Intersection Incursions
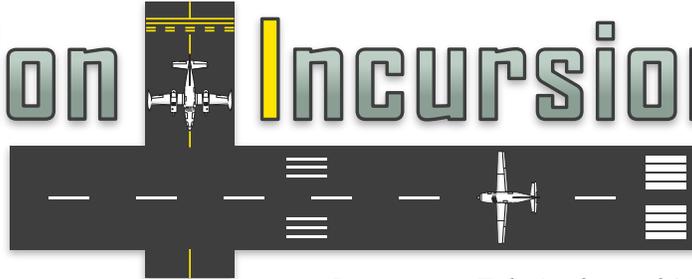
According to the FAA, there are approximately three runway incursions every day in the United States. A runway incursion is defined as: Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft.[1]

Different aspects of the runway incursion problem will be addressed in future issues of *CALLBACK*. This month we will look only at runway incursions related to intersection departures.

In the Departure Mode

The following two ASRS reports deal with runway incursions in which a Controller asked a Pilot or Flight Crew if they would accept an intersection takeoff. Perhaps the Controllers' inquiries, which included either the word *depart* or *departure*, predisposed these pilots to think in terms of being "cleared for departure." When the pilots were subsequently directed to taxi to the runway at the particular taxiway intersection, the word "cleared" was never used, let alone "Cleared for takeoff."

The clearance to "*taxi to*" a given runway at a particular intersection has the same restriction as a clearance given to "*taxi to*" the approach end or "full length" of a runway; that is, the pilot must hold short of the runway until cleared to "*line up and wait*" or is "*cleared for takeoff*." The absence of "hold short" instructions should never be construed as clearance to proceed onto the departure runway.

In the first incident, a Tower Controller spotted a runway incursion in time to avoid a close encounter between two aircraft on the same runway.

■ *I was working the Local Control position and had Air Carrier Y holding in position (for wake turbulence) on Runway 10 (at the full length). I asked Aircraft X if he could depart from Intersection Zulu on Runway 10 (this was to facilitate in-trail spacing requirements). Aircraft X stated that he could and I issued taxi instructions to "Taxi to Runway 10 at Zulu." Aircraft X was never told to "Line up and wait" or given a takeoff clearance. I issued Air Carrier Y a takeoff clearance on Runway 10 from the full length then observed Aircraft X taxi onto Runway 10*

at Intersection Zulu (in front of Air Carrier Y). At that moment, I told Air Carrier Y to cancel his takeoff clearance and hold his position. I then told Aircraft X to taxi off the runway and call the Tower for possible pilot deviation. Although I was not required to issue hold short instructions to Aircraft X, in hindsight such a clearance would have contributed greatly to preventing this from happening.

In the second report, a Learjet Captain misunderstood the Tower Controller's instruction and apparently talked the First Officer into believing what the Captain heard rather than what the Controller said.

■ *Upon reaching number three in line for takeoff on Runway 20...both of us heard the Tower Controller say something to the effect, "(Call sign), are you able to make the right turn on Quebec for an intersection departure at Yankee, 10,000 feet remaining?" The Pilot Not Flying, who was working the radios, looked at me for concurrence. I nodded and verbalized, "Of course." He then acknowledged to the Tower Controller that we could accept the intersection departure. We both then heard, "Right turn on Quebec; left turn on Yankee, for Runway 20 Intersection Yankee departure." I assumed the Tower Controller, for whatever reason, was taking us in front of the other two aircraft for departure. I called for the Before Takeoff Checklist, turned around and advised our passenger that we were cleared onto the runway for departure, and taxied as instructed via Quebec and Yankee for Runway 20, to wait for further takeoff clearance.*

We were now conducting the challenge response checklists with each crewmember respectively turning on appropriate switches, arming spoilers, etc. as I taxied via Quebec and Yankee. Upon crossing the hold short line, I looked left as I always do, and saw the aircraft that was #1 moving into position on the runway behind us. The First Officer asked me as I was crossing the hold short line, "Are we going to hold or go into position?" I replied, "We were cleared onto the runway." The First Officer did not question or challenge me or the Tower Controller's instructions any further, so

I continued to taxi onto the runway. Once we took position for departure and were lined up with the centerline waiting takeoff clearance, the Tower Controller said something to the effect, "That is not what I wanted you to do. Exit the runway immediately on Yankee, right on Quebec, right on Zulu, and Hold Short Runway 30." We then heard him say to the aircraft that pulled onto the runway behind us, "Cancel takeoff clearance." The Tower Controller advised us we had not been cleared onto the runway, that the aircraft behind us had been cleared for takeoff, and instructed us to take down a telephone number for a possible pilot deviation….

