

EAAP

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Issue 8
Etihad Altitude Awareness Program

الإتجاه
ETIHAD
AIRWAYS
FLIGHT OPERATIONS



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Introduction

A warm welcome to edition 8 of the EAAP (Etihad Altitude Awareness Program) digest and a Happy New Year to you all. As mentioned in previous editions, our main function in producing this digest is to monitor the trends associated with altitude deviations/level busts within Etihad Airways and to pro-actively remedy the causes and reasons behind such incidents. In disseminating this publication we hope to make the process an inclusive one, whereby you, the pilots, are actively contributing to the success of the program. We hope to continue doing this by continuing to produce these digests every 3 months and bringing the Etihad pilot community relevant and useful information that may be used to decrease the amount of altitude deviation occurrences that we currently experience.

In this edition, we discuss the Go-around. One in ten go-around reports worldwide record a potentially hazardous go-around outcome; including exceeded aircraft performance limits, fuel endurance and altitude deviations.

A VERY BIG THANK YOU to all of you that completed the EAAP survey; we will analyze and discuss the results in detail in the next editions of the EAAP Digest.

The statistical data contained within these documents is primarily derived from our own Flight Safety department and as such, is only as good as the information that is reported by you, the pilots. Again, we actively encourage you to report any altitude deviation, however insignificant it may seem at the time. Minor errors that have resulted from dynamic threats that we experience every day may be caught in good time to prevent an altitude deviation however the underlying reasons behind the initial error are of interest to us all. We employ a 'Just Culture' within the airline and this enables all pilots to report these occurrences without fear of retribution. All reports are de-identified when they are received by Flight Safety so only the Flight Safety department are fully aware of who files any report related to any altitude deviations and of course any other flight safety events.

Please continue to actively report all deviations. Your participation in this process is integral to the overall success of reducing the occurrences that we experience.

Any procedures mentioned in this document are purely for information purposes only. Pilots should review their own aircraft type specific procedures for complete and proper guidance and not use this document in any way as a source document for Etihad aircraft operations.

Review

This edition of the EAAP is the 8th in the series. The previous 7 EAAP digests have covered a broad range of topics that have proven to be instrumental as contributory causes to altitude deviations within Etihad Airways. These previous editions continue to be available for review by all pilots and can be found on your Skybooks under the Flight Safety tab.

- Issue 1 – Pilot/Controller Communication
- Issue 2 – Maintaining RTF standards
- Issue 3 – TCAS
- Issue 4 – Sterile Cockpits
- Issue 5 – Weather/Turbulence induced altitude deviations
- Issue 6 – Aircraft Energy Management
- Issue 7 – A Pilot's Tale

We strongly encourage all pilots to review these publications on a regular basis so that they can maintain a high level of awareness with regard to these associated threats. It is the responsibility of all pilots to stay up to date with the information contained within these publications. We have a common goal to manage our safety levels effectively and by reducing the number of altitude deviation occurrences; we can assist in achieving that goal.

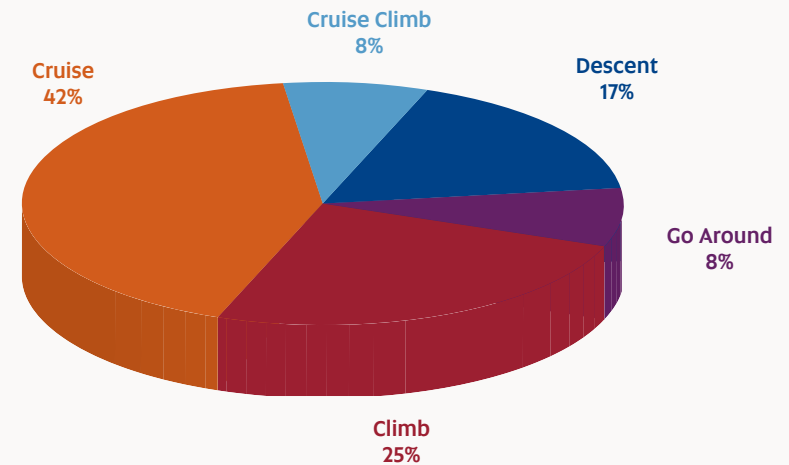
We also ask all pilots to offer their own feedback to this publication. Should you feel that an item of discussion is worthy of inclusion into the digest, please email EAAP@etihad.ae.

Latest Statistics (August 2013-October 2013)

Drawing on the data that has been collected between the beginning of November 2013 and the end of December 2013 the company has experienced a total of 12 altitude deviations. On a pro-rata basis this is a slight increase in events per month compared to the period of the August – October 2013. This period also records an altitude deviation attributed to a go-around event. This is the first time this has been reported in Etihad but is not an uncommon occurrence worldwide.

