

The Honourable Company of Air Pilots is the largest City of London Livery Company and the only one with a global membership. London Livery Companies are charitable specialist professional and trade bodies which, where relevant, seek to contribute their entirely independent and impartial expertise to their areas of interest. The Air Pilots Commercial Air Transport Team is directly supported by a large network of Company Members who review and validate our draft publications before issue.

If you would like to receive copies of new Safety Briefing Notes direct by email - or stop receiving them - please advise this to catcsg1@airpilots.org All published Notes which continue to be relevant can be consulted at or downloaded from <https://www.airpilots.org/CATSafetyBriefingNotes/>

AIR PILOTS - COMMERCIAL AIR TRANSPORT SAFETY BRIEFING NOTE 03

[Issued 02 MARCH 2021]

RARELY USED NORMAL PROCEDURES

The Context

The majority of Normal Procedures will be used often and it can be expected that pilots will have no difficulty following them. If the possible need to use those which are only rarely used can be anticipated, then this can be covered in prior, suitably focused, briefings. However, in a few cases, checklist-based normal procedures will typically begin with a memory based sequence of actions to be correctly accomplished *in unanticipated circumstances and without delay*. This is particularly true of a go-around other than one commenced because of an absence of the required visual reference on reaching DA/MDA. A go-around commenced soon after touchdown will, for most pilots, be a relatively rare if not a very rare occurrence. Experience has shown that situations like this are particularly prone to unintended deviation from applicable procedures. This can often be attributed in part to a combination of surprise at the onset of the situation and lack of any recent and directly relevant full flight simulator training covering the sequence involved.

An Example: failure to successfully initiate a go-around after touchdown

In August 2016, a Boeing 777-300 flight crew attempted to commence a go around shortly after a manual touchdown at Dubai when it became clear that touchdown had occurred sufficiently beyond the runway threshold that a long landing was in prospect. However, despite taking action in response to an ATC call as they climbed, they did not confirm that the necessary thrust had been set until it was too late to prevent a loss of flight path control and runway impact followed. Although all occupants successfully evacuated without any fatalities, the already damaged aircraft was then destroyed by fire.

The Investigation¹ attributed the attempt to go-around without setting the thrust required to achieve this to both pilots' unfamiliarity with the initiation of a go-around after touchdown in the circumstances it was necessary. However, it also noted their failure to follow several required procedures which could have supported early recovery of control and a successful transition to the intended go-around state. The aircraft operator's normal go-around procedure for the aircraft type required the A/T to remain engaged for all flight phases including approach and landing when, with weight on wheels sensed, it then reverts automatically to 'IDLE' mode and the TO/GA switches are disabled. This condition then remains unless the thrust levers are manually advanced for a go-around, in which case the A/T annunciated mode changes to 'THR' and the thrust levers move accordingly.

Discussion

Although the operator provided recurrent training considerably in excess of minimum regulatory requirements which included go-arounds commenced after touchdown following a manual approach, this exercise was being conducted with the A/T and the Flight Directors off and pre briefed as a demonstration that manually advancing the thrust levers would be necessary. This meant that there was a significant difference from the way this situation would be encountered during normal operations, in particular that the usual way to set TO/GA thrust for any go around is by pressing the corresponding thrust lever switches.

¹<http://www.gcaa.gov.ae/en/ePublication/admin/iradmin/Lists/Incidents%20Investigation%20Reports/Attachments/125/2016-Published%20Final%20Report%20AIFN-0008-2016-UAE521%20on%206-Feb-2020.pdf>

In this case, the investigators found no evidence that the difference between the way the thrust levers work in the case of A/THR on current Airbus types and A/T on Boeing types played any part in what happened. However, where pilots have changed their current type rating in either direction, there is a potential for reversion to their former type to affect the pilot interface with the thrust levers when unexpected situations arise suddenly. More generally, scenarios such as that in the example above serve to illustrate the importance of both clear and appropriate procedures and training which enables all pilots to respond appropriately to any infrequently encountered normal scenario which arises unexpectedly and requires a prompt response relying on little-used memory actions and cross checks. Important checks do need to be called and confirmed to avoid omission.

Other examples of go-arounds which may also be encountered unexpectedly include one commenced in IMC or at night well before reaching the DA/MDA and loss by one pilot of the previously acquired visual reference when below DA/MDA. An example of the former occurred at London Stansted UK in February 2019 where issues with the control of the aircraft when a night go-around was commenced from 2000 feet worsened the loss of separation against a departing aircraft². An example of the latter occurred in Brunei in July 2014 when an A320 approach was continued after the handling pilot lost their previously acquired visual reference below DA and the other pilot took over and continued to a runway excursion landing on the basis that he could “make out” a line of white lights which turned out to be runway edge lights³.

Safety Recommendations

To Aircraft Operators

- Although operating procedures supplied by aircraft manufacturers provide a sound basis, aircraft operators should carefully review them against the demands which will be placed on them as applied to their particular combination of crew experience and route flying.
- A risk assessment of all Normal Procedures which may need to be only infrequently used should be made, paying special attention to those procedures which begin with memory recall actions. Any appropriate risk mitigations should then be put in place and, like all risk assessments, then periodically reviewed to confirm their continued efficacy.
- Care is needed to ensure crews have sufficient understanding of the relationship between potentially critical Normal Procedures and the automated systems on which they are based and that corresponding training reflects normal rather than abnormal circumstances.
- Any risk which can be informed by Operational Flight Data Monitoring should use it to track performance against procedure and capture relevant data for review. Situations where rarely used Normal Procedures have been - or should have been - used should be considered as a risk exposure measure.
- If, because of regulatory requirements which must be satisfied, it proves difficult to fit in adequate full flight simulator practice of rarely-used Normal Procedures which require a rapid response and memory recall, alternative ways in which your pilots can be supported, such as the use of part-task training devices and classroom or online learning, should be considered.

To Pilots

- Not all pilots are fortunate enough to fly for operators like the one involved in the example event described above who provide training beyond regulatory minima. Even if you are, it is worth recognising that delivering pilot training on the response to rarely used normal scenarios as frequently as you personally would perhaps prefer may be a challenge. You may therefore want to supplement it by ensuring you regularly and critically review rarely used normal procedure checklists for situations which can occur unexpectedly.
- If the initial or recurrent aircraft type training provided does not give you the confidence that you could necessarily competently respond to any situations where the solution is a rarely-used Normal Procedure initiated by memory recall, you may wish to supplement it by regularly thinking through such sequences - a process that has sometimes been described as ‘armchair flying’.
- Unless the content of an ATC call is safety critical, the early stages of any go around or the response to any other critical flight phase is a time to prioritise in the order ‘Aviate - Navigate - Communicate’. This priority may, in the illustrative example provided, have increased the chances that both pilots would have prioritised confirmation that the appropriate thrust, pitch attitude and trim had been set.

² https://assets.publishing.service.gov.uk/media/5d9f2d0ee5274a5959410736/Airbus_A320_OE-IHD_and_Saab-Scania_SS340B_G-LGNK_11-19.pdf

³ <https://www.skybrary.aero/bookshelf/books/4104.pdf>