Factors : Distraction
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Training / Qualification
Human Factors : Workload
Human Factors : Confusion

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

While flying an unfamiliar light twin aircraft with avionics that I was unfamiliar with, I flew an RNAV approach to about 200 FT above minimums. While distracted with the avionics, I flew below the prescribed altitude for the segment I was on. I was not past the final approach fix, but believed I was and the Tower asked me to check my altitude due to a low altitude warning they got on my aircraft. I checked and saw that I started the descent too early and climbed back up and regained the glide path for this approach and completed the approach and landing without further incident.

Synopsis

A pilot unfamiliar with an aircraft's RNAV equipment became distracted during the approach and descended below the final approach fix altitude where ATC notified him of a low altitude warning.

Time / Day

Date : 201205

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZFW.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 18700

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Ceiling : CLR

Aircraft

Reference : X

ATC / Advisory.Center : ZFW

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class A : ZFW

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1013591

Human Factors : Communication Breakdown

Human Factors : Fatigue

Human Factors : Workload

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : Flight Crew

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1013331

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Separated Traffic

Assessments

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

Narrative: 1

While climbing through 15,000 FT to level at 17,000 MSL on an assigned heading vector of 360 degrees and an assigned speed of 250 KTS we received a clearance to "climb to FL350." We read back the clearance, confirmed it per SOP, set altitude on the FMC and then continued our climb. However, upon climbing through about FL187, ATC called to "verify" that we were level at 17,000 FT. [When advised we weren't, he] promptly assigned FL230, and a heading of 320 degrees.

After about another ten minutes en route, we received a request to call Center upon landing. After landing I called as requested and was advised that a "pilot deviation" had occurred. This was explained to me as an ATC separation deviation of 4.5 NM and 600 FT vertical with a CRJ in front of us.

At no time was there any doubt of the altitude assignment in the cockpit. Nor did we receive a TCAS alert, or perceive a collision threat. It is now apparent that ATC meant to say "fly heading 350" not "flight level 350" by mistake as we were certain of the altitude assignment and did read back the clearance without any correction from the controller. I believe that this mistake occurred due to the high ATC workload caused by the thunderstorms in the area.

[A logical solution to events of this type would be to] reduce pilot/ATC workloads, hours of duty, radio congestion, and increase Air Traffic Control training/supervision.

Narrative: 2

There was quite a bit of thunderstorm activity in the area and our flight had been delayed due to an inability to fuel with the lightning that was upon and around the airport. ATC was extremely busy and the ATC frequencies were congested.

There was no confusion in our minds regarding the clearance to climb to FL350. Neither pilot believed we had misheard the clearance

The controller said that, during the event, my readback of FL 350 had been received. Both pilots felt that it was strange that ATC would receive my readback of an assignment to FL350 but that no correction by ATC was issued if that readback was in error.

I believe the Controller miss-phrased the clearance that he intended to give our flight.

Synopsis

Although, while at 16,000 MSL, both pilots of an A320 heard "cleared to FL350" and had readback FL350 ATC was alarmed to note they were climbing out of FL187 and directed them to stop their climb at FL230 and fly a new heading to avoid traffic with which they were conflicted.

Time / Day

Date : 201205
Local Time Of Day : 0601-1200

Place

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

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B747-400
Crew Size.Number Of Crew : 4
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise

Component

Aircraft Component : Hydraulic Main System
Aircraft Reference : X
Problem : Failed

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 17400
Experience.Flight Crew.Last 90 Days : 120
Experience.Flight Crew.Type : 950
ASRS Report Number.Accession Number : 1013541
Human Factors : Communication Breakdown
Human Factors : Fatigue
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 21000
Experience.Flight Crew.Last 90 Days : 65
Experience.Flight Crew.Type : 13300
ASRS Report Number.Accession Number : 1013553
Human Factors : Fatigue

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action

Assessments

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

Narrative: 1

We had a HYD LOW QTY and completed the checklist by turning off the ENG and AUX PUMPS on Number 4 shortly after reaching cruise. Prior to TOD we revisited the checklist and determined that we should turn the pumps back on prior to gear extension. In the checklist it says to turn the pumps on before using FLAPS AND GEAR. The PF turned off the autopilot and hand flew the approach. When calling for flaps 1, we got the FLAPS PRIMARY caution. So the flaps were slow to extend. Turning on the pumps late did not cure the problem. Read the checklist to confirm the situation and turned base for the airport. The First Officer was confused with the display of the secondary flaps and was trying to control speed and altitude while monitoring a new display.

