CFIT Prevention in Africa to Improve Safety Performance– Part 1

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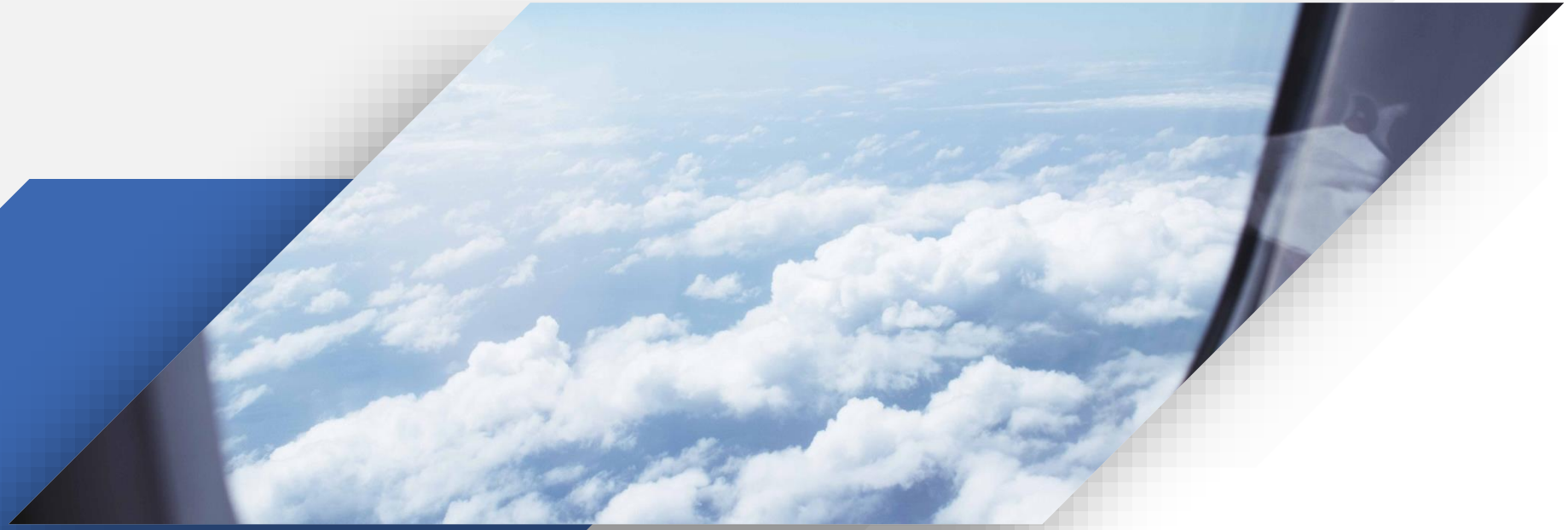
Better Skies for Africa

Agenda

1. Africa Safety Records Prior to 2012
2. CFIT Prevention Matters
3. Two occurrences in 2003:
    1. A missed CFIT at Bole International Airport and
    2. CFIT accident at Mount Kenya
4. Data-Driven Approach to Safety Improvement
5. Coordinated Efforts to Reduce ALA, Including CFIT
6. The Data identified the types of accidents to Manage and Reduce Accident rates

