International Civil Aviation Organization

First Meeting of the RASG-MID Steering Committee (RSC/1)

(Cairo, Egypt, 18 – 20 June 2012)

Agenda Item 4: **Regional Performance Framework for Safety**

OUTCOME OF THE ICAO MID REGIONAL RUNWAY SAFETY SEMINAR (MID-RRSS)

AND

RUNWAY AND GROUND SAFETY ASSOCIATED ENHANCEMENT INITIATIVES

(Presented by the Secretariat)

SUMMARY

Runway Safety Accidents represent 59% of all accidents worldwide. One of the outcomes of the ICAO Global Runway Safety Symposium (2011) was to conducting Regional Runway Safety Seminars (RRSSs).

This paper provides an overview of the outcomes of the Middle East Regional Runway Safety Seminar (MID-RRSS) which was held in Amman, Jordan 14-16 May 2012. The MID-RRSS recommended supporting, the creation of local Runway Safety Teams (RSTs) to address the prevention and mitigation of runway excursions, runway incursions and other occurrences related to runway safety. The role of RASG-MID will be crucial for the implementation of the RSTs throughout the Middle East Region. The last part of this working paper proposes a list of draft Safety Enhancement Initiatives (SEIs)/mitigation measures related to Runway and Ground safety for consideration by the meeting.

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 ICAO's dedicated focus on runway safety efforts began in 2002 with an education and awareness campaign that consisted of a series of seminars in ICAO regions to disseminate information on the prevention of Runway Incursion (RI). This was followed in 2005 with the ICAO Runway Safety Toolkit CD-ROM and in 2007 with the Manual on the Prevention of Runway Incursions (Doc 9870). As the frequency and severity of runway excursion became more apparent, it was considered appropriate to address all runway safety issues in a comprehensive manner. The ICAO Runway Safety Programme has evolved to include the prevention and mitigation of Runway Incursion (RI), Runway Excursion (RE) and other occurrences related to runway safety.

1.2 ICAO has developed Standards and Recommended Practices (SARPs), procedures for PANS-ATM (Doc 4444), guidance material and toolkits to address various aspects of runway safety and has held a series of seminars to raise awareness.

1.3   ICAO has been called upon by the International Civil Aviation community to exercise leadership in the effort to reduce the number of runway-related accidents and incidents worldwide. Starting with the Global Runway Safety Symposium (GRSS) convened in May 2011, ICAO aims to raise awareness and share information as a means to generate effective solutions. Note: Outcomes of the GRSS are discussed in details in WP/5 of this meeting.

2.   DISCUSSIONS

2.1   Global Runway Safety accidents represent 59% of all accidents accounting for 29% of all fatal accidents and 19% of all related fatalities reported between 2006 and 2010. In MID Region, Runway Safety accidents represent 63% of all accidents accounting for 50% of all fatal accidents and 18% of all related fatalities reported where Runway excursions represent 43% of the Runways Safety-related accidents.

2.2   ICAO organized the Global Runway Safety Symposium (GRSS) in 2011 in collaboration with international partners and stakeholders. One of the outcomes was to initiate the Regional Runway Safety Seminars (RRSSs) in order to implement effective change and result in action plans to create Runway Safety Teams (RSTs) and provide support to those already in place.

2.3   ICAO organized the Middle East Regional Runway Safety Seminar (MID-RRSS) in Amman, Jordan from 14-16 May 2012, hosted by IATA and supported by the Airport International Group (AIG) of Amman, Boeing, and FAA.

2.4   More than 85 participants attended the seminar/workshop from 10 States (Bahrain, Egypt, Iran, Jordan, Morocco, Oman, Qatar, UAE, Saudi Arabia, Sudan, and UAE) and other organizations like IATA, ACI, CANSO, FAA, IFALPA and Boeing. In addition, there was participation from the following airlines: Bahrain Air, Royal Jordanian, Etihad Airways, and Qatar Airways.

2.5   The MID-RRSS consisted of two-day presentations and a third day for a workshop and airport visit to Queen Alia International Airport. The MID-RRSS programme is available on the ICAO MID Office website.