Communication was lacking due to 14 hour duty day and jet lag. I turned on the autopilot as PF was approaching cleared altitude. The bunkies were very involved with advocating corrective actions for the descent through cleared altitude by 400 FT. The Controller confirmed we had the airport and gave us the visual. Typical [approach] that put us a little high on final with our own problem of self inflicted slow flaps. The rest of the approach and landing were uneventful. I debriefed the crew regarding use of autopilot to reduce workload, and how we interpreted the wording of the checklist was wrong and a 14 hour duty day the checklists should be pretty straight forward. On this particular checklist, I would advocate for the words to turn on the pumps before using flaps or gear. With a warning of what will happen if you start using flaps without Number 4 pressurized.

Narrative: 2

[Narrative 2 had no additional information]

Synopsis

A B747-400 flight crew deviated from their heading and altitude clearance while dealing with a hydraulic problem.

Time / Day

Date : 201206

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZFW.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 17000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZFW

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class E : ZFW

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZFW

Aircraft Operator : Military

Make Model Name : Fighting Falcon F16

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Flight Phase : Climb

Route In Use : None

Airspace.Class E : ZFW

Person : 1

Reference : 1

Location Of Person.Facility : ZFW.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

ASRS Report Number.Accession Number : 1013503

Human Factors : Other / Unknown

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
ASRS Report Number.Accession Number : 1014142

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Air Traffic Control
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Brownwood MOA was active FL500 and below, which limits options for vectoring aircraft for sequence into DFW. I had 4-5 jets for the JEN9 arrival, all tied for sequence and other traffic, contributing to moderate-heavy workload, with no D-Side. Several flights of 1-4 aircraft each were flying VFR along the paths, coinciding with paths of previously shortcut and sequenced DFW inbound sequence. The line of jets, descending and F16s climbing, was the same and I was not successful in getting all the transmissions across to all of the merging aircraft before a TCAS alert of a Commercial Jet and a flight of 4/F16s, of which I was not talking to and did not check on my frequency until 20 miles into my airspace and after the event. The Commercial Jet climbed back up and was unable to comply with D10's LOA restrictions for the STAR to cross ISABL at 11,000 FT. Contributing factors include, VFR's requesting flight following, of which the sector was too busy and complex to provide, so I did not provide for all the of VFR requests. I had no D-Side and was unable to find time to ask for one, while the busiest traffic was present. NFW departures to BWD MOA consistently fly through JEN9's decent path. The supervisor was whispering in my ear to make sure I remembered to call the next traffic, as I was waiting for a read back and when that was the next transmission already planned to go out. By the time I got attention back to the scope the Commercial Jet was calling and asking if I had traffic for him, which is when I finally called it 3 miles out, opposite direction, merging. He responded that he was reacting to a TCAS climb. I told him when able try his best to comply with restrictions of which he said he would be unable. This NFW/BROWNWOOD departure traffic and DFW inbound jet traffic TCAS events are common. Therefore, it is unsafe. While the NFW fighter aircraft are VFR, for safety a procedure should be created. My recommendations include: Fighter jets departing over MQP direct Brownwood MOA or depart towards GEENI Intersection direct BWD to peel their routes away from the DFW inbound traffic. Another possibility is to have Hornet and Tomcat East for more vectoring room. Another possibility is to have D10 issue a "maintain VFR at or below 10,000 FT" clearance to let us allow higher VFR altitude, depending on EDNAS traffic and workload, often times when the fighters come to frequency, they are already above 10,000 and in conflict paths with DFW inbound jets. I should have asked for a D-Side. I didn't have time to call D10 but a

D-Side could have helped me, by calling D10 to suggest a climb stop or suggest to work further west and also to ask them to switch the fighter to my frequency, since I was not yet talking to him.