Africa Safety Records Prior to 2012



CFIT Prevention Matters

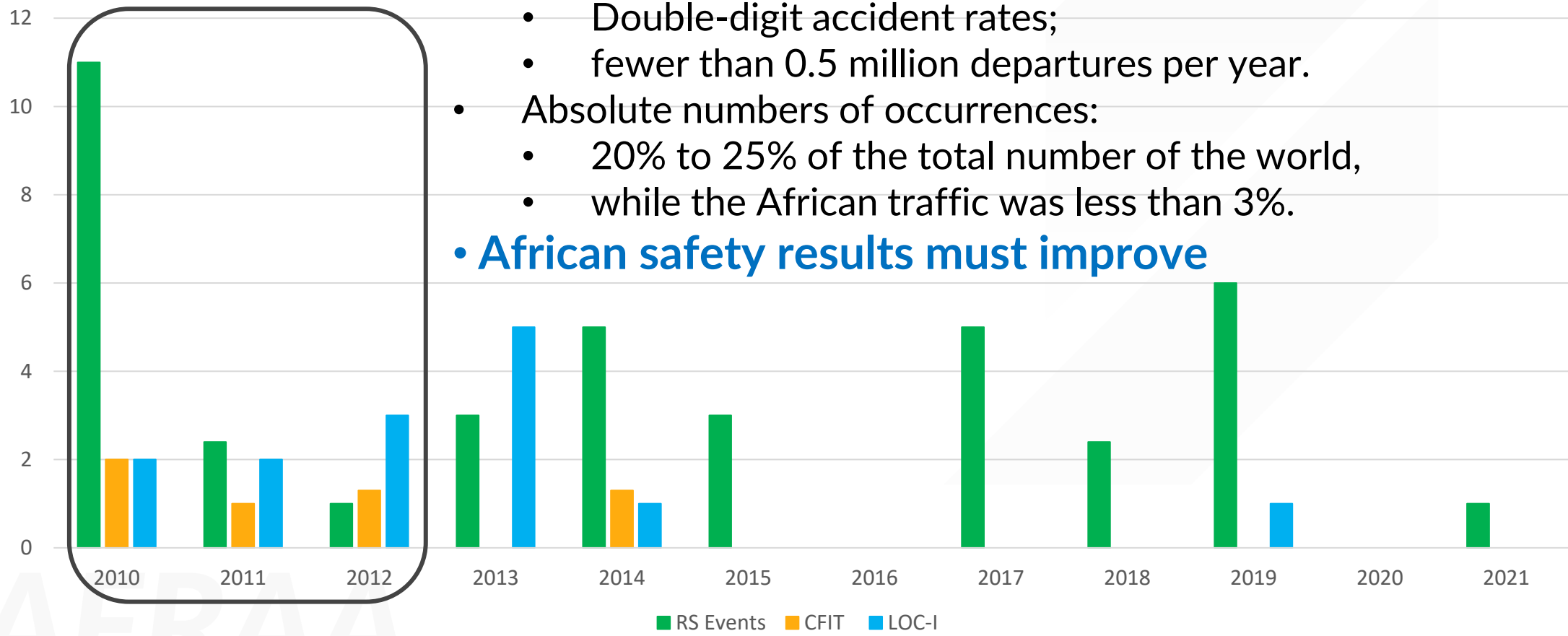
- **CFIT is disproportionately deadly (globally:**
  - A small share of accidents but a large share of fatalities.
  - Of the total 415 accidents between 2010 and 2014,
    - 88 accidents were fatal, resulting in 2,541 total fatalities.
    - Note that 86 of the fatal accidents were assigned.
    - CFIT was the second most frequent category of fatal accident, representing 31 fatal accidents or 36 percent of total fatal accidents
    - These CFIT accidents resulted in 707 fatalities among passengers and crew.

Source Flight Safety Foundation / IATA

Before 2012

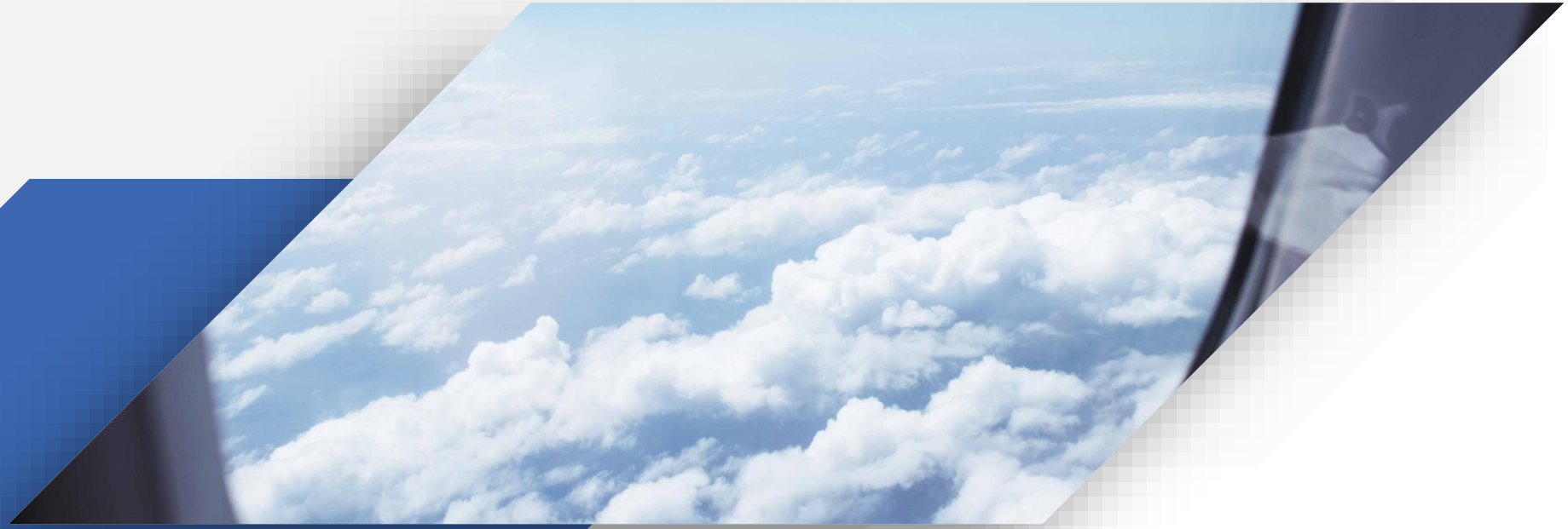
- Accident rate KPI per million departures:
  - Double-digit accident rates;
  - fewer than 0.5 million departures per year.
- Absolute numbers of occurrences:
  - 20% to 25% of the total number of the world,
  - while the African traffic was less than 3%.