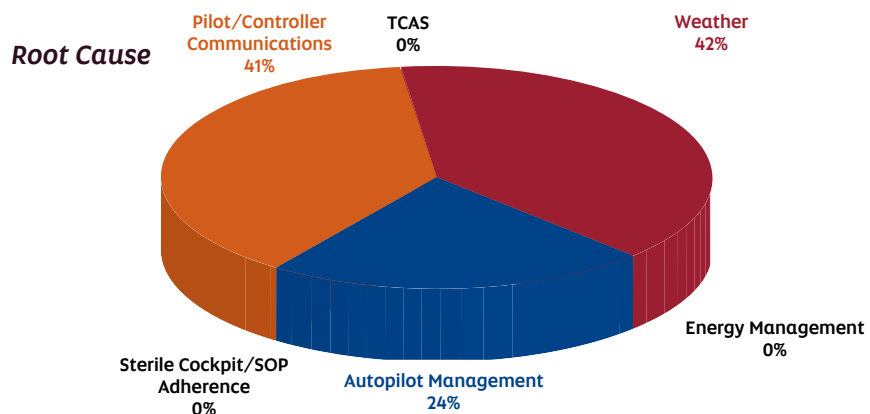
The chart below shows us the breakdown of which phase of flight the deviations occurred.

Phase of flight



Causes

The data presented to us for this quarter shows a fairly even distribution of causes to our Altitude deviations. It is encouraging to see the reduction to the deviations accountable to sterile cockpit/SOP adherence, which was illustrated so well by one of our pilots in 'A Pilot's Tale' in the last EAAP issue. The trend perhaps at the moment is the increase in weather related deviations. Compared to the last period of data Weather issues have increased from 25% to 42% of Altitude deviations. This topic was discussed at length in Issue 5 of the EAAP back in May 2013. For those pilots who have joined us in the last 6 months we recommend you review the article in Issue 5. Altitude deviations attributed to Pilot/Controller Communications have reduced slightly but still represent a major proportion of events. Pilots are reminded of the need to remain vigilant with their RT standards. Again, we ask you to file reports on cases where you may hear multiple radio call signs that have the same flight number. You may recall that EAAP digest No2 was directed at Communication error and how we can better maintain high RTF standards.



Pilots are encouraged to refresh themselves with the content of the 'All Clear EY Phraseology' guide that can be found on the Skybook under:

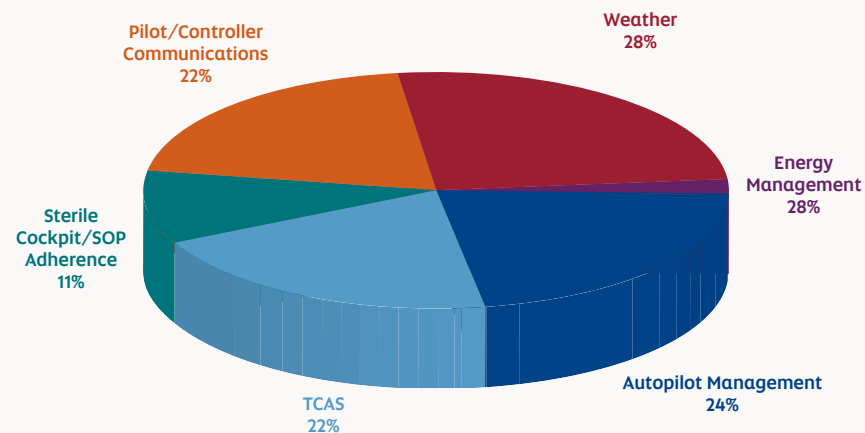
- TRAINING > Supplementary Training > RTF Training Guide.

You are encouraged to file reports on cases where by multiple radio call signs of a similar nature exist on the same frequency at the same time. Unless you advise the company of these situations, we are unable to tackle the problem.

Summary of Causes of Altitude Deviations 2013

We are now able to publish the annual root causes of altitude deviations within Etihad for 2013. As we can see the dominant threat is Weather, closely followed by Autopilot management. FMS management is included as a sub-group within Autopilot management. Pilot /Controller Communications are still a significant causal factor while approximately one in ten events are attributed to Sterile Cockpit/ SOP adherence. Arguably some TCAS events were a result of Energy management issues, but those not causing a TCAS event have been separated out for clarity.

