



Federal Aviation Administration

Memorandum

Date: June 3, 2008

To: Manager, Small Airplane Directorate, ACE-100

From: Manager, Wichita Aircraft Certification Office, ACE-115W

Prepared by: T.N. Baktha, Airframe & Services Branch, ACE-118W

Subject: Equivalent Level of Safety to § 23.807(e); Cessna Aircraft Company Model 525C; Finding No. ACE-08-08

This memorandum requests your office to review and provide concurrence with the proposed finding of equivalent level of safety (ELOS) to the “Emergency Exits” requirements of 14 CFR, part 23, § 23.807(e).

BACKGROUND:

The Cessna Model 525C is a 16,650 pound, 11 place (9 passengers and 2 crew), airplane powered by two Williams FJ-44-4 Turbo Fan Engines (1920 lb. thrust). The 14 CFR § 23.807(e) requires that “one exit above the waterline on each side of the airplane for multiengine airplanes” must be provided for purposes of emergency exit. Model 525C has one over-wing emergency exit on its right side, but on the left side of the fuselage, the main entry door is proposed to be used as the emergency exit. However, when the airplane floats in the water in the case of water landing, the entry door’s sill will be below the water line. In order to prevent water entering into the cabin, Cessna proposes to employ a water barrier, as it has used in several of its models, such as in Model 680.

APPLICABLE REGULATIONS:

14 CFR § 23.807 requires that the twin turbo engine, commuter category airplane must demonstrate compliance with § 23.807(e) “Emergency exits.”

REGULATIONS REQUIRING AN ELOS:

In considering the current design, the applicant has requested an equivalent level of safety to have the water barrier at the main entry door, so that the main entry door can also be used as an emergency exit, in the case of water landing. On the basis of this approval, the Federal Aviation

Administration (FAA) has determined that an appropriate level of safety can be provided by the issuance of an ELOS, in accordance with the provisions of 14 CFR, part 21, § 21.21(b)(1).

EXPLANATION OF COMPENSATING FEATURES:

Cessna requests the FAA to consider an equivalent in level of safety by using the water barrier to enable the main entry door to be used as an emergency exit in water landings as required by § 23.807(e). The FAA has approved the water barrier installation in several part 25 Cessna Models. Model 525C is an amended type certificate (ATC) of Model 525. Compliance will be shown to § 23.807(e), which requires two escape routes - one escape route being the main cabin door that could be used for evacuation by installing the water barrier prior to opening the main cabin door in case of a landing in water, and the second escape route being the over-the-wing escape door on the right side of the fuselage. The provision of the water barrier will serve as the compensating feature in this case. Therefore, FAA concurs that providing an approved water barrier design is acceptable as an equivalent level of safety.

RECOMMENDATION:

Wichita Aircraft Certification Office (ACO) considers the equivalent level of safety is established by the provision of the water barrier and therefore, recommends the approval of the ELOS.

Concurred by:

<i>William Schinstock</i>	<i>2/20/08</i>
William Schinstock, <i>for</i> Manager, Wichita ACO, ACE-115W	Date
<i>Patrick R. Mullen</i>	<i>5/30/08</i>
<i>for</i> Manager, Standards Office, ACE-110	Date
<i>David R. Showers</i>	<i>6/3/08</i>
<i>for</i> Manager, Small Airplane Directorate, Aircraft Certification Service, ACE-100	Date