

Best Practices for Runway Incursion Prevention

The following Best Practices have been identified to provide an overview of programs and procedures that have proven effective in preventing runway incursions, and which can be adapted for use at other airports. These practices can assist air traffic controllers and airport managers in their efforts to eliminate or reduce the risk of runway incursions.

Best practices for air traffic control (ATC) personnel:

- Minimize the frequency of runway crossings by aircraft and vehicles where possible.
- Reduce non-standard phraseology; standardize and simplify internal coordination.
- Issue taxi instructions slowly and clearly. This will result in more accurate hear-back/read-back, eliminate expectation bias, and reduce confusion.
- Issue instructions in a procedure referred to as “chunking.” Controllers define this as breaking long and complicated taxi instruction into short, easy-to-understand phrases. Chunking also alleviates the comprehension difficulty that may be experienced by foreign air crews.
- Establish standard taxi routes to reduce confusion and reinforce a routine flow of traffic. Local pilots know what to expect. A pilot familiar with the standard taxi routes who hears full route may be primed to listen more closely to taxi instructions.
- Develop standard practices for coordination of unplanned runway closures, and incorporate these practices into existing agreements.
- ATCT managers should regularly participate in airport construction and planning activities. Establish a consistent liaison representative throughout programmed activities to ensure continuity of operations.
- Seek site-specific visual memory aids to act as runway occupancy reminders for local and ground control. These may take the form of strip bay headers, supplemental strip marking, opposite direction reminders, line up and wait new phraseology and visual/aural alarms.

- Maintain a cooperative team environment with a high level of operational integrity, and consider adopting the sterile cockpit practice used by aircrews.
- Work with the airport operator to develop and maintain a “ride along” program for new and newly certified employees. This practice can help new employees become more familiar with the airport from ground level.
- Tower cab simulator. Training selects beneficial learning from operational errors and deviations and then recreates the incident in the tower cab simulator which allows crews to work on group performance and share lessons learned in a safe and controlled environment.

Best practices for airport operators:

- At general aviation airports, use enhanced marking and additional signage as recommended in the 150 series Advisory Circulars to draw attention to parts of the airport where traffic can create a safety hazard.
- Modify airport geometry to reduce runway crossings and, if necessary, reconfigure airport geometry to eliminate taxiway choke points that confuse pilots and vehicle operators.
- Develop standard practices for coordination of unplanned runway closures. Incorporate these practices into existing agreements.
- Maintain an electronic forum for pilots to receive the latest airport safety-related information and as a means for them to provide direct feedback to the airport operator. Equip airport vehicles with transponders and GPS units.
- Have a two-tier vehicle operator training program, with one for the movement area and the other for the non-movement area. Require all users to make a request through the airport manager to access taxiway and airport areas. This aids in reducing the number of people who have access to the movement area.
- When training vehicle drivers, supplement classroom and practical training with simulation where possible.
- Consider developing an airport-specific pre-departure presentation for an FBO and make it available to all pilots prior to departing. One location uses an animated PowerPoint presentation on a computer located in the pilot briefing room. This short (five-minute) presentation outlines past runway incursions with the ATC voice recording. The team noted it as a best practice for extra safety awareness in the prevention of runway incursions.