

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 1: Introduction and assessment of a global air traffic management (ATM) operational concept

**1.4 The role of airborne collision avoidance systems (ACAS) technologies
:**

AIRBORNE COLLISION AVOIDANCE SYSTEM (ACAS) EFFECTIVENESS

(Presented by Colombia)

SUMMARY

This paper explains a proposal for complementary action by ATC in cases of resolution advisory (RA) manoeuvres.

Action by the conference is in paragraph 4.

1. INTRODUCTION

1.1 The regrettable accident that occurred in the skies of Switzerland last year left us with a harsh lesson: we must harmonize human actions and automation procedurally.

2. DISCUSSION

2.1 Several years passed before collision avoidance systems gave pilots instructions in three dimensions and as many again before the controller could know on screen what manoeuvres would be performed by aircraft.

2.2 Furthermore, airborne collision avoidance system (ACAS) II systems suggest manoeuvres in the vertical plane, leaving the horizontal plane free so that the controller with surveillance systems (radar

or automatic dependent surveillance (ADS)) can complement this with instructions to turn which can help to prevent a collision.

3. **CONCLUSION**

3.1 It is very important to maintain the possibility for human intervention in these circumstances, without generating contradictions between the machine and the human, since in certain circumstances this can mean the difference between a dangerous incident and a regrettable accident.

3.2 One might think that a commercial aircraft takes less time in responding to a turn manoeuvre than to a climb manoeuvre. This could also be evaluated in greater depth.

4. **ACTION BY THE CONFERENCE**

4.1 The conference is invited to note this information and to evaluate the usefulness of including it among the initiatives to increase ACAS II efficiency and of introducing it into the relevant ICAO documents.

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