Narrative: 2

[We were] descending via the Glen Rose arrival, direct ISABL to cross it at 11000. Passing 18,000 FT received a TCAS traffic advisory. Two targets at about 7 and 10 miles climbing toward us. I queried ATC about traffic and the controller stated, "Yes, two F-16's at your 11 to 12 o'clock climbing VFR." Just as he/she finished, the TCAS RA commanded a 1,000 FPM climb. I advised ATC we were climbing in response to a TCAS alert. We immediately complied and visually acquired the F-16's which passed approximately 500 FT below us. We climbed from 17,000 back to 18,000 during the RA when we received the "clear of conflict." Advised ATC we were resuming descent and would be unable to comply with crossing restriction at ISABL. I called ATC and spoke with two supervisors who were already aware of the incident, had listened to the tapes, and who were both extremely apologetic for the loss of separation. I did advise one supervisor this could have turned out very badly had we been dispatched with the TCAS inoperative which I believe is something the FAA should review. Dispatching an aircraft without TCAS is rolling the dice with disaster. I forgot to ask and would really appreciate an answer as to why were the F-16's allowed to climb VFR right into the midst of an arrival corridor? Make TCAS a mandatory item per the aircraft MEL. Don't allow military aircraft to climb VFR in controlled airspace.

Synopsis

ZFW Controller described a TCAS conflict event between an DFW Air Carrier arrival and a flight of 4 VFR military jets operating near the Brownwood MOA, the reporter suggesting changes to the airspace and operational procedures.

Time / Day

Date : 201205

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZID.ARTCC

State Reference : IN

Altitude.MSL.Single Value : 35000

Environment

Weather Elements / Visibility : Turbulence

Aircraft

Reference : X

ATC / Advisory.Center : ZID

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER&LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Cruise

Airspace.Class A : ZID

Person : 1

Reference : 1

Location Of Person.Facility : ZID.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

ASRS Report Number.Accession Number : 1013258

Human Factors : Other / Unknown

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1014556

Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

An E170 was on my frequency transitioning through my airspace at FL350. There were reports of constant light to occasional moderate chop being reported and most aircraft were descending to lower altitudes to get better rides. Another aircraft checked on my frequency and after telling the aircraft of the rides to expect they requested lower. The aircraft was not in my airspace so I called on the land line to coordinate lower. While I was off line coordinating I heard over the speaker somebody request something. I got off the line, transmitted in the blind that I was off the line coordinating and I would be right back with them. I then finished my coordination, and descended the aircraft that had requested lower. Then I observed the E170 descending out of FL343. I called the E170 to verify level at FL350. He told me that he had encountered constant moderate chop bordering on severe and the way I understood it the aircraft had to descend to keep his speed. He told me something about being near the safety envelope and needing to descend immediately. He told me he didn't require assistance now that he had descended. I worked the sector for another hour and never had a report of worse than occasional moderate chop. It's the first time in my experience that I've heard of a plane needing to descend so urgently, without an emergency. I felt I was taking care of the aircraft on first come, first serve basis. I'm pretty sure if I could have heard the E170's first request transmission instead of going over the speaker since I was on the line, I could have gotten him his clearance in time for him to not have to take matters into his own hands.

Narrative: 2

While flying at FL350, we encountered an area of severe turbulence. We were operating in VMC. The aircraft had large changes in pitch airspeed and altitude. I took the controls to exit the area of turbulence with a descent to FL330. We called ATC to inform them that we were unable to maintain FL350 and were descending to FL330. We received no response from ATC. Once we exited the severe turbulence and level at FL330 we called the cabin to ensure there were no injuries. ATC then asked us to verify our altitude as FL350. We explained that we called and told him we were descending and that we encountered severe turbulence at FL350. He asked if we were declaring an emergency. We said "NO". We were out of turbulence and there were no injuries on board. ATC said he was "on a land line and missed the call", and then he gave us a phone number to call for possible pilot deviation. We did what was needed to maintain control of the aircraft and the safety of the people on board. Upon landing Maintenance inspection found some damage.

Synopsis

ZID Controller described an unexpected descent by an Air Carrier at FL350 during a turbulence encounter. The controller did not hear the initial descent request because of land line coordination.

Time / Day

Date : 201205

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 1800

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Dusk

Ceiling.Single Value : 5000

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Corporate

Make Model Name : Learjet 45

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : EWR

Component : 1

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Improperly Operated

Component : 2

Aircraft Component : Altitude Alert

Aircraft Reference : X

Problem : Improperly Operated

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 11000
Experience.Flight Crew.Last 90 Days : 35
Experience.Flight Crew.Type : 15
ASRS Report Number.Accession Number : 1013204
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Communication Breakdown
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 10470
Experience.Flight Crew.Last 90 Days : 14
Experience.Flight Crew.Type : 1804
ASRS Report Number.Accession Number : 1012780
Human Factors : Situational Awareness
Human Factors : Workload

Events

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

Assessments

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

Narrative: 1

I was acting as the pilot not flying on a Part 91 flight in our corporate jet.