2.6   First day presentations highlighted the need for collaborative approach, regional issues, and provided an overview on runway incursion/excursion from the perspectives of pilot, airport operator and air traffic controller. Last session identified regional issues.

2.7   Second day presentations, addressed examples for taking a collaborative approach, establishing RST, and identified mitigation options. The second day ended with a Panel Discussion involving interviewees from RASG-MID, ICAO, IATA, ACI, and CANSO.

2.8   The participants were apprised of ICAO initiatives on runway safety and commitment from international organizations to work together to promote proven solutions and endorse best practices.

2.9   The third day workshop and airport visit provided practical experience in establishing a runway safety team and practise in identifying hazards on the airside of an airport.

2.10   The MID-RRSS highlighted the availability of ICAO Runway Safety Website and the establishment of Runway Safety Team Portal for use by Runway Safety Teams.

2.11   Participants suggested that ICAO should provide additional workshops on the establishment and running of RSTs. Other suggestions included: adding RST availability to USOAP Protocol Questions, issuance of ICAO guidance materials for RST establishment and action plans, and consideration of adding RST as part of SARPs.

2.12   The participants recommended the creation of a Runway Safety Group under the RASG-MID umbrella. It has been agreed that MID States should develop action plans to establish Runway Safety Teams (RSTs). RSTs should be hosted by airports and include, as a minimum, representation from air operators and air traffic controllers.

2.13   The MID-RRSS outcomes included the following:

2.13.1   Support the creation of RSTs in the Middle East Region and support those already in place

2.13.2   ICAO to consider the creation of a Regional RST Go Team with participation of ICAO Runway Safety partners to assist States with the creation of RSTs

2.13.3   Safety Partners to assist/mentor the RST's by: performing a gap analysis and assessing the areas identified, providing recommendations to support the implementation of RSTs, and supporting RST as appropriate.

2.13.4   Coordination between RASG-MID and MIDANPIRG should be observed to avoid duplication and assure the implementation of Runway safety enhancement initiatives.

2.13.5   Organization of another Runway Safety Seminar/Workshop in 2013.

2.14   Working Paper (WP/5), on "Initiatives to reduce the risk of runway related accidents", introduced suggested Safety Enhancement Initiatives (SEIs) related to Runway safety. In addition to the SEIs mentioned in WP/5, the following may be considered:

Safety Enhancement Initiative (RE) - Scenario Based Training for Tower Controller

2.15   This safety enhancement will reduce Wrong Runway Departures by providing scenario-based training for controllers highlighting the contributing factors that have led to wrong runway departures. The training would focus on operations in complex airports, airport geometry, communications, taxi/departure clearances, understanding and managing fatigue and time pressures.

Safety Enhancement Initiative (RE) - Air Traffic Control Clearance Procedure Review

2.16   This safety enhancement evaluates policy and procedures for the issuance of early takeoff clearances that require the crossing of multiple runways before reaching the departure runway. The purpose of this SE is for ATC to conduct a review of the procedures for clearances that specify all runways to be crossed before reaching the departure runway and restrict early takeoff clearances when flight crews must cross multiple runways before reaching the departure runway.

2.17   Other issues like Wildlife Control and Reduction as well as Foreign Object Debris (FOD) are contributing factors that affect Runway Safety in the MID Region. These issues need to be considered when establishing action plans or a final list of Safety Enhancement Initiatives.

2.18   A list of possible mitigation measures related to Runway and Ground Safety are attached in **Appendix A** to this working paper.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

   a)   consider the creation of a Runway Safety Group;

   b)   support the establishment of Runway Safety Teams (RSTs) in the MID Region and support those already in place;

c) invite ICAO to consider the creation of RST Go Teams, under ICAO leadership and with the participation of ICAO's Runway Safety Partners to assist States with the creation of RSTs;

d) support the organization of another MID Runway Safety Seminar/Workshop in 2013 and invite States to support/host it; and

e) consider the draft SEIs related to Runway and Ground Safety in para. 2.14 - 2.18 , when developing the final SEIs and DIPs for the MID Region.

