



2nd MID RRSS

Value of Data Exchange at Local Level

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Global Aviation Data Management GADM

Presently, GADM collects data through the following IATA programs:

- Flight Data eXchange (FDX).
- Safety Trend Evaluation, Analysis and Data Exchange System (STEADES).
- Ground Damage Database (GDDB).

What is FDX about?

- Flight Data eXchange (FDX) is an aggregated de-identified database of FDA/ FOQA type events.
- With data from more than 100 airports in FDX.
- Makes up about 500 runways.





What is FDX about?

- Currently, more than a dozen different events are displayed by location including Ground Proximity Warning System (GPWS/ TAWS) locations, Traffic Collision and Avoidance System (TCAS) events, Windshear warnings, Unstable approaches, Go-arounds, and high tailwind landing events.



How FDX works

- Flight recorder data is supplied to IATA by participating airlines.
- Specialist software is used to de-identify the data which is processed against a pre-defined list of safety events.
- De-identified resulting data is displayed in the GADM-FDX website which has built in reporting tools.



Select Event Type

Unstable Approach

Select Event

Unstable Approach - All

Unstable Approach - All

Unstable Approach - Above 500ft

Unstable Approach - Below 500ft

Excessive Glideslope Deviation - Above (1000 - 500)

Excessive Glideslope Deviation - Below (1000 - 500)

Excessive Localizer Deviation (1000 - 500)

High Rate of Descent (1000 - 500)

Late Flap Configuration (1000 - 500)

Late Gear Configuration (1000 - 500)

Low Power on Approach (1000 - 500)

Excessive Glideslope Deviation - Above (Below 500 ft)

Excessive Glideslope Deviation - Below (Below 500 ft)

Excessive Localizer Deviation (Below 500 ft)

High Rate of Descent (Below 500 ft)

Late Flap Configuration (Below 500 ft)

Low Power on Approach (Below 500 ft)

Late Gear Configuration (Below 500 ft)

Summary

Total of 1206105 flights

Total of 1571548 hours of flight

Select Date Range



All data, rates and trends are based on the selected date range in the above slider.

Maps

Select Event Type

Unstable Approach

Unstable Approach

GPWS Scatter Plot

GPWS By Airport

TCAS Scatter Plot

TCAS by Airport

High speed on Approach

Low speed on Approach

Other

Road

Aerial

> Reports

> Animations

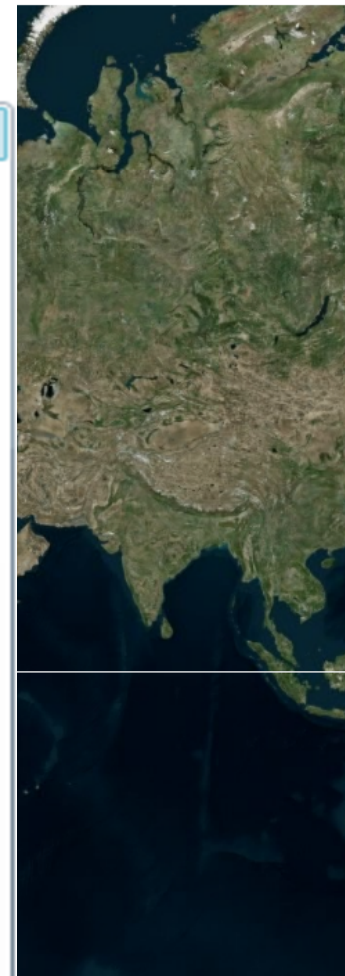
Legend



Over 2 standard deviations from average



Between 1 and 2 standard deviations from average



Summary
 Total of 1206105 flights
 Total of 1571548 hours of flight
 Select Date Range
 All data, rates and trends are based on the range in the above slider.

