



ICAO

UNITING AVIATION

Establishing Runway Safety Teams

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Runway Safety

- 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



ICAO and its Runway Safety Programme Partners are now working together on a series of concrete measures to minimize the risks of runway incursions, runway excursions and other events linked to runway safety by:



Establishing, promoting and enhancing multi-disciplinary Runway Safety Teams (RSTs) at individual airports

Runway Safety Team (RST) Role



**Develop a
runway safety
action plan**

**Advise
management
on potential
runway safety
issues**

**Recommend
strategies for
hazard removal**

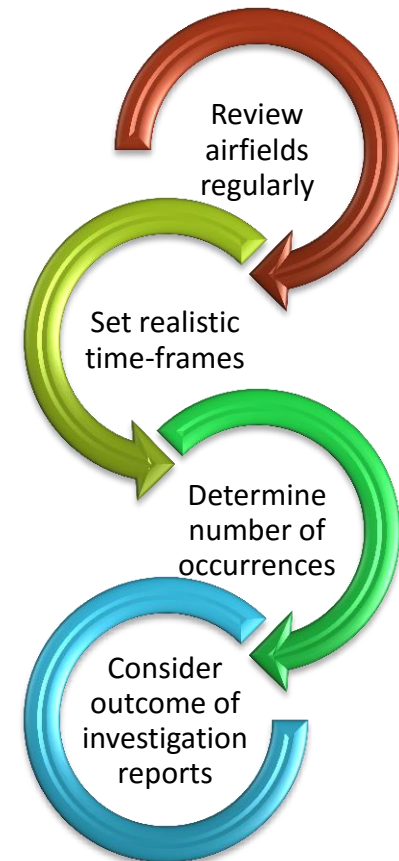
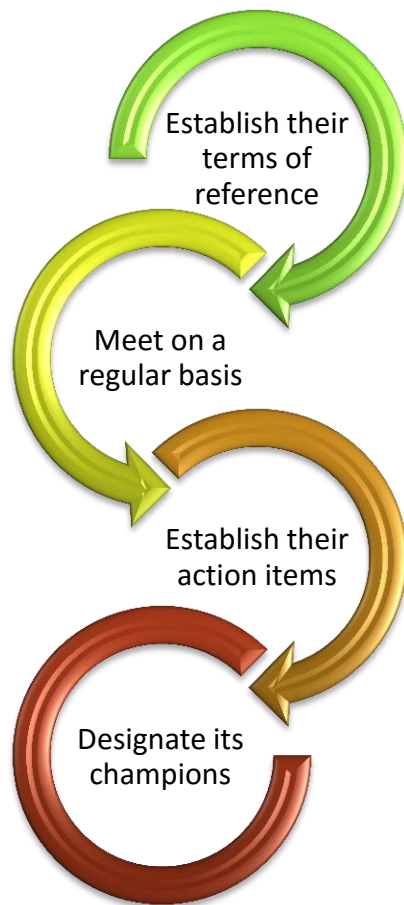
**Mitigate
residual risk**

RST Composition

**Representatives
from:**



Runway Safety Teams need to:



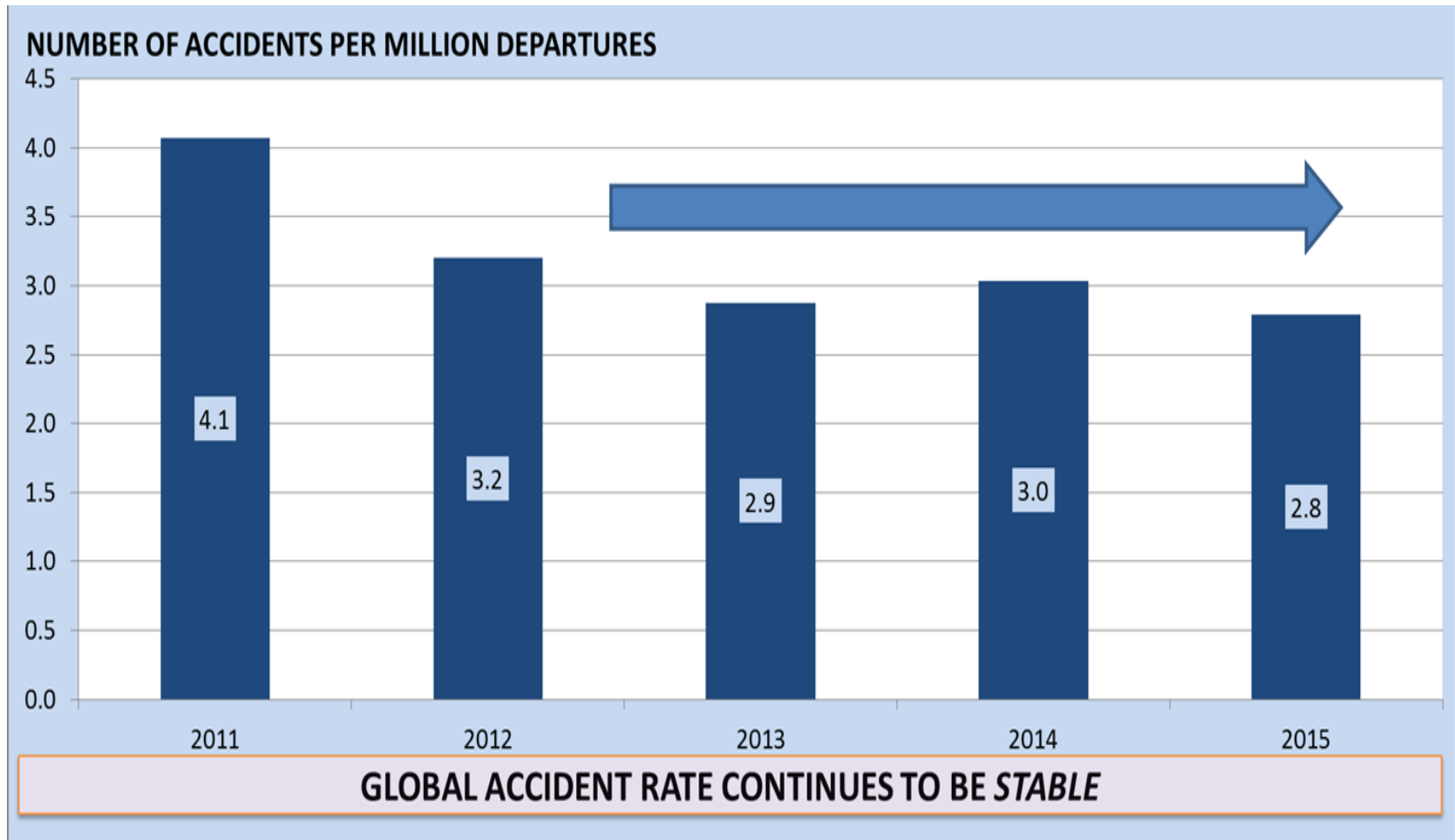
Education and Awareness

There are many sources of information from the ICAO's Runway Safety Programme Partners

