



TEL.: (514) 954-6725

Ref.: AN 11/1.1.23-97/70

8 August 1997

Subject: Proposals for the amendment of Annex 6, Parts I, II and III with respect to the carriage of airborne collision avoidance systems (ACAS) and pressure-altitude reporting transponders

Action required: Comments to reach Montreal by 21 November 1997

Sir/Madam,

1. I have the honour to present the results of the preliminary review by the Air Navigation Commission, at the fifteenth meeting of its 145th Session on 19 June 1997, of proposals for the amendment of Annex 6 *Operation of Aircraft, Part I International Commercial Air Transport Aeroplanes, Part II International General Aviation Aeroplanes* and Part III *International Operations Helicopters* with respect to the carriage of airborne collision avoidance systems (ACAS) and pressure-altitude reporting transponders. The objective in conducting the preliminary review at this time was to take the opportunity of an amendment to Annex 6, Parts I, II and III in 1998.

2. The Air Navigation Commission believes that ICAO should actively encourage the mandatory carriage of ACAS and pressure-altitude reporting transponders world-wide and that a deadline for the implementation of ACAS carriage requirements should be established.

3. The proposed amendments were developed because of a perception that the existing provisions concerning requirements for the carriage of ACAS contained in Annex 6, Part I were no longer appropriate and that a universal Standard was necessary rather than agreements in individual ICAO regions.

4. The Air Navigation Commission was, however, concerned about several aspects associated with the proposals, in particular the date for the implementation of a requirement for the carriage of ACAS in the larger aeroplanes and the difficulties which might be experienced if the lead time were to be too short. Details concerning the amendments and the concerns of the Air Navigation Commission are provided in Attachment A. The amendment proposals are presented in Attachment B.

5. The Air Navigation Commission wishes to receive your comments on all aspects of the proposed amendments and, in particular, on the implementation dates in the proposed Annex 6, Part I, paragraphs 6.18.1 and 6.18.2. Any suggestions you may have for the variation of those dates will be taken into account, including supporting rationale such as any difficulties that may be perceived in the acquisition of the appropriate ACAS equipment and in the fitting of that equipment to the aeroplanes concerned.

6. The Air Navigation Commission considers the implementation of ACAS to be a most important aspect in the drive to further improve the safety of air operations. The Commission is therefore desirous of the maximum possible participation of States in providing a response to the proposals covered by this letter. In order to assist in the monitoring of the replies received, I would request you to provide a copy of your response to the ICAO Regional Office accredited to your State. The Commission would also like to remind you that time is short for the achievement of an amendment to Annex 6 for applicability in 1998, and that there is thus a necessity for a timely response to this letter.

7. At this time, it is not necessary to correct any faulty cross-references or paragraph numberings in the proposed amendment. Similarly, in examining the amendment you should not feel obliged to comment on editorial aspects as such matters will be addressed by the Air Navigation Commission during its final review.

8. May I request that any comments you may wish to make on the proposed amendment be dispatched to reach me not later than 21 November 1997. The Air Navigation Commission has asked me to specifically indicate that comments received after the due date may not be considered by the Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.

9. For your information, the proposed amendment to Annex 6, Parts I, II and III will be combined with other Annex 6 amendments currently in preparation and is envisaged for applicability on 5 November 1998. Any comments you may have thereon would be appreciated.

10. The subsequent work of the Air Navigation Commission and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposals. Please note that, for the review of your comments by the Air Navigation Commission and the Council, replies are normally classified as agreement with or without comments , disagreement with or without comments or no indication of position . If in your reply the expression no objections or no comments should be used, they will be taken to mean agreement without comment and no indication of position , respectively.

Accept, Sir/Madam, the assurances of my highest consideration.

R.C. Costa Pereira
Secretary General

Enclosures:

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| Attachment A | Discussion of the proposed amendments and the concerns of the Air Navigation Commission |
| Attachment B | Proposed amendment to Annex 6, Parts I, II and III |

ATTACHMENT A to State letter AN 11/1.1.23-97/70**DISCUSSION OF THE PROPOSED AMENDMENTS AND
THE CONCERNS OF THE AIR NAVIGATION COMMISSION****Pressure-altitude reporting transponders**

11. The Air Navigation Commission endorsed the need for the universal use of pressure-altitude reporting transponders and agreed to the circulation of the proposal to amend Annex 6, Part I, paragraph 6.19 as presented in Attachment B. The equivalent amendments to Annex 6, Part II and Part III, Sections II and III are also provided in Attachment B.

The requirements for mandatory carriage of ACAS

12. The Air Navigation Commission was similarly in no doubt as to the need to replace the existing Standard which referred to regional agreements as the basis for mandatory carriage of ACAS with a Standard requiring international implementation by a specified date.