Maps
 Select Event Type
 Unstable Approach
 Select Event
 Unstable Approach - All
 Show Events
 Zoom to IATA Region
 Road

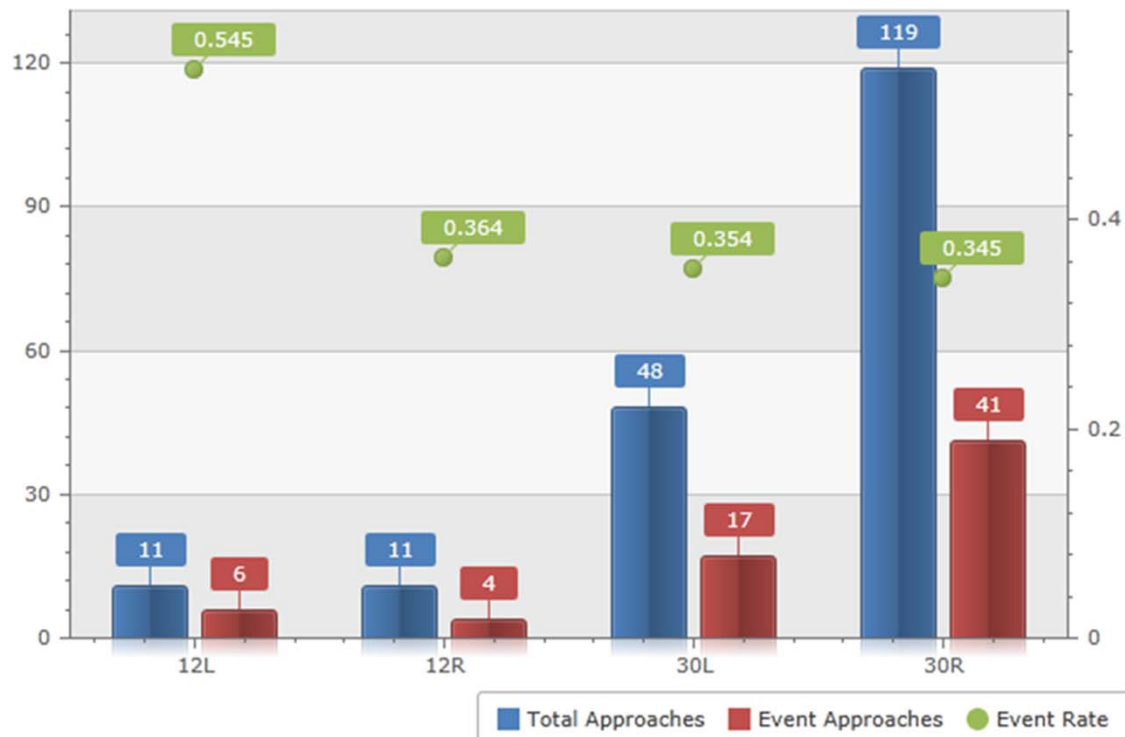
Reports
 Animations

- Legend
- Over 2 standard deviation
 - Between 1 and 2 standard deviation
 - Within one standard deviation from average

Unstable Approach - All

DUBAI INTL (DXB) (Approaches only)

