

Computer Simulations on Interior Access Vehicles for Emergency Evacuation

Hae Chang Gea, Rutgers University, Piscataway, NJ

Garnet A. McLean, FAA CAMI, Oklahoma City, OK

Abstract

During aircraft emergency evacuation, the passenger fatality can be greatly reduced if airport fire fighters can join the flight crew on the evacuation of the passenger before the fuselage is compromised. Therefore, the feasibility of a new concept vehicle called Interior Intervention Vehicle (IIV) has been studied in recent years. The primary function of this new concept Interior Intervention Vehicle is to aid fire fighters in making a safe and rapid entry into an aircraft fuselage, as well as assist in the egress of passengers, while adding a fire fighting capability. To evaluate the effectiveness of the Interior Intervention Vehicle, a Monte Carlo Simulation based aircraft emergency evacuation program that was developed. Various Interior Intervention Vehicle emergency deployment scenarios to both single aisle aircraft and double aisle aircraft are modeled and studied. In each configuration, the deployment time of Interior Intervention Vehicle is modeled firstly as 0 second delay and with 10 seconds increment until it reaches 80 seconds delay. Simulation results and some conclusion remarks will be presented.