Attachment 6

to Operational Factors / Human Performance Group Factual Report

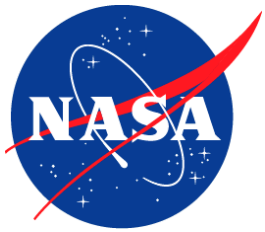
DCA011IA047

ASRS DATABASE SEARCH

Search Request No. 7030

Required Navigation Performance (RNP) Related Incidents

July 12, 2011



Aviation Safety Reporting System
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National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000

TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

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

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

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

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

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: 921001 *(1 of 7)*

Synopsis
B757 Flight Crew reports descending below 14,820 FT prior to ANBUR during the RNAV Runway 35 approach to SEQU. VNAV had become disengaged without the crew noticing.

ACN: 863613 *(2 of 7)*

Synopsis
A B737NG Captain reports that the aircraft's FMC database displays only the DCA RNAV (RNP) 19, and is currently unable to present both the DCA ROSSLYN LDA and DCA RNAV (RNP) 19.

ACN: 853367 *(3 of 7)*

Synopsis
Confusion reigned as the flight crew of a B737-700 struggled to comply with a runway change on the RIIVR STAR to LAX. Lack of facility with and understanding of the B737-700 VNAV functions of the FMS and poor cockpit discipline result in an altitude deviation.

ACN: 802082 *(4 of 7)*

Synopsis
A B737-800 FLT CREW COMPLAINED ABOUT THEIR ATC CLEARANCE ON THEIR APPROACH TO DCA, CLAIMING THE HIGHER THAN STANDARD CROSSING RESTRICTION AND SPEED MADE THE APPROACH DIFFICULT.

ACN: 792097 *(5 of 7)*

Synopsis
A320 CAPT REPORTS ANP VALUES HIGHER THAN APPROACH LIMITS DURING VOR DME 2 RWY 22 APPROACH AT MMPR.

ACN: 763744 *(6 of 7)*

Synopsis
AN ACR PILOT BELIEVES THE SEQU RNAV 35 APCH REQUIRES MORE TRAINING THAN HIS CREW RECEIVED. THE APCH IS DEMANDING AT NIGHT IMC WITH TFC AND MOUNTAINS.

ACN: 721922 *(7 of 7)*

Synopsis
B737-400 FLT CREW ENCOUNTERS MULTIPLE FMS/AUTOFLIGHT FAILURES ON APCH TO JNU.

Report Narratives

ACN: 921001

Time / Day

Date : 201011
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SEQU.Airport
State Reference : FO
Altitude.MSL.Single Value : 13900

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
ATC / Advisory.TRACON : SEQU
Aircraft Operator : Air Carrier
Make Model Name : B757-200
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Approach

Component

Aircraft Component : Autoflight System
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)
ASRS Report Number.Accession Number : 921001
Human Factors : Workload
Human Factors : Situational Awareness

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
ASRS Report Number.Accession Number : 921022
Human Factors : Workload
Human Factors : Human-Machine Interface
Human Factors : Situational Awareness

Events

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
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

On initial approach to SEQU, RNAV (RNP) Runway 35, between DAGMA and ANBUR a descent below the ANBUR restriction of 14,820 FT occurred to approximately 13,900 FT. An immediate correction and return to 14,800 FT was initiated. No terrain cautions or warnings occurred. A major contributer at the time of the incident was VNAV PATH had changed to VNAV SPD, and was not immediately noticed. The FAF altitude of 11,500 FT that was set in the MCP was not reset to 14,900 FT for ANBUR when in VNAV SPD. Strict adherence to all company procedures for SEQU would have most likely prevented this unfortunate event. I think the First Officer's mental alertness (tired) could have played a part, although when asked he denied it.

