



# Memorandum

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Subject: **ACTION:** Review and Concurrence, Equivalent Level of Safety ; ACE-02-20

Date: August 20, 2003

From: Manager, Wichita ACO

Reply to Mr. Paul Nguyen  
Attn. of: ACE-118W

To: Manager, Small Airplane Directorate, ACE-100

Attn:

**Background:** Cessna Aircraft Company requested a finding of equivalent safety for the Cessna Model 525B, FAA Project Number AT3268WI-A, with respect to the minimum aisle width specified in 14 CFR §23.815 of the certification basis. Cessna requested to have an aisle width of 9 inches at levels below 25 inches from the floor and an aisle width of 13 inches at level 25 inches from the floor and above, for passenger capacities up to 9. 14 CFR §23.815(b) specifies an aisle width of 12 inches at levels below 25 inches from the floor and an aisle width of 15 inches at levels 25 inches and above from the floor, for passenger capacities up to 10. The standard interior of the Model 525B provides for 6 passengers. The Model 525B will be certified for a maximum of 9 passengers.

**Applicable regulations:** Cessna Model 525B will be certified under commuter category to the emergency exit provisions of 14 CFR §23.807(d)(4); therefore, the aisle width must meet the requirements of §23.815(b).

**Regulation Requiring an ELOS:** 14 CFR §23.815(b) specifies an aisle width of 12 inches at levels below 25 inches from the floor and an aisle width of 15 inches at levels 25 inches and above from the floor, for passenger capacities up to 10.

**Compensating features which allow the granting of the ELOS:** The Cessna Models 525, 525A, 525B, 550, and 560 all have the same fuselage diameter of 58 inches. The Models 550 and 560 are Part 25 aircraft and required an Equivalent Level of Safety for reduced aisle width of 7 inches at levels below 25 inches from the floor and an aisle width of 13 inches at levels 25 inches from the floor and above for passenger capacities up to 11. The following table documents the Citation Models that have received an Equivalent Level of Safety (ELOS) for reduced aisle width.

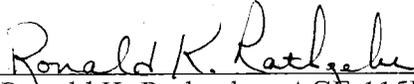
Through evacuation testing, FAA meeting minutes, letters from the FAA, and Cessna reports, an ELOS has been granted for each of the Models shown below.

Model	Aisle Width <25	>25	Number of Passengers	Compliance Documentation	Documentation Date
Model 500-0001	9.0"	15.0"	7	Test, FAA	28 January 1971

			Minutes	
Model 500-0350 BPC	7.0" 13.0"	9	Test, FAA Letter	10 November 1976
Model 550-0001	7.0" 13.0"	11	FAA Letter	22 December 1977
Model S550-0506	7.0" 13.0"	11	FAA Letter	15 September 1983
Model 560-0001	7.0" 13.0"	11	FAA Letter	11 October 1988
Model 560-0539	7.0" 13.0"	11	FAA Letter	7 September 1999
Model 550-0801	7.0" 13.0"	11	FAA Letter	17 February 2000

**Explanation of how these features provide an ELOS:** The aisle width requirements of 14 CFR 23.815(b) were written to ensure that passenger egress was not obstructed during an emergency landing situation. The above information has demonstrated the opportunity for rapid egress in all Cessna 500-Series Citations and the FAA has concurred. The FAA and Cessna confirmed the conclusion that evacuation is restricted by egress through the escape hatch and not by the restriction of the aisle width.

**ACO Recommendation:** The FAA notes that Cessna's request for equivalent level of safety is based on data and rationale developed previously for other Cessna models that have already been granted an equivalent level of safety finding. These data have demonstrated that the differences in egress time between this arrangement and arrangements that directly comply with the regulation are negligible. In this case, the data indicate that, in the particular exit arrangement used on the Cessna 525B, there will not be any effect overall on egress due to the aisle width. Since all of the factors considered in granting the previous equivalent level of safety findings for Cessna 500 series airplanes continue to apply, the Wichita ACO recommends that the Small Airplane Directorate grant an equivalent level of safety for 14 CFR § 23.815(b) on the Model 525B under the provisions of § 21.21(b)(1).

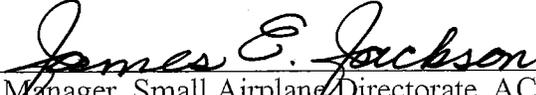
  
 Ronald K. Rathgeber, ACE-115W  
 Manager, Wichita Aircraft Certification Office

8/22/03

Concurrence:

  
 For D.R. Stowers  
 Manager, Standards Office, ACE-110

10-29-03  
 Date

*Acting*   
 Manager, Small Airplane Directorate, ACE-100

10-31-03  
 Date