- **African safety results must improve**



Source RASG-AFI

Two CFIT Events in 2003 in Africa



The 2003 Near Missed CFIT at ADD

On 31 March 2003

- An A320, operated by British Mediterranean, narrowly missed colliding with terrain during a non-precision approach to Addis Ababa.
- The A320 on a flight from Alexandria to Addis Ababa, Ethiopia, carried out two approaches using Addis Ababa VOR and associated DME. On the second approach, the aircraft crossed over a ridge of the high ground in IMC and came within 56 feet of the terrain at location 5 NM to the north-east of the airport,
- Sticking to the operator SOP, the crew diverted to the alternate airport, landed safely at Djibouti, and filed an Aviation Safety Report. Source SKYBrary Aviation Safetyoperator's

The 2003 CFIT at Mount Kenya

On 19 July 2003

- The Swearingen Metro plane, carrying 12 American tourists and two South African crew members, departed Nairobi-Wilson Airport at 15:58 for a flight to the Samburu national park. The flight plan was to allow the crew to fly round Mount Kenya before landing at a private airstrip in the game park.

  The airplane crashed into the eastern slope of Point Lenana (16,450 feet), which is the third highest peak of Mount Kenya. The crash site was located approx. 450 feet below the snow-capped top. Debris scattered into the adjacent valleys of the peak, and then burnt throughout the night.

