

Federal Aviation Agency

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AIR CARRIER AND
COMMERCIAL OPERATIONS

EFFECTIVE :

9/22/66



SUBJECT : MAINTENANCE OF EVACUATION SLIDES

1. **PURPOSE.** This advisory circular provides information and guidance to air carriers and commercial operators in the maintenance of emergency evacuation slides.
2. **REFERENCE REGULATIONS.** Sections 121.309(b), 121.309(f), and 121.310(a).
3. **BACKGROUND.** Time is a critical factor in saving lives during a survivable accident. Seconds gained by emergency equipment that has operated properly may be all that is necessary to save all of the passengers on the aircraft. This is particularly true when large numbers of passengers must be evacuated rapidly and safely during a survivable accident. Favorable conditions seldom exist during actual emergencies; therefore, emergency equipment must function properly in order to provide adequately for the survival of the passengers and crew. Any malfunction of emergency evacuation slides can become hazardous during adverse conditions; however, the number and frequency of such malfunctions can be reduced and/or eliminated by proper maintenance practices.

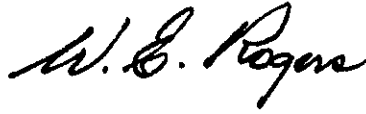
The Federal Aviation Agency conducted studies and observed and evaluated numerous simulated emergency evacuations to determine whether large numbers of passengers could be evacuated in a given period of time. When all emergency evacuation slides functioned properly, these demonstrations showed that the passengers could be evacuated in a rapid and orderly manner. However, there were cases wherein malfunctions of the emergency equipment could have resulted in partially restricting the evacuation of passengers. The following are some examples:

- a. The attach bar was not secured and the slide rotated, dropping the evacuee to the ground.
- b. Slide strap was not attached to the aircraft.

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- c. Rear slide failed to inflate because the release cable became detached from the valve.
- d. Slide support straps were crossed when installed.
- e. Difficulty experienced in positioning the escape bar due to interference of the inspection tag.
- f. Storage bin doors dropped to the full extended position restricting evacuee's movement.
- g. Slide fabric material torn and chafed in fold areas.
- h. Excessive time to install and inflate slides.
- i. Webbing and straps damaged and frayed.
- j. Slides punctured by nuts and screws protruding into the slide containers.
- k. Fabric deteriorated due to moisture.
- l. Insufficient charge in inflation bottle.
- m. Air hoses disconnected, restricted release cable travel, misaligned valves, and kinked or broken lines.
- n. Storage door failed to open even though operation was in accordance with approved procedures.
- o. Slides could not be inflated due to malfunction of inflation valve; inspection of parts supply revealed other defective valves.
- p. CO₂ hose quick disconnect fitting released when a slight charge pressure was applied.
- q. Slide dropped from its container with the attach straps entangled.
- r. Pins on the slide storage door bar slipped out on the forward slide and the door had to be manually opened.
- s. Rear slide twisted out of position when it was inflated and attempts to straighten were unsuccessful. The slide was deflated and used as a noninflatable slide.
- t. Both slides failed to inflate fully due to low charge in inflation bottle.

4. RECOMMENDATIONS. In view of the hazards resulting from malfunctions of emergency evacuation slides, air carriers and commercial operators should ensure the positive operation of slides and other emergency equipment by providing for recurrent inspection and proper maintenance methods, techniques and practices in their maintenance programs. In this respect, the manufacturers' recommendations provide a basis for a sound maintenance program.



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