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PROVISIONAL
ACCEPTABLE MEANS OF COMPLIANCE

AEROPLANE STATIC PRESSURE SYSTEM

UNIFORM METHOD OF CALIBRATION OF POSITION ERROR

Prepared by the Airworthiness Committee and
published by authority of the Secretary General

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PROVISIONAL ACCEPTABLE MEANS OF COMPLIANCE
AEROPLANE STATIC PRESSURE SYSTEM -
UNIFORM METHOD OF CALIBRATION OF POSITION ERROR

FOREWORD

1. The Standards in Annex 8, Airworthiness of Aircraft, are of the nature of broad specifications stating objectives rather than the 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, 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 method 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. That type of 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 this Circular was developed by the Airworthiness Committee, a body of experts authorized by the Council and functioning under the Air Navigation Commission. The Airworthiness

Committee recommended the issuance of this Provisional Acceptable Means of Compliance in its report of the Seventh Meeting which was held from 22 November to 15 December 1966. 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 issuance of this 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.

7. This Provisional Acceptable Means of Compliance is applicable to all aeroplanes certificated for operation at subsonic speeds up to an altitude of 15 000 metres (50 000 feet). It contains specifications concerning the calibration of the static pressure system position error of such aeroplanes. It also describes in detail the trailing cone calibration method which has been shown to meet the accuracy requirements of ± 23 metres (± 75 feet) throughout the prescribed operating altitude and airspeed/Mach number limitations and which has also proven to be an accurate, easily repeatable, relatively simple and economical method. The subject of this Provisional Acceptable Means of Compliance is one important factor directly related to the problem of vertical separation of aeroplanes.

8. It should be noted that States are being asked to conduct, on a sampling basis, static pressure system position error measurements of selected in-service aeroplanes using the trailing cone method, in order to gather additional data on this subject for evaluation by ICAO.

9. States are invited to use these specifications and to notify ICAO of the extent to which they are 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 difference.

AEROPLANE STATIC PRESSURE SYSTEM -
UNIFORM METHOD OF CALIBRATION OF POSITION ERROR

APPLICABILITY

This PAMC contains specifications applicable to all aeroplanes certificated for operation at subsonic speeds up to an altitude of 15 000 metres (50 000 feet).

1. GENERAL

1.1 Introduction

This PAMC specifies a minimum accuracy required for calibration of the static pressure system position error of an aeroplane and details one acceptable method for uniform application.

1.2 Definitions

Static Pressure System Position Error: The difference between the altitude indicated by an altimeter (having no instrument error) connected to the static pressure system of the aeroplane and the ambient pressure altitude. It is convenient to consider the static pressure system position error as made up of the following two component parts:

- a) the fixed error, which is recorded in the Aeroplane Flight Manual, and
 - b) the variable error, which is the probable departure from the fixed error. Included in the variable error is the error attributable to the test procedure used.
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