



**WORKING PAPER**

**ASSEMBLY — 37TH SESSION**

**TECHNICAL COMMISSION**

**Agenda Item 30: Runway safety**

**Agenda Item 44: Development of an up-to-date consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation**

**RUNWAY SAFETY**

(Presented by Belgium on behalf of the European Union and its Member States<sup>1</sup> and by the other States Members of the European Civil Aviation Conference<sup>2</sup>, and by EUROCONTROL)

**EXECUTIVE SUMMARY**

The declaration of the ICAO 2010 High Level Safety Conference acknowledges that, “Runway safety continues to be one of aviation’s greatest challenges”. Despite significant progress to improve runway safety, recent serious runway incursions in Europe and around the world provide clear evidence that this remains a serious safety issue. Furthermore, there has been no significant reduction in the runway excursion accident rate in over twenty years, and recent studies of runway excursions have called for appropriate measures to be taken to address this problem. ICAO is therefore requested to again take the lead in initiating and raising the profile of appropriate prevention measures and risk reduction strategies in relation to runway safety.

**Action:** The Assembly is invited to:

- a) *agree* on the need for a global response to the high risk threat of runway incursions and excursions;
- b) *request* the Council to lead a global initiative to raise the profile of this threat, develop appropriate risk prevention measures and create a global awareness of potential solutions;
- c) *urge* Contracting States to communicate to ICAO all available safety recommendations of global interest resulting from runway-related accidents and serious incidents;
- d) *request* the Council to ensure the wide dissemination of those available safety recommendations, and other relevant lessons learned, operational experience, advice and best risk mitigation practices;
- e) *urge* Contracting States to monitor runway safety events and related precursors as part of the safety data collection and processing system established under their Safety Programme (SSP) and to report to ICAO, notably as part on the USOAP Continuous Monitoring Approach (CMA), relevant runway safety data and information which they consider to be of global interest to the aviation community;
- f) *request* the Council to monitor relevant runway safety events and, as the SSP and CMA mature, to focus CMA activity as a response to detected runway safety deficiencies;

<sup>1</sup> Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

<sup>2</sup> Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Monaco, Montenegro, Norway, Republic of Moldova, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, and Ukraine.

<p>g) <i>urge</i> Contracting States and Regional Safety Oversight Organisations to take further steps to enhance runway safety measures, including implementation of safety management at aerodromes, from an inter-organisational perspective and involving all the relevant actors;</p> <p>h) <i>ask</i> the Council to ensure coordinated development of requirements for runway safety technologies in order to ensure a globally consistent service to aerodrome users, interoperability and avoid duplication of effort; and</p> <p>i) <i>consider</i> extending the scope of Appendix P to Resolution A36-13 to cover aerodrome operations, with improving runway safety made a priority.</p>	
<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective A (Enhance global civil aviation safety) as it results in enhanced runway safety.
<i>Financial implications:</i>	Neutral
<i>References:</i>	Doc 9902, <i>Assembly Resolutions in Force</i> (as of 28 September 2007) Doc 9870, <i>Manual on the Prevention of Runway Incursions</i>

## 1. INTRODUCTION

1.1 Despite various initiatives launched world-wide since 2001, including under the aegis of ICAO, “Runway safety continues to be one of aviation’s greatest challenges”. This was also recognised by the ICAO 2010 High Level Safety Conference<sup>3</sup>.

1.2 Recent aviation experience shows that an inter-organisational perspective needs to be adopted when dealing with runway incursions and excursions, including the implementation of safety management at aerodromes, involving all the relevant actors.

1.3 This paper advocates that ICAO lead pro-actively a global initiative to raise the profile of the runway incursion and excursion threat, develop appropriate risk prevention measures, and create a global awareness of potential solutions, with the support and assistance of Contracting States, Regional and International Organisations, as well as that of all other relevant stakeholders.

## 2. RUNWAY SAFETY - INCURSIONS<sup>4</sup>

2.1 The runway safety activities of ICAO, supported by the Contracting States, International Organisations and industry, have produced in the past several initiatives that have addressed many of the issues relating to runway safety. Despite this excellent work, near misses continue, and it is evident that the profile of runway incursion prevention is reducing. What is needed is a global strategic response to the high risk threat of runway incursions.

2.2 During 2003, ICAO led an initiative to raise awareness and share best practices through a number of seminars. These seminars were particularly effective and made significant progress in raising the profile of the problem. However, to achieve and maintain the highest possible levels of safety, a focused action is again required by ICAO, its Member States and other relevant stakeholders.

