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ICAO Runway Safety Programme

Aviation's #1 Safety Priority

<http://www.icao.int/safety/RunwaySafety>

Michiel Vreedenburgh

ICAO Air Navigation Bureau

Chief Implementation Planning and Support – Safety

2nd Global Runway Safety Symposium

Lima, Peru, 20 - 22 November 2017



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Runway Safety Programme



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19 November 2017



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Panel 1

- David Gamper, Director, Safety, Technical and Legal Affairs, Airports Council International (ACI)
- Robert Holliday, Head Operational Safety, Safety and Flight Operations, International Air Transport Association (IATA)
- Nico Voorbach, Director, ICAO and Industry Affairs, Civil Air Navigation Services Organization (CANSO)
- Tzvetomir Blajev, Coordinator Operational Safety, Eurocontrol
- James Fee, ATO Safety and Technical Training Manager, Runway Safety Group, Federal Aviation Administration (FAA), United States



Runway Safety Programme Mandate

The establishment of **coordinated**, *collaborative and multidisciplinary efforts* within **ICAO** and between **ICAO** and **Runway Safety Programme Partners** to promote the implementation of *strategies* to *reduce* the number and severity of *runway safety-related accidents and incidents on an on-going basis*.

Our Mandate





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Expected Outcome



reduce the number and severity of *runway safety-related accidents and incidents.*



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Outcome Hierarchy

Effective implementation of Runway Safety Teams at airports with assistance from ICAO ROs, RSP Partners and RASGs



reduce the number and severity of *runway safety-related accidents and incidents.*





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Measuring Results

How will we know if our efforts are effective?

1. Monitor and measure the number, activities and maturity of RSTs globally. (RST survey & RS Go-Teams)
2. Monitor and measure the rate of runway-safety-related occurrences at the airport, State, regional and global levels. (RSAP-WG)





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Evolution of the Runway Safety at ICAO (before GRSS2011)

- ICAO NAM/CAR/SAM Regions Runway Safety/Incursion Conference, Mexico City, October 2002
- ICAO AN-Conf/11 Recommendation 4/5 on Runway safety programmes - 2003
- ICAO/ERAU Runway Safety Toolkit - 2005
- ICAO Manual on the Prevention of Runway Incursions First Edition — 2007
- ICAO/FAA Runway Incursion Severity Classification (RISC) – 2009
- ICAO Assembly Resolution 37-6 on Runway Safety - 2010
- ICAO/IATA Runway Excursion Risk Reduction Toolkit - 2011
- ICAO Global Runway Safety Symposium, Montreal, May 2011



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RSP ACHIEVEMENTS



Evolution of the Runway Safety Programme (after GRSS2011 up to 2014)

- ICAO Global Runway Safety Symposium, Montreal, May 2011
- Establishment of ICAO Runway Safety Programme in collaboration with partners – 2011
- ICAO RSP Regional Runway Safety Seminars - 2011 – 2015
- ICAO Runway Safety Implementation Kit (I-Kit) and new web site - 2014
- ICAO Runway Safety Team Handbook - 2014
- ICAO Runway Safety Go-Team Methodology – 2014





RSP Achievements - 2015

- RASG runway Safety Enhancement Initiatives (SEI), Detailed Implementation Plans (DIP), WGs & regional publications – guidance and safety advisories/circulars
- ICAO & Partners Runway Safety Go-Team missions
- ACI APEX Airport Safety Reviews
- IATA Unstabilised Approach Guidance
- US FAA Academy ICAO TRAINAIR Standardized Training Package (STP) on “Runway Incursion Prevention”





RSP Achievements - 2016

- New Runway safety team survey – 216 RSTs registered
- Annex 14 Vol. I Amendment 13 – Nov 2016
- PANS-Aerodromes 2nd edition (Doc 9981) – Nov 2016