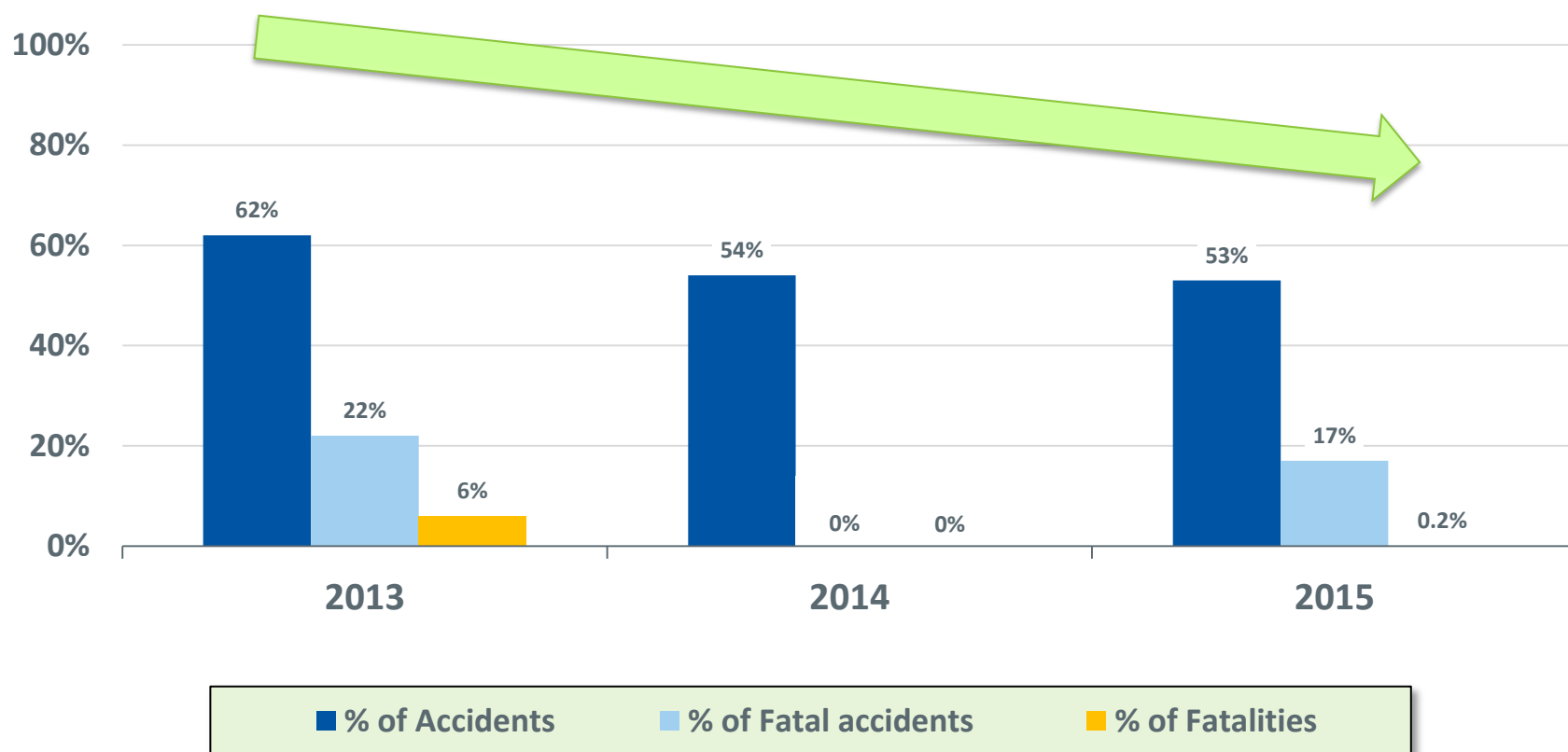
Visit the ICAO Runway Safety Site:
<http://www2.icao.int/en/RunwaySafety/default.aspx>



Global Accident rate



Runway Safety related Accidents



Runway Safety related Accidents

Year	2013	2014	2015
% of accidents involving Runway Safety	62%	54%	53%
% of fatal accidents involving Runway Safety	22%	0%	17%
% fatalities involving Runway Safety	6%	0%	0.2%

