

**Airbus China Safety Conference**  
**Chengdu, 15-16 July 2015**

## **Lateral Runway Excursion**

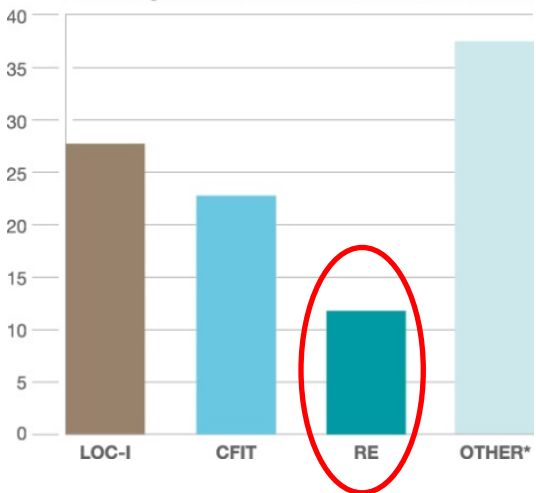
The right things to do to avoid it

Presented by Capt. Olivier ASPE

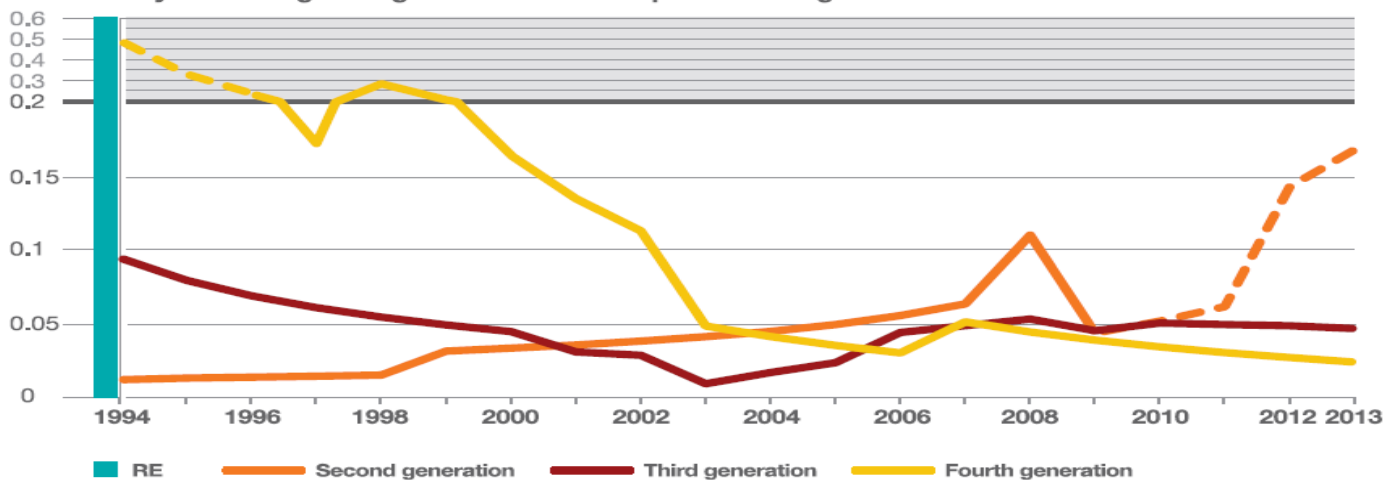


# Technology as an Efficient Safety Net

Percentage of total number of accidents since 1994



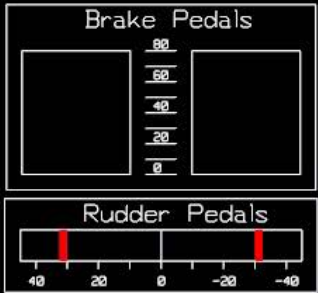
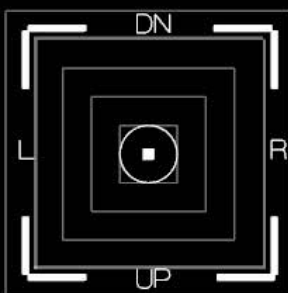
10 year moving average RE accident rate per million flights



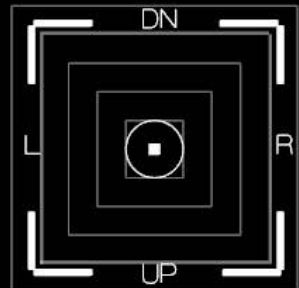
Emerging technology contribution in addressing Runway Excursion:

- ✓ ROPS or equivalent energy/landing performance based system

23:08:15 UTC



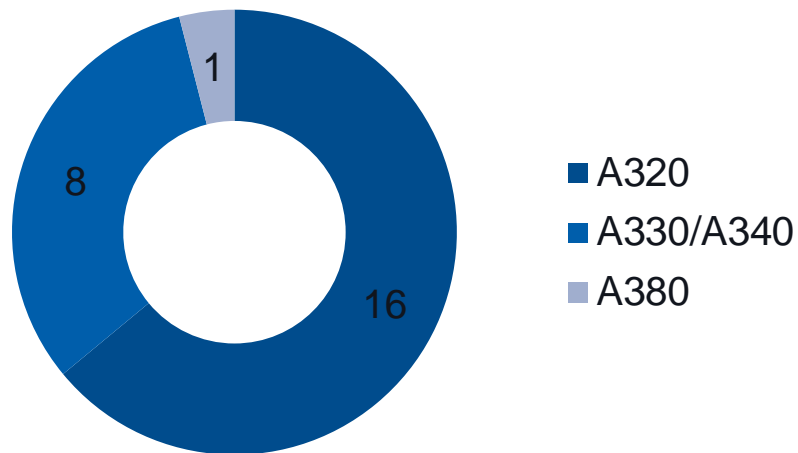
AUTOBRAKE: MED



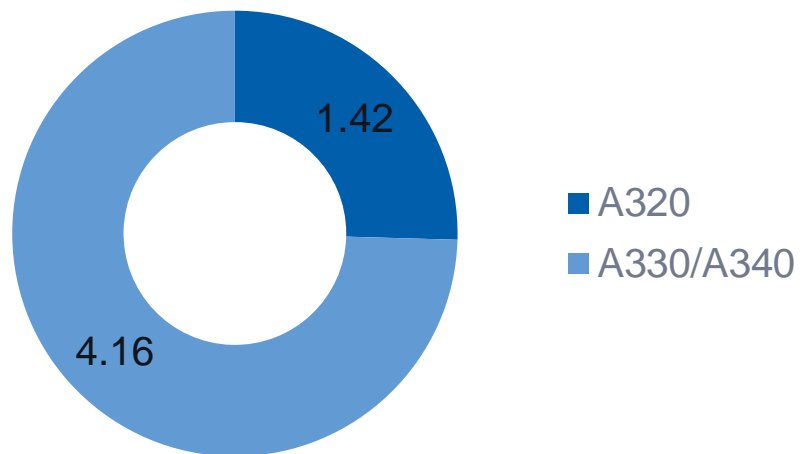
# Events Analysis

- From the 01/01/2012 to the 31/12/2014:
  - 31 Airbus events reported as Lateral Runway Excursions (LRE)
  - all programs
- Among these 31 events:
  - 25 usable LRE events
  - 6 events removed for various reasons including:
    - No available data (no plots, no conclusions, no conditions)
    - LRE during U-turn at the end of the runway
    - Very narrow runway due to snow (snowdrifts)
    - RH landing gear bogie broken in two parts