13. The proposal to replace a system of regional agreements with an ICAO Standard to require the carriage of ACAS was prompted by a number of actions on the carriage of ACAS throughout the world: the Seventh Africa-Indian Ocean Regional Air Navigation Meeting (AFI/7), held in Abuja, Nigeria from 12 to 23 May 1997, formulated a recommendation for an amendment to the *Regional Supplementary Procedures* (Doc 7030) AFI Region, requiring the carriage and operation of ACAS II in the entire region; a recent proposal by the European Air Navigation Planning Group (EANPG) for the amendment of *Regional Supplementary Procedures* (Doc 7030) European Region to require the carriage and operation of ACAS II; and a similar action that has been taken by member States of the European Civil Aviation Conference (ECAC). Additionally, action is being taken independently by Australia, India and Japan. Australia and India intend the requirement to be applicable not only to aeroplanes registered in the State but also to all aeroplanes flying in their airspace. Work to achieve a regional agreement for the Asia/Pacific Regions has also been initiated.

14. In North America, the United States has issued on 31 December 1993 a requirement for the carriage of TCAS II by aeroplanes operating in United States airspace. This currently applies to foreign or domestic aeroplanes operating under Federal Aviation Regulations (FAR) Parts 121 and 129, engaged in scheduled services and which are authorized to carry thirty (30) or more passengers. Consideration is also being given to applying the same requirements to cargo carrying aircraft.

15. In the case of Canada, the use of the United States-developed TCAS was authorized in Canadian airspace subject to the same requirements contained in Federal Aviation Administration (FAA) circulars. Canada is presently examining the possibility of mandating the use of ACAS/TCAS in Canadian airspace, and a decision is expected before the end of 1997.

Recommended Practice for the carriage of ACAS by all aeroplanes Annex 6, Part I

16. The Air Navigation Commission considered it essential in the interest of the safety of operations that the earliest possible provision of ACAS equipment to all aeroplanes, both passenger and cargo, in commercial operations be encouraged. To this end the Commission included a proposal for a Recommended Practice on the carriage of ACAS II in a new paragraph Annex 6, Part I, 6.18.3.

The ACAS equipment to be provided

17. As explained in Annex 10 *Aeronautical Telecommunications, Volume IV Surveillance Radar and Collision Avoidance Systems*, Chapter 4, ACAS I is not intended for international implementation and standardization by ICAO. Pending the availability and standardization of ACAS III, the ACAS equipment to be provided is ACAS II. To be compatible all ACAS equipment must comply with the specifications in Volume IV. The final sentence of existing paragraph 6.18.1 of Annex 6, Part I has therefore been relocated as a proposed new paragraph 6.18.4.

The size of aeroplanes required to carry ACAS

18. Current ICAO provisions in Annex 6, Part I, paragraph 6.18.1, do not prescribe any limitations on size. The Air Navigation Commission considered that size limitations were necessary in this context and that the sizes of aeroplanes associated with the recommendations of AFI/7 and the proposals of the European Region were appropriate and that these size limitations should be associated with particular implementation dates.

19. The Commission has therefore proposed the division of the ACAS carriage requirement into requirements for aeroplanes with a maximum certificated take-off mass (MCTM) in excess of 15 000 kg or authorized to carry more than 30 passengers and aeroplanes with MCTM in excess of 5 700 kg or authorized to carry more than 19 passengers. Suggested implementation dates are provided for these two categories of aeroplanes in the proposed new paragraphs 6.18.1 and 6.18.2 to Annex 6.

Implementation dates for ACAS carriage requirements

20. The Air Navigation Commission was concerned over the dates for the implementation of any new ICAO requirements for the carriage of ACAS. While safety considerations called for the earliest practicable implementation dates, cost, availability of equipment and scheduling of installation on board aircraft would also need to be considered.

21. The current ICAO provision contained in Annex 6, Part I, paragraph 6.18.2 indicates that any regional agreement on the carriage of ACAS should provide at least a five-year notice. This Recommended Practice originated from the fifth meeting of the Secondary Surveillance Radar Improvements and Collision Avoidance Panel (SICASP) held in Montreal from 1 to 19 November 1993. The Recommended Practice had been originally proposed as a Standard and included the five-year period on the basis that, in November 1993, many commercial aircraft were already fitted with ACAS and that a five-year period of prior notification regarding the mandatory carriage of ACAS would be sufficient.

22. When Amendment No. 22 to Annex 6, Part I was adopted by the Council at the first meeting of its 147th Session on 19 February 1996, the proposed Standard in paragraph 6.18.2 was changed to the status of a Recommended Practice. This action was taken because some ICAO regions might wish to

apply a lesser period of notice, in which case a mandatory period of prior notice of five years was not appropriate.