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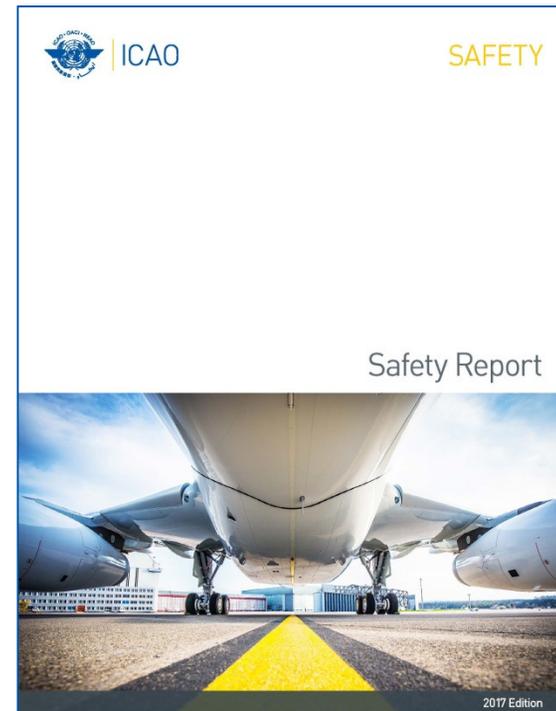
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ICAO ANNUAL SAFETY REPORT 2017 EDITION





STATE OF AVIATION SAFETY



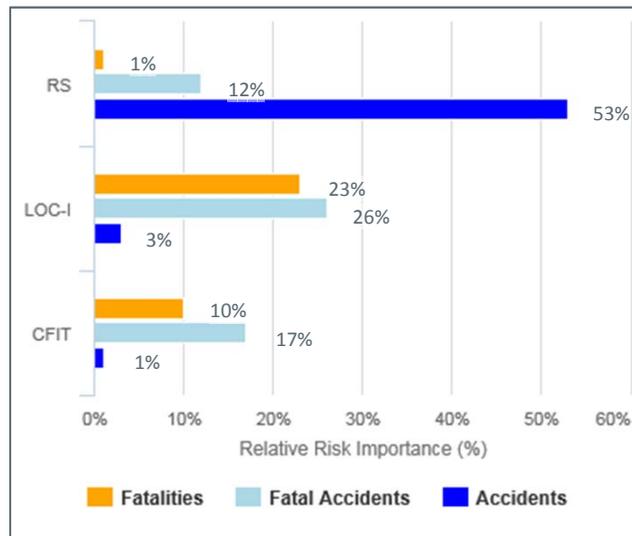
Source: 2017 Safety Report (<https://www.icao.int/safety/Pages/Safety-Report.aspx>)



Risk Distribution for the Top 3 Safety Priorities

Scheduled commercial above 5 700kg for 2012 - 2016

World



Continue focus on the Top 3 Safety Priorities (RS, CFIT, LOCI)



Source: iSTARS 3.0 – ADREP et al. (<https://portal.icao.int/space>)



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UNITING AVIATION



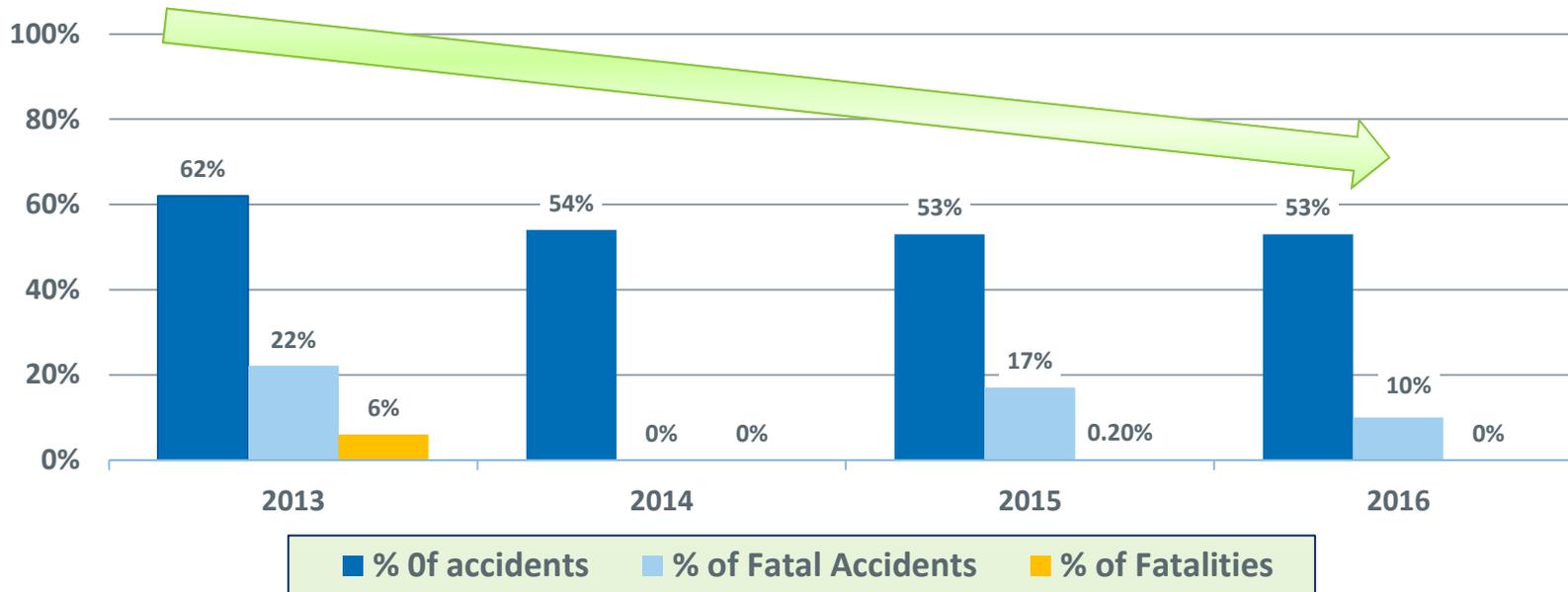
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Runway Safety related Accidents