Runway Safety in 2016*

Year	2016
Number of accidents involving Runway Safety	17

* Preliminary data not validated, as of May 2, 2016

List of Runway Safety Accidents – up to 2 May 2016

Date	Airport	Aircraft Type	Flight Phase
03/01/2016	CHICAGO O'HARE INTL (KORD), Chicago, IL (USA)	Canadair CL-600-2C10 Regional Jet CRJ-702	Standing
09/01/2016	RONDONOPOLIS (SWRD), Rondonopolis, Brazil	ATR ATR 72	Approach
14/01/2016	HOSEA KUTAKO INTL (FYWH), Windhoek, Namibia	Airbus A319-112	Approach
28/01/2016	SHAHID HASHEMI NEJAD INTL (OIMM), Mashhad, Iran	Boeing (McDonnell-Douglas) MD-80	Landing
14/02/2016	PRES JUSCELINO KUBITSCHEK INTL (SBBR), Brasilia, Brazil	Boeing 737 (NG)	Standing
03/03/2016	CHHATRAPATI SHIVAJI INTL (VABB), Mumbai, India	Boeing 737 (NG)	Taxi
04/03/2016	BOLE INTL (HAAB), Addis Ababa, Ethiopia	Boeing 787	Standing
21/03/2016	GUARANI INTL (SGES), Ciudad Del Este, Paraguay	Airbus A320	Landing
23/03/2016	PERETOLA (LIRQ), Florence, Italy	BAE SYSTEMS (Avro) RJ Avroliner	Landing
27/03/2016	ASTANA (UACC), Astana, Kazakhstan	Fokker 100	Landing
28/03/2016	LIC BENITO JUAREZ INTL (MMMX), MEXICO CITY	Sukhoi Superjet 100	Take-off
04/04/2016	HALIM INTL (WIIH), Jakarta, Indonesia	Boeing 737 (NG)	Take-off
15/04/2016	LOS ANGELES INTL (KLAX), Los Angeles, CA (USA)	Boeing 747	Landing
20/04/2016	GANDER INTL (CYQX), Gander, Canada	Hawker Beechcraft 1900	Landing
28/04/2016	MARISCAL LAMAR (SECU), Cuenca, Ecuador	Embraer 190	Landing
30/04/2016	CATANIOA-FONTANAROSSA (LICC), Catania, Italy	Fokker 50	Landing
01/05/2016	KANGDING (ZUKD), Kangding, China	A319	Approach

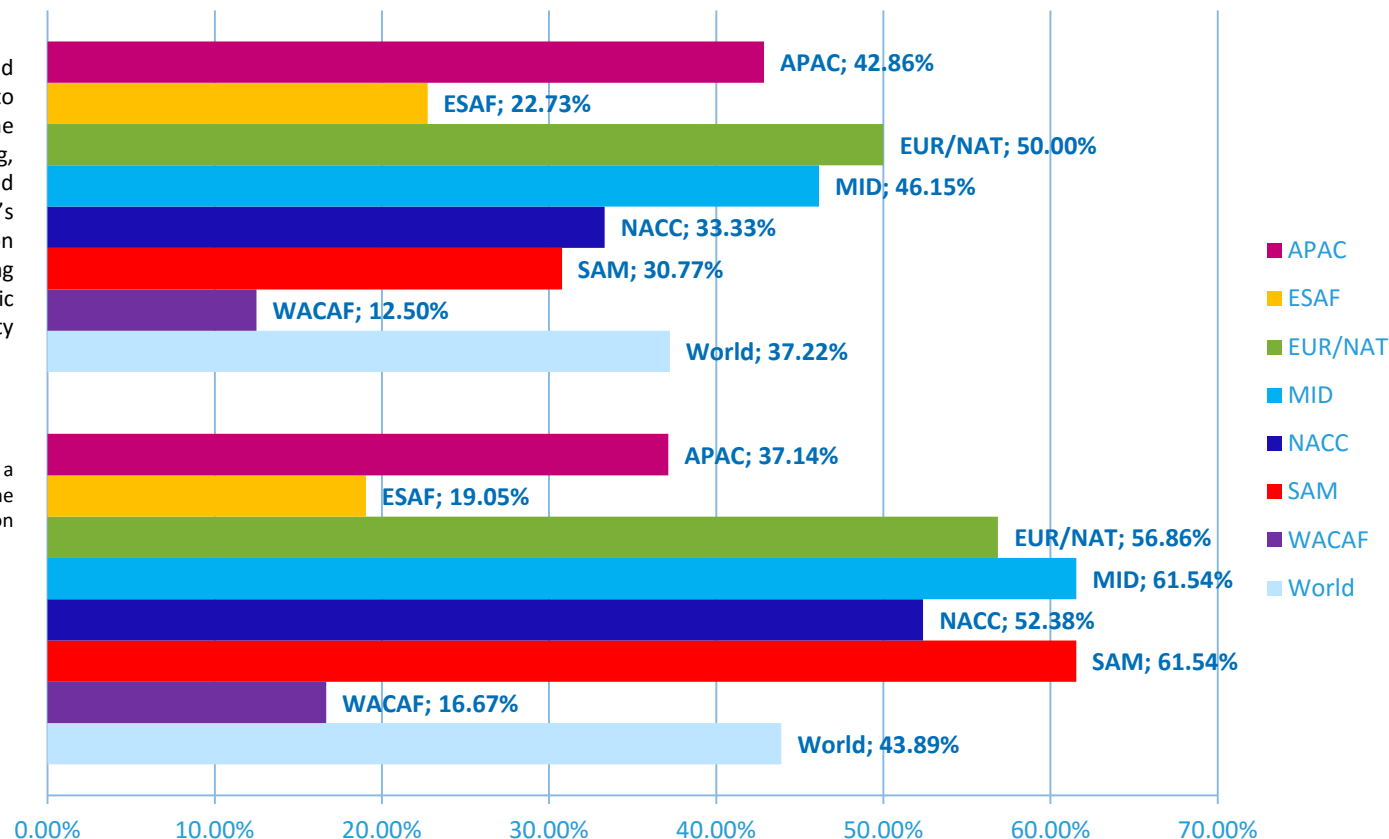
Average EI of PQs: 7.189 & 8.205 for World: 40.56%

