

Flight Simulation Training Device Qualification Guidance

Cockpit Emergency Equipment Required for FSTD Qualification

FSTD Guidance Bulletin 07-02

Purpose: This bulletin provides guidance for sponsors to use in determining how emergency equipment may be represented in a Flight Simulation Training Device (FSTD).

Background: An overview of the General Requirements for Flight Deck Configuration is appropriate. Please review the following excerpts from the FAR Part 60 regulation:

Level A, B, C, & D FSTD's: The simulator must have a flight deck that is a replica of the airplane simulated with controls, equipment, observable flight deck indicators, circuit breakers, and bulkheads properly located, functionally accurate and replicating the airplane. The direction of movement of controls and switches must be identical to the airplane. Pilot seats must allow the occupant to achieve the design "eye position" established for the airplane being simulated. Equipment for the operation of the flight deck windows must be included, but the actual windows need not be operable. Additional equipment such as fire axes, extinguishers, and spare light bulbs must be available in the FFS but may be relocated to a suitable location as near as practical to the original position. Fire axes, landing gear pins, and any similar purpose instruments need only be represented in silhouette...

For simulator purposes, the flight deck consists of all that space forward of a cross section of the flight deck at the most extreme aft setting of the pilots' seats, including additional required crewmember duty stations and those required bulkheads aft of the pilot seats. For clarification, bulkheads containing only items such as landing gear pin storage compartments, fire axes or extinguishers, spare light bulbs, and aircraft document pouches are not considered essential and may be omitted...

Simulated airplane systems must operate as the airplane systems operate under normal, abnormal, and emergency operating conditions on the ground and in flight...

August 9, 2007

Flight Simulation Training Device Qualification Guidance

Level 6 FSTD's: The FTD must have a flight deck that is a replica of the airplane simulated with controls, equipment, observable flight deck indicators, circuit breakers, and bulkheads properly located, functionally accurate and replicating the airplane. The direction of movement of controls and switches must be identical to that in the airplane. Pilot seat(s) must afford the capability for the occupant to be able to achieve the design "eye position." Equipment for the operation of the flight deck windows must be included, but the actual windows need not be operable. Fire axes, extinguishers, and spare light bulbs must be available in the flight simulator, but may be relocated to a suitable location as near as practical to the original position. Fire axes, landing gear pins, and any similar purpose instruments need only be represented in silhouette...

For FTD purposes, the flight deck consists of all that space forward of a cross section of the fuselage at the most extreme aft setting of the pilots' seats including additional, required flight crewmember duty stations and those required bulkheads aft of the pilot seats. For clarification, bulkheads containing only items such as landing gear pin storage compartments, fire axes or extinguishers, spare light bulbs, aircraft documents pouches are not considered essential and may be omitted...

Installed systems must simulate the applicable airplane system operation, both on the ground and in flight. Installed systems must be operative to the extent that applicable normal, abnormal, and emergency operating procedures included in the sponsor's training programs can be accomplished...

Level 4 & 5 FSTD's: The FTD must have equipment (e.g., instruments, panels, systems, circuit breakers, and controls) simulated sufficiently for the authorized training/checking events to be accomplished. The installed equipment must be located in a spatially correct location and may be in a flight deck or an open flight deck area. Additional equipment required for the authorized training/checking events must be available in the FTD, but may be located in a suitable location as near as practical to the spatially correct position. Actuation of equipment must replicate the appropriate function in the airplane. Fire axes, landing gear pins, and any similar purpose instruments need only be represented in silhouette...

Installed systems must simulate the applicable airplane system operation, both on the ground and in flight. Installed systems must be operative to the extent that applicable normal, abnormal, and emergency operating procedures included in the sponsor's training programs can be accomplished...

Flight Simulation Training Device Qualification Guidance

Summary: All cockpit emergency equipment contained on the flight deck of the actual aircraft, that the simulator is to replicate, must also be located, when possible, in the correct location, on the flight deck of the simulator.

Emergency equipment must be operative to the extent that normal (including preflight), abnormal, and emergency operating procedures appropriate to the FSTD Approved Training Program can be accomplished. For that emergency equipment that is not used in the normal, abnormal, and emergency operating procedures checklist, with the exception of the preflight inspection, a full size, non-functioning, 3 dimensional replica or pictorial representation may be acceptable, provided that the exterior of the equipment provides sufficient detail and indications for the pilot to determine that the equipment is ready for flight. Some of these items may be: fire extinguisher; or a crash axe

Exceptions to the above policy may be acceptable on a case by case basis following coordination with the respective POI/TCPM and the National Simulator Program Manager (NSPM). Coordination should be concluded during simulator design phase.