CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

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Readers Weigh in on "Cones of Confusion"

The March 2010 CALLBACK (#363, Pilot and ATC Cones of Confusion) stimulated more reader feedback than any issue we've published in recent years. In this issue we looked at several common IFR approach situations where (according to recent ASRS reports) confusion may exist, including:

- Making a Procedure Turn
- Making a Hold-in-Lieu-of Procedure Turn
- Expecting a Straight-In Approach

This month we'd like to share some of the responses we received to the three IFR scenarios described.

> ***Pilot Feedback:*** Issue 363 was the best one you guys have ever published. I thought it was just me arguing with the controllers over GPS approach procedures!

No, you definitely are not alone in having these issues. ASRS has been collecting IFR approach incident (and many other) reports for years. In keeping with our mission to improve system safety, we have been issuing alert messages and sharing de-identified reports with the FAA, various industry organizations and other government-industry groups. Many of our alerting messages have resulted in fixes to published and operational procedures. And, of course, it is our mission to share these issues with our readers – to provoke thought and discussion.

> ***Pilot Feedback:*** Some answer as to who was right / wrong in each of the scenarios would be helpful. Simply providing both sides of the story in an anecdotal way does not provide clarification - it promotes confusion...

The answers of right vs. wrong, or correct vs. incorrect, are not always clear-cut. In this instance (approach procedures), Section 5-4-9 of the Aeronautical Information Manual (AIM) explains when a procedure turn or hold-in-lieu-of-procedure turn is required, and also the circumstances in which these maneuvers are *not* permitted. However, the AIM uses "radar vectors" and "straight in," terms which pre-date modern area navigation and GPS technologies. ASRS reports indicate that controllers sometimes clear RNAV-capable aircraft "direct" to IAF/FAF approach fixes in lieu of assigning radar vectors; and/or fail to issue "straight in" approach clearances (to cancel procedure turn/holding requirements) after an RNAV-capable aircraft has been cleared direct to an approach fix. The existing AIM language may promote pilots' expectations that controllers will use the terms "radar vectors" and "straight in" exactly as described in the AIM, without consideration of an aircraft's alignment with the final approach course. Advances in aircraft technology and related changes in air traffic control practices may have contributed to pilot/controller confusion.

A controller's response makes an additional point about ATC training:

> ***Controller Feedback:*** Speaking as a controller, the training we have received on these issues has been VERY minimal at best…We love the ability to "point and shoot" (point the aircraft at a waypoint and clear them for the approach), but the majority of controllers I work with do not have a clear understanding of when this is not appropriate.
>
> Just wanted to give you some insight on to what's happening on the other side of the mike….

A pilot respondent appears to agree with this controller:

> ***Pilot Feedback:*** The REAL cone of confusion is with ATC. Controllers are, almost universally, not properly trained about the necessity to conduct a Procedure Turn (unless the controller gives vectors, NoPT, or timed approach, as you point out)….
>
> While I agree that confirmation [of the controller's intentions] is a good thing, it should not be required at virtually every ATC facility in the country.

Another reader suggested a step back from the cone of confusion:

> ***Pilot Feedback:*** …Take a step back from the cone of confusion and maybe the procedure turn's true purpose will provide sensible answers when the AIM's laundry list does not. The PT is not added to the approach just so the pilot can burn some more gas. It is my understanding that the PT is for either: alignment with, or descent to, the FAF. If you don't need to do either, I believe the controller and the prudent pilot would both assume a straight-in should be accomplished. Actually, I think the PT is a holdover from the non-radar environment. If you're actually receiving vectors to an approach, the controller is (I think) required to align you with final and at a reasonable altitude to safely fly the rest of the approach.

But note our reader's use of "believe," "assume," and "I think." Assumption can be a dangerous companion in the IFR approach environment, especially in IMC.

In Conclusion: ASRS hopes that our March issue, along with this month's publication of reader responses, will contribute to ongoing dialogue and constructive resolution of potential confusion when conducting IFR approaches.

