International Civil Aviation Organization

WORKING PAPER

A37-WP/83
TE/31
1/9/10
English and Russian only[1]

ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 46: Other issues to be considered by the Technical Commission

CERTIFICATION OF AERODROME AND EN-ROUTE EQUIPMENT

(Presented by the Interstate Aviation Committee[2])

EXECUTIVE SUMMARY

The importance and complexity of provision and regulation of flight safety are ever increasing. Mostly, they are associated with a high autonomy of service providers and aerodrome and en-route equipment manufacturers.

The practical experience of several Contracting States has shown that certification of aerodrome and en-route equipment is an effective means for ensuring compliance with the ICAO Standards and Recommended Practices (SARPs).

Action: The Assembly is invited to consider this working paper and suggest that the ICAO Council undertake a study in this field and develop appropriate guidance and information material.

Strategic Objectives:	This working paper relates to Strategic Objectives A and D to improve the flight safety level of international civil aviation.
Financial implications:	Financing within the ICAO Regular Programme budget allocations.
References:	Doc 9902, *Assembly Resolutions in Force* (as of 28 September 2007) Annex 10 — *Aeronautical Telecommunications* Annex 14 — *Aerodromes* ISO 9001

1. Versions in Russian and English are presented by the Interstate Aviation Committee (IAC).

2. Interstate Aviation Committee (IAC) is the executive body of the Interstate Agreement on Civil Aviation and Airspace Use (international agreement, participants of which include Azerbaijan Republic, Republic of Armenia, Republic of Belarus, Georgia, Republic of Kazakhstan, Kyrgyz Republic, Republic of Moldova, Russian Federation, Republic of Tajikistan, Turkmenistan, Ukraine, and the Republic of Uzbekistan).

1. INTRODUCTION

1.1 One of the main tasks of the International Civil Aviation Organization (ICAO) is enhancing the international civil aviation safety level. The 32nd ICAO Assembly adopted Resolution A32-15 “ICAO Global Aviation Safety Plan (GASP)”.

1.2 The importance and complexity of provision and regulation of flight safety is ever increasing. Mostly, it is associated with a high autonomy of service providers and providers of aerodrome and en-route equipment.

1.3 Compliance with the ICAO Standards and Recommended Practices (SARPs) is a necessary requirement for achieving the GASP goals. This is why it appears reasonable that ICAO develop concrete requirements so as to enhance the degree of equipment compliance with the SARPs.

1.4 Certification of aerodrome and en-route equipment is an effective measure for ensuring compliance with the ICAO SARPs.

1.5 However, currently ICAO does not require that States certify aerodrome and en-route equipment similar to the Annex 14 requirements for aerodrome certification.

2. DISCUSSION

2.1 The aerodrome and en-route equipment includes means of communication, navigation aids, surveillance means, air traffic control equipment, lighting, meteorological equipment, aeronautical fixed telecommunication network (AFTN) means, systems for pavement surface condition monitoring, etc.

2.2 Compliance of the aerodrome and en-route equipment with SARPs may include the following steps:

a) compliance of the type (reference) design presented by the equipment manufacturer;

b) conformity of the production equipment with the type design; and

c) compliance of installed equipment.

2.3 Demonstrating compliance of equipment on-site is a common practice in the Contracting States of the Interstate Agreement on Civil Aviation and Airspace Use. However, the proof of compliance with all necessary requirements of the equipment to be installed can be difficult to realize and cannot be cost-efficient. For example, the necessity to demonstrate compliance with the International Commission on Illumination (CIE) equations in Annex 14 for the chromaticity of aerodromes’ lighting equipment as well as compliance with several Annex 10 provisions on the radio navigation aids (particularly regarding new ones, e.g. satellite systems). Therefore, testing equipment only on-site may not guarantee equipment compliance with ICAO SARPs’ requirements.

2.4 Demonstrating compliance of the type (reference) design presented by the equipment manufacturer to the aviation administration includes, first of all, full testing on compliance with SARPs. In demonstrating compliance with the type (reference) design, special standards and requirements concerning local climate, electric power supply, aircraft noise and vibrations, aircraft thermal effects, chemical agent effects, etc., in a specific region or in a specific Contracting State shall be taken into consideration.

2.5 Compliance of the type (reference) design with the requirements that include the ICAO SARPs and additional regional or national requirements (if any) can be confirmed by equipment type certificate issued by the aviation administration to the equipment manufacturer.

2.6 An equipment type certificate shall ensure compliance of production equipment with the type design that passed full tests. Experience shows that to achieve this, special desk and/or on-site audits conducted by the aviation administration are needed. The main objective of these audits is to check if there is a quality control system in place at the manufacturer.

2.7 As a result, conformity of all production equipment with the type design is ensured and this equipment complies with all flight safety requirements, subject only to acceptance tests on-site when putting equipment into operation.

2.8 Due to the need to show compliance of the type design with the SARPs, as well as with additional requirements (if any), the role of individual States capable of full testing, as well as regional organizations established, among other things, to solve complex tasks, such as aerodrome and en-route equipment certification, is becoming more essential.

2.9 Therefore, equipment type certification, on one hand, and on-site equipment checks, on the other hand (including regular flight and/or ground checks), provide efficient means of compliance of aerodrome and en-route equipment with the requirements and it ensures its operational safety, which, eventually, results in enhanced flight safety.

— END —