We departed TEB on the RUUDY 4 RNAV Departure. The departure was properly set in our dual FMS system. Both myself and the pilot flying verified the information was correct prior to takeoff. The SID requires a 240 degree heading to join a 260 degree course to the WENTZ intersection and level off at an altitude of 1,500 FT. Shortly after climb out, we had joined the 260 degree course and were then handed off to the New York Departure Controller.

I completed the after takeoff check list and noticed we were on course to TASCA intersection as indicated on my MFD at which time I selected 2,000 FT on the altitude pre select. I verified the pilots information was indicating that TASCA as our next fix. I then contacted New York Departure and reported climbing through 1,600 FT for 2,000 FT. The Controller advised that we needed to be at 1,500 FT as per the departure procedure. I then advised we were correcting and selected the altitude preselect to 1,500 FT and the pilot flying immediately disengaged the auto pilot and within seconds we descended from 1,800 FT back to 1,500 FT.

I then selected "direct to" WENTZ intersection on both FMS systems and realized we were still 1.6 miles from the WENTZ intersection. We crossed WENTZ at 1,500 FT and then selected and climbed to 2,000 FT and crossed TASCA. The Controller mentioned traffic was off to our left which we had no visual contact with. I did verify the traffic on TCAS but there was no conflict and no evasive maneuvering was required.

Narrative: 2

I was the acting pilot flying.

I saw the next fix on my MFD as TASCA and (with the autopilot now engaged) reset the altitude select from 1,500 FT to 2,000 FT, the required altitude at TASCA.

I then hit the direct to button on the FMS and realized we were still 1.5 miles BEFORE WENTZ.

Synopsis

A Learjet 45 flight crew flying the RUUDY RNAV SID from TEB climbed above the mandatory 1,500 FT MSL restriction prior to passing WENTZ. The pilot flying had noted TASCA as their "next" fix and unilaterally selected its 2,000 FT MSL crossing restriction in the altitude select window. When alerted by ATC the PF realized they were still 1.6 NM from WENTZ which was still the active waypoint. Worth noting in the individual narratives is the conflict as to which pilot performed which actions.

Time / Day

Date : 201205
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 4800

Environment

Flight Conditions : IMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : 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 Phase : Initial Approach
Route In Use : Vectors
Airspace.Class B : ZZZ

Component

Aircraft Component : Compass (HSI/ETC)
Aircraft Reference : X
Problem : Failed

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1013078
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew
When Detected : In-flight
Result.Air Traffic Control : Issued New Clearance
Result.Aircraft : Equipment Problem Dissipated

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During vectors to ILS Approach aircraft HSI/Compass failed. First Officer was flying pilot at time of event and the auto pilot was engaged. The weather was in and out of towering cumulus clouds, cloud bases at approximately 2,500 FT and visibility was 10 plus mile. We were in a descending left turn to heading 320 degrees and altitude 5,000 FT MSL. As aircraft started to level and fly heading 320 degree both First Officer's and Captain's HSI began spinning causing aircraft to enter approximately 25 degree right bank turn. "EFIS COMP MON" amber CAS illuminated with associated master caution during event. The autopilot continued to follow the HSI till I (Captain) disengaged and leveled wings using attitude indicator along with outside visual references. I (Captain) took over pilot flying duties for remainder of flight. After turning autopilot off, our heading varied from assigned by approximately 30 degrees and altitude was 200 FT low. While avionics failure was occurring Approach tried calling several times to assign lower altitude and intercept heading vector, but we were unable to initially respond. When we cleared clouds on the north side of final approach course we had a clear view of runway. We advised Approach that we had avionics failure and needed a visual to airport. Approach cleared us for the visual approach approximately 15 miles from runway. Soon after, leveling wings, on final approach course HSI headings returned to normal and all cautions disappeared.

Synopsis

CRJ700 Captain experiences dual HSI failure during approach with the autopilot attempting to follow the spinning HSI's. The Captain assumes control and levels the wings and once in VMC a visual approach is requested. Once established the HSI headings return to normal.