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?

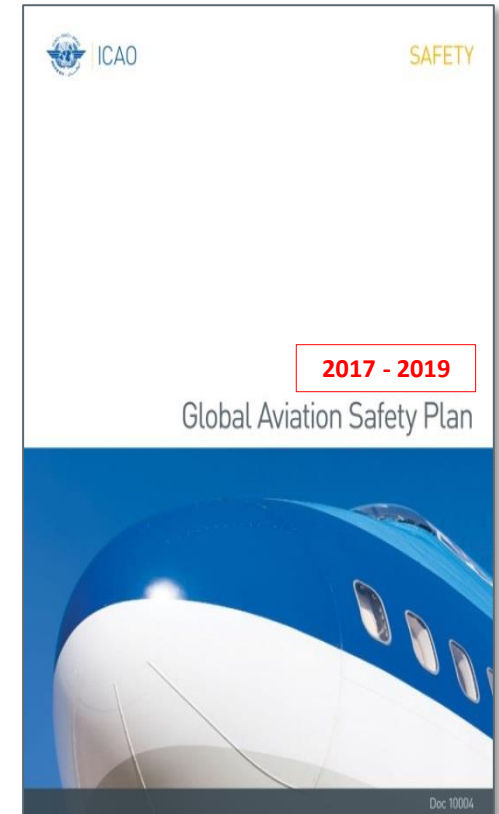
PQ 7.189

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



GASP 2017-2019 Edition

- Runway safety events identified as **one of the top high-risk accident categories**
- **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
- **Over half of the accidents worldwide** involved runway safety events
- Runway safety was the **prevalent accident category** for all the regions





Runway Safety Programme



ICAO





ACHIEVEMENTS AND PLANS (since mid-2014)

RSP Achievements - 2014

- Published ICAO RST Handbook
- Launched RS Implementation Kit (I-Kit)
- RRSS (AFI, SAM & MID)
- Runway Safety KPIs WG – Workout Sessions
- Regional Dashboards – RS accidents
- Runway Safety Go-Teams – methodology, pilot missions
- iSTARS/SPACE on-line list of aerodromes
- ACI APEX Airport Safety Reviews
- IATA Airport Analyses





RSP Achievements - 2015

- 2nd edition of ICAO Runway Safety Team (RST) Handbook
- RASG Safety Enhancement Initiatives (SEI) related to runway safety, Detailed implementation plans (DIP), & related activities
- Regional publications – guidance and safety advisories
- 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”
- Updated Runway Safety implementation kit (iKIT) on ICAO website at www.icao.int/safety/runwaysafety





Current Airport Certification Status in the CAR Region (Central America and Caribbean)

- Based on the new Air Navigation Plan (ANP), CAR/SAM Facilities and Services Implementation Document (FASID) (Doc 8733), there are 154 international aerodromes in the CAR Region.