Implementation date for the carriage of ACAS by aeroplanes of MCTM in excess of 15 000 kg or authorized to carry more than 30 passengers

23. The Air Navigation Commission has proposed a date of 1 January 2000 for the mandatory carriage of ACAS by aeroplanes of MCTM in excess of 15 000 kg or authorized to carry more than 30 passengers. This date was based upon the proposals for the amendment of the *Regional Supplementary Procedures* (Doc 7030) for the Africa-Indian Ocean and European Regions which both propose 1 January 2000. Note was taken of action by Australia to introduce ACAS requirements in 1997, by India to introduce requirements effective 31 December 1998, by Japan to introduce a requirement effective 4 January 2001, and by the United States which has had a requirement for the carriage of ACAS since 30 December 1993.

24. The Commission was aware that many commercial aeroplanes were already fitted with ACAS. The Commission is also aware that the prior notice of the proposed Standard is thirteen months from the expected applicability date of Amendment No. 23 to Annex 6, Part I and one year and nine months from the possible date of adoption in March 1998.

Implementation date for the carriage of ACAS by aeroplanes of MCTM in excess of 5 700 kg or authorized to carry more than 19 passengers

25. The Air Navigation Commission has proposed a date of 1 January 2005 for the mandatory carriage of ACAS by aeroplanes of MCTM in excess of 5 700 kg or authorized to carry more than 19 passengers. The Commission is convinced that the prior notice of nearly seven years from the possible date of adoption of the Standard is adequate for the equipage of the aeroplanes concerned.

ATTACHMENT B to State letter AN 11/1.1.23-97/70

RECOMMENDATIONS OF THE ICAO AND INDUSTRY CFIT TASK FORCE

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

OPERATION OF AIRCRAFT

ANNEX 6

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

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the new text which is highlighted with grey shading

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new text to be inserted is highlighted with grey shading

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PART I
INTERNATIONAL COMMERCIAL AIR TRANSPORT AEROPLANES

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CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT, AND FLIGHT DOCUMENTS

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**6.18 Aeroplanes required to be equipped with an
airborne collision avoidance system (ACAS)**

~~6.18.1 Requirements for mandatory carriage of airborne collision avoidance system shall be on the basis of regional air navigation agreements which shall specify the airspace and the airborne implementation time-scales. The airborne collision avoidance system shall operate in accordance with the relevant provisions of Annex 10, Volume IV.~~

~~6.18.2 **Recommendation.** *The agreements indicated in 6.18.1 above should provide at least five year's notice.*~~

6.18.1 On or after 1 January 2000, all aeroplanes of a maximum certificated take-off mass in excess of 15 000 kg or authorized to carry more than 30 passengers shall be equipped with an airborne collision avoidance system (ACAS II).

6.18.2 On or after 1 January 2005, all aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than 19 passengers shall be equipped with an airborne collision avoidance system (ACAS II).

6.18.3 **Recommendation.** *All aeroplanes should be equipped with an airborne collision avoidance system (ACAS II).*

6.18.4 An airborne collision avoidance system shall operate in accordance with the relevant provisions of Annex 10, Volume IV.

**6.19 Aeroplanes required to be equipped with a
pressure-altitude reporting transponders-transponder**

~~Unless exempted by the appropriate authorities, all~~ **All** aeroplanes shall be equipped with a pressure-altitude reporting transponder to fly in designated airspaces.

Note. This provision is intended to improve the effectiveness of air traffic services as well as airborne collision avoidance systems.

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PART II
INTERNATIONAL GENERAL AVIATION AEROPLANES

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CHAPTER 6. AEROPLANE INSTRUMENTS AND EQUIPMENT

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**6.13 Aeroplanes required to be equipped with a
pressure-altitude reporting transponders transponder**

~~Unless exempted by the appropriate authorities, all~~ **All** aeroplanes shall be equipped with a pressure-altitude reporting transponder ~~to fly in designated airspaces.~~

Note. This provision is intended to improve the effectiveness of air traffic services as well as airborne collision avoidance systems.

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**PART III
INTERNATIONAL OPERATIONS HELICOPTERS**

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**SECTION II
INTERNATIONAL COMMERCIAL AIR TRANSPORT**

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CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT, AND FLIGHT DOCUMENTS

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**4.15 Helicopters required to be equipped with a
pressure-altitude reporting transponders transponder**

~~Unless exempted by the appropriate authorities, all~~ **All** helicopters shall be equipped with a pressure-altitude reporting transponder to fly in designated airspace.

Note. This provision is intended to improve the effectiveness of air traffic services as well as airborne collision avoidance systems.

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**SECTION III
INTERNATIONAL GENERAL AVIATION**

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CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT, AND FLIGHT DOCUMENTS

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**4.11 Helicopters required to be equipped with a
pressure-altitude reporting transponders transponder**

~~Unless exempted by the appropriate authorities, all~~ **All** helicopters shall be equipped with a pressure-altitude reporting transponder to fly in designated airspace.

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Note. This provision is intended to improve the effectiveness of air traffic services as well as airborne collision avoidance systems.

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