Time / Day

Date : 201205

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SFO.Airport

State Reference : CA

Relative Position.Distance.Nautical Miles : 6

Altitude.MSL.Single Value : 1100

Environment

Flight Conditions : Mixed

Light : Daylight

Ceiling.Single Value : 1500

Aircraft

Reference : X

ATC / Advisory.TRACON : NCT

Aircraft Operator : Air Carrier

Make Model Name : B737-500

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class B : SFO

Component

Aircraft Component : FMS/FMC

Problem : Improperly Operated

Problem : Design

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Last 90 Days : 554

Experience.Flight Crew.Type : 15000

ASRS Report Number.Accession Number : 1013048

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
Experience.Flight Crew.Last 90 Days : 479
Experience.Flight Crew.Type : 4000
ASRS Report Number.Accession Number : 1013280

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Air Traffic Control
Detector.Person : Air Traffic Control
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

A disaster!

Arriving in SFO we were cleared for the TIPTOE [Charted] Visual Approach to Runway 28L--with another air carrier aircraft on the FMS BRIDGE Visual to 28R-- and were flying a -500 with round dials, of course. We had programmed the TIPTOE Visual fixes in the FMS and were flying in LNAV with 1,900 MSL set in the Altitude window. Aircraft turned to a 310 heading in LNAV at OAK 151/14.0, per the arrival. I selected VOR/LOC and dialed in zero feet with the runway in sight. Shortly thereafter, WE LOST VISUAL TO THE RUNWAY DUE TO A LOW SCUD CEILING. At the same time, VOR/LOC was NOT armed because our [FMS NAV MODE] switches were still in LNAV.

I raised the switch and re-engaged VOR/LOC on the MCP, but we had [already] blown through the LOC course, so we were not re-intercepting. We were also below 1,900 MSL so we did not capture and level. I had to hand-fly the aircraft back to the left to rejoin the Localizer. The aircraft was still descending until we leveled at 1,100 MSL. At that time we were ten knots below the minimum speed for our flaps 5 setting and we could not see the bridge or the runway anymore. We were a conflict with the 28R aircraft, probably right underneath him, at which time we were given a low altitude alert by Approach Control.

It was a disastrous approach, salvaged to an uneventful landing.

Not having glass displays makes this a highly complicated maneuver with nothing to help with situational awareness; an LNAV/VNAV initial routing to a visual maneuver to a localizer approach. There are way too many switches and buttons that have to be engaged at exactly the right time for this to work. I consider myself a competent pilot, but this went from a perfectly briefed and set up arrival to a disaster in about 60 seconds. Seriously, we were not expecting to lose the visual to the runway, and our instrumentation is poor at handling this type of information overload.

Narrative: 2

Losing sight of the runway on a technically difficult approach like the TIPTOE can prove challenging. The Classic aircraft's gauges aren't the best for situational awareness. Forgetting to flip the switch out of NAV is a common mistake. It seems the approaches to our airports are getting more complex; however, our Classic fleet's instrumentation isn't keeping up.

Synopsis

When the pilot flying inadvertently failed to select the appropriate nav modes, a B737-500, equipped with a single FMS and without a CRT map display, failed to comply with track, altitude and minimum configuration airspeed constraints while assigned the TIPTOE CHARTED VISUAL APPROACH to Runway 28L at SFO. They had been cleared to fly the visual procedure side by side with another air carrier aircraft flying the QUIET BRIDGE CHARTED VISUAL to Runway 28R. The reporters' resultant flight path went through the extended centerline of 28L (separated by only 750 FT from 28R) and their descent prior to receipt of a low altitude alert from Approach Control was about 800 FT below their charted 1,900 crossing at BRIJJ. Both pilots stressed the inadequacy of the non-glass single FMS equipment for terminal navigation, particularly with respect to closely spaced parallel approaches which require side by side aircraft to join up from converging lateral tracks.