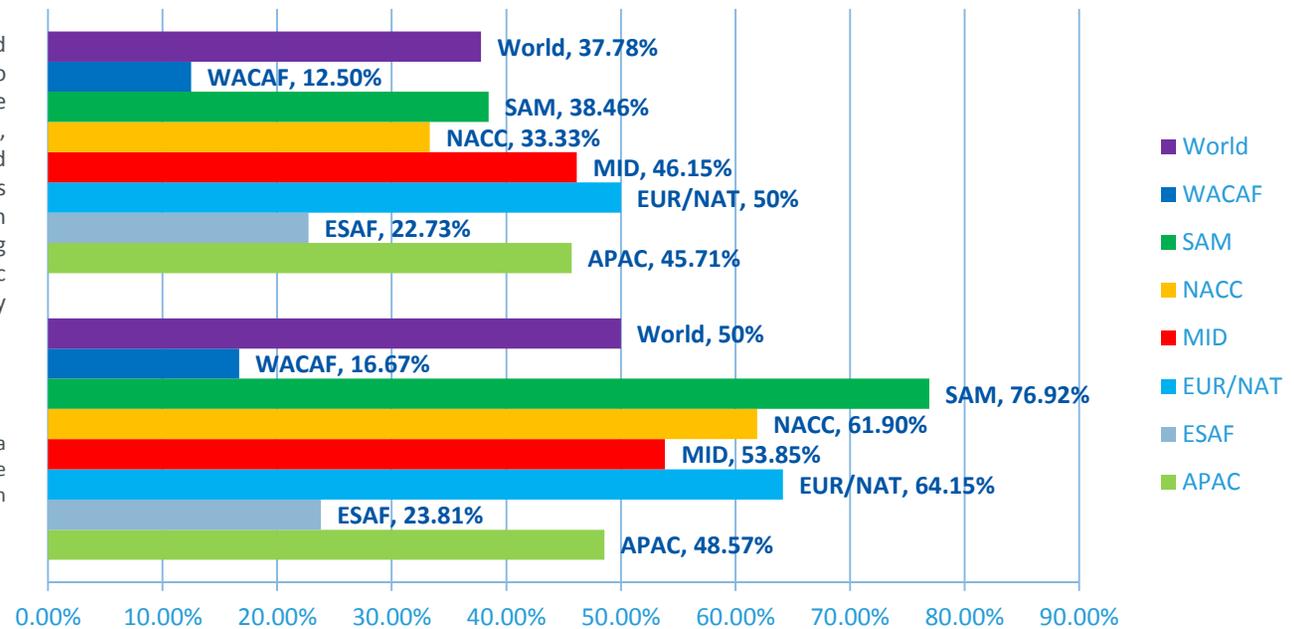
Average EIs of PQs: 7.189 & 8.205

PQ 8.205

Has the State established and implemented a process to ensure that an aerodrome operator's plan for lighting, signs and markings is integrated as a whole into the aerodrome's runway incursion and collision avoidance strategy, taking account of different traffic intensities and visibility conditions?

PQ 7.189

Has the State promulgated a regulation requiring the establishment and implementation of a runway safety programme?





