

CALLBACK

From NASA's Aviation Safety Reporting System



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A Perturbing Pair: **Confusion** and **Distraction**

Confusion and distraction are among the human factors most frequently invoked to explain incidents reported to ASRS.¹ This issue of *CALLBACK* looks at two detailed ASRS reports that provide good insights into how confusion and distraction can adversely affect a given situation. Most importantly, the reporters describe how they were able to overcome these factors and avoid potentially serious consequences.

“Confusion now hath made his masterpiece.”

— William Shakespeare (Macbeth)

Confusion is often recognized during an event and that is when immediate corrective action needs to occur. In this report, an alert Flight Crew's inquiry and decisive action by the Tower Controller resolved a very confused situation.

■ *I was providing OJT (On the Job Training) at the time of this event. Staffing was short and a Front Line Manager (FLM) was working Ground Control so that training could be accomplished. There was a mixed arrival / departure push and while training may have been some distraction, my Developmental (Controller trainee) was doing a good job.*

Ground Control taxied several aircraft to Runway 14L and 14R and then taxied an aircraft to Runway 14L for an intersection Juliet departure.

I examined the Flight Progress Strips and noted that a C402 had “14L/J” written on the Strip. Our SOP requires this type of Strip marking. Our SOP also requires that Ground Control verbally notify Local Control when an aircraft has been taxied to an intersection for departure, although I am unable to recall if this was accomplished.

It was dark and I could see an aircraft at the intersection of Runway 14L and Taxiway Juliet, but I could not

ascertain the exact type. I made an assumption that this was the C402 and the Developmental also believed [it was] since we had discussed launching the C402 next so that there would be no wake turbulence issues with the succeeding aircraft.

I distinctly remember the Developmental clearing the C402 for takeoff from Intersection Juliet since I was listening for the proper phraseology.

There was traffic on final to Runway 14L and 14R and the Developmental and I were both looking at the aircraft located at the intersection of Runway 14L and Taxiway Juliet. The plan was to roll a Shrike Commander from the approach end as soon as we had the required runway separation. We both thought that the Shrike Commander was at the approach end of Runway 14L. Then an air carrier made a transmission on the frequency asking if we had just rolled someone from Intersection Juliet.

There was something unusual in the pilot's voice, so I quickly keyed the microphone and said, “Yes! What do you see?” The pilot said that there was another aircraft rolling from the approach end of Runway 14L. I scanned back down the runway, north of Juliet where the C402 was supposed to be departing, and I saw another aircraft rolling at a fairly high rate of speed. In my mind, the C402 was slow rounding the corner of Juliet, and I thought that another aircraft had taken the C402's clearance. I feared that the C402 was about to pull out in front of this other departing aircraft. Then I thought that I really didn't know who any of these aircraft were, so I made the transmission, “EVERYONE STOP... STOP... STOP! CANCEL YOUR TAKEOFF CLEARANCE!”

The departing aircraft aborted its takeoff and stopped just short of Juliet. I made a transmission asking who was on the runway and learned that it was indeed the

¹ The human factors most often cited by reporters or inferred by analysts in ASRS reports are:

1. Confusion, 2. Distraction, 3. Communication breakdown, 4. Fatigue, 5. Complacency, 6. Work Overload, 7. Fixation

C402. Then I asked who was at Juliet on Runway 14L and learned that this was the Shrike Commander.

Ground Control looked at the Flight Strips and saw that the wrong Strip had been marked and we all realized what had happened.

If staffing had permitted, we would have had a stand-alone Supervisor and thus would have been allowed to use Line Up And Wait (LUAW) procedures. If LUAW had been in effect, my Developmental would have issued LUAW instructions to the Shrike Commander after clearing the C402 for takeoff and there is a definite possibility that we would have experienced a runway collision. We would have witnessed two aircraft rounding the corner from two different locations with the departing aircraft in back and rolling for departure.

As it was, I could not be 100% certain that something bad was not about to happen and I attempted to stop everyone until things could be sorted out and identified. The crew of the air carrier should be commended for speaking up and notifying us that they thought something was amiss. This is truly representative of the "If you see it, say it" concept.

"Any occurrence requiring undivided attention will be accompanied by a compelling distraction."

— Robert Bloch, American Author

Confusion and distraction were both mentioned in this B200 Captain's report that appears to describe a classic case of disorientation and confusion due to vertigo.

■ *The Pilot Flying [has] 38-years experience and has always been a top-notch professional. I was the Captain and Pilot Not Flying in the right seat.*

It was still dark. The base of the ceiling was 900 feet and I believe the tops were 4,500 feet. We were cleared for takeoff...on course and cleared to maintain 4,000 feet.

After the gear was retracted, the pilot instructed me to select Heading and Altitude Select on the flight director [and then] to set climb power which I accomplished as we started the turn. The pilot rolled wings level on a 240-degree heading then remembered that we were cleared

direct and reached to turn the heading knob to the correct heading... As the turn continued (we were already in clouds), I selected Direct/Enter on the GPS to align the course. At that moment the pilot stated that there was something wrong and was quite alarmed. I looked up to see what the problem was and I saw that we were in a steep bank and [the pilot] appeared confused. He did not seem to know whether or not to believe what he was seeing (he later said that he thought he had an inverter or instrument failure).

I was confused as I had my head down prior to this and I had to scan back and forth to finally realize that the left and right side instruments were indicating the same. By this time we were in a rapid descent and I grabbed the yoke and assisted in rolling the wings level and pulling up.

Due to the stress of the situation we ended up [climbing to] 4,300 feet and then corrected back down to 4,000 feet. The estimated lowest altitude was 2,000 feet and the bank angle was around 40-degrees.

The pilot said that when he looked up after rotating the heading knob to 117-degrees, he saw that the flight director bars indicated the need for a steeper bank and then a descent. During that process he did not recognize that this was going to be too steep and that we still needed to climb. Then he got totally confused. I did not see the command bars do this as I had my head down. It looked to me as if, due to the confusion, he kept trying to turn the aircraft in the wrong direction and could not figure out why this was happening.

I had a moment of confusion since the pilot stated that there was something wrong and... [I] was trying to figure out what [was wrong] instead of accepting the obvious—that he turned too steep for whatever reason which delayed me in recovering quicker.

This was a simple departure that we have been doing routinely for years and which, due to a distraction from the possible flight director malfunction, could have been disastrous.

The searchable ASRS database, information on Electronic Report submission, previous issues of *CALLBACK* and additional aviation safety publications and information are all available online at: <http://asrs.arc.nasa.gov/>

ASRS Alerts Issued in April 2011	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	10
ATC equipment or procedure	4
Airport facility or procedure	4
Maintenance procedure	2
TOTAL	20

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Moffett Field, CA
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April 2011 Report Intake	
Air Carrier/Air Taxi Pilots	2910
General Aviation Pilots	925
Controllers	716
Cabin	275
Mechanics	162
Dispatcher	56
Military/Other	27
TOTAL	5071