States / Territories CAR Region	No. Aerodromes (Doc.8733, ANP, FASID, Table - AOP 1)	Responsible	Number of Aerodromes			
			Certified	On – going process	Planned	Remarks
21/18	154	CAA	30	8	4	23% (2012)
21/18	154	CAA	77	15	17	51% (Aug 2017)



Aerodrome Issues

- ✈ Rescue and fire fighting
- ✈ Bird/wildlife management
- ✈ Aeronautical studies
- ✈ Risk assessments
- ✈ Enforcement
- ✈ Airfield signs, markings and lighting
- ✈ Obstacle evaluation
- ✈ Acceptance and oversight of safety management system SMS



RST Implementation in CAR Region

59 Runway Safety Teams established: Mexico, Cuba, Trinidad & Tobago, Honduras.

- 2015 Workshop on Best practices to prevent Runway Incursion/Runway Excursions (Regional Office, 11 to 14 August 2015)

Runway Safety Go Team missions:

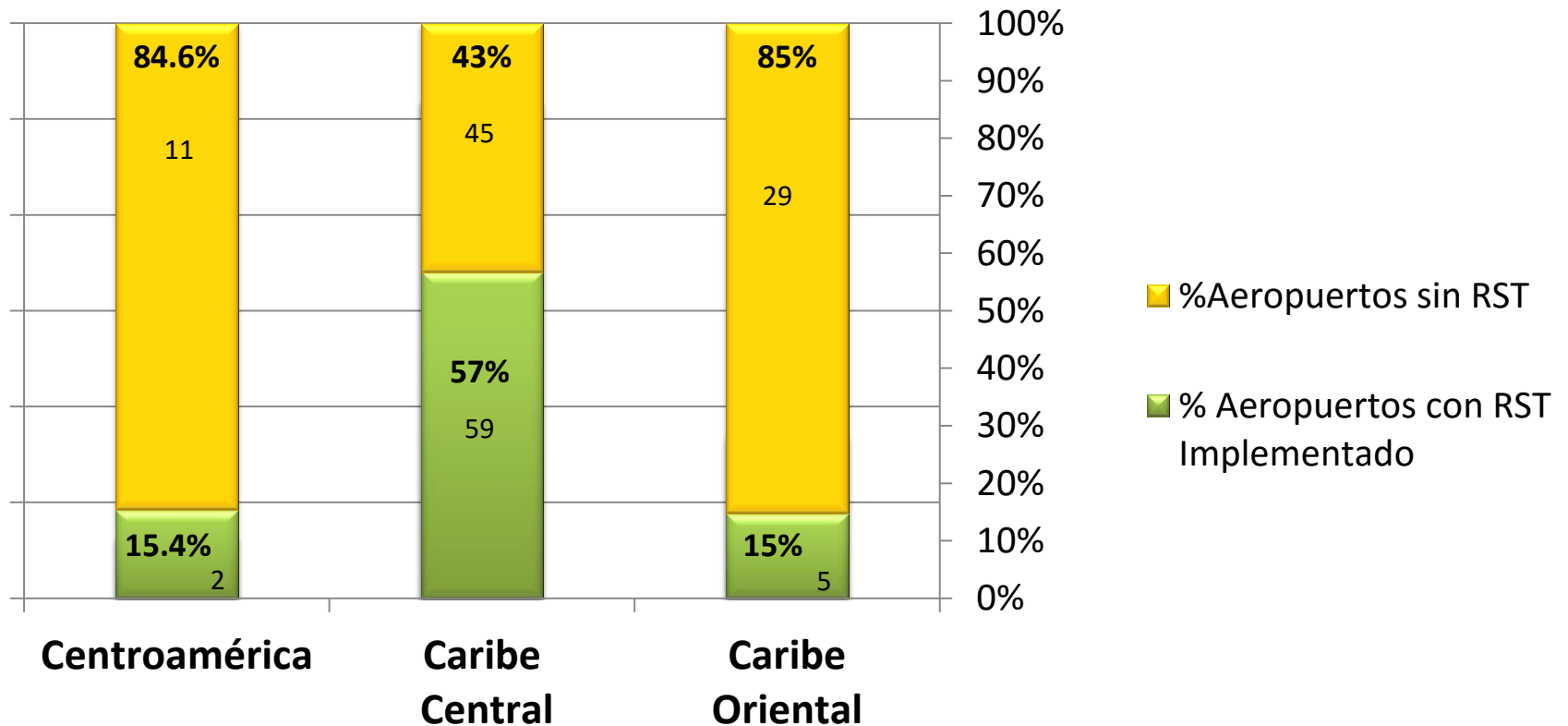
- TONCONTIN INTL (MHTG) - Tegucigalpa, Honduras (10 to 14 March 2014)
- LA AURORA INTL (MGGT) - Guatemala City, Guatemala (13 to 17 April 2015)
- JOSE MARTI INTL (MUHA) - Havana, Cuba, in collaboration with FAA to assess functioning of RSTs (13 to 15 October 2015)
- V C BIRD INTL (TAPA) - St. John's, Antigua and Barbuda (8-11 November 2016)
- WILLEMSTAD/HATO INTL. (TNCC) - Curacao, Curacao (Planned 1st QTR 2017)

