



Runway Safety Simulation

Through its Integrated Air Traffic Management (ATM) laboratory capability, MITRE's Center for Advanced Aviation System Development (MITRE/CAASD) has combined the newest information technology with systems engineering, modeling, and simulation to produce results that are operationally viable. MITRE/CAASD is dedicated to improving aviation system safety, security, and performance and has created a cockpit simulation that incorporates several runway safety technologies that have been fielded or are currently being researched. This simulation provides users the ability to interact with these systems and includes many runway safety technologies (including the Ground Marker Beacon System).

Final Approach Runway Occupancy Signal (FAROS).

When pilots are on final approach for landing, in certain conditions such as haze or nighttime, it is difficult to distinguish an aircraft that is already on the runway and pointing directly away from an arriving aircraft. The Flashing Precision Approach Path Indicator (FPAPI) system provides a visual indication of runway occupancy status directly to landing pilots. When the FPAPI lights begin flashing, the landing pilot is immediately alerted to the possibility of an occupied runway.



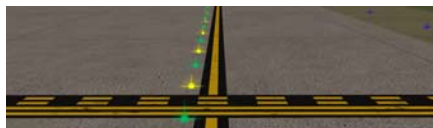
Runway Guard Lights (RGLs).

RGLs are yellow flashing lights that designate hold points prior to active runways. They provide a distinctive warning to anyone approaching the runway holding position that they are about to enter an active runway. Below 1200 Runway Visual Range (RVR) – all taxiways, whether part of low visibility route or not will have RGLs.



Taxiway Lead-on Lighting.

The FAA is investigating a modified lighting configuration for taxiway centerline runway lead-on lights.



Under the current standard, the color pattern of taxiway centerline runway lead-on lights is all green, while the pattern for runway lead-off lights is alternating green and yellow. Under the proposed change, the color pattern for both lead-on and lead-off lights would be alternating green and yellow.

Enhanced Surface Markings.

These are intended to improve awareness of the runway environment and



conspicuity of runway holding position markings. The Enhanced Surface Markings include extending the Runway Holding Position Markings beyond the taxiway edge lines; changing the dashes on the Holding Position Markings from yellow to white; painting a Surface Painted Holding Position Sign on each side of the taxiway centerline; and painting Dashed Yellow Lines on both sides of the taxiway centerline.

Surface Moving Map.

The Airport Surface Situational Awareness (ASSA) application is intended to reduce the likelihood of pilot disorientation on the airport surface by superimposing the pilot's current position upon a map of the airport surface. The ASSA application is flight deck-based and includes the depiction of ownship position, traffic position, and a surface moving map (including runways, taxiways, holding areas, ramps, hangars, and prominent airport structures, etc.) on a cockpit display. The surface moving map display can give important information about nearby traffic, such as ground speed and current heading, to help the pilot anticipate turns or deceleration of the traffic.



Runway Status Lights (RWSLs).

RWSLs are a lighting system designed to reduce the risk of runway incursions by warning the pilot when the potential for an incursion exists. RWSLs provide this warning in the form of red lights at the runway holding position marking (Runway Entrance Lights (RELs)) and on the runway (Takeoff Hold Lights (THLs)). When the surveillance network driven RWSL system, detects an aircraft in the process of taking off, and/or an aircraft crossing the runway, red lights RELs or on the THLs, illuminate.



For more information, contact:

Fran Hoover
Information Management Specialist
+1.703.983.5912