APPENDIX A

Runway Safety: Possible Mitigation Measures
(Extracts from the MID-RRSS 2012 Presentations)

✈ From Pilot's Perspectives
- Knowledge of airport surface markings, lights and signs
- Briefing of expected taxi out/in routing
- English language proficiency
- PA, or company calls are to be avoided while taxiing.
- Plan timing and execution of checklists to increase attention when approaching intersections and runway crossings
- Avoid high taxi speed
- Consistent use of internationally agreed standard, phraseology, and procedures
- Enhanced situational awareness, based on the use of one language – aviation English
- Complete information about expected taxi in routing and stand, taxi-out routing and runway well in advance
- Implementation of SMS
- Use maximum available aircraft external lights
- Use of latest generation technology
- Intensified Line Training
- ATC/Pilot awareness program
- Exposure using simulators
- Emphasize maximum performance take-offs
- Human Factors and training
- Information Sharing Platform (exchange of experience)
- Passenger Education on the necessity to divert from "comfort flying" – application of brakes (auto brakes) and full reverse thrust
- When in doubt, seek clarification
- To avoid non essential communication: adopt sterile cockpit concept
- Avoid communication impediments in multi- crew cockpit, define the role of each pilot
- Manage the cockpit workload
- Minimize the number of tasks to be performed when aircraft is moving during taxiing
- Standard operating procedures for: using precision approaches, visual approaches and circling approaches; selecting the most operationally suitable runway, stable approach criteria, and missed approach criteria
- Identify operational issues that can be addressed through training
- Implement an effective incident reporting system
- Use all available technologies to maintain situational awareness on the ground
- Adhere to low visibility procedures, including enhanced crew coordination, when conditions require
- Realistic training for all low visibility operations
- Use accurate aerodrome charts, where available, and essential information on aerodrome conditions
- Use of NOTAMs and real-time radio communication
- Use full runway length operations especially in marginal conditions
- Conduct an airport briefing before every operation
- Develop comprehensive guidance for operations during airport works

➔ From Aerodrome Operator's perspectives

- Implementation of signs, markings and lighting in accordance with Annex 14
- Airside Driver Training
- Perform runway inspections on Tower Frequency
- Encourage staff to verify clearances if not perfectly understood
- Close Coordination of airside works with ATC for Work in Progress Meetings
- Safety Induction to all personnel working airside
- Supervision of airside construction work by Safety Personnel
- Work on pull-back basis only under escort of Airport Safety
- Provision of obstacle free overrun areas
- Scheduled runway surface inspections
- Inspection has to include signs, marking, and lighting, FODs, safety areas, Cracks, erosions and rubber accumulation
- Speed should be kept as low as practicable
- Periodical measuring for Runway friction levels (rubber deposits)
- Treatment of contaminated runway if it cannot be avoided (A runway completely or partly covered with standing water - more than 3mm)
- Runway Inspection Vehicles to be equipped with 2 base sets of VHF radio for TWR and GND frequency
- Clarity of runway markings, signs and lights (PAPI, Runway end lights, etc)
- The charts need to show hot Spots, RESA information, etc
- Use Grid map for standby and low visibility
- Continuous practice for appropriate response
- Rescue and Fire Fighting (RFF) ability to locate and access excursion occurrences
- Front line positions for RFF vehicles in case of Low visibility (to intervene on shorter times)
- Continuous personnel training for effective emergency response
- Adequate access roads for RFF Vehicles
- Follow an approved maintenance program to check signage, lights
- Provide signs for flight crews to visually determine runway remaining distance
- Ensure the airfield and RESA conform to ICAO specifications
- Define standard criteria for not operating runway
- Conducting a runway safety awareness campaign that focuses on local issues
- Install SMR with surface movement providing controller with radar picture and equip vehicles with transponders
- Install sufficient barriers to eliminate access to active RWY
- Avoid designs that include crossing a runway to access taxiway or another part of the aerodrome
- Avoid complicated layout
- Outer roads must be provided for vehicles and equipment
- Limit vehicles entering aircraft manoeuvring areas
- Familiarization of Airside Layout, including: Signage Markings, and Lights, Responsibilities of Drivers, Right of away, Hazards of Airside Driving, Light Gun signal from tower, Aviation phraseology, Emergency procedures
- Airports must have adverse weather procedure available during low visibility operation
- Use of checklist for new airport operations
- Establish and host RST with participation of Runway Safety Partners