# LRE – Events per Aircraft Type



# LRE – Events per Million of Landings

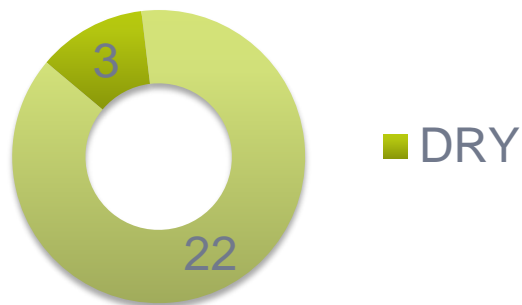


# LRE – Weather Effect per Aircraft Type

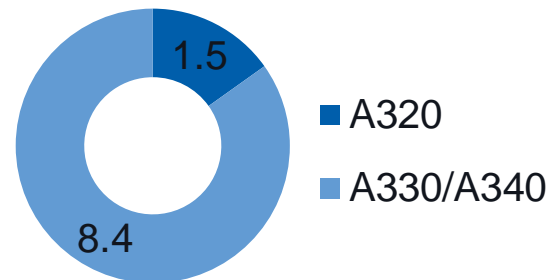
## LRE – Dry runway



## Environmental

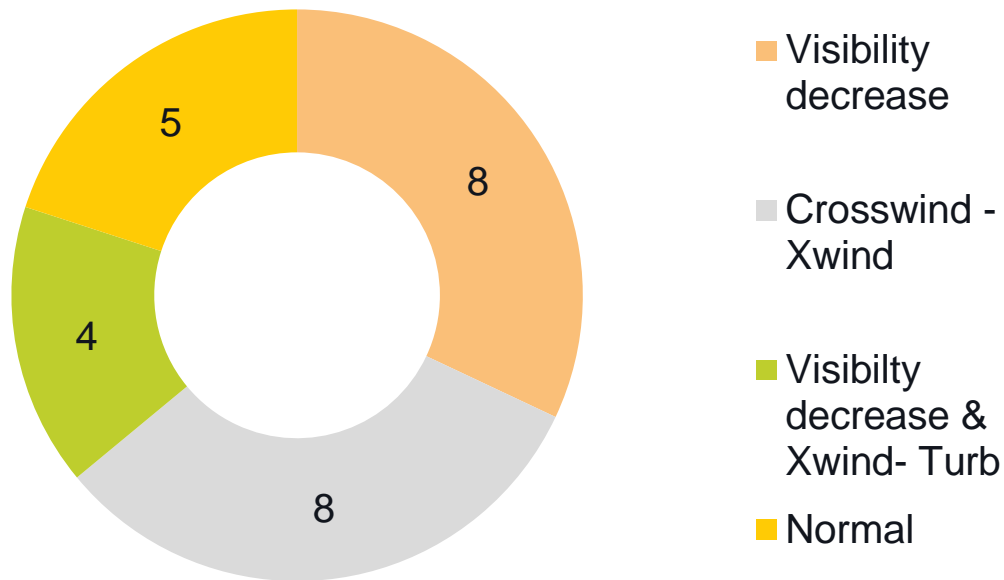


## LRE – Wet runway per million ldngs



# LRE – Weather Effect

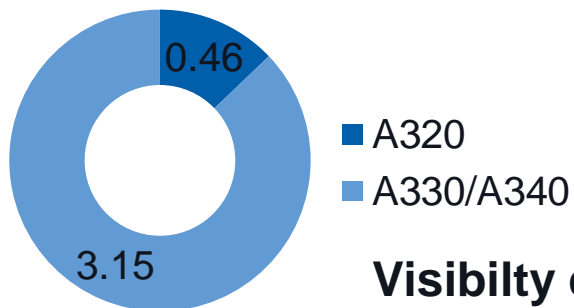
## Weather



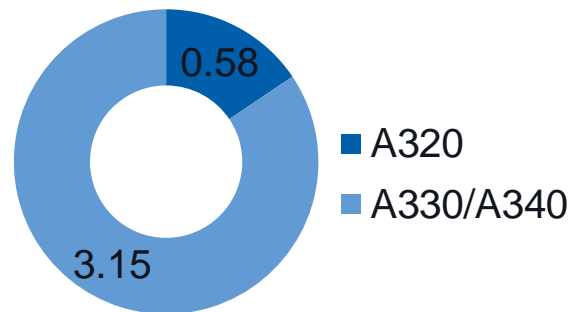


# LRE – Weather Effect per Million Landings

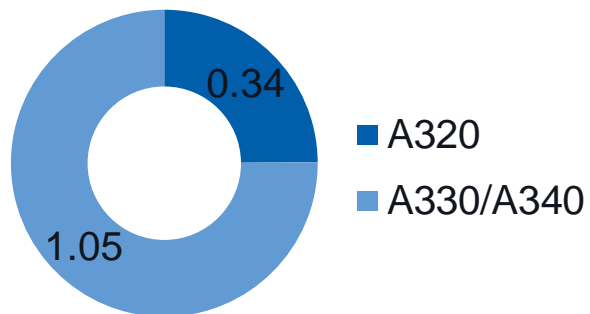
## Visibility decrease



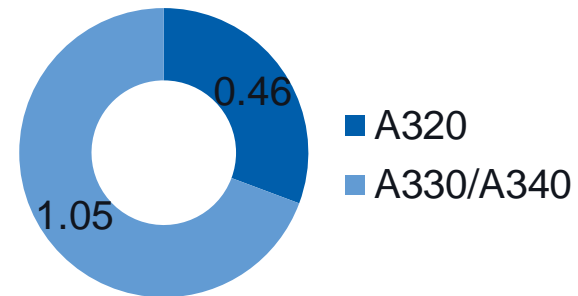
## Crosswind - Xwind



## Visibility decrease & Xwind- Turb



## Normal



# Handling Issues

- Lack of lateral control before touch down
  - Localizer deviation away from runway centerline
- Insufficient decrab before touchdown
- Loss of situational awareness
  - Particularly below 500ft
- Poor ground control
- A combination of the above

# What Is the Correct Technique?

## Be correctly seated

Full deflection of all flight controls and braking must be possible at all times

## Be Go-Around minded

Initiate go-around close to the ground or bounced landing procedure, if needed (as long as reversers are not deployed, a go-around is always possible)

## Be Stabilized

Aircraft must be on the correct lateral and vertical path at the correct configuration and speed and continuously until the flare is initiated.

# What Is the Correct Technique

Be aware of the landing conditions

- Fly within the crosswind limits of the aircraft

- Be aware on the runway braking coefficient

Use proper flare and decrab techniques

- Flare, decrab and land in the landing zone with the correct alignment

- Land without delay after decrab

« Fly » until you vacate the runway

- Weathercock effect

- Braking

- Respond immediately to any adverse reverser effect

# Conclusion



**Fly the aircraft and continuously monitor a changing environment**

© Airbus S.A.S. All rights reserved. Confidential and proprietary document. This document and all information contained herein is the sole property of AIRBUS. No intellectual property rights are granted by the delivery of this document or the disclosure of its content. This document shall not be reproduced or disclosed to a third party without the express written consent of AIRBUS S.A.S. This document and its content shall not be used for any purpose other than that for which it is supplied. The statements made herein do not constitute an offer. They are based on the mentioned assumptions and are expressed in good faith. Where the supporting grounds for these statements are not shown, AIRBUS S.A.S. will be pleased to explain the basis thereof. AIRBUS, its logo, A300, A310, A318, A319, A320, A321, A330, A340, A350, A380, A400M are registered trademarks.