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

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



Estado de Implementación de Equipo de Seguridad Operacional de Pista (RST) en la Región CAR



RSP Activities/Plans - 2016 and beyond

- Runway safety team survey – RSTs have registered
- Runway Safety Go-Team missions
- Annex 14 Vol. I Amendment 13 – Nov 2016
- PANS-Aerodromes 1st edition (Doc 9981) – Nov 2016
- Global Runway Safety Detailed Implementation Plan - 2016
- PANS-Aerodromes 2nd edition (Chapter 5) – 2018
- Annex 14 Vol. I Amendment – Nov 2018
- USOAP audit protocol questions on runway safety provisions



Upcoming SARPs

- **Amendment 13 to Annex 14 includes provisions for enhancing runway safety. They mainly cover the following areas:**
 - Global reporting format for measuring and reporting runway surface condition to prevent runway excursions
 - Autonomous runway incursion warning system to prevent runway incursions
 - Requirement for publishing runway end safety area (RESA) and arresting system information in the AIP to raise situational awareness
 - Improved provisions relating to aerodrome visual aids, including runway-holding position markings to prevent runway incursions
 - Taxiway design guidance to assist in the prevention of runway incursions
 - Guidance on runway surface unevenness

Future SARPs work

- **In the next triennium, in the field of aerodromes, ICAO will deliver more SARPs, PANS and guidance material to address runway safety:**
 - Second edition of PANS-Aerodromes, which will include a specific Chapter on runway safety
 - More guidance material for the assessment and reporting of runway surface condition, including the use of new technology
 - Provisions on the criteria for the design specification, installation and acceptance by a State of an arresting system in lieu of part or all of a RESA
 - Provisions on surface management, including prevention of runway incursions using A-SMGCS
 - Provisions on standardized taxiway naming convention to help prevent runway incursions
 - Procedures and updated guidance on reduction of bird/wildlife strike hazard, including the use of new methodologies and technologies
 - New/updated provisions in Annex 14 Volume I and PANS-Aerodromes for the prevention, and the installation of devices for the detection, of Foreign Object Debris (FOD) ingestion



Runway Safety Recommendations

- RASGs to analyze **regional runway safety data** and develop related Safety Enhancement Initiative (SEI) & Detailed Implementation Plans (DIP)
- States to implement **runway safety programmes**
- Airports to implement and enhance **Runway Safety Teams (RST) and safety management systems**
- Airports to make use of the **Runway Safety iKit, RST Handbook, and other guidance material**
- Airports to request **ICAO Runway Safety Go-Team visits** and/or **ACI APEX Airport Safety Review**



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THANK YOU!