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RUNWAY SAFETY AREA

Frequently Asked Questions

Southern Region Airports Division

February 2003

RUNWAY SAFETY AREAS
FAQ's

What is a runway safety area (RSA)? A surface surrounding the runway that has been prepared for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

What is the size of the RSA? Generally, on airports that serve air carrier aircraft, the RSA is rectangular in shape and extends 250' either side of the runway centerline and 1000' beyond each end of the runway.

What are the RSA requirements in FAR, Part 139? On commercial service airports that are certificated under FAR, Part 139, the safety area requirements are:

Each safety area shall be cleared and graded, and have no potentially hazardous ruts, humps, depressions, or other surface variations (this applies to cable trenches, splice boxes, concrete foundations, conduits, etc.).

- Surface variations (this applies to cable trenches, splice boxes, concrete foundations, conduits, and etc.).
- Grading or storm sewers to prevent water accumulation shall drain each safety area.
- Each safety area shall be capable under dry conditions of supporting snow removal equipment, and aircraft rescue and firefighting equipment and supporting the occasional passage of aircraft without causing major damage to the aircraft.
- FAA Advisory Circulars in the 150 series contain standards and procedures for the configuration and maintenance of safety areas acceptable to the Administrator.

For these reasons, an airport owner should have standards for earthwork done on their airport and should tell the FAA what the requirements are when an FAA project is coordinated for review. The airport owner may have to coordinate with the airport owner's consultant.

What's wrong with this picture?

What are acceptable slopes or grades for earthwork around a facility located inside the RSA? The transverse slopes for runway safety areas range between 3 - 5% (AC 150/5300-13, page 51). Since other runways and taxiways commonly intersect one another, these grades would apply in the direction parallel to the runway centerline as well transverse to the runway centerline. These grading standards also apply to grading work for a NAVAID facility within the RSA such as a PAPI or LOC foundation or footing. Fill material must be graded and appropriately compacted around the edges of the concrete footings.

What are low impact resistant supports (LIRS)? Supports designed to resist operational and environmental static loads and fail when subject to a shock load such as that from a colliding aircraft.

What is a frangible NAVAID? A frangible NAVAID is an approved airfield system that is mounted on or supported by material that is designed to break away on impact with another object. AC 150/5300-13 describes frangible NAVAIDS as a NAVAID that retains its integrity and is stiff up to a designated load, but on impact from a greater load, it breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

What is a NAVAID that is fixed by function? AC 150/5300-13 describes this as a NAVAID that must be positioned in a particular location in order to provide an essential benefit for civil aviation. Appurtenances that support fixed by function NAVAIDS are not fixed by function unless operational requirements require them to be in proximity to the NAVAID.

NAVAIDS Fixed by function: PAPI(s), VASI(s), REIL(s), ALS(s), MIRL(s), HIRL(s), RVR(s), touchdown zone lighting (TDZ) and centerline (CL) lighting, airfield guidance signs, threshold lights, and supporting equipment.

Can a NAVAID not "fixed by function" be installed within an RSA? Siting NAVAID(s) such as an ILS Localizer (LOC) within an RSA is **not** normally considered fixed by function, and must first be determined to be necessary due to unusual circumstances or as necessary for LOC to perform adequately. If the NAVAID must be sited in the RSA then the permanent structures must meet the frangibility requirements. Objects higher than 3 inches should be constructed of low impact resistance structures such as frangible couplings, or the lowest practicable height and with the point of frangibility no higher than 3 inches above grade. However, it is understood that some localizer support pedestals will not permit the breakaway point to be less than 6 inches above grade. The LOC pedestal is allowed on the airfield but should be sited outside of the RSA.

What is a Runway Object Free Area (ROFA) – This is an area surrounding the RSA intended to enhance safety by providing an area that is free of objects protruding above the RSA edge elevation. It is acceptable to place objects within the ROFA for air navigation or aircraft ground maneuvering purposes that extend above the RSA edge elevation. The ROFA at most airports with commercial service is 800' wide and may extend beyond the end of runway a distance of up to 1,000'. The purpose of the ROFA is to provide an area adjacent to the RSA that is clear of unnecessary objects that could cause damage to the engine pods or other parts of an aircraft that might overhang the ROFA if an aircraft inadvertently overran or veered off a runway into the RSA.

What about temporary objects in the RSA? People and vehicles should not be permitted in the RSA when an aircraft is using the runway. Please contact the airport management staff and the local air traffic control tower for the proper procedures before going on the airfield. Temporarily installed arresting systems for air show exercises may be needed for special events. Air shows and short-term military exercises are <u>not</u> valid requirements for permanent component installation. However, **permanent** arresting structures needed by the military are allowed in the RSA for a permanent military mission at that airport.

TAXIWAY SAFETY AREA (TSA)

What about taxiways? Do they have safety areas? Yes
The taxiway safety area is centered on the taxiway centerline and is considerably smaller than a RSA. The most critical aircraft determines the dimensions. The requirements for TSA under FAR Part 139 are the same as an RSA. The TSA is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

Is construction permitted in the TSA? If in the TSA, vehicles and personnel must remain mobile and move out of TSA for each passing aircraft. Mark, light and NOTAM work areas. Use wing walkers if space restricted.

Safety during construction: One of the most significant changes to AC 150/5370-2 involves the limitations imposed on work near runways and taxiways.

Work adjacent to runway edges: Work may occur in the RSA if: (1) work is no closer than 200 feet from the runway centerline and there is no penetration of the OFZ; (2) The Airport has issued NOTAM(s) and coordinated with ATCT, AF, and FAA Airports District Office (ADO).

Work adjacent to runway ends: No work allowed within the existing RSA and all work must remain clear of threshold sighting surface & OFZ. This restriction must also provide adequate protection from jet blast.

TRENCHES AND EXCAVATION: Trenches and open excavations are not permitted within 200' of the runway centerline. The required RSA distance from the runway threshold must remain free of excavations and trenches. All trenches adjacent to the areas described above must be marked, lighted and a NOTAM must be issued.

STOCKPILING: Stockpiling of materials/equipment is not permitted in the RSA/OFA/OFZ of any operational runway. If materials are stockpiled adjacent to the areas listed above then they must be properly marked and lighted as required. If stockpiling is in the taxiway safety area (TSA), vehicles and personnel must remain mobile and move out of TSA for each passing aircraft. All work areas near the TSA must be marked, lighted, and NOTAM(ed). Use wing walkers for moving aircraft through the TSA if the space is restricted.

AIRPORT GROUND OPERATIONS

As an operator of a vehicle on a controlled airport, **you must get permission from the Air Traffic Controller before you go onto a runway or taxiway, their associated safety areas, or any other part of the movement area.** When communicating by radio, state where you are and where you want to go. For example, "Vehicle One is on the terminal ramp and would like to cross 18 Right, to taxiway Alpha and proceed to the VOR." Remember to always wait for the controller's response. The controller will either approve or deny your request, or issue specific route instructions. An example of the instructions would be "Vehicle One, proceed to hold short of runway 18 Right." Always acknowledge that you have heard the controller's instructions and remember to always repeat a "hold short" clearance.

You should familiarize yourself with basic aviation phraseology before going onto movement areas. For example, **when you hear the phrase "go ahead", controllers use this to mean "state your request." It never means "proceed."** You should also be familiar with the location of movement areas. Remember to check the airport diagram before going on the movement areas.