Root Cause



The Go-Around (GA)

The subject we would like to discuss in more depth this issue is the Go-Around (GA). Etihad suffered an altitude deviation in the last month as a direct result of a GA manoeuvre. This appears to be a relatively new causal factor for Etihad in relation to altitude deviations but is well known and documented in the Airline industry. In June 2013 a GA Safety Forum was held to achieve consensus on the way forward to improve go-around safety. The event was held in Partnership with ECAST, ICAO, IFATCA, UK CAA, BEA (France), UK NATS, IATA, ECA and DGAC (France). Altitude deviations resulting from GAs as well as many other safety related issues attributed to the manoeuvre were acknowledged and discussed at this forum.

For the majority of pilots, a GA will be a rare event. This rarity can often lead to us being unprepared even if we have made the decision to GA. This is particularly true where the onset of the circumstances which have created the need for a GA have not been anticipated. If, because of this, one or both pilots are “startled”, the consequences can include:

- a delay in initiating the necessary action as well as making the decision which can complicate the manoeuvre and increase risk.
- a failure by the PF to apply the SOPs in aircraft handling / management as prescribed, especially in sequence,
- ineffective cross-monitoring by the PM,

At the initiation of any GA manoeuvre, especially one near to or even in contact with the runway, workload is significantly increased so that we are likely to be functioning much nearer to our mental capacity than during the approach phase. Notwithstanding their need to communicate with aircraft making a GA to assure traffic separation, Air Traffic Control need to recognize that this is a time to keep communication to a minimum commensurate with safety. The only additional communication which will be helpful to us as pilots beyond instructions essential for separation are those which simplify the GA being flown - for example by amending the stop altitude or issuing a radar heading in place of a complex tracking sequence. The message is that ATC can assist us in making an important contribution to GA safety. They are a resource that we can use to manage risk.

Although increased crew cooperation, task-sharing, cross-monitoring and situational awareness are all required at this time, there is a risk that one

or both pilots can become fixated on a single issue. If this happens, then a number of effects may follow:

- attention may narrow and instrument scanning may cease,
- overall situational awareness may decrease
- effective communication between pilots diminishes and standard callouts may be omitted.

In effect CRM breaks down.

By making use of the Etihad Risk Management Model it's as simple as ABC!

To Assess the current or potential risk level, and to then Balance that risk to:

- buy time (eg reduce the rate of climb)
- reduce workload (eg utilise available automation)
- change the mission (eg accept a change of MAPP tracking or altitude)

Then most importantly, Communicate your risk assessment or balancing tactic.

The avoidance of an altitude deviation at the conclusion of a missed approach is extremely important since if no further climb clearance has been received, the restriction is likely to be in place because of the need to avoid conflict with other aircraft flying above. The same is true of specified tracks and any radar headings, although these may also be linked to the avoidance of obstacles and terrain - or the requirements of noise abatement. Throughout any missed approach, we need to maintain our concentration and manage the GA flight phase with effective task-sharing and cross-monitoring. There could be a temptation to relax after an initially sudden and intense period of activity!

Towards the end of the 2000's BEA observed that a number of public air transport accidents or serious incidents were caused by a problem relating to “aeroplane state awareness during GA” (ASAGA). These events had some common features such as:

- Surprise
- Excessive preoccupation by at least one member of the crew
- Poor communication between crew members

- Difficulty in managing the automatic systems or modes of the aircraft.

As we can see, there have been some common elements identified as a risk to flight safety by both studies. So how can we, as pilots at Etihad, better prepare ourselves so as to complete a GA manoeuvre safely and effectively when called upon to do so?

- To avoid the 'surprise' element, we must carefully brief the GA and missed approach procedure with particular reference to the use of automation, tracking and go-around altitude. The height at which a go-around is initiated during an approach presents different challenges and risks. Remember, a GA may be initiated above the GA altitude- an unusual event – but one that is part of our Day 2 training during the current OPC semester. At London Heathrow, there are numerous occasions documenting aircraft failing to follow the Go Around level restrictions. The main cause of this is due to carrying out a go around above the missed approach altitude where pilots fail to descend to the correct altitude.
- We must follow the SOPs and use the standard call outs
- We must be aware of our aircraft state and appropriate thrust modes.
- We must not be distracted or be overly pre-occupied with a single issue at the expense of everything else.
- The PM has a very important role in monitoring the PFs actions and the flight path and modes of the aircraft. Any deviations from the standard procedures should be communicated effectively between the pilots.
- Above all:
AVIATE – NAVIGATE – COMMUNICATE – MANAGE

In summary, during a GA we find ourselves confronted with a situation where we must perform a large number of crucial tasks (gear retraction, flight path management) under severe time pressure. This can be exacerbated if the manoeuvre is flown manually, as the PMs workload is significantly increased. Add to this our expectation of landing, low fuel states and elements of crew fatigue after a long flight, then clearly the GA poses a potential flight safety risk that we need to anticipate and apply our well honed CRM skills in order to manage the threat safely. The GA altitude should be set, cross checked and rigidly adhered to unless ATC issue a further clearance.

