



International Coordinating Council of Aerospace Industries Associations

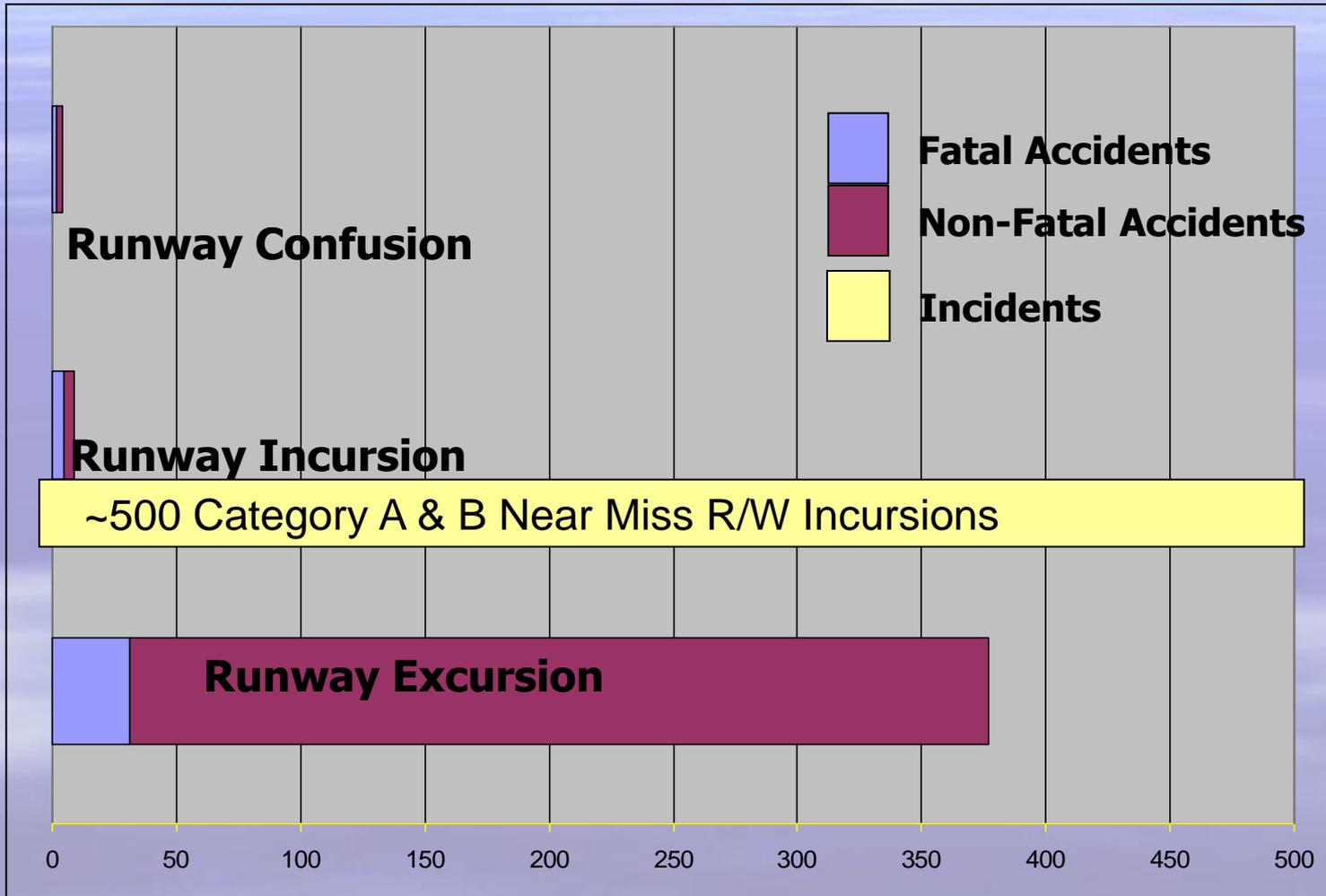
Runway Incursion

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Runway Incursion Accidents + Incidents (1995-2008)



- Accident data alone does not fully inform the discussion.



Eliminating Runway Incursion and Confusion requires Flight Crew Awareness of:

- **Position of Own Ship on the Airport Surface,**
- **Position of Other Traffic on the Airport Surface,**
- **Taxi Route,**
- **Conflicting Traffic.**



Program Implementation Considerations

- **Airbus solution to reduce runway incursion and confusion risk is based on On-board Airport Navigation System (OANS)**
 - Superimposition aircraft real time position on an airport moving map
 - Improvement of flight crew situation awareness during airport surface operations
 - Selection capability of different modes and zoom with corresponding maps displayed on the Navigation Display
 - Triggering of graphical alerts on Navigation Display when aircraft approaches runways
 - Cornerstone for the integration of surface operations features (brake-to-vacate, taxi route, surrounding traffic, etc.)
- **Design philosophy**
 - OANS is not a guidance system and displayed information must be correlated by the pilot with outside world
- **Implementation**
 - New equipment: On-board Airport Navigation Computer (OANC)
 - DO272/ED99/ARINC 816 Airport Map Database required
- **Certification Date**
 - A380: Certified and in-service since 2007
 - A320 family: Q1 2012
 - A330/A340: Q2 2012
 - A350XWB: At Entry-Into-Service



Program Implementation Considerations

- **Significant fleet coverage needed to achieve widespread safety benefit.**
 - **New, Derivative and Production Aircraft**
 - **Retrofit Aircraft**



Available Equipage

Situational Awareness

AMM on Nav Display

AMM on Class 3 EFB

Smart Runway

Alerting

Runway Disagree Alerting

Position Awareness
(incursion/confusion)



Available Equipage

Positional Awareness via Airport Moving Map

GS and
Wind indications

Airport information

Airport moving map



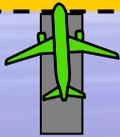
Software Control
Panel (SCP)



Display
in case of
runway proximity

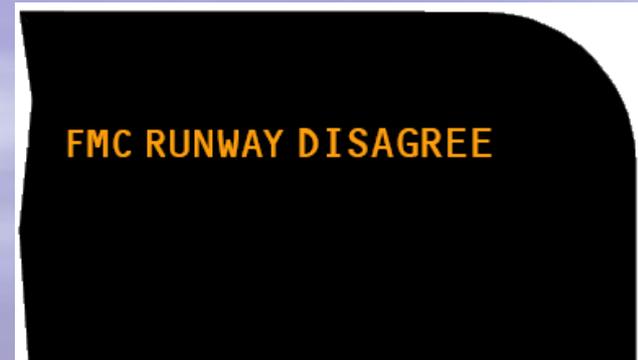
Available Equipage

"On Runway Zero-Nine Left"



"Approaching Zero-Nine Left"

Smart Runway



Runway Disagree Alerting

Future Equipage Studies

Situational Awareness

Surface CDTI

Taxi Route

Class 2 EFB with AMM –
Window Sill

Runway Status
Indications

Smart Runway

Position, Taxi Route, &
Traffic Awareness,
Traffic Alerting

Alerting

Surface Traffic Conflict
Alerts

Future Equipage Studies - AMM





Runway Incursion – Bottom Line

Actively committed to government and industry efforts to improve runway safety.

- **CAST, RTCA, FAA, NTSB, FSF, ICAO.**
- **Customer & Vendor Collaborations.**

Aggressively funding research & product development, and providing flight deck solutions for current and future airplanes.