ASRS Alerts Issued in March 2010

Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	9
Airport facility or procedure	8
ATC equipment or procedure	7
TOTAL	**24**

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March 2010 Report Intake

Air Carrier/Air Taxi Pilots	3344
General Aviation Pilots	1015
Controllers	714
Cabin/Mechanics/Military/Other	493
TOTAL	**5566**

ASRS Injury and Incapacitation Incidents

There are almost 1,500 reports in the ASRS Database Online (DBOL) that describe some type of physical injury or incapacitation associated with a reported incident. Many of these events reflect common threads related to communication, or decision-making on the part of individuals or organizations that contributed to mishaps. Here is a sampling of relevant reports from cabin and cockpit crew members.

Down the Hatch

A B747 Purser reports that a Maintenance Technician failed to comply with communication and procedural requirements before entering an E/E (Electrical and Electronic) hatch in the passenger cabin.

■ *...Prior to boarding passengers, a Mechanic entered the E/E Hatch located near Row 4 on our B747-400. The Mechanic did not warn any Flight Attendant (nor me as the Purser) that he would be opening the hatch; nor did he install the safety barrier strap which is required per our procedures. As a result, a Flight Attendant fell into the fully opened hatch and was able to catch herself after injuring her foot and badly bruising her knee. Both her shoes fell to the floor below in the cargo well. The Mechanic then attempted to close the hatch, but did not do so properly and another Flight Attendant came along and tripped on the partially opened hatch* [and was injured].

Call Light Conundrum

Aircraft passenger call lights are both a safety and security feature. Flight Attendants in larger aircraft may not be able to see the entire cabin from their duty stations. If a passenger crisis occurs, it may be some time before they know about it unless call lights are activated. However, the call light system may be legally placarded inoperative by Maintenance, as was the case with a B767's passenger call system. Here's what happened shortly after departure (according to a Flight Attendant's ASRS report):

■ *Passenger upon climbout suffered from a seizure. Passenger call lights were not working at time of departure and we were aware of this, but call lights were placarded and we departed. Purser questioned the decision in the event of an emergency with having no working call lights. Twenty minutes after takeoff passenger's mom was screaming because of daughter who went into seizure…Purser was most involved in the incident as she was first on the scene. I retrieved oxygen from mid-galley and took it to her…Captain advised passengers we were returning to our departure airport and would be landing in 25 minutes. Landed and passenger was in aisle upon landing….*

In this situation I witnessed, it was pretty extreme and getting back on an aircraft with call lights that Maintenance had placarded upset me to the point of having to remove myself at the time. My thoughts went back to security as well as medical in this given situation.

ASRS learned during a callback to this reporter that the passenger and her mother were in the center section seats where they were not seen for an estimated three minutes after the daughter's seizure began. The passenger was experiencing a Grand Mal seizure and was apparently choking to death. The aircraft did return quickly enough to save the passenger's life, but flying with the disabled call system was not safe, in the reporter's opinion.

Decked by the Door

A CRJ-700 Captain was following company procedures while taxiing in to the gate. Signals from the Ground Crew appeared normal. Then the Flight Attendant went to open the main passenger door…

■ *After landing the aircraft, I taxied to the gate. Under the direction of the Marshaller, I taxied the aircraft to a stop at gate. After receiving the brakes 'set' and chocks 'in' signals from the Marshaller, I performed my usual shutdown checklist flow. After turning off the seatbelt sign, the Flight Attendant opened the main passenger door. While the door was opening downward, the door struck a Ramper walking under the door on the head. He fell to the ground. The Flight Attendant notified me of what happened. I opened the cockpit door and contacted paramedics to respond to the scene. We attempted to assist the Ramper until paramedics arrived…I was informed by another Ramper after the event occurred that the Ramper was walking back along the right side of the aircraft to retrieve the chocks to put them in place in front of the CRJ700 aircraft. For some unknown reason the chocks had been left in the location that would be appropriate for a CRJ200 but the additional length of the CRJ700 placed the chocks to the right rear of the main passenger door. This and miscommunication between the ground personnel and the crew caused the event. I believed it was completely safe to turn off the seatbelt sign and perform my after shutdown flow….*

Additional training should occur to standardize the procedures to be utilized by both flight crew and ground personnel during the shutdown and door opening process so that this incident does not occur again. In addition, ground personnel must be aware that the door may open anytime after an aircraft arrives at the gate and the brakes-set, chocks-in signal is received by the flight crew under the current procedures.