Narrative: 2

1. We were flying the RNP 35 approach. 2. Auto pilot and VNAV were engaged (we were in VNAV to the best of our recollection). 3. MCP altitude was set correctly for DEVAS at 11,500 FT. 4. Between DAGMA and ANBUR we noticed that the aircraft had not leveled or reduced the decent rate to cross ANBUR at or above 14,900 FT. 5. In the heat of battle, and with the priority to climb right back up to the published altitude, I cannot recall if the reason for the deviation was due to the constraint not being in (or dropping out) of the FMC, or if the VNAV reverted to speed mode. As soon as I noticed it, I immediately corrected. 6. Upon noticing the deviation (at approximately 13,900 FT) we immediately returned to 14,900 FT and completed the approach as published. 7. We were in VMC conditions at all times we were aware of our position relative to the high terrain surrounding SEQU, and at no time did we receive a terrain caution or warning, nor did we ever deviate laterally from the published route. 8. We believe that a combination of a loss of situational awareness between DAGMA and ANBUR while referencing the lengthy checklist items pertaining to the RNP approach (supplemental card) and not noticing that were in some other mode than VNAV path was the contributing factor to the deviation. Furthermore, I can personally say I have only flown the RNP to 35 once

or twice before, so the deviation came as a bit of a surprise since I have been flying to SEQU for a long time and I am accustomed to descending straight down to 12,000 FT in the exact same airspace (see ILS DME Runway 35). Of course, we will be more careful in the future to pay more attention to the path and the altitude differences between the RNP and other approaches more closely.

Synopsis

B757 Flight Crew reports descending below 14,820 FT prior to ANBUR during the RNAV Runway 35 approach to SEQU. VNAV had become disengaged without the crew noticing.

ACN: 863613

Time / Day

Date : 200912
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : DCA.Airport
State Reference : DC

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : B737 Next Generation Undifferentiated
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Final Approach
Flight Phase : Initial Approach

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 : Air Carrier
ASRS Report Number.Accession Number : 863613
Human Factors : Training / Qualification
Human Factors : Confusion

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected.Other
Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Equipment / Tooling
Contributing Factors / Situations : Company Policy
Contributing Factors / Situations : Airport
Primary Problem : Ambiguous

Narrative: 1

In October during my RNP qualification with the Company Check Airman and the Air Carrier's B737 FAA representative in attendance, a discussion on the DCA approaches (because training is using the RNAV (RNP) Runway 19 approach in the simulator) occurred about the fact that our B737 FMS database does not contain the Rosslyn LDA Runway 19 approach. The LDA Runway 19 is in the database and has lower minimum than does the Rosslyn LDA. However, having flown extensively out of DCA, the Rosslyn LDA is the weapon of choice used by Washington ATC to get aircraft landing Runway 19 under a higher overcast to essentially finish the approach as a visual using the Potomac River. The FAA Representative stated that due to our Non-ILS Approach procedures, this approach is considered a raw data approach and as such, should be referred to the QRH and briefed as an abnormal procedure. He also recommended that all crews should then file a report about the approach. I have seen a several year old circular briefings addressing this situation and not explaining how the FMS has a problem entering 2 approaches with the same Runway designation. The database manufacturer and our Air Carrier were, however, going to fix this situation by giving letter designations to each approach such as the LDA Y Runway 19 (Rosslyn) and the LDA Z Runway 19 (LDA Runway 19). Since I have not seen any further response concerning the above situation and with the winter months setting in, I felt in accordance with or FAA representative's instructions concerning the fleet wide report recommendations, this message needs to get out to the crews until the company, the database manufacturer, and the FAA can review this situation.

Synopsis

A B737NG Captain reports that the aircraft's FMC database displays only the DCA RNAV (RNP) 19, and is currently unable to present both the DCA ROSSLYN LDA and DCA RNAV (RNP) 19.