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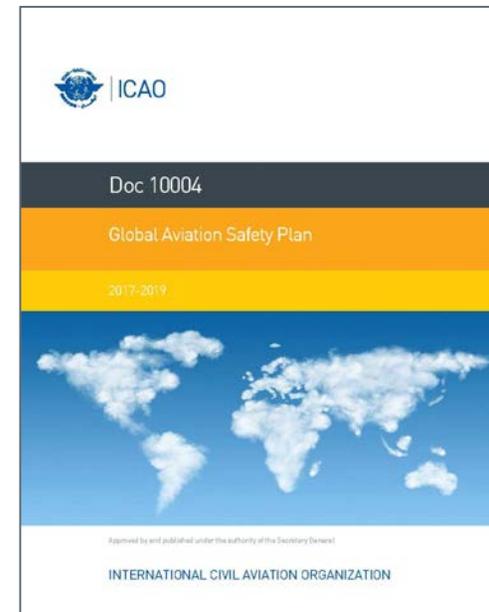


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GASP 2017-2019 Edition

- Runway safety related events identified as **one of the top 3 high-risk accident categories**
- **Highest proportion of the accidents worldwide** during the 5-year period (2010 - 2014) involved runway safety events
- Runway safety was the **prevalent accident category** for all the regions
- **Runway safety-related events** include, but are not limited to: abnormal runway contact, bird strikes, ground collisions, events related to damage from ground handling operations, runway excursions, runway incursions, loss of control on the ground, collision with obstacle(s), undershoots and overshoots





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RSP ACHIEVEMENTS AND PLANS (from 2017)



RSP Achievements 2017

- Planning & coordination meeting – April & November
- Runway Safety Action Plan Working Group
- Input to GASP Study Group
- New runway safety Go-Team missions site
- 23 Runway Safety Go-Team missions completed
- 1st Runway Incursion Prevention course - November
- 2nd Global Symposium – November
- New SMM (Doc. 9859) – December
- Runway safety panel during SANIS - December





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Runway Safety Action Plan Working Group Scope

- Review Runway Safety Programme achievements, objectives and priorities
- Develop a Runway Safety Action Plan for the future
- Make recommendations to the GASP Study Group to assist the development of the next 2020-2022 edition



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Objectives

- Safety risk assessment of Runway Safety category and sub-categories
- Confirm Runway Safety risk priority and identify main sub-categories
- Identify mitigation measures



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Objectives

- Develop new Runway Safety Action Plan
- Advise 2020-2022 GASP Study Group
- Present at the 2nd Global Runway Safety Symposium
- Present at the Safety and Air Navigation Implementation Symposium (SANIS), Montreal, 13-15 December 2017



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Working Arrangements

- The deliverables split into three sub-groups:
 - Data Review Sub-Group
 - Hazard Identification and Risk Assessment Sub-Group
 - Runway Safety Action Plan Sub-Group



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Working Group Deliverables

Deliverable	Completion Date
Report on the results of the data review	31 st March 2017
Hazard Identification and Risk Assessment Report	31 st August 2017
Runway Safety Action Plan	31 st October 2017



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Working Group Recommendations

- Is Runway Safety still a global priority?
- If so, what category(ies)?

Yes

Runway Excursion

- Highest total risk weight
- Highest number of events
- Harmonized with international organizations (e.g IATA)

Runway Incursion

- High number of incidents
- 1 incident report per day
- High fatality risk



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Regional Implementation





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NACC RO Report

66 Runway Safety Teams established

- Workshop on Best practices to prevent Runway Incursion/Runway Excursions (Regional Office, March 2014 to August 2017)

Runway Safety Go Team missions:

- TONCONTIN INTL (MHTG) - Tegucigalpa, Honduras (10 to 14 March 2014)
- LA AURORA INTL (MGGT) - Guatemala City, Guatemala (13 to 17 April 2015)
- JOSE MARTI INTL (MUHA) - Havana, Cuba, in collaboration with FAA to assess functioning of RSTs (13 to 15 October 2015)
- V C BIRD INTL (TAPA) - St. John's, Antigua and Barbuda, in collaboration with FAA (8-11 November 2016)
- REINA BEATRIX INTL (TNCA) – Oranjestad, Aruba (14-16 June 2017)

RASG-PA is currently working on the following Runway Safety Enhancement Initiatives (Detailed Implementation Plans (DIPs)):

- RASG-PA/RE/215 – 216 – Landing Training for Flight Crews.
- RASG-PA/RE/217 – Airline Operations and Training – Take-off Procedures and Training.
- RASG-PA/RE/218 – Implementation of on - board technologies.
- RASG-PA/RE/219 – Air Traffic Service Provider Training to Prevent Runway Excursions.



