

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

**Agenda Item 2: Safety and security in air traffic management
(ATM)**

2.4 Global Aviation Safety Plan (GASP)

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**UPDATE ON THE ICAO PROGRAMME FOR THE PREVENTION OF
CONTROLLED FLIGHT INTO TERRAIN (CFIT) AND FOR THE
APPROACH AND LANDING ACCIDENT REDUCTION (ALAR)**

(Presented by the Secretariat)

1. INTRODUCTION

1.1 The development of the ICAO programme for the prevention of controlled flight into terrain (CFIT) has been a continuous process since 1992. This programme is the result of all ICAO activities directed towards CFIT prevention, undertaken either on ICAO initiative or in response to the recommendations of the CFIT Task Force and the CFIT prevention package which was developed by the CFIT Task Force. ICAO formed a multi-disciplinary CFIT Team, within the Air Navigation Bureau, which continues to support and participate in the work of the CFIT Task Force. The Global Aviation Safety Plan (GASP), which is described in AN-Conf/11-WP/10, contains, as essential elements, all aspects of the ICAO programme for the approach and landing accident reduction (ALAR) and for the prevention of CFIT.

2. BACKGROUND

2.1 In early 1991, the International Federation of Airline Pilots' Associations (IFALPA) drew attention to the increasing numbers of CFIT accidents and to problems both with respect to the installation and usage of ground proximity warning systems (GPWS) and the lack of effectiveness of existing Annex 6 — *Operation of Aircraft* requirements. In fact, in the fourteen years from 1978 to 1991, there had been over 260 CFIT accidents with more than 195 aircraft destroyed and more than 5 500 passenger and crew fatalities.

2.2 In October 1992, the Air Navigation Commission recognized that CFIT remained a critical flight safety problem which required urgent attention. The Commission directed the formation of an ICAO Task Force to develop a programme for reducing the occurrence of CFIT accidents. The Commission also

initiated an update of GPWS provisions in Annex 6, Part I — *International Commercial Air Transport — Aeroplanes* and Part II — *International General Aviation — Aeroplanes*. In June 1993, the Air Navigation Commission agreed that, to avoid duplication of effort and to benefit from the work of other organizations, ICAO would, in place of an ICAO Task Force, cooperate in the work of an Industry CFIT Task Force which had been formed in late 1992 by the United States Flight Safety Foundation (FSF). The work of the ICAO and Industry CFIT Task Force resulted in a series of recommendations delivered to ICAO in 1995.

2.3 By 1995 ICAO had commenced the amendment of Annex 6, Parts I and II, with regard to strengthening the requirements for the provision of the GPWS. Other amendments to ICAO Standards and Recommended Practices (SARPs) and guidance material were made in response to the recommendations of the CFIT Task Force. This amendment process has continued with the latest amendment related to the prevention of CFIT being adopted. Information on the actions taken by the Commission related to the adoption of amendments to ICAO Annexes and approval of procedures concerning CFIT accidents prevention is provided in Appendix A.

2.4 The CFIT Task Force produced a CFIT Education and Training Aid, which was published by the FSF as its components became available in 1995 and 1996. The CFIT Education and Training Aid was also published in a CD-ROM format and circulated to some 6 000 recipients in the aviation industry worldwide in November 1996. This was followed by the distribution in CD format and hard copy, with the associated training videos, to all States by the FSF in conjunction with the United States Federal Aviation Administration (FAA). The FSF/FAA distribution was addressed to the Directors General of Civil Aviation.

2.5 In December 1998, ICAO distributed the material as a customized ICAO CD-ROM to the Directors General of Civil Aviation of all States. Much of the material is available on the web sites of the FSF and the FAA. ICAO has completed the production of language versions of the video, CFIT Awareness and Prevention, in Arabic, Chinese, French, Russian and Spanish and is working on the translation of the video CFIT: An Encounter Avoided.