ACN: 853367

Time / Day

Date : 200909
Local Time Of Day : 0601-1200

Place

Locale Reference.Intersection : SKOLL
State Reference : CA
Relative Position.Angle.Radial : 090
Relative Position.Distance.Nautical Miles : 1
Altitude.MSL.Single Value : 9300

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : SCT
Aircraft Operator : Air Carrier
Make Model Name : B737-700
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use.Localizer/Glideslope/ILS : ILS 24R
Flight Phase : Initial Approach
Route In Use.STAR : RIIVR TWO
Airspace.Class B : LAX
Airspace.Class E : SCT

Component

Aircraft Component : FMS/FMC
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 : Pilot Not Flying
Function.Flight Crew : First Officer
Experience.Flight Crew.Last 90 Days : 227
Experience.Flight Crew.Type : 2000
ASRS Report Number.Accession Number : 853367
Human Factors : Communication Breakdown

Human Factors : Distraction
Human Factors : Situational Awareness
Human Factors : Workload
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

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
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Weather at LAX was VFR. The RIIVR TWO Arrival into LAX depicts using the approach to Runway 25L. Knowing we had a 50/50 chance of getting 24R, I decided to hold off loading the ILS 24R with RIIVR transition. I briefed the appropriate portion of the arrival and both the visuals to 24R and 25L as the weather was VFR (but didn't load anything). We maintained 280 KIAS as requested by Approach. Passing RUSTT, Approach told us to slow to 250 KIAS. I loaded 250 in the descent page and the autopilot responded appropriately with VNAV and autothrottles engaged. Approach Control did not assign us a runway until just past HASBO. At that time the autopilot was set holding 250 KIAS with autothrottles and VNAV engaged. Approach then assigned us Runway 24R off of the RIIVR Arrival. The Captain loaded the ILS 24R with RIIVR transition. At the same time we both incorrectly decided to put 2,200 MSL into the MCP ALT window since VNAV and A/T were engaged. The program was executed passing RIIVR and slightly below 12,000 MSL. After executing the program, the autopilot immediately began slowing the aircraft. I noticed the descent page target speed went to 193/flaps instead of maintaining 250 until 10,000 MSL. We both were momentarily confused as to why the autopilot wanted to slow. This was a problem since Approach wanted us at 250 KIAS. After about 4-5 seconds, the Captain noticed the "at or above (xxxA)" altitudes assigned to each point on the ILS 24R, RIIVR transition on the LEGS page. He mentioned that this was the cause and correctly decided to load "hard" altitudes. As he did this, my instincts were to disengage the auto throttle and VNAV system since it was not performing as I wanted it to. (I didn't realize until after touchdown that the autopilot wanted to slow to the FAF speed since it was the only hard altitude there - 2,200 feet). I announced performing these steps, but the Captain and I had been having trouble hearing each other all day due to cockpit noise. He didn't hear me. At this time, the autopilot was holding roughly 1500 FPM in vertical

speed mode. By the time the Captain had re-executed the program with hard altitudes, we were already just below 10,000 MSL and inside MINZA on the ILS 24R. As he finished loading the hard altitudes, he went "heads up" while I went "heads down" to double check his inputs. When finished, I looked up and noticed we were approaching 9,300 MSL about 1.5 miles prior to SKOLL. (SKOLL has a 10,000 feet altitude restriction.) I immediately noticed 2,200 feet was still in the MCP ALT window and selected 9000 feet while simultaneously reducing the descent rate to about 800 FPM in Vertical Speed and LNAV. As I did this, the Captain became aware of the altitude bust and gave appropriate inputs. The remainder of the approach and landing were uneventful. Approach Control never commented on the bust. First, regardless of what I thought I was going to expect, I should have loaded the appropriate approach and transition based on the RIIVR TWO Arrival (in this case ILS 25L, RIIVR transition). I didn't want to have to load the approach twice so I waited. This was a mistake. Second, loading 2,200 in the MCP window (the FAF altitude) was simply not correct. The appropriate altitude in this case while in VNAV and A/T was 12,000. This is the last bold font altitude on the arrival. Per FOM, that is when the A/T and VNAV should be disconnected. Had 2,200 not been in the window, there would have been no issues. Third, this was a wake up call on RNP, A/T, and VNAV. I thought I knew a lot about it, but realize there is more to learn. With the upcoming advanced training coming, we all could use a refresher. Fourth, back each other up. In the case above, we were both so busy with the last minute runway assignment, loading the approach in the box, and reacting to an unexpected autopilot input that we both lost SA which contributed to the altitude deviation.