2.3 Given the global nature of aviation, ICAO is again requested to take the lead in this area. The clear objectives of such an initiative would be to raise the profile of runway incursion prevention measures that will improve States' adherence to ICAO provisions, enhance reporting to ICAO, improve the sharing of lessons learned, and share information on best practice development.

<sup>3</sup> HLSC Conclusion 3/3, section 19.1(d)(2).

<sup>4</sup> To be understood as including runway incursions and runway confusion

2.4 Work has also been conducted worldwide into the development of technologies, both visual aids and others, to prevent and mitigate the severity of runway incursions. While the ongoing work to modernise the provisions of Annex 14 is acknowledged, it is essential that ICAO co-ordinates these developments to ensure a globally consistent service for aerodrome users, interoperability and avoid duplication of effort. The recent introduction of some new technologies in the United States and Europe has further emphasised the need for such a co-ordinated global approach. The aim should be the development of harmonised requirements for consistent implementation of runway safety nets worldwide. Such implementation would be greatly supported by interoperable technologies (in particular where interaction between the aircraft and its environment is required), that can be utilised worldwide, and consistent with the process used to develop collision avoidance systems widely used in aircraft or to be introduced.

### **3. RUNWAY SAFETY – EXCURSIONS**

3.1 In response to the concern about the persistent rate of runway excursion accidents over the last twenty years, the aviation community has identified common causal and contributory factors, of worldwide interest. These factors touch many ICAO Annexes.

3.2 Study findings describe areas of concern such as pilot training, friction measurement, operational braking action, and non-stabilised approach. These findings also identify the need for a common semantics across all ICAO Annexes to be used by aerodrome staff and flight crews for describing, in particular, the conditions of contaminated runways.

3.3 To ensure a harmonised approach to runway excursion accident reduction, ICAO is invited to lead the global development and dissemination of appropriate mitigation measures.

### **4. RUNWAY SAFETY – ORGANISATIONAL ISSUES AND LESSON-SHARING**

4.1 An inter-organisational approach is necessary at each aerodrome not only with respect to incursions, but also to prevent excursions, in order to increase awareness and facilitate dialogue on operational conditions among staff working in different organisations (e.g. aerodrome, control tower, flight crew).

4.2 Recent occurrences, for example mistaken runway selections and aircraft departures from taxiways, demonstrate the need for more emphasis to be given to the sharing of lessons learned from ground navigation errors. Monitoring these runway safety events and related precursors as part of safety data collection and processing is essential.

4.3 Recent occurrences also show that precursors to runway incursions and excursions originate in various sources (air traffic services, flight operations), or in combinations of these.

4.4 A cross-check of the ICAO annexes for mutual consistency regarding runway safety matters is needed, in order to strengthen the global approach taken to runway safety.

### **5. CONCLUSIONS**

5.1 Runway incursions and excursions represent safety risks to civil aviation which need to be monitored at the local, regional and global level, so that an effective and global response can be developed under the leadership of ICAO.

5.2 States should be explicitly required to monitor runway safety events and related precursors, as part of the safety data collection and processing systems established under their State Safety Programmes (SSP). They should also be explicitly required to report to ICAO, notably as part on

the USOAP Continuous Monitoring Approach (CMA), relevant runway safety data and information which they consider to be of global interest to the civil aviation community.

5.3 ICAO should monitor runway safety events and disseminate relevant information as part of its exchange of operational safety information within the international community. As the SSP and CMA mature, ICAO should also focus its CMA activity as an effective response to detected runway safety deficiencies.

5.4 As a short term measure, States should communicate to ICAO all safety recommendations of global interest to the civil aviation community, available to them as a result of runway-related accidents and serious incidents. ICAO should then ensure the wide dissemination of these safety recommendations, as well as other relevant lessons learnt, operational experience, advice and best risk mitigation practices.

5.5 The ICAO initiative to develop “PANS Aerodromes” is welcomed and supported. ICAO should also consider extending the scope of Appendix P to Resolution A36-13 to cover aerodrome operations, giving priority to runway safety issues.

5.6 ICAO is also invited to cross-check the ICAO annexes for mutual consistency regarding runway safety matters, notably with regard to the semantics used for contaminated runways, and to ensure coordinated development of requirements, including from an inter-organisational perspective, for runway safety technologies in order to ensure a globally consistent service to aerodrome users, interoperability and avoid duplication of effort.

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