✈ From Air Traffic Controller's perspectives

- Check that signage and markings are ICAO-compliant and visible to pilots and drivers
- Identify potential new technologies that may enhance runway safety
- Ensure that procedures are compliant with ICAO Standards and Recommended Practices (SARPs)
- Initiate local awareness and training to controllers, pilots and personnel driving vehicles on the aerodrome
- Conduct joint awareness sessions/seminars on: Arrival and approach requirements - Runway excursion - stabilized approach - aircraft performance
- Set up familiarization programs where ATCOs and pilots can attend/observe the activities related to ATS and aircraft operations
- Ensure that ATCOs comply with ELP requirements and use ICAO phraseology (Doc4444) during communication with approaching aircraft
- Restrict late runway change and speed control during approach
- Ensure that ATCOs comply with ATS requirements for the reporting of current weather information and runway conditions
- Use of "follow-me" vehicles and Progressive taxi guidance
- Procedures to have controllers instruct pilots to: Enter, Backtrack or line up on runway should be acknowledged by Read Back
- Determine "line-of-sight" can aircraft at opposite ends of the runway see each other
- Identify Hot Spots on applicable aerodrome ground movement charts
- Use standard phraseology between vehicle drivers and ATC
- Assign ground controller with close liaison to aerodrome operations
- Coordinate vehicles & equipment movement periods and restrict any vehicle & equipment during bad weather
- Minimize single controller communication coordination between local, ground and radar controllers
- Manage the use of multiple tower / ground frequencies
- Minimize the occurrences where one controller is responsible for traffic on multiple frequencies
- Controllers are required to manage the movement numbers during capacity constraints
- Controllers are to manage increased number of runway crossings very effectively
- Air Traffic Management are required to develop Standard Operating Procedures for use during airport works
- Follow an approved low visibility procedures
- Routings: Avoid ATC change in routings-short cuts, Avoid changes that result in varying to distance from touchdown
- For runway selection, consider aircraft type, avoid late changes, base on wind or operational suitability
- Stable Approaches; avoid vectoring to short final, vector to intercept the glide slope from below, speed control, avoid high speed approaches, allow for aircraft configuration requirements
- Limit the number of aircraft crossing an active runway
- Select runways based on operational suitability, longest runway, into wind, least cross-wind, least turbulence, etc
- Participate to RST work.

✈ Collaborative Approach:
- Exchange information
- Collaborate as early as possible
- Make use of (existing) SMS systems
- Use a holistic approach
- Work in multidisciplinary teams

✈ Role of Regulator
- Ensure that the authorization of ANSPs, certification of air operators and airports is in compliance with national regulations and ICAO Standards
- Establish and improve requirements for specific operating procedures related to runway safety
- Establish training and checking requirements for pilots, air traffic controllers and airport personnel
- Ensure necessary standardization of operating procedures for military operations at joint-use airports
- Participate in RST meetings to provide information on regulatory matters, as necessary
- Facilitate the exchange of safety information from the CAA or other relevant agencies that could be of use to the RST
- Intervene, where appropriate, to coordinate with other governmental agencies or external stakeholders to resolve issues that affect runway safety (noise abatement rules, obstructions on the approach path, etc)
- Identify and raise awareness of contributory and causal factors for runway safety issues that could be used as safety performance indicators
- Ensure that lessons learned are disseminated widely to increase understanding of causal and contributory factors and effectively implement runway excursion and incursion prevention measures
- Promote the use of incident reporting systems
- Refer any relevant reports submitted through a national incident reporting system to the respective RSTs
- Provide timely feedback to operational personnel on information gleaned through analysis of incident reports and any related mitigations
- Develop guidance to define and launch Runway Safety Teams
- Harmonize "Runway Safety" definitions, taxonomies and reporting of runway conditions and other safety indicators
- Standardize and improve communication procedures
- Implementation of ICAO Standards to be monitored through the Continuous Monitoring Approach

-END-