

could be used in lieu of the full scale demonstration, plus an outlined step-by-step methodology for preparing such an analysis. The former recommendation would require a revision to Appendix J to part 25, while the latter recommendations would expand FAA guidance now in Advisory Circular 25.803-1, Emergency Evacuation Demonstrations. The report was revised numerous times, over several PSWG meetings, based on comments from PSWG members. Nonetheless, after numerous attempts to develop a report that was acceptable to all members of the working group, it was determined that a consensus on the full report could not be attained. Areas of disagreement were, however, defined and discussed in an attempt to reach consensus. Representatives of three organizations on the PSWG have written letters stating their objections to the report as finalized. These letters are included as Appendix 2 of the report. In summary, the objectors expressed concern that the committee did not systematically review the causes of injuries in emergency evacuation demonstrations, and thus could not make meaningful recommendations to reduce or eliminate those injuries. Instead, the objectors felt that the committee had concentrated on an approach which would effectively eliminate the full scale demonstration. It should be noted that the comments are primarily aimed at the proposed revisions to the existing advisory circular and not to the revisions to Appendix J of part 25 contained in this NPRM.

The PSWG accepted the report, although a consensus could not be reached on all issues covered in the report, after discussing all items members raised, including the letters of objection. The report was forwarded to the ARAC on January 28, 1993, and accepted by that body with one negative vote. The vote was taken after an opportunity was given to all members to raise questions or to discuss any item in the report. The ARAC then tasked the PSWG to draft the appropriate rulemaking document and revise the advisory material as recommended in the report. This NPRM covers the recommended revisions to part 25 covered in the report, "Emergency Evacuation Requirements and Compliance Methods that Would Eliminate or Minimize the Potential for Injury to Full Scale Evacuation Demonstration Participants." A copy of the report has been placed in the docket for examination by interested parties.

Harmonization With the Joint Aviation Authorities (JAA)

This document has not been formally harmonized with the JAA in that the JAA has not agreed, as yet, to proceed with parallel rulemaking. A representative of the JAA, however, has been involved with the PSWG since its inception; and the views of the JAA representative have been considered in the development of this notice. Additionally, a representative of the JAA participated as a member of the PSWG writing group, which produced the report noted above upon which this notice is based.

Injuries During Full Scale Emergency Evacuation Demonstrations

Hundreds of people jumping out of an airplane in simulated dark of night conditions onto inflated slides, sliding as many as 25 feet to the ground below, can result in some injuries. As stated in the report, FAA records ("An FAA Analysis of Aircraft Emergency Evacuation Demonstrations: 1982, Society of Automotive Engineers Technical Paper Series #821486 by Sharon A. Barthelmess) noted 166 injuries to participants in a sampling of seven full scale evacuation demonstrations conducted between 1972 and 1980, involving 2,571 passengers and crewmembers. Additionally, a review of 19 full scale evacuation demonstrations during the 1972-1991 time frame identified 269 injuries among 5,797 passengers and crewmembers. Detailed descriptions of most of the injuries discussed above are not available. Not all the injuries, therefore, could be classified as to their severity. Some injuries have been serious; however, the majority probably would not be classified as serious (see 49 CFR 830.2 for injury classification definitions). To date, the most serious injury has resulted in paralysis.

Discussion of the Proposals

The FAA proposes amending Appendix J to part 25, as recommended by the ARAC, to reduce the possibility of injury to participants in a full-scale emergency evacuation demonstration and to codify existing practice regarding airplanes equipped with overwing slides.

Paragraph (a) of Appendix J would be amended to allow exterior light levels of 0.3 foot-candles or less prior to the activation of the airplane emergency lighting system in lieu of the currently required "dark of night" conditions. The proposed light level is approximately the level that would be found in the passenger cabin when the emergency

lighting system is the only source of illumination. Allowing this low level lighting outside the airplane will enhance the ability of the demonstration director to see and react more quickly to problems that may develop during the demonstration. While this would not prevent injuries incurred at the onset of the problems, it could result in reducing the number of injuries by halting the demonstration sooner than in the past. Tests were not run to ascertain whether or not such exterior ambient lighting would enhance or detract from evacuation performance, since it was considered that crew performance, escape system efficiency, and illumination provided by the airplane emergency lighting system have the predominant impact on evacuation performance.

Paragraph (p) would be revised to allow exits with inflatable slides to have the slides deployed and available for use prior to the start of the demonstration timing. If this method is used, the exit preparation time, which would be established in separate component tests, would need to be accounted for in some manner. This change would prevent what has occurred in at least two instances, a participant exiting the airplane before the slide was fully available for use. Neither participant was seriously injured; however, if this were to occur again, the potential for serious injury would remain. An additional benefit is that slides being pre-deployed and inflated would not be subject to damage from equipment, such as light stanchions, that is near the airplane only because a demonstration is being run. The predeployment and inflation of slides also allows the proper placement and opportunity for inspection of safety mats around the slide prior to the start of the demonstration. Additionally, the paragraph would be revised to require that the exits that are not used in the demonstration must be clearly indicated once the demonstration has started. This revision to the regulation would contain wording more general than currently in the rule to accommodate the additional flexibility in exit configuration (slide stowed or pre-deployed and inflated) allowed by this proposal. Finally, the opening sentence in the paragraph would be revised to more succinctly describe the exits that are to be used in the demonstration. The exit pairs in the proposed regulation are as required in the passenger seating tables in § 25.807(d). As in the past, exits that are not installed in pairs, typically tail cone or ventral exits, would not be used in the demonstration. This proposal is in