SAM RO Report

- **Second Global Runway Safety Symposium in Lima, Peru on November 20-22, 2017.**
- 26 Runway Safety Teams Established
- Regional Mechanism for AIG Cooperation for the SAM Region (ARCM)
 - Taskforce under the AIG-SAM/RE workgroup (part of ARCM) on analysis of associated factors on RE events in 2016 on the SAM Region (on going / 2016)
- Regional Safety Oversight Organization for the SAM Region (SRVSOP)
 - SRVSOP Advisory Circular on Runway Safety Teams under Latin American Regulations (LAR), based on ICAO's RST Handbook and Brazil's experience (2017)
 - Review by OPS Panel on criteria for unstable approach parameters for operators at the SAM region (2017)
- RASG-PA Detailed Implementation Plans:
 - RASG-PA/RE/215 – 216 –Landing Training for Flight Crews.
 - RASG-PA/RE/217 – Airline Operations and Training – Take-off Procedures and Training.
 - RASG-PA/RE/218 – Implementation of on - board technologies.
 - RASG-PA/RE/219 – Air Traffic Service Provider Training to Prevent Runway Excursions.
- Other activities:
 - GREPECAS (SAM Region PIRG) project on Runway Safety under review (Project F2)
 - CARSAMPAF (CAR/SAM Regional Wildlife committee) task on a Regional Bird Migration Alert System (2017-18)



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EUR/NAT RO Report

33 Runway Safety Teams reported to ICAO

- In addition, all Russian airports have RSTs established as per order of Russian CAA

SMS/RWY Safety Seminar held on 19-20 July 2016 in Moscow, Russia. The Seminar has been organized with the support of ICAO, IAC, FAA, Rosaviatsia (Russian CAA) and Airbus. The Seminar was attended by over 180 representatives of CAAs and airports of Armenia, the Republic of Belarus, Republic of Kazakhstan, Kyrgyz Republic and Russian Federation.

Runway Safety Go-Team missions:

- BEN GURION (LLBG) - Tel Aviv, Israel (08-10 November 2016)
- ESENBOGA (LTAC) – Esenboga, Turkey (07-09 March 2017)
- MANAS (UAFM) - Bishkek, Kyrgyzstan (02-04 August 2017)
- PODGORICA (LYPG) – Podgorica, Montenegro (14-16 November 2017)

RASG-EUR have two Safety Enhancement Initiatives developed on runway safety

- SEI IE-REST/IE-RSG/01 related to Runway Safety Standard Operating Procedures (SOP) Promotion
- SEI IE-REST/IE-RSG/02 related to Runway Safety Team Guidance and Implementation

RASG-EUR to publish safety advisory on guidance for Air Operators in developing SOP supporting runway safety (scheduled for November 2016)

Translation into Russian of the ICAO RST Handbook on the ICAO EUR/NAT website and at:
http://favt.ru/favt_new/?q=novosti/aktualnaja_informacija/aktualnaja_informacija/4348



MID RO Report

33 RSTs established which represents 56% of the required RSTs of the MID Region aerodromes

Third meeting of the RASG-MID Runway and Ground Safety Working Group (RGS WG/3) held in Cairo, Egypt, 19 - 22 September 2016

Fourth meeting of the RASG-MID Runway and Ground Safety Working Group (RGS WG/4) will be held in Cairo, Egypt, 5-7 November 2017

Runway Safety Go-Team missions:

- KHARTOUM (HSSS) - Khartoum, Sudan (30 November to 4 December 2014 in conjunction with ACI APEX Safety review)
- KUWAIT INTL (OKBK) - KUWAIT, Kuwait (15-18 February 2016)
- QEEN ALIA INTL (OJAI) - Amman, Jordan (5-8 Sep 2016)
- Tentative for 2018: (OOMS) Muscat, Oman and (OLBA) Beirut/ Rafic Hariri , Lebanon (TBD)