Time / Day

Date : 201205

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : DAB.Airport

State Reference : FL

Relative Position.Angle.Radial : 156

Relative Position.Distance.Nautical Miles : 3

Altitude.AGL.Single Value : 650

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : DAB

Aircraft Operator : Air Carrier

Make Model Name : MD-88

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 C : DAB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 11000

Experience.Flight Crew.Last 90 Days : 138

Experience.Flight Crew.Type : 4096

ASRS Report Number.Accession Number : 1012977

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Physiological - Other

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Air Traffic Control
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Had been vectored for approach to other runway, but recognized that we would be unable to conduct the approach because of the intensity of weather returns on final. We requested and received vectors to the south runway and quickly briefed the approach. We were given a vector to join final and cleared for the approach. At the FAF we configured and began normal descent procedures. We initially had visual contact with the runway but momentarily lost contact as we passed through showers. We failed to recognize our descent through the MDA and were issued a low altitude alert from the Tower Controller and immediately arrested our descent. We were in visual conditions and runway was insight and we continued to landing.

Because of the time compression we were unable to give adequate time to brief the new approach and reinforce the nuances of a more complex procedure. Also the dynamic nature of the weather conditions lulled us into complacency and we did not follow through with our briefed procedures and callouts.

Synopsis

After being redirected from their original approach due to weather the flight crew of an MD-88 were not fully prepared for their second, non-precision, approach to another runway and descended below their MDA. A timely low altitude alert from the Tower both prevented further error and allowed the approach to be successfully concluded when the flight crew made visual contact with the runway.

Time / Day

Date : 201205
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : TEB.Airport
State Reference : NJ
Relative Position.Angle.Radial : 250
Relative Position.Distance.Nautical Miles : 6
Altitude.MSL.Single Value : 2300

Environment

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

Aircraft

Reference : X
ATC / Advisory.TRACON : N90
Aircraft Operator : Personal
Make Model Name : Skynight 320
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Personal
Flight Phase : Initial Climb
Route In Use.SID : RUUDY 4
Airspace.Class B : EWR

Component

Aircraft Reference : X
Problem : Improperly Operated

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 2150
Experience.Flight Crew.Last 90 Days : 18.7
Experience.Flight Crew.Type : 1291.3

ASRS Report Number.Accession Number : 1012971
Human Factors : Communication Breakdown
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness
Human Factors : Training / Qualification
Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Clearance
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

My clearance was via the RUUDY 4 Departure, radar vectors SBJ, thence... I wasn't given an initial heading or altitude; I briefly looked over the SID, but not close enough to realize there was a route with altitudes for the first few fixes. I had assumed, probably out of habit, and was expecting radar vectors to SBJ as soon as I contacted New York Departure. After departing and contacting New York they didn't give me a heading or altitude so I continued on the runway heading of 240, this put me left of the course to WENTZ and TASCA. I believe I also climbed past the SID altitude, I was then cleared to a higher altitude but I had already gone past 2,000 FT which the SID said to cross TASCA at. I think the confusion arose out of the terminology in the clearance, by using the words "Radar Vectors" I incorrectly thought I didn't need to fly to any fixes in the SID, but would be given a heading to the initial fix of SBJ VOR.

Synopsis

A Cessna 320 pilot, cleared to depart TEB via the RUUDY RNAV SID radar vectors to SBJ, instead took off and flew runway heading rather than the SID track and climbed at will.

Time / Day

Date : 201205

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZLA.ARTCC

State Reference : CA

Altitude.MSL.Single Value : 30000

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class A : ZLA

Component : 1

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : FMS/FMC

Aircraft Reference : X

Problem : Malfunctioning

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1012898

Human Factors : Confusion

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

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

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

On descent into LAX out of FL300 on the SEAVU2 arrival the FMGC in our aircraft would not hold the programmed airspeed entered in the perf descent page (ATC assigned 300+ knots, then later assigned 280 KIAS). I tried several times to select managed speed and was forced by the aircraft (it was pitching up trying incorrectly to achieve 250 KIAS) to return to selected speed and after three attempts found myself almost 1,000 FT above path. (I wrote up the anomalies upon arrival in LAX).

In order to make my restriction of 17,000 FT/280 KTS at KONZL, I selected full speed brakes and disconnected the auto pilot (in order to get full spoiler deflection). We monitored our speed and vertical path and managed to meet the constraint airspeed and altitude at KONZL. As we approached ENGLI we noticed that we were starting to descend below the constraint altitude approximately two and a half miles prior to the fix.

I pushed V/S to stop our descent and was surprised that we continued a gentle descent. At the same time we noticed that the NAV display was indicating that we were 0.3 miles right of course centerline. At this time the First Officer noticed that we were not following the Flight Director. I realized that after stowing the speed brake we had never reengaged the autopilot and the airplane had been tracking pitch and roll attitude in Control Wheel Steering since the speed brakes had been stowed.

