



INTERNATIONAL CIVIL AVIATION ORGANIZATION
EASTERN AND SOUTHERN AFRICAN OFFICE

TENTH MEETING OF THE AERODROME OPERATIONS PLANNING SUB-GROUP
(AOP/SG/10) (NAIROBI, KENYA, 5-7 AUGUST 2013)

Agenda Item 4: Runway Safety Programmes

(Presented by Secretariat)

SUMMARY

This paper outlines the concept of the Global Runway Safety Programme and highlights the evolution towards a more integrated safety management approach to ICAO's runway safety programme by a coordination of global efforts to improve runway safety. The paper provides the outcome of the Global Runway Safety Symposium (GRSS) held in Montreal from 24-26 May 2011 and describes outlines of the Regional Runway Safety Seminars (RRSS) that have been held worldwide between 2011 and 2013.

Action by the Meeting: As indicated in Paragraph 8.

Strategic objective:

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References:

Assembly 37 Report
GRSS Report

1. General

1.1 The Assembly Resolution A37-6 of the 37 session held in Montreal from 28 September to 8 October 2010 urged States to take measures to enhance runway safety, including the establishment of runway safety programmes using a multidisciplinary approach, that includes at least regulators, aircraft operators, air navigation services providers, aerodrome operators and aircraft manufacturers to prevent and mitigate the effects of runway excursions, runway incursions and other occurrences related to runway safety. States were also invited to monitor runway safety events and related precursors as part of the safety data collection and processing system established under their State Safety Programmes. The runway safety programmes should be based on inter-organizational safety management including the creation of local runway safety teams that address prevention and mitigation of runway excursions, runway incursions and other occurrences related to runway safety. States were encouraged to participate in global and regional seminars and workshops to exchange safety information and best practices on runway safety.

2. Global Runway Safety Symposium (GRSS)

2.1 The Global Runway Safety Symposium (GRSS) was held in Montreal, Canada, from 24 to 26 May 2011. The symposium was an important first step in coordinating a global effort for improving runway safety by identifying what a State can do to improve runway safety outcomes, including determining a common framework for the enhancement of runway safety. ICAO proposed a number of next steps, and a number of key issues have been identified. These include that, one size does not fit all. Solutions developed by ICAO need to account for local conditions yet be standardised and harmonised to ensure interoperability. Runway incursions and excursions are the main issues but other aspects such as Bird Strike and FOD should not be overlooked. We need improved collaboration at multiple levels. International organisations have committed to work together to compile and promote proven solutions and endorse best practices. We need to improve standardisation and harmonization. ICAO sees a need to harmonise runway safety definitions, taxonomies and reporting of runway conditions and other safety indicators. At the same time ICAO needs to ensure that Standards and Guidance material are fit for purpose.

Regional Runway Safety Seminars (RRSS)

2.2 The GRSS recommended the holding of Runway Safety Seminars (RRSS) at the regional levels, and so far there have been two RRSS in the AFI region, the first one took place in Cape Town, South Africa in October 29-30, 2012 whilst the second was held in April 10-12 in Agadir, Morocco. In General the outcomes and recommendations of the two meetings were that States were encouraged to establish Runway Safety Teams (RSTs), ICAO is to follow-up on effective implementation of RSTs in the AFI region through the ROs, ACI is committed to support by providing free training related to SMS and basics of ICAO Annex 14 and in particular aerodrome signs and markings as well as facilitating knowledge sharing and information. In addition, ACI promoted the idea of friendly audits as a first step to Aerodrome Certification to Annex 14 Standards. CANSO committed to facilitate communication with ATC to obtain their commitment and to provide guidance material. As a successful RST programme requires all key stakeholders to cooperate in a collaborative manner, ICAO committed to develop a Runway Safety Team Handbook. This document, therefore, is intended to serve as a reference for airport operators, air traffic services organizations, commercial air operators, organizations representing the general aviation community, the regulatory authority and other stakeholders interested in improving runway safety.

Regional Runway Safety Seminars Timetable

Year	Location	Dates	State Co-host	International Co-host
2011	Miami, USA	12-14 October	FAA	IFALPA
2012	Amsterdam, Netherlands	08 March	EUROCONTROL	ATC Global
	Aman, Jordan	14-16 May	IATA	IATA
	Bali, Indonesia	21-24 May	DGAC, Indonesia	FSF/AAPA
	Quito, Ecuador	16-19 July	Ecuador	ACI
	Cape Town, South Africa	29-30 October	CANSO	CANSO
	Moscow, Russian Federation	6-8 November	Russian Ministry of Transport	IATA

Year	Location	Dates	State Co-host	International Co-host
2013	Agadir, Morocco	10-12 April		
	NAM/CAR	27-29 May	ECCAA of OECS	IFALPA and FSF
	Istanbul, Turkey	6-8 November	DGAC, Turkey	EURPCONTROL and IATA
	Malaysia	18-20 November	DCA Malaysia	FSF and AAPA

2.3 Although not considered a regulatory authority or intended to replace any required component of a Safety Management System (SMS), the Runway Safety Team (RST) programme is designed to improve runway safety by integrating the safety systems of the participating organizations. This is accomplished by identifying and managing runway safety risks in a collaborative way, and communicating safety issues to operational personnel. The RST consists of representatives from key stakeholder organizations who meet periodically to review current and potential hazards within the airport environment. During these meetings, the RST uses a structured process to manage the level of safety risk within the operation by analyzing the consequences of the identified hazards and taking appropriate action.