Synopsis

Confusion reigned as the flight crew of a B737-700 struggled to comply with a runway change on the RIIVR STAR to LAX. Lack of facility with and understanding of the B737-700 VNAV functions of the FMS and poor cockpit discipline result in an altitude deviation.

ACN: 802082

Time / Day

Date : 200808
Local Time Of Day : 1801-2400

Place

Locale Reference.Intersection : HIXIT
State Reference : DC
Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Night
Ceiling.Single Value : 3500

Aircraft

Reference : X
ATC / Advisory.TRACON : PCT.TRACON
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
Nav In Use : FMS Or FMC
Flight Phase : Initial Approach
Route In Use : Visual Approach
Route In Use.STAR : RIVER Visual
Airspace.Class B : DCA.B

Person

Reference : 1
Location Of Person.Aircraft : X
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Experience.Flight Crew.Last 90 Days : 190
Experience.Flight Crew.Type : 320
ASRS Report Number.Accession Number : 802082

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

WE GAVE ATC AMPLE TIME TO PROCESS OUR REQUEST TO PERFORM THE RNAV (RNP) RWY 19 INTO DCA. CONDITIONS WERE VISUAL, BUT WITH LACK OF FAMILIARITY WITH THE RWY 19 APCH, NIGHT CONDITIONS AND THE ASSOCIATED P-56 RESTR AREA, THE FO AND MYSELF CONCLUDED THAT THE ABOVE RNP APCH WOULD KEEP US OUT OF TROUBLE. ATC NEEDS TO DO A REFRESHER ON THE SPECIFICS OF THIS APCH. POTOMAC APCH CLRED US TO CROSS HIXIT AT 3000 FT MSL AND TO KEEP OUR SPD UP (170 KTS) TO SETOC. BOTH OF THESE ATC REQUIREMENTS BOTCHED UP THE APCH. HIXIT HAS A MANDATORY ALT OF 2500 FT MSL, AND THE SPD REQUIREMENT WAS NOT COMPATIBLE WITH THE FMC'S VNAV PATH PROFILE. THE FO HAD FLOWN INTO RWY 19 ON THE RIVER VISUAL APCH BEFORE, THE CAPT (PF) HAD NOT -- BUT WE BOTH HAD A VISUAL ON THE ARPT AND THUS UTILIZED VISUAL PROCS TO GET TO RWY 19. HAD WE BEEN IMC THE APCH WOULD HAVE BEEN TERMINATED DUE TO ATC'S UN-STABILIZING RESTRS. HAVE ATC REVIEW THE OPERATIONAL REQUIREMENTS, ALTS AND SPDS ON THE RNAV (RNP) RWY 19 DCA.

Synopsis

A B737-800 FLT CREW COMPLAINED ABOUT THEIR ATC CLEARANCE ON THEIR APPROACH TO DCA, CLAIMING THE HIGHER THAN STANDARD CROSSING RESTRICTION AND SPEED MADE THE APPROACH DIFFICULT.

