

9th Triennial International Aircraft Fire and Cabin Safety Research Conference
October 28 – October 31, 2019
Atlantic City, NJ

Author:

Name: **Melissa Beben**

Affiliation: **FAA Civil Aerospace Medical Institute, Cabin Safety Research Team**

Topic: Evacuation and Post-Crash Survival: Water Survival Equipment and Rafts

Title: Inflatable Emergency Equipment II: Evaluation of Individual Inflatable Aviation Life Preserver Retention Characteristics

Abstract

This study was conducted to measure the retention of aviation inflatable life preservers on wearers jumping into water, as specified by FAA Technical Standard Order (TSO) C13f, Life Preservers, and SAE Aerospace Recommended Practice (ARP) 1354A, Individual Inflatable Life Preservers. Both of these resources establish minimum performance standards and test methods for the development and use of life preservers during transport aircraft emergencies such as ditching. The objective of the study was to provide the Aircraft Certification Service, Systems and Equipment Standards Branch (AIR-6B0) and the SAE S-9, Cabin Safety Provisions Committee, with recommended revisions to test protocols presented in ARP 1354A and TCO-C13. This study evaluated seven different models of inflatable life preservers, using wearers who jumped into the water from a height of five feet above the surface. Factors studied included number of inflatable chambers, waist strap adjustment, and arm position while jumping into the water. The study found a significant difference in life preserver retention in regards to inflation chamber type and waist strap adjustment. Arm position did not yield a significant difference in life preserver retention.