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FEDERAL AVIATION AGENCY

FLIGHT STANDARDS SERVICE

14 CFR Parts 4b, 40, 41, 42

Regulatory Docket No. 1740 ; Notice No. 63-19

REQUIREMENT FOR A WING-FLAP-ACTUATED LANDING GEAR WARNING SYSTEM

Notice of Proposed Rule Making

Notice is hereby given that there is under consideration a proposal to amend Parts 4b, 40, 41, and 42 of the Civil Air Regulations to require the installation of a wing-flap-actuated landing gear warning system. Manufacturers and operators of airplanes having a maximum certificated weight of more than 12,500 pounds may be affected by these proposed amendments.

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the regulatory docket or notice number and be submitted in duplicate to the Federal Aviation Agency, Office of the General Counsel: Attention Rules Docket, 1711 New York Avenue, N. W., Washington 25, D. C. All communications received on or before July 18, 1963, will be considered by the Administrator before taking action on the proposed rule. The proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons.

Currently effective § 4b.334(e) prescribes, for airplanes with retractable landing gear: that a means "be provided for indicating to the

pilot when the gear is secured in the extended and in the retracted positions"; that, in addition, landplanes "be provided with an aural warning device which will function continuously when one or more throttles are closed if the gear is not fully extended and locked"; and that, if a manual shutoff for the aural warning device is provided, it "be installed so that reopening the throttles will reset the warning mechanism."

The Air Line Pilots Association (ALPA) has suggested to the Agency that many airplanes fitted with means to shut off the aural warning may be landed with throttles at or near the fully retarded position. On such airplanes, it states, the throttles are not necessarily reopened after the aural warning is silenced during an approach, and an inadvertent gear-up landing accident may result. To prevent such accidents, the ALPA proposes that the Agency: (1) amend currently effective § 4b.334(e) to require that the landing gear aural warning system be not only throttle-actuated but also wing-flap-actuated, that manual shutoff for the wing-flap-actuated portion of the aural warning system be prohibited, and that separate circuit protective devices be provided for the throttle-actuated and the wing-flap-actuated portions of the aural warning system; and (2) amend the operating rules to require a retrofit of these design features on all current transport category airplanes.

In support of its proposals, the ALPA contends that: (a) the currently prescribed landing gear warning system is inadequate because of the faster pace of present day operations (which reduces the effectiveness of the checklist on all airplanes) and because of the operational

characteristics of jet transports (long straight-in approaches with throttles retarded, occasionally all the way to touchdown); (b) inadvertent gear-up landings are hazardous to the occupants; (c) inadvertent gear-up landings create adverse publicity for the airlines, and decrease public acceptance of air travel; (d) the proposed amendments would require only a simple low-cost modification of airplanes affected; and (e) two jet transport models already are fitted with the proposed wing-flap-actuated aural warning system.

The Agency finds, from a review of the accident record over the past eight years, that fifteen inadvertent gear-up landing accidents were reported in which airplanes operating under Parts 40, 41, and 42 were involved. Although these accidents did not result in either major injuries or fatalities, such accidents are potentially quite hazardous, particularly by reason of possible ignition of fuel which may be spilled.

From its analysis of the accident record, and from a study of operational practices relating to landing gear aural warning systems, the Agency believes that the currently prescribed throttle-actuated aural warning device, even though backed up to some extent by the prescribed landing checklist procedure, is not sufficiently effective in preventing inadvertent gear-up landing accidents. The Agency believes further that installation of the proposed wing-flap-actuated aural warning system would reduce the number of such accidents, thereby eliminating the potential hazard to the airplane occupants, preventing damage to the airplanes, and avoiding loss of public confidence in air travel.

The need for the additional provision dealing with separate circuit protective devices for the throttle-actuated and wing-flap actuated portions of the aural warning system is not supported by available evidence. The Agency considers that this provision would be unnecessarily burdensome in relation to the increment of safety which might be attained.

The format of any final rules adopted pursuant to this proposal will be subject to such changes as may be necessary for recodification under the Agency's recodification program announced in Draft Release 61-25 (26 F.R. 10698).

In consideration of the foregoing, it is proposed to amend Parts 4b, 40, 41, and 42 of the Civil Air Regulations as follows:

1. By amending § 4b.334(e) of Part 4b by adding a new subparagraph (4) to read as follows:

4b.334 Retracting mechanism.

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(e) Position indicator and warning device.

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(4) In addition to the requirements of subparagraphs (1), (2), and (3) of this paragraph, landplanes shall be provided with an aural warning device which will function continuously when the wing flaps are extended beyond the approach climb configuration setting or to a setting normally used following gear extension, whichever is the lesser flap setting, if the gear is not fully extended and locked. This warning device shall not be equipped with a manual shutoff.

2. By adding a new § 40.154 to Part 40 to read as follows:

40.154 Landing gear aural warning device. After December 31, 1963, landplanes having a maximum certificated weight of more than 12,500 pounds shall be provided with a landing gear aural warning device (in addition to the throttle-actuated device installed in compliance with the airworthiness requirements under which the landplane is type certificated) which will function continuously when the wing flaps are extended beyond the approach climb configuration setting or to a setting normally used following gear extension, whichever is the lesser flap setting, if the landing gear is not fully extended and locked. This warning device shall not be equipped with a manual shutoff.

3. By amending § 40.170(c)(1) to read:

40.170 Aircraft instruments and equipment for all operations.

* * * * *

(c) * * *

(1) Instruments and equipment required to comply with airworthiness requirements under which the airplane is type certificated and as required by the provisions of § 40.110 and §§ 40.150 through 40.154.

4. By making similar amendments to those proposed in items 2 and 3 in Parts 41 and 42.

These amendments are proposed under the authority of sections 313(a), 601, 603, 604, 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354, 1421, 1423, 1424, 1425).


Director,
Flight Standards Service

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