ACN: 792097

Time / Day

Date : 200806
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : MMPR.Airport
State Reference : FO
Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.TRACON : MMPR.TRACON
Aircraft Operator : Air Carrier
Make Model Name : A320
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use.VOR / VORTAC : PVR.VOR
Flight Phase : Initial Approach
Route In Use.Other

Person

Reference : 1
Location Of Person.Aircraft : X
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Experience.Flight Crew.Total : 11615
Experience.Flight Crew.Last 90 Days : 85
Experience.Flight Crew.Type : 3075
ASRS Report Number.Accession Number : 792097

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation - Procedural : Published Material / Policy
Detector.Person : Flight Crew
Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Aircraft
Primary Problem : Ambiguous

Narrative: 1

AIRBUS STANDARD RNP VALUE FOR NON-PRECISION APCH NAV APCHS IS 0.37. OUR PROCS REQUIRE US TO VERIFY THE 0.37 PRIOR TO XING THE FAF. OUR PROCS ALSO SPECIFY TO USE THE DEFAULT VALUE UNLESS THE CHART SPECIFICALLY TELLS US TO USE A DIFFERENT VALUE. HOWEVER, THE MANUAL ALSO SAYS THAT THE DEFAULT VALUE IS ONLY 0.37 WHEN THE FMGC HAS DME-DME UPDATING AVAILABLE. IF IT ONLY HAS VOR-DME UPDATING, THE DEFAULT VALUE IS 0.61. THIS IS OFTEN THE CASE IN PVR. IN FACT, I HAVE SEEN THE DEFAULT VALUE AS HIGH AS 0.78 ON THE FINAL APCH SEGMENT. IF WE ARE SUPPOSED TO BE USING 0.37 FOR THE APCH, THE CHART IN PVR NEEDS TO TELL US TO HARD-TUNE IT IN THE FMGC TO PREVENT AN AUTOMATIC INCREASE IN RNP VALUE. THE CURRENT SITUATION SETS THE CREW UP FOR A DOUBLING OF RNP INSIDE THE FAF WITH ABSOLUTELY NO NOTIFICATION WHATSOEVER, LEADING TO A XTRACK ERROR THAT IS POTENTIALLY DOUBLE BEFORE A NAV ACCURACY DOWNGRADE. THIS QUALIFIES AS VERY BAD WHEN CLOSE TO THE GND. AS AN ASIDE, THE RNP VALUE AUTOMATICALLY INCREASES AT PVR EVEN IN THE GPS-EQUIPPED AIRPLANES, WHICH SHOULDN'T HAPPEN. OBVIOUSLY, IF THE FMGC IS RECEIVING GPS UPDATES, THAT'S FAR MORE ACCURATE AND EITHER DME-DME OR VOR-DME UPDATING IS IRRELEVANT. PLEASE GIVE US SOME INSTRUCTIONS ON THE CHART TO HARD-TUNE AN RNP OF 0.37 FOR NON-PRECISION APCHS AT PVR. AS ANOTHER ASIDE, IN NON-GPS AIRPLANES THIS WILL ALSO CAUSE US TO ONLY DO CONSTANT DSCNT APCH PROCS BECAUSE WE'LL GET A NAV ACCURACY DOWNGRADE EVERY TIME.

Synopsis

A320 CAPT REPORTS ANP VALUES HIGHER THAN APPROACH LIMITS DURING VOR DME 2 RWY 22 APPROACH AT MMPR.

ACN: 763744

Time / Day

Date : 200711
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SEQU.Airport
State Reference : FO

Environment

Flight Conditions : IMC
Light : Night

Aircraft

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

Person

Reference : 1
Location Of Person.Aircraft : X
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
ASRS Report Number.Accession Number : 763744