RASG-MID Safety Advisories which have been circulated by State Letters and are available on the ICAO MID website at:

www.icao.int/MID/Pages/rasgmid.aspx

- RSA-01, Guidance for Harmonising the Use & Management of Stop Bars at Airports - November 2014
- RSA-02, Guidance on Regulatory Framework Supporting Establishment of Runway Safety Teams - January 2015
- RSA-03, Model Checklist for Runway Safety Teams (RSTs) - March 2015
- RSA-05, Aerodromes Certification Toolkit - September 2015
- RSA-10, Guidance on Periodic Surveillance Audits of Aerodrome Infrastructure & Maintenance - August 2016
- RSA 11, Guidance on Safeguarding of Aerodromes, March 2017
- RSA 12, Guidance on Laser Attacks Safety Guidelines (Rev 1) – October 2017
- RSA 13, Guidance on Wildlife Management and Control Regulatory Framework & Guidance Material



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WACAF RO Report

Runway Safety Workshop

- 53rd ACI Africa Board and Working Groups Meeting & Regional Conference and Exhibition, Casablanca, Morocco, 18 – 22 April 2015

Development of guidance material and training programs to be used by the Go-Team to ensure the establishment and operation of Runway Safety Teams.

Runway Safety Go-Team missions conducted in 2014, 2015 and 2016 :

- Dakar, Lomé, Accra, Banjul, Lagos, Brazzaville, Pointe Noire, Bamako and Abidjan

Runway Safety Go-Team missions conducted in 2017:

- Libreville and Ouagadougou

Waiting for the approval of the AfDB Projects to plan more activities for 2017 and 2018 in order to cover all international aerodromes in the WACAF Region



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ESAF RO Report

6 Airports with established Runway Safety Teams

Regional Runway Safety Seminar was held in Livingstone, Zambia, 9 - 10 October 2014

Runway Safety Go-Team missions:

- Luanda, Angola (4 - 6 November 2014)
- Planned: Botswana, Seychelles, Uganda, Zambia, Zimbabwe



APAC RO Report

Completed Runway Safety RASG-APAC SEIs and publications:

- Runway Safety Maturity Checklist
- Unstable Approaches - ATC Considerations - <https://www.canso.org/unstable-approaches-air-traffic-control-considerations>
- Guidance on runway maintenance and operations – Aerodrome Operator’s perspective - available on ACI website
- Model AC on Runway Incursion Standard Operating Procedures – Runway Incursion Prevention and Pilot Training
- Established APAC Runway Safety Go Team
- Typical Training Programme for AGA Inspector – Standardized Capacity Building Programme
<https://www.icao.int/APAC/RASG/eDocs/Forms/AllItems.aspx>

Other Runway Safety SEIs in progress:

- Identify the probable causal factors associated with pilot decisions not to go around when a go around is appropriate
- Develop guidance material and training programs to establish and operate runway safety team



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Global Airport Runway Safety Teams – 216 Teams Reported to ICAO



Please visit the following link to complete survey and see the complete list of reported Runway Safety Teams:
<https://www.icao.int/safety/RunwaySafety/Pages/Runway%20Safety%20Team%20Register.aspx>



Global Runway Safety Go-Team missions – 23 completed by ICAO & Partners



Please visit the following link to see the completed Runway Safety Go-Team missions:

<https://www.icao.int/safety/RunwaySafety/Pages/RS-Go-Team-Missions.aspx>



ICAO RSP Activities/Plans - 2018 and beyond

- Disseminate, Promote and Implement new Runway Safety Programme Action Plan
- Runway Safety Action Plan Working Group continues
- Support RASGs for regional implementation
- PANS-Aerodromes (Doc 9981) 3rd edition (new RS Chapter) – 2018
- Annex 14 Vol. I Amendment – Nov 2018
- New USOAP audit protocol questions on runway safety provisions based on AR 37-6, 9870, 9981) – 2018
- New GASP – 2019
- Revised Doc. 9870 - 2019





Partner Activities/Plans - 2017

- ACI - APEX, new SMS Handbook, incident data collection
- CANSO - SEANS, RS maturity checklist update
- Eurocontrol – RI Studies, EAPPRI v3.0
- FSF - Go-Around Decision-Making and Execution Project
- IATA - RE & RS Studies, Airport Analyses
- IFALPA - RS manual update, new position paper
- IATA, CANSO, IFATCA and IFALPA - Unstable Approaches Risk Mitigation Policies, Procedures and Best Practices





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