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ACCEPTABLE MEANS OF COMPLIANCE

TURBINE ENGINES – TYPE TESTS

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PROVISIONAL ACCEPTABLE MEANS OF COMPLIANCETURBINE ENGINES - TYPE TESTSFOREWORD

1. The Standards in Annex 8, Airworthiness of Aircraft, are of the nature of broad specifications stating objectives rather than methods of realizing those objectives. In order to indicate by example the level of airworthiness intended by the Standards of that Annex, some specifications of a more detailed and quantitative nature have been included in the same volume under the title "Acceptable Means of Compliance". The Foreword of Annex 8 indicates the obligation under the Convention, resulting from the introduction of Acceptable Means of Compliance.

2. When the Annex was adopted on 13 June 1957, the Standards on the subjects: Aeroplane Performance, Strength under Flight Loads, Reciprocating Engines, Turbine Engines, Propellers, and Navigation Lights were supplemented by Acceptable Means of Compliance. The absence of provisions of that type pertaining to other subjects was considered either as recognition by the Council that the Standards in themselves defined a sufficiently accurate level of airworthiness, or as recognition by the Council that due to the technical developments going on in a subject at the time of adoption of the Annex, it had not yet been possible to establish a more precise technical specification than that in the Standards themselves.

3. It is the essence of the Acceptable Means of Compliance that they permit variations in overall methods as well as in detailed application. Therefore, Contracting States, in establishing national codes that will ensure compliance with the Standards, will sometimes need guidance as to the departures from Acceptable Means of Compliance that are suitable for the certification of aircraft other than those specified in their Range of validity, and also as to the use of methods developed too recently to have behind them the suitable background of experience deemed necessary for introduction of an Acceptable Means of Compliance.

4. The guidance material is established by ICAO as "Provisional Acceptable Means of Compliance", a class of specification that does not impose any obligation under the Convention. The Provisional Acceptable Means of Compliance are not, like the Standards or the full-fledged Acceptable Means of Compliance, established by agreement between Contracting States; instead, they reflect an agreement reached by an international body of experts to the effect that a specification is worthy of trial.

5. Trial application of Provisional Acceptable Means of Compliance in national regulations or practices is intended to build up the amount of experience that, eventually, could lead to the introduction of an Acceptable Means of Compliance on the same subject.

6. The Provisional Acceptable Means of Compliance presented in the First Edition of this Circular (Circular 51-AN/46) was developed by the Third Air Navigation Conference Meeting in September-October 1956. It was based on a revised Turbine Engines Type Test Schedule which had been agreed between the United States and the United Kingdom in February 1956. The level of airworthiness illustrated by this Provisional Acceptable Means of Compliance was intended to be at least as high as that exemplified by the Acceptable Means of Compliance on the subject within the covers of Annex 8, of which it was a revision. The revision affected mainly the endurance test. While the Acceptable Means of Compliance for Turbine Engines devotes only a proportion of the time to cyclic testing, the revised test in the earlier Provisional Acceptable Means of Compliance was fundamentally a cyclic test schedule. The Council, acting on the recommendation of the Air Navigation Commission, approved the issue of this Provisional Acceptable Means of Compliance at the Eleventh Meeting of its Twenty-Ninth Session on 30 November 1956. In approving the issue of this Provisional Acceptable Means of Compliance, the Council and the Air Navigation Commission did not pass judgement on, or endorse, the technical contents recommended by the Third Air Navigation Conference.

7. At its Fourth Meeting, the Airworthiness Committee, a body of experts authorized by the Council and functioning under the Air Navigation Commission, decided that a re-evaluation of the Provisional Acceptable Means of Compliance - Turbine Engines - was desirable with respect to its adequacy for rotorcraft. At the Fifth Meeting, the Airworthiness Committee examined a draft revision to the Provisional Acceptable Means of Compliance which, in addition to some refinements, included the concept of contingency ratings for turbine engines intended for use in multi-engined rotorcraft. However, in view of the lack of operational experience with such engines, the Airworthiness Committee decided to study the draft further with the intent of finalizing the revision at its next Meeting. At the Sixth Meeting, the Committee observed that there was still a number of areas in which differences existed and recommended that engine-manufacturing States attempt to resolve these differences prior to its next Meeting.

8. The Provisional Acceptable Means of Compliance presented in this Second Edition of the Circular was prepared by the Airworthiness Committee at its Seventh Meeting which was held from 22 November to 15 December 1966. It contains specifications on type tests for turbine engines without contingency ratings for use in aeroplanes and for turbine engines with contingency ratings for use in multi-engined helicopters. In the latter case, two alternative endurance tests have been included to provide for two different approaches, followed in major manufacturing States, relating to the maximum duration (30 minutes or unlimited) of the use of the intermediate contingency power. The Air Navigation Commission, after satisfying itself that this Provisional Acceptable Means of Compliance is properly co-ordinated with the ICAO Standards and related material and that the policies of the Organization have been followed, authorized issue of this revised edition of the Provisional Acceptable Means of Compliance at the Fourth Meeting of its Fifty-Fourth Session on 31 January 1967. It is to be noted that, in so doing, the Air Navigation Commission did not pass judgement on, or endorse, the technical contents recommended by the Airworthiness Committee.

9. States are invited to use these specifications and to notify ICAO of the extent to which they are being applied. Should any State find it desirable or necessary to adopt any significant variations from the specifications, that State is invited to notify the Organization of such differences.