Events

- ▶ During cruise, moderate clear air turbulence was encountered. Seat belt sign was switched on and speed selected to M0.81 and cabin crew were advised to be seated. Shortly thereafter, the aircraft descended 50ft and then climbed 250ft momentarily. Autopilot remained engaged throughout the exceedance. ATC was advised "unable RVSM due turbulence" as well as the altitude excursion. Normal cruise at FL370 was resumed shortly thereafter.
- ▶ While descending for FL150 new clearance was given to descend 13000 FT QNH 1012 after passing BOPIT. PF selected 13000 on FCU and inserted a constraint in FMGC. PF however inadvertently inserted +13000 instead of +15000 at BOPIT.

By the time PM crosschecked the PF's action a/c had already passed FL150 before BOPIT and UAE controller had called to verify our level maintaining & position



- ▶ During cruise at FL380 at approximately 80NM southwest of point ODIRU, we experienced turbulence that caused an undesired altitude excursion of about 300 ft above and below the assigned cruise altitude. Autopilot was disconnected by CM1. Weather was not detected due to suspected radar tilt indication unreliable.
- ▶ Cruising at FL360. Lost 300ft (FL357). IMC, no weather returns on ND. ST ELMOS on windscreen, followed by aircraft descending 300ft. Autopilot remained engaged as recovery to CRZ ALT was occurring. ATC notified.
- ▶ During cruise over Budapest FIR, light turbulence was reported along our route FL350 - FL390. We were encountering light occasional turbulence. Few miles before position TEGRI there was a sudden increase in speed, where we reacted immediately by pulling and selecting a lower speed. Even after this action, speed continued to increase rapidly, so we reacted again by extending the speed brakes to a maximum of 1/2 and disconnected the AP to climb to a maximum of 260 ft due to RVSM. ATC was informed and requested a lower level. No negative RVSM call was made due to the fact that the 300ft limit was never exceeded. Cabin manager was informed and checked condition of the crew and guest and everything was normal
- ▶ During the climb from DOHA, we were cleared to climb FL230. Passing 21700 approx. ATC 121.1.
ATC (121.1): ETD398 apologize, descent to FL210.
ETD 398: Confirm descent to FL210
ATC (121.1): Descent FL210
ETD 398: Passing FL217 (around this FL) Descending to FL210
ATC (121.1) Thank you ETD398 Change Freq. UAE 128.25
It was not consider a level bust because, ATC was aware of his previous clearance to FL230 and we never reach this level, ATC never state STOP CLIMB. The ATC call was Apologize descent FL 210. Initially I set FL220 on the FCU and when confirmed FL210. During descent we contacted 128.25.

- ▶ UAE ATC 129.5VHF cleared us FL270 & read back done accordingly. At position KANIP passing FL215 ATC advised to maintain FL210 as our cleared altitude. Aircraft managed accordingly to descend back to FL210. We advised ATC that our read back was FL270 according to the received clearance where the ATC admitted that they are sorry & most probably was a mistake done from their side. Level bust by 600ft with no effect on safety or any other traffic around. Possible confusion from our side or ATC side could be for the following: - confusion between EY470, EY416 & EY472 as couple of wrong altitudes & frequencies were given to them & us in UAE & MUSCAT FIR.
- ▶ We were cleared for an ILS APP rwy 23R at CAI. ILS was never identified on PFDS but only aurally once we asked if the ILS of rwy 23R was operational. The answer was positive. ILS was never captured. Change of controls and a go around initiated. Go around altitude busted. A/C reached 4500. Go around altitude is 3500. Finally asked for a VOR APP and a manage VOR APP was carried out. Final APP did not engage at PAF so a visual APP was carried out as pre briefed.
- ▶ Clearance to FL370 canceled passing FL353 and asked to return FL350 (previous cruise level).
- ▶ Handed over to Lahore (124.1) and requested FL320 non standard FL310 and direct position PARAK was cleared when level FL310 abeam SAJAN-heard climb FL320 radio strength was 3/5 and clearance was reconfirmed with call sign. Climb commenced and passing FL312 instructed to maintain FL310. Pushed to level off and descended FL310. No further communication received and approx 10 minutes later cleared to FL320.
- ▶ At FL380 CRZ IMC nothing on wx radar mod turb few sec A/C went up to FL383 then back to FL380 at position (NERTI) with c/BBN FIR.
- ▶ During cruise FL 370 approaching position OYABI, ATC cleared us to FL 330. We understood FL 300. At level off ATC contacted us again saying that clearance was FL 330. We apologized and climbed back FL 330.

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