I called the Tower Supervisor on the cockpit satellite phone…. He advised me that he had listened to the tapes and that the Tower Controller did not say, "Line-up and wait or cleared for takeoff." I acknowledged that we (crew) agree and did not hear him say either of those two phrases and that crew confusion came into play as he did not say "hold short" either. I understand the pilot's responsibility to query ambiguous ATC instructions. I should have stopped the aircraft and clarified what was expected of us.

An Intersection Close Call

Thanks to an alert ATC crew in the Tower, a pilot's failure to hold short at a runway/taxiway intersection resulted in a close call rather than a collision.

■ *A PA46 Malibu called ready to taxi at the west ramp. I told him, "Taxi to Runway 14R at Echo; taxi via Echo" and he read back, "Taxi to 14R at Echo." I noticed him taxiing fast on Echo while I was giving another aircraft an IFR clearance. As he got closer to the runway, I asked him if he needed a run-up; he replied, "No." I was about to ask him if he needed a back taxi when I noticed he wasn't slowing down for the hold short line. I immediately told him to stop, but he passed the hold short line. I turned to tell my Local Controller, but he had already seen it and canceled a Cessna's takeoff. The Malibu was not able to stop before entering the runway, and the Cessna was not able to stop before the intersection. The Cessna swerved left to miss the Malibu, and reported being 50 feet away at the time he passed him. We advised the Malibu of his possible pilot deviation.*

I believe we did everything in a timely manner. I don't know what made the pilot not see the runway, but as soon as I noticed he wasn't going to stop, I reacted.

Wrong Way

Departing from the end of a runway (that does not share a common point of origin with another runway) leaves only one direction available for the pilot to takeoff. As described by a Tower Controller in this report, the situation is more complicated at the intersection of a runway and a taxiway; there are two directions available to turn… and one of them is wrong.

■ *Ground Control placed a strip into my departure bay, a Cherokee for a southeast departure off of Runway 10. I had two aircraft inbound to Runway 28 and would have had to delay the Cherokee for several minutes, so I asked the Cherokee if he could accept a 17L at Alpha Intersection departure. The Cherokee said he could accept that and read it back, so I cleared the Cherokee for takeoff on 17L at Alpha with a southeast departure. My next transmission was to a Cessna full length. I said, "Cessna Runway 17L full length, line up and wait, traffic departing down-field." The Cessna went into position. I saw the Cherokee taking Runway 17 from Alpha then looked back at Runway 28 for the Cessna I had that was rolling out. At that time Ground Control told me to tell the Cherokee to stop. I turned around, observed the Cherokee rolling opposite direction and told him to stop. The Cherokee had apparently turned right onto 35R instead of left onto 17L. I told the Cherokee that 17L was the opposite direction and he exited the runway.*

The following, from the FAA *Pilot's Handbook of Aeronautical Knowledge*, are some practices to help prevent a runway incursion:

- Read back all runway crossing and/or hold instructions.
- Review airport layouts as part of preflight planning, before descending to land and while taxiing, as needed.
- Know airport signage.
- Review NOTAMs for information on runway/taxiway closures and construction areas.
- Request progressive taxi instructions from ATC when unsure of the taxi route.
- Check for traffic before crossing any runway hold line and before entering a taxiway.
- Turn on aircraft lights and the rotating beacon or strobe lights while taxing.
- When landing, clear the active runway as soon as possible, then wait for taxi instructions before further movement.
- Study and use proper phraseology in order to understand and respond to ground control instructions.
- Write down complex taxi instructions at unfamiliar airports.

[1] 2010 FAA Runway Safety Report

ASRS Alerts Issued in March 2012	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	3
Airport facility or procedure	4
ATC equipment or procedure	3
TOTAL	**10**

March 2012 Report Intake	
Air Carrier/Air Taxi Pilots	3196
General Aviation Pilots	883
Controllers	737
Cabin	264
Mechanics	152
Dispatcher	71
Military/Other	39
TOTAL	**5342**