

Federal Aviation Agency

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ADVISORY CIRCULAR

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SUBJECT : AIRPLANE FLIGHT MANUAL PROCEDURES ASSOCIATED WITH
PERFORMANCE LIMITATIONS

1. **PURPOSE.** This circular sets forth acceptable means, not the sole means, by which compliance may be shown with the requirement of Special Regulation SR-422B, section 4T.743(c), that performance procedures be included in the "limitations" section of the airplane flight manual in the form of guidance material.
2. **REFERENCE REGULATION.** 4T.743(c), Procedures

"Procedures established in accordance with paragraph 4T.111(c) shall be given to the extent such procedures are related to the limitations and information set forth in accordance with paragraphs (a) and (b) of this section. Such procedures, in the form of guidance material shall be included with relevant limitations or information, as applicable."
3. **DISCUSSION.**
 - a. Objections have been raised to the requirement that performance procedures be included in the "limitations" section of the airplane flight manual. Objections have also been raised to the mandatory language used in some of these performance procedures such as "when an engine failure occurs, the take-off must be discontinued when the failure is recognized prior to attaining V_1 speed, the critical engine failure speed, and must be continued when the failure occurs after V_1 speed." Some airplane flight manuals use mandatory language in specifying these procedures and have failed to identify the procedures as guidance information in accordance with section 4T.743(c).
 - b. Performance procedures associated with performance limitations are included in the airplane flight manual as guidance information to tell the pilot operating the airplane in service how the

flight tests were conducted to obtain the scheduled performance shown. These procedures are directly related to the minimum performance standards required by the airworthiness regulations and usually apply to critical engine inoperative conditions. It is important to note that in order to reproduce the performance in the airplane flight manual when operating under identical conditions (dry runway, critical engine failure at V_1 , etc.) as those scheduled therein, the pilot would have to follow the procedures associated with the performance limitations involved.

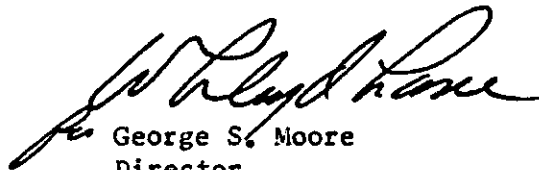
- c. ICAO has issued a circular on "Standardization of Approved Aeroplane Flight Manuals" in which performance data and associated performance procedures relating to performance limitations are to be placed in the performance information section. The performance data are to be referenced so that they are binding as limitations. This approach is consistent with the provisions of part 4T.743(c). In this method, the pertinent performance data are referenced both to and from the Limitation Section and so worded that they are unmistakably binding as limitations. This method also eliminates any misunderstanding concerning the status of the operational procedures set forth therewith.
- d. Basically, the resulting maximum weight for a given set of conditions is the operational performance limitation, not the procedures shown relating thereto as guidance information.

4. ACCEPTABLE MEANS OF COMPLIANCE.

- a. In showing compliance with section 4T.743(c), it is necessary to put the applicable performance procedures with the relevant performance data. All performance procedures are guidance material only.
- b. A statement should accompany the performance procedures to identify them as guidance material and to state that these procedures were those used during type certification to show compliance with the applicable performance limitations requirements. Use of words with a mandatory connotation such as, "shall" and "must," should be avoided to preclude inference that the performance procedures are mandatory.
- c. One acceptable means of identifying the performance procedures as guidance material when the procedures are included in the Limitations Section is as follows:

"The following _____ procedures associated with the _____ limitations are guidance information. These procedures were used during type certification flight tests to show compliance with the applicable performance requirements and in determining the performance shown in this airplane flight manual."

- d. Another acceptable means of compliance would be to use the recommended method shown in ICAO Circular 65-AN/59 of 1963 entitled "Provisional Acceptable Means of Compliance - Standardization of Approved Aeroplane Flight Manuals."
- e. It should be noted in the ICAO PAMC that when a limitation such as airplane weight involves performance data, the performance data are to be located in the Performance Section and the cross-reference material in the Limitations Section worded so that the pertinent performance data are legally binding as limitations. The performance data in the Performance Section that are used as limitations should be labeled accordingly and cross-referenced to the appropriate part of the Limitations Section.



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