Events

Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

FLEW AN RNAV APCH INTO SEQU. THIS IS THE THIRD RNAV I'VE FLOWN INTO SEQU AND NOT ONE OF THEM WENT AS ADVERTISED. DSNDED TOWARD DAGMA WITH AN FAA GUY IN THE COCKPIT. HE KEPT TRYING TO INSTRUCT US ON HOW TO RUN THE VNAV! THE WAY I UNDERSTAND VNAV, WE DON'T NEED IT ENGAGED UNTIL PRIOR TO DAGMA. WE CAN DSND ANY WAY WE WANT PRIOR TO THAT SO LONG AS WE ENGAGE IT PRIOR TO DAGMA AND FLY IT DOWN AS THE PROC STATES, BUT HIS DISTR IS NOT THE POINT HERE. AT DAGMA WE WERE INSTRUCTED BY ATC TO MAINTAIN 16000 FT, DUE TO TFC THAT WE HAD IN THE VICINITY, COMING FROM THE S, I THINK. WE WERE ALL SET UP FOR THE RNAV (RNP) RWY 35 BUT, OBVIOUSLY COULD NOT FLY THAT, SO WE ASKED FOR AND RECEIVED CLRNC FOR THE VOR RWY 35 APCH. WITH SOME QUICK FLIPPING OF PAGES AND A QUICK BRIEF WE INITIATED THE VOR APCH (WE WERE JUST A FEW MI FROM QIT WHEN WE REALIZED THAT WE COULDN'T FLY THE RNAV). ON THE APCH WE RECEIVED A GPWS WARNING AND EXECUTED A MISSED APCH IN IMC. CAME BACK AROUND FOR ANOTHER TRY AT THE RNAV APCH, WHICH AFTER SOME BRIEFING FROM THE FAA ON HOW TO RUN THE VNAV (REAL DISTR IN IMC, AT NIGHT, IN A TERRAIN ENVIRONMENT) WE SHOT THE RNAV TO RWY 35 SUCCESSFULLY. AGAIN, THIRD RNAV I'VE FLOWN TO SEQU AND NOT ONE OF THEM HAS GONE WELL, OR AS PROMISED IN TRAINING. YOU HAD 2 EXPERIENCED GUYS LAST NIGHT WHO WERE ABLE TO MAKE IT LOOK RELATIVELY SIMPLE. IT WASN'T. I THINK THAT RNAV APCHS COULD BE GREAT, BUT WE ARE ASKING FOR TROUBLE WITH THE LEVEL OF TRAINING GIVEN.

Synopsis

AN ACR PILOT BELIEVES THE SEQU RNAV 35 APCH REQUIRES MORE TRAINING THAN HIS CREW RECEIVED. THE APCH IS DEMANDING AT NIGHT IMC WITH TFC AND MOUNTAINS.

ACN: 721922

Time / Day

Date : 200612
Local Time Of Day : 1801-2400

Place

Locale Reference.Intersection : CUSHI
State Reference : AK
Altitude.MSL.Single Value : 6500

Environment

Weather Elements / Visibility.Visibility : 10
Light : Night
Ceiling.Single Value : 5000

Aircraft

Reference : X
ATC / Advisory.TRACON : A11.TRACON
Aircraft Operator : Air Carrier
Make Model Name : B737-400
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 : Initial Approach
Airspace.Class C : ANC.C

Component

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

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Experience.Flight Crew.Last 90 Days : 230
Experience.Flight Crew.Type : 4800
ASRS Report Number.Accession Number : 721922

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain

Person : 3

Reference : 3
Reporter Organization : Government
Function.Air Traffic Control : Flight Service

Person : 4

Reference : 4
Location Of Person : Company
Reporter Organization : Air Carrier
Function.Maintenance : Technician

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Procedural : Maintenance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Result.General : None Reported / Taken
Result.General : Maintenance Action