2.6 Prior to the publication of the CFIT prevention material, the Task Force safety effort had already been redirected towards the reduction of approach and landing accidents under the direction of a CFIT/ALAR Action Group (CAAG). Most activities appropriate to the prevention of CFIT also apply to the reduction of approach and landing accidents. The CAAG developed new accident prevention material, which incorporates some of the earlier CFIT prevention material, in the form of an ALAR Tool Kit. The FAA, through the Commercial Aviation Safety Team (CAST) programme and the Joint Aviation Authorities (JAA) through its Joint Safety Strategy Initiative (JSSI) have endorsed the ALAR Tool Kit as training material to be used by operators. The ALAR Tool Kit is described in Appendix B to this paper.

3. IMPLEMENTATION EFFORTS IN SUPPORT OF THE CFIT PREVENTION AND ALAR PROGRAMME

3.1 Recalling the lack of implementation of the earlier CFIT Education and Training Aid programme, the CAAG recognized that major implementation efforts were required in each region. CAAG also determined that this could best be achieved by the selection of regional team leaders supported by adequate resources.

3.2 The implementation effort started in South and Central America, including Mexico, and the Caribbean where the Pan American Aviation Safety Team (PAAST) acts as the umbrella organization for the teams of experts in the region who are supported by their own organizations. The PAAST received the training material at the end of January 2001 and commenced an immediate implementation programme of seminars, workshops and visits by the action teams. Seventeen action teams have been formed by the PAAST to work on the implementation of existing safety enhancement tools. Major local effort is being applied to translating the training material of the ALAR Tool Kit into the Spanish language.

3.3 The FSF and the CFIT Task Force, through the CAAG, continue to promote implementation of the ALAR Tool Kit, and associated training material, in other regions of the world. It was considered essential that ICAO be involved in order to ensure that State authorities were included in the implementation effort. During 2001, the CAAG held workshops in Bangkok, Johannesburg, Mexico City, Miami and Nairobi and during 2002, workshops in Beijing, Cairo, Melbourne, Perth and Reykjavik have taken place. Teams established in South and East Asia, and in South and East Africa work actively on the implementation of the tool kit, using means similar to those being employed by PAAST in the Caribbean, Central and South America. For 2003, workshops are scheduled to be held in Dakar and Moscow.

3.4 In October 2001, ICAO has acquired a bulk supply of the CD-ROM version of an ALAR Tool Kit. The purchase was made to assist in the distribution of the tool kit to regions where such material may not be readily obtainable and to operational staff who may not normally be able to acquire this type of material with the objective of providing the widest possible distribution of this effective accident prevention material to civil aviation authority operations inspectors, operators' training staff and individual pilots, and air traffic management staff and to personnel involved in all aspects of aircraft operations including instrument procedure design.

4. STATISTICAL DATA – CFIT AND APPROACH AND LANDING ACCIDENTS

4.1 Statistical data available in Accident/Incident Data Reporting (ADREP) System since 1990 for CFIT accidents, show an improving trend with respect to CFIT accidents through the decade of the 1990s. However, similar data for approach and landing accidents show an increase in this type of accident over the 1980s and early 1990s and those related to CFIT show a decreasing trend for the last five years of the 1990s. The non-CFIT related approach and landing accidents maintain a constant level since the mid-1990s. Preliminary information available from industry concerning suspected CFIT accidents having occurred in 2002 indicates that none of the involved aircraft was equipped with GPWS having a forward-looking capability. Statistical data are provided in Appendix C.

5. CONCLUSIONS

5.1 ICAO is continuing to support the programme for the prevention of CFIT and approach and landing accidents by the development of appropriate SARPs and guidance material and by publicizing the prevention material that is available from all sources.

5.2 ICAO will continue to monitor the CFIT and approach and landing accident statistics in order to assess the implementation of the ALAR Tool Kit and the success of the continued accident prevention efforts.

5.3 It will take several years to establish and evaluate the success of the overall elements of the ICAO programme for the prevention of CFIT and for the reduction of approach and landing accidents. In the meantime, it is essential that the available prevention material be brought into the fullest possible use and that every effort be made toward the reduction of CFIT in conjunction with other flight safety programmes.

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