Source Aviation Safety Network

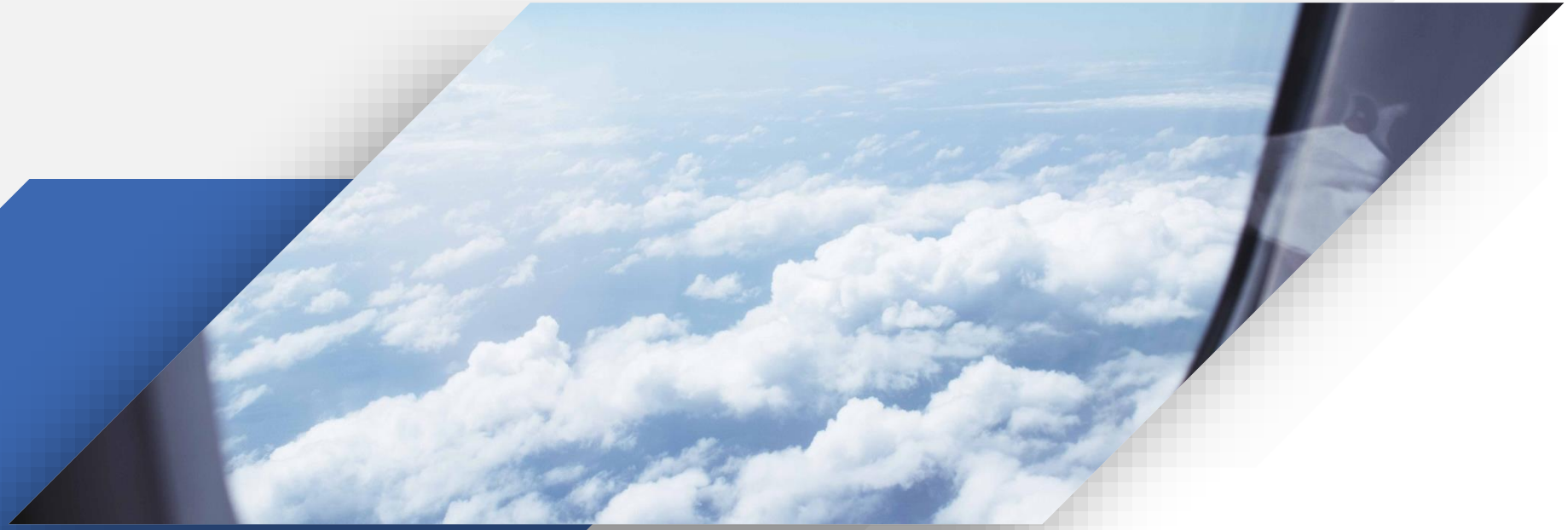
The 2003 CFIT at Mount Kenya

On 19 July 2003

- Probable cause: The pilots' failure to maintain horizontal and vertical situational awareness of the aircraft's proximity to the surrounding terrain, resulting in inadequate clearance, and controlled flight into terrain.
- Contributing factors:
  - Unfamiliarity with the airspace and the route in particular and the existence of high ground on the planned flight route.
  - Inadequate flight planning by the pilots and distraction of their attention when they were instructed to contact Nanyuki.
  - Poor pilot briefing by the Wilson ATC briefing office.
  - Poor communication between the air traffic control units.
  - Failure of the radar controller to advise the pilot of termination of radar service.
  - Lack of a radar system minimum safe altitude warning to the radar controller
  - Poor civil military coordination during transit through the military airspace.

Source Aviation Safety Netwo

World Data Driven Approach



The Data Driven Approach Influenced the Down Trend

The Aviation initiatives analyzed safety occurrences

- Dedicated safety bodies such as the Flight Safety Foundation (FSF), the US Commercial Aviation Safety Team (CAST), the Joint Safety Analysis Team (JSAT), and the European Joint Aviation Authorities Safety Authorities Aviation Safety Strategy Initiatives (JSSI) contributed to analyzing safety and making relevant recommendations.
- Based on the recommendations of these stakeholders, FSF developed a toolkit to prevent approach and landing accidents, including Controlled Flight Into Terrain (CFIT), the aviation killer.
- IATA regularly published its Annual Safety Report to disseminate lessons learned from safety events.

Approach and Landing Accident Reduction ALAR

Approach and Landing Accident Reduction ALAR

Validation

- ICAO 33rd Assembly:
  - "The ALAR Tool Kit has been assessed as containing extremely valuable accident prevention material which will greatly assist accident programs."
- Copy sent with each IATA Safety Report
- CAST:
  - "Develop an ALAR JSIT Training Guide, using the Flight Safety Foundation's CFIT and ALAR training guide . . . "

ALAR Tool Kit Workshops

Location	Host/Region	Date
Miami	PAAST/Latin America	Nov 2000
Mexico City	MASAir/Latin America	June 2001
Bangkok	AAPA/Asia-Pacific	Sept 2001
Nairobi	AFRASCO/Africa	Nov 2001
Johannesburg	SAA/South Africa	Nov 2001
Cairo	ICAO/AACO Middle East	Mar 2002
Reykjavik	Iceland FSF/Iceland	May 2002
Perth	ASFA/ Australia	Sept 2002
Melbourne	ASFA/ Australia	Sept 2002
Beijing	CAAC/China	Sept 2002
Dakar	ASECNA/IATA/ West Africa	May 2003
Moscow	FSFI/Russia	July 2003
Brussels	Eurocontrol/ERA/Europe	Dec 2003
Dubai	Emirates/Persian Gulf	Feb 2004
Bahrain	Gulf Air/Persian Gulf	Feb 2004
Korea	Korean Air/North Asia	June 2004
Alexandria, VA	Corporate Aviation	Oct 2004
Christchurch	Air New Zealand/South Pacific	July 2005
Anchorage	Medallion Foundation/Alaska	Aug 2005
Abu Dhabi	Gulf Air/Persian Gulf	Sept 2005
Muscat	Gulf Air/Persian Gulf	Sept 2005
New Delhi	Indian DGAC/South Asia	Jan 2006
Caracas	ALTA/Venezuela	August 2006
Tokyo	ATEC/Japan	December 2006
Baku	FSFI /Balkans	September 2007
Bangladesh	COSCAP South Asia	December 2007
Perth	ASFA/Australasia	May 2008
Melbourne	ASFA/Australasia	May 2008
Brisbane	ASFA/Australasia	May 2008
Tripoli, Libya	AFRIQIYAH/North Africa	July 2008
Pretoria, South Africa	IFALPA/Africa	October 2009
Taipei, Taiwan	FSF-T/Taiwan	November 2009
Manila, Philippines	AAPA/Pacific	October 2010
Bangkok, Thailand	IFALPA/ Pacific	December 2010