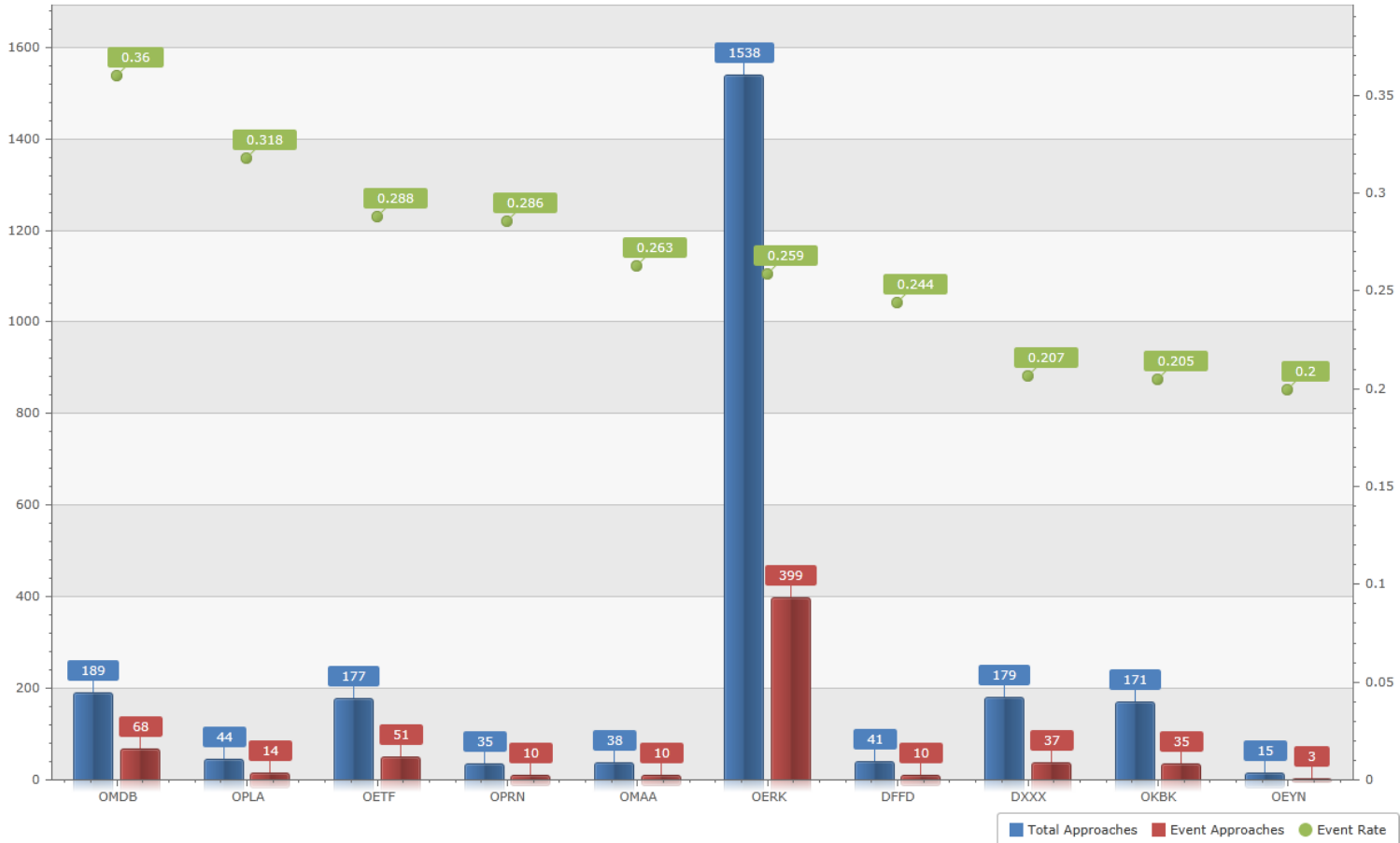
Show Event Rates





Top 10 Unstable Airports

Show Event Rates





Benefits for the participants

- Identify safety risks using aggregated de-identified FDA- FOQA results
 - Alert your crews to safety hazards
 - Compare results with STEADES or in-house programs
 - Identify risks at new destinations for your airline
 - View flight animations for safety and training purposes
 - Receive IATA reports on specific topics
 - Benchmark your operations against global and regional results
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STEADES

Safety Trend Evaluation, Analysis and Data Exchange System (STEADES).