RST Meetings

2.4 The RST meeting is the most important component of the programme as it is the forum in which the hazards are discussed, consequences determined, risks assessed, priorities determined, and recommendations developed. This type of face-to-face interaction leads to improved collaboration, problem-solving and risk management because the team members benefit from information sharing and the perspectives of representatives from other groups. As above mentioned the RST meetings should, at least include representatives from the following groups:

- ✓ airport operator;
- ✓ air traffic services;
- ✓ commercial air operators; and
- ✓ members from the general aviation community (if applicable).

The team may also include:

- ✓ the regulatory authority;
- ✓ military operator (if applicable);
- ✓ support services (de-icing, catering, ground handling, etc.);
- ✓ emergency response service providers; and
- ✓ subject matter experts (upon invitation).

2.5 Generally, the airport operator hosts the meeting and establishes a long-term schedule to allow adequate planning by the members. It is recommended that the RST elect a “Chairperson” to serve as the coordinator for the team. The agenda for the meeting, as a minimum should include:

- ✓ an update on previous recommendations;
- ✓ new hazards and associated consequences;
- ✓ risk assessments of the consequences; and
- ✓ proposed recommendations for managing the risk.

Hazards and Associated Consequences

2.6 Once the team members are identified, the Chairperson selected, and the terms of reference and schedule are agreed to, the real work of the RST begins with the identification of hazards. It is anticipated that each member will come to the meetings prepared to brief on the hazards related to runway safety, as identified through their respective SMS (arising mostly from safety reporting, investigation and audit activities). In addition to the hazard reporting systems of the member organizations, the RST should also conduct periodic visits to various airport locations (i.e., tower facility, construction areas, taxiway intersections, etc.) and solicits input especially from organizations without formal representation at the meeting. These may include corporate operators, flight schools, industry organizations, ground services and others. By casting a wide net, the RST will develop a deeper understanding of the operational complexity associated with the airport environment and, therefore, be better able to identify hazards and determine operational risks.

Safety Risk Assessment

2.7 The reason for conducting safety risk assessments is to provide the RST with a method for appropriately managing the risks of identified hazards, developing effective risk mitigation strategies, and prioritizing their workflow. Given that time and financial resources are limited, the following process allows the RST to efficiently determine which areas require its immediate attention to reduce the runway safety risk to As Low As Reasonably Practicable (ALARP).

2.8 The process of runway safety risk assessment and management is the same as any risk management process. Once the hazards have been identified, the objective is to determine the safety risk severity in the context of the local system accounting for the current defences and mitigations in place at the time. This information should then be used to categorize the safety risk severity using predefined definitions and tools. Based on the event that would be the worst feasible consequences, the next step is to evaluate the relative probability (or likelihood) of that event occurring in the specific operational environment, after taking into account the current defences and risk mitigation strategies in place. The team should consult associated safety and hazard report databases, incident & accident investigation reports, flight data monitoring and analysis, operational audit data and other historical sources to determine the likelihood of the identified consequence occurring. This information should then be used to categorize the probability against a set of predefined definitions. This information is then integrated into a severity/probability matrix to determine the overall assessment of the risk. The last step in the assessment process is to determine how much safety risk in the system the RST is willing to accept:

This determines the level of acceptable risk:

- ✓ when the risk is acceptable and the operation may continue;
- ✓ when risk mitigation is required; or
- ✓ when the risk level is unacceptable and that part of the operation should be suspended.

Developing Recommendations

2.9 Following the safety risk assessment, the RST should develop specific recommendations to reduce the risk by incorporating the following concepts:

i) Prioritization

The RST should ensure their solutions are prioritized according to the “safety risk tolerability” assessment. For example, if they determine that “the operation may continue” with the assessed level of safety risk, their recommendations should reflect a strategy where improvements are implemented as resources become available. Conversely, if they determine “the operation may continue with mitigation,” their recommendations should reflect a strategy requiring immediate action(s) to address the consequences of the hazard.

ii) Control Strategies

Safety risk is controlled by addressing either:

- ✓ the probability of the consequences occurring,
- ✓ the severity level of the consequences, or
- ✓ both simultaneously.

iii) Evaluating Alternative Solutions

During the process, the RST should explore several strategies for controlling the safety risk. These strategies should be evaluated against one another to find the most effective and efficient solution using objective and subjective measures. These measures may include criteria such as conducting a cost/benefit analysis, determining the enforceability of the proposal, assessing the acceptability to the affected stakeholder, and others. In all cases, however, the RST must conduct a risk assessment of their proposed solution and evaluate any potential hazards created by their strategy. However because a solution is easy to implement, cost effective and acceptable to all stakeholders, it does not mean that it will reduce the risk level. The effectiveness of the strategy in reducing the risk is measured by the residual or remaining risk once the strategy has been activated. A risk assessment should determine if the remaining (residual) risk is acceptable, or if more solutions and mitigations are required.

iv) Notification to Affected Stakeholders

If the RST determines that either a mitigation strategy is required or part of the operation should be modified or suspended, it should make a formal recommendation to the organization responsible for that part of the operation and include the rationale and risk assessment.

3. Action by the AOP/SG/10 Meeting:

- Note the information and the progress made in addressing problems relating to the Runway safety.
- Recommend to States to establish RSTs at least at all international aerodromes by a target date.
