

Expecting the Unexpected Part II – Runway Incursion Avoidance

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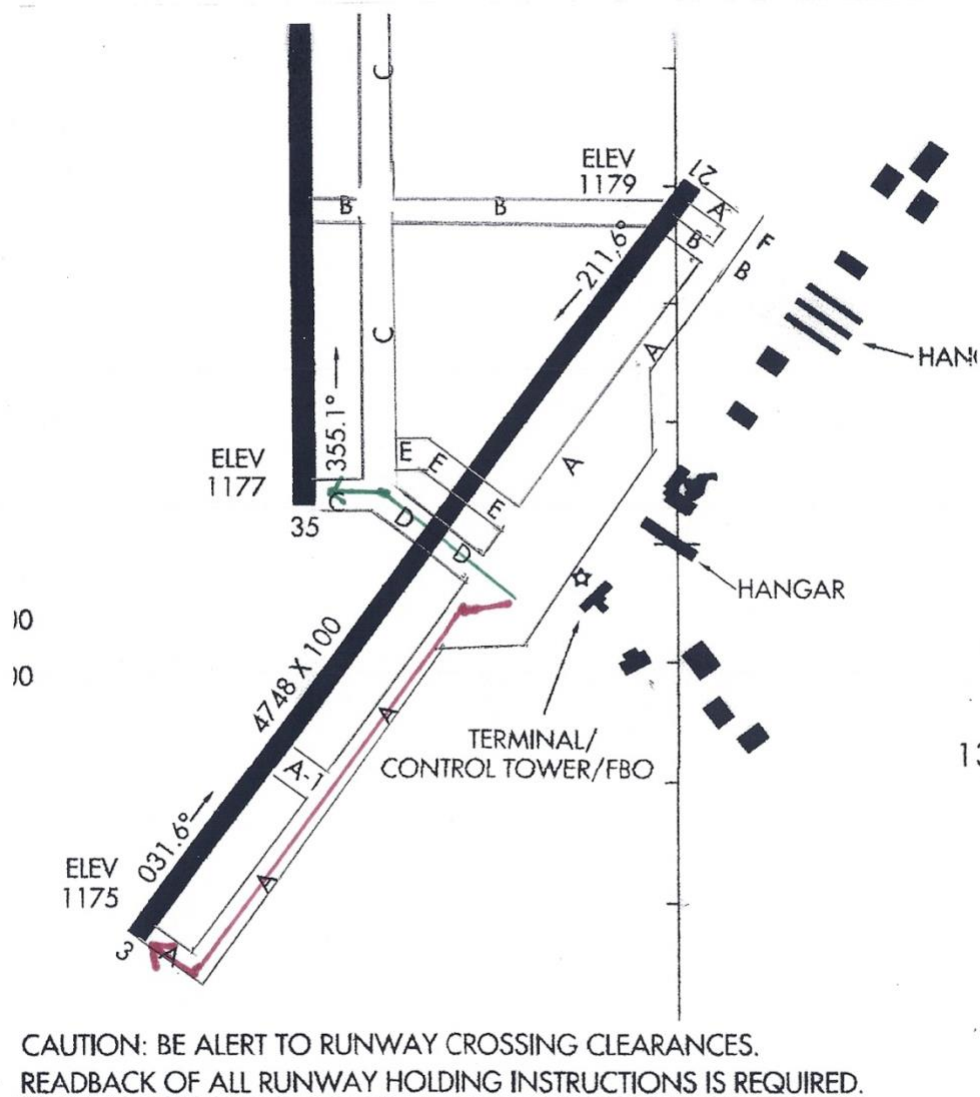
Runway incursions have been a problem in aviation for decades. There have been numerous tragic accidents and near misses caused by aircraft, vehicles, and people entering a runway without clearance. During examinations, testers were satisfied if the student understood the advisability of airport diagrams, the concept of progressive taxi, and were able to successfully follow ATC directions. Recently, runway incursion avoidance has been added as a specific task to be evaluated on stage checks and practical tests. Pilots now have to 'walk the walk' in addition to 'talk the talk' when it comes to practicing and testing runway incursion avoidance. They must demonstrate procedures for minimizing distractions, writing down taxi clearances, using airport diagrams, etc. In particular, examiners must make sure the pilot "utilizes procedures to ensure that a clearance or instructions that are actually received are adhered to rather than the ones expected to be received." This can be covered simply by briefing and maintaining a sterile cockpit, writing down taxi instructions, and tracing out the taxi route on an airport diagram which pilots have on their laps while taxiing. Even for Westheimer, which many local pilots are familiar with, those instructions seem complicated.

For example, one can look at this recent solo flight. For the past several days Runway 03 had been in use. On the day of this particular flight, the winds generally supported the use of Runway 03. The clearance and read back went something like:

Tower: "Crimson X, taxi to Runway 35 via Delta, Charlie, cross Runway 03 at Delta."

Crimson X: "Taxi to Runway 03 via Delta." Note: No correction from tower.

Observe the airport diagram below. The green line represents what the pilot was cleared to do. The red line represents what the pilot actually did. The pilot taxied to Runway 03 via Alpha. Why? Well, that's what had been happening for the last several days. That was the expectation. "Runway 03" was in the clearance. What could have saved the pilot from taxiing to the wrong runway, writing down the taxi clearance or tracing the clearance on the airport diagram? If the pilot had written down "Taxi to Runway 03 via Delta," upon tracing the route, the pilot would have quickly ascertained that taxiway Delta would only go to an intersection halfway down Runway 03.



Even though it does not happen often and the proposed procedure feels like a bit much, it has happened more often than anyone would like, even at Westheimer. On one occasion, a pilot had just taxied off Runway 03. While waiting for taxi clearance, the pilot heard ATC clear three warriors, all dual flights, to taxi to Runway 03 via Alpha. The first warrior started toward Runway 21, with the other two warriors following the first. Why? For the past several days, Runway 21 had been in use. These pilots (and instructors) expected Runway 21, so that's where they went, despite being cleared to Runway 03.

What if Runway 35 had been in use for the past several days, but the clearance today was taxi to Runway 03? Pilots acting on their expectations and taxiing to Runway 35 would taxi across an active runway (Runway 03). This behavior has been seen on a few instructional flights and stage checks. Instructors have had to firmly apply brakes before the plane crossed the Runway 03 hold short line, much to the surprise and chagrin of the student. There's much more at stake than embarrassment.

Looking back at the first scenario, one might ask where ATC was. Why was the bad read back not corrected? Contrary to popular belief, they're not gods, they're humans. ATC also has the reasonable expectation that pilots will read back the clearance correctly. Most of the time that works out and they catch and correct a bad read back. Some of the time, they may be distracted by other tasks and simply don't catch the bad read back. In these days of tight budgets, one controller may be working both the ground control and tower frequency, even when it's busy. Pilots must remain vigilant, follow the prescribed procedures, regardless of solo or dual, and overall must expect the unexpected.