- **Use global trend analysis to set safety performance targets**
 - The STEADES database of de-identified airline incident reports is the world's largest, offering a secure environment for airlines to pool safety information for global benchmarking and analysis needs.
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STEADES Airport Analysis – Criteria

Minimum requirements for airport analysis

- ↗ Minimum time-frame:
 - ↗ Three years of data
 - ↗ Usual time frame for analysis will be from 2009
 - ↗ Minimum number of reports:
 - ↗ Average of 100 reports per year at the given airport
 - ↗ Number of STEADES airlines operating at the given airport:
 - ↗ Airlines from three operator regions
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Some examples

- ↗ LHR – 18,109 reports / 9 regions
 - ↗ DXB – 4,946 reports / 7 regions
 - ↗ DEL – 1,149 reports / 7 regions
 - ↗ BKK – 2,254 reports / 7 regions
 - ↗ JNB – 3,651 reports / 6 regions
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STEADES Airport Analysis

Topics of Interest:

- Airside Infrastructure
 - Communication and Navigation
 - Air Traffic Management
 - Aeronautical and Airport Information
 - Meteorological Services
 - Airport Ground Services
 - Weather
 - Outcomes
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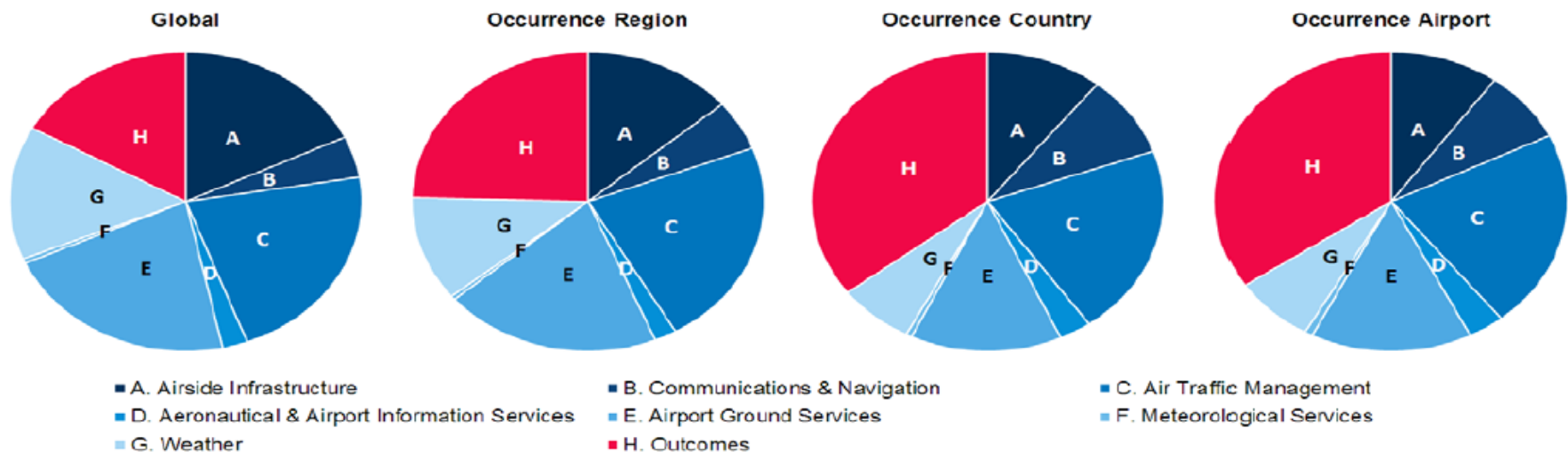
Table 1: GADM STEADES Report Distribution (2009 Q1 – 2012 Q4)

	Global	Occurrence Region MENA	Occurrence Country Egypt	Occurrence Airport CAI
Total Reports in GADM STEADES	469,013	19,749	916	653
Total World Flights	141,324,832	N/A	N/A	N/A
Total GADM STEADES Flights	26,674,947	N/A	N/A	N/A
% of World's Flights	19%	N/A	N/A	N/A