Assessments

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

Narrative: 1

I WAS FLYING TO JNU. PLANNED FOR AND BRIEFED RNP RWY 8 ZULU APCH JNU, WITH AN LDA 8 BACKUP. NORMAL DSCNT WITH ZAN. CLRED FOR THE RNP APCH. AT CUSHI BELOW 10000 FT, GOT A 'SINGLE FMC OPS' MESSAGE, ALONG WITH 'MAP' FLAG. I LOST RNP CAPABILITY ON THE R SIDE AND XFERRED ACFT CTL TO CAPT. AT THAT POINT, WE HAD ONLY A SINGLE FAILURE. HE ATTEMPTED TO RESUME RNP APCH, BUT WE HAD TOTAL MCP FAILURE (50000, ALL DIGITS LIT, LOCKED UP, ETC). WE REVERTED TO OUR BRIEFED BACKUP, THE LDA APCH, WHILE HE REFED HIS MAP. WX WAS SUFFICIENT FOR LDA. IN THE MEANTIME I PLACED FMC SWITCH TO 'BOTH ON L.' RESTORED DUAL FMC OPS SO I HAD A MAP AGAIN. CAPT STAYED ON MAP, I STAYED ON LDA RAW DATA AND XCHKED OUR POS WITH COURSE AND DME. IT WAS QUESTIONABLE WHETHER GPS AND MAP WERE ACCURATE, AS WE SAW DEV ON LDA COURSE INDICATOR, SO WE REVERTED TO NAVING SOLELY ON LDA COURSE. IN THE MEANTIME, WE HAD MCP FLASHING, ALT ALERT FLASHING, ALT HORN HONKING, 20 KT XWIND, ICING. IN THE BACKGROUND, I HEARD ZAN HAND US OFF TO JNU RADIO. WE WERE TOO BUSY TO TALK TO ANYONE, JUST FOCUSED ON STAYING ON COURSE, AIRSPD, CONFIGURING, ETC. AT ABOUT THE SAME TIME, AT APPROX 5000 FT WE SAW VASI/ARPT ENVIRONMENT. THERE WAS NO OTHER TFC IN THE AREA. DECIDED FIRMLY TO CONTINUE FOR LNDG AT THAT POINT. I CALLED OUT DEVS FOR COURSE, AIRSPD, POS, DOUBLE-CHKED CONFIGN, WHAT OUR AIRSPD SHOULD BE, ETC. (WE COULDN'T SET ALTS OR AIRSPDS DUE TO MCP FAILURE.) LANDED

WITHOUT INCIDENT IN A MOSTLY HEADWIND APPROX 9 KTS. GOOD BRAKING ACTION. AS WE CLRED THE RWY, I CALLED JNU RADIO AND SAID WE WERE DOWN AND CLR. JNU RADIO ADVISED US TO PLEASE CALL WHEN AT BARLO NEXT TIME. I REPLIED THAT WE HAD SOME PROBS WITH THE ACFT AND DIDN'T HAVE TIME. AFTER ARRIVING AT THE FREIGHT AREA IN JNU, THE MECHS RELAYED THAT THE ACFT HAD BEEN STRUCK BY LIGHTING A FEW DAYS AGO AND HAD EXPERIENCED THE SAME ANOMALIES THAT WE DID. WROTE UP ALL FAILURES, BRIEFED ONCOMING CREW AND WENT TO THE HOTEL. THE COMPANY SHOULD DO A BETTER JOB OF MAINTAINING/CHKING OUR ACFT AFTER SIGNIFICANT EVENTS (LIGHTING PLUS NAV FAILURE). I SHOULD HAVE BEEN ABLE TO SQUEEZE IN A RADIO CALL TO JNU FSS SOMEWHERE, BUT I WAS SO INTENT ON CONFIRMING OUR COURSE INTO JNU (LOTS OF MOUNTAINS IN OUR WAY!) AND ALT, THAT I USED ALL MY RESOURCES. THE ALL-NIGHTER FLYING IS SIMILAR IN EFFECT TO SLIGHT INTOXICATION, IT'S NOT THE SAFEST OP, EVEN WITH PROPER REST. IF WE HADN'T GOTTEN ESTABLISHED, IF WX WAS WORSE, IF HADN'T SEEN LIGHTS, WE'D HAVE GONE MISSED AND CLBED OUT OF JNU. IT DIDN'T SEEM WORTHY OF AN 'EMER' CALL.

Synopsis

B737-400 FLT CREW ENCOUNTERS MULTIPLE FMS/AUTOFLIGHT FAILURES ON APCH TO JNU.