We crossed close abeam ENGLI at approximately 15,600 FT (almost 400 FT below constant altitude). A quick visual scan and scan of the TCAS indicated that we were not in danger of a midair collision. A gentle correction to our descent rate reestablished us on path and the autopilot was reengaged. We advised ATC that we were going to miss our altitude constraint at ENGLI. The rest of the approach was flown within parameters and without incident.

The event was caused by our distraction with equipment malfunction and failure to remain aware of the autopilot disconnect. Because Control Wheel Steering is the automatic default in the A320 it can easily be mistaken for an autopilot engaged mode.

We needed better delineation of pilot flying and pilot not flying duties. Only close attention to the path allowed us to catch it (the autopilot disconnect) as early as we did.

Synopsis

An A320 Captain discussed the effects of flight crew confusion and distraction associated with a malfunctioning vertical navigation programming on flight path control and situational awareness.

Time / Day

Date : 201205
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Angle.Radial : 090
Relative Position.Distance.Nautical Miles : 20
Altitude.MSL.Single Value : 10000

Environment

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

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Corporate
Make Model Name : Super King Air 200
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Route In Use : Direct
Airspace.Class E : ZZZ

Component

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

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 4900

Experience.Flight Crew.Last 90 Days : 90
Experience.Flight Crew.Type : 140
ASRS Report Number.Accession Number : 1012697
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

During descent from cruise altitude of FL260, weather was picked up and the Captain heard the altimeter setting of 30.61. Once passing FL180 Captain set altimeter to 30.61 and commented to the copilot about the very high pressure setting. Co-pilot acknowledged the same and the descent continued. ATC never gave a local altimeter during the descent, and never mentioned discrepancy until we leveled at 10,000, then told us to maintain 10,000, while once again not stating the altimeter setting. We acknowledged with level at 10,000 again no mention of an altimeter setting. The co-pilot then got the field in sight and we were cleared for the visual, the co-pilot switched to CTAF, and I queried ATC if my altitude was showing what it should? About then I noticed the co-pilot's altimeter was 1,000 FT below mine set at 29.61. ATC said that we had been up to 600 FT off at the last 3 level offs. Everything turned out normal but there was definitely a break down between the 2 pilots and ATC in that the obvious was never stated, and the altimeter be given and or cross checked between pilots there was a verbal cross check but obviously not a visual cross check.

Synopsis

BE200 Captain reports incorrectly hearing and setting his altimeter during descent, although the Copilot's altimeter was set correctly. This was not detected by ATC or either pilot through three level offs. After being cleared for a visual approach the discrepancy was detected.

Time / Day

Date : 201205

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZHU.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 25000

Aircraft

Reference : X

ATC / Advisory.Center : ZHU

Aircraft Operator : Corporate

Make Model Name : King Air C90 E90

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Direct

Airspace.Class E : ZHU

Component

Aircraft Component : Altimeter

Problem : Improperly Operated

Person

Reference : 1

Location Of Person.Aircraft : X

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 7415

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1012629

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : Clearance
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

After leveling off at my assigned cruise altitude of 10,000 MSL using the autopilot altitude preselect, the Controller asked me to say altitude. When I looked at my PFD altitude display (Garmin 600) it showed approximately 10,600 FT. When I checked the mechanical back up altimeter it showed 10,000 FT. When I cross checked the two altimeter settings I realized that the back up altimeter setting was not correct. I disengaged the autopilot and descended to 10,000 FT using the PFD altimeter and reset the autopilot to altitude hold.

After talking with the owner of the aircraft on my return he informed me that the autopilot altitude capture was linked to the mechanical standby altimeter, not the PFD altimeter. The aircraft was an "other owner" aircraft that I was flying on an infrequent basis and believed that the altitude management process was controlled by the primary PFD altimeter. I am now aware that the PFD back up altimeter must be reset at all times along with the primary and secondary altimeters and altitude capture indications must be verified on both altimeters.

Synopsis

A King Air pilot, unfamiliar with the avionics in the aircraft involved, leveled 600 FT above his cleared altitude because the altitude select/capture mode was predicated on the reading from the standby altimeter, not his PFD altimeter, which he had failed to reset prior to takeoff.