Table 2: Defined Category Distribution

	Global		Occurrence Region		Occurrence Country		Occurrence Airport	
	% (# of reports)		% (# of reports)		% (# of reports)		% (# of reports)	
Topics of Interest	27.3%	127,924	33.6%	6,626	25.2%	231	26.0%	170
A. Airside Infrastructure	6.0%	28,346	6.3%	1,252	4.4%	40	4.1%	27
B. Communications & Navigation	1.5%	7,056	2.5%	492	3.6%	33	3.2%	21
C. Air Traffic Management	7.5%	35,132	10.2%	2,005	8.1%	74	8.6%	56
D. Aeronautical & Airport Information Services	0.8%	3,730	0.9%	186	1.2%	11	1.4%	9
E. Airport Ground Services	7.4%	34,860	9.7%	1,908	6.2%	57	6.9%	45
F. Meteorological Services	0.2%	777	0.2%	38	0.2%	2	0.3%	2
G. Weather	4.9%	22,997	5.2%	1,026	2.8%	26	3.1%	20
H. Outcomes	5.4%	25,236	10.7%	2,110	14.1%	129	13.8%	90

Figure 1: Defined Category Distribution





Airside Infrastructure

- Wildlife Hazard Control
 - Runways, Taxiways and Aprons
 - Perimeter Security
 - Airport Rescue and Firefighting
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Ground Damage Database GDDDB

- The IATA Ground Damage Database is a key initiative supporting the IATA Global Ground Operations activities.

How GDDDB works

- Accepted data submission minimizes as much as possible any variation in the data; thereby allowing us, to not only provide aggregate information back to participants, but also accurate detailed analysis to identify trends and contributing factors (correlations).
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Operational Scope

- ↗ While parked at gate / stand or other parked area
 - ↗ During marshaling or using stand guidance
 - ↗ During deicing
 - ↗ While being towed
 - ↗ Near miss (no actual damage)
 - ↗ Slide deployments
 - ↗ Hangar
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Summarizing

Whom contributes to:

FDX = Airlines (FDA/FOQA)

STEADES = Airlines (ASRs)

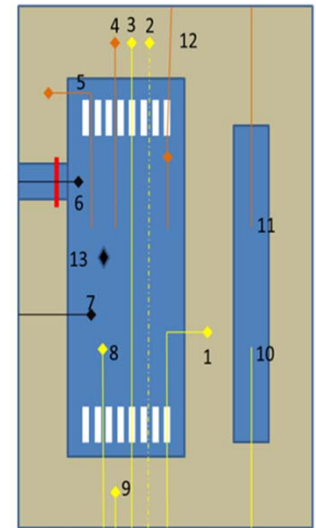
GDDDB = Airlines, Ground Service Providers and Airports providing ground services.

All of them contribute to “Runway Safety” in different ways.

Runway Safety KPI

- IATA, ICAO, EASA, FAA, ACI, CANSO
- Studying and developing a common taxonomy
- Ability to analyze integrated data
- Develop KPIs on the three top issues per Runway Safety Accident Category

To talk exactly the same language .





Established KPIs for:

- ↗ Runway Incursion
 - ↗ Runway Excursion
 - ↗ Overshoot / Undershoot
 - ↗ Hard Landing
 - ↗ Tail Strike
 - ↗ FOD
 - ↗ High Speed Rejected Take-Off
 - ↗ Wildlife Incursion
 - ↗ Non-Designated Take-Off / Landing
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KPI-Rate of Hard Landings

- Rate of each Type
 - Hard Landing during Precision Approach
 - Hard Landing during Non-Precision Approach

 - Rate of each Type when Weather a factor or not
 - Hard Landing during Precision Approach, Weather a factor "Yes"
 - Hard Landing during Precision Approach, Weather a factor "No"
 - Hard Landing during Non-Precision Approach, Weather a factor "Yes"
 - Hard Landing during Non-Precision Approach, Weather a factor "No"
-



➤ *“The way forward is to collect data from as many information sources as possible, complemented with the well-developed analytical tools to unlock critical information,”
Tony Tyler.*