34 ALAR Workshops
5 ALAR Seminars

Approach and Landing Accident Reduction ALAR

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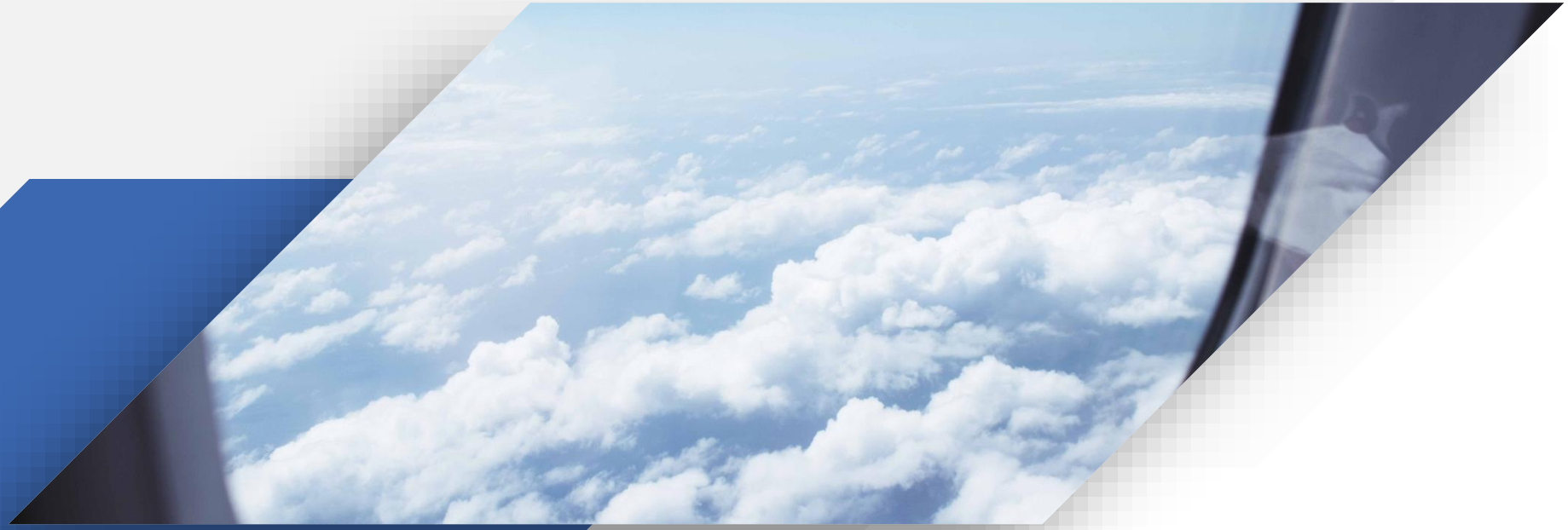
ALAR Tool Kit Distribution

• FSF	11,700	• ALPA	100
• Boeing	875	• ICAO	10,000
• Airbus	5,200	• FAA	4,000
• Cessna	120	• IATA	800
• SAAB	60	• Air Safety Australia	150
• Dassault	400	• Flight Safety Intl	600
• Gulfstream	1,000	• Friendship Fund	2,500
• BAE Systems	350	• Bahrain Royal Flight	300
• Fairchild-Dornier	150	• Aer Lingus	450
• NBAA	300	• Emirates	1,400
• Mexican Pilots(ASPA)	1,000	• Korean Air	100
• German Airline Pilots	35	• Gulf Air	550
• Medallion Foundation	32		

Total: 42,172

44

The Abuja Safety Targets



The Abuja Safety Targets

- **In 2011:**
  - Africa **7.9** and the world average **4.2** per million departures

- **In 2012**, the status of runway safety related accidents was:
  - 10-year-average was **17** runway safety related events **per year**
  - **Initially**, the Abuja set target for runway safety related accidents was to reduce runway related accidents to no more than **8** by **2015**

- **In 2012**, at Abuja, Africa recognized the Regional unacceptable safety performance.
  - Highest Accident rate insinuating the risk level of accident in Africa at about twofold of the world average
  - **Hence the initial 2012 Abuja Safety targets and the 2017 revised ones were set to improve aviation safety over time**
  - Progressively reduce the African accident rate to be in line with the global average.
  - With focus on reducing the accidents of three accident categories:
    - **runway related accidents, controlled-Flight-Into-Terrain (CFIT) and Loss of Control – In-flight (LOC-I)**

CFIT Prevention in Africa to Improve Safety Performance towards Abuja Safety Targets – Part 2

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Better Skies for Africa

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