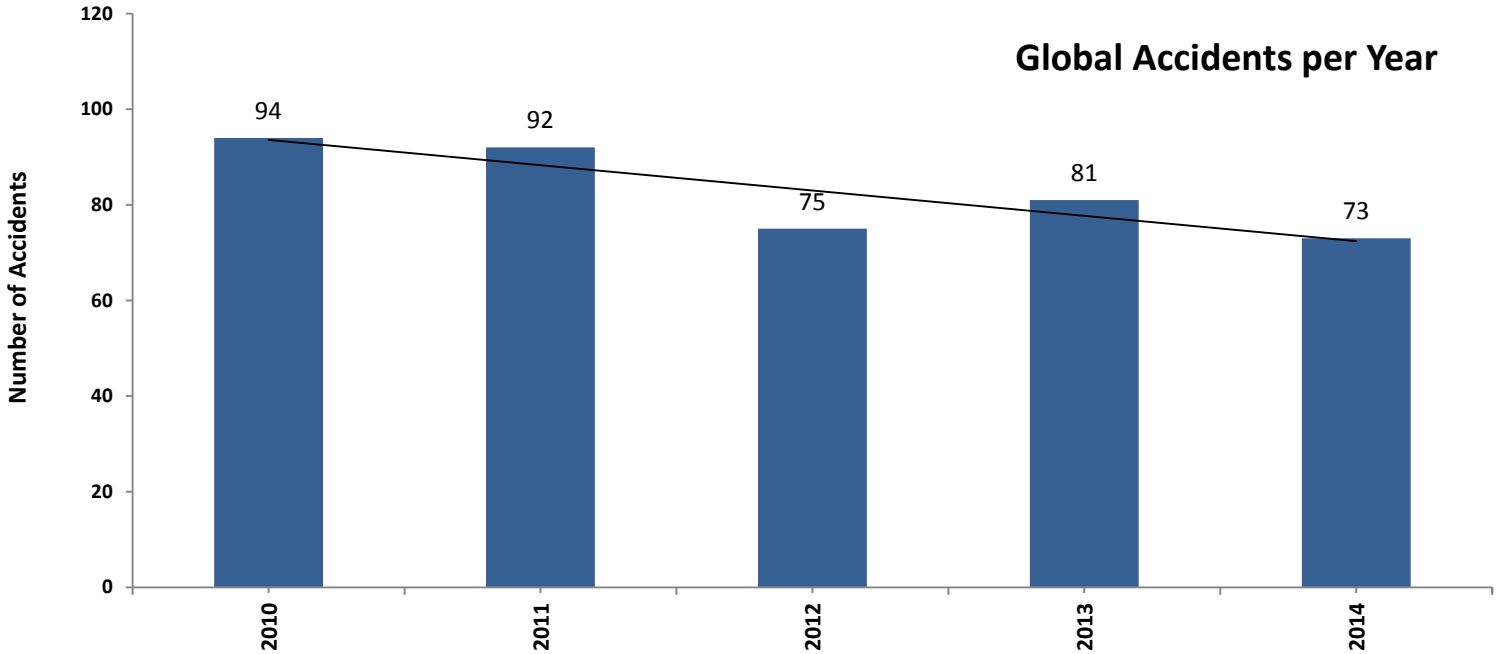
Loss of Control Inflight Accident Analysis

Global Aviation Accident Analysis

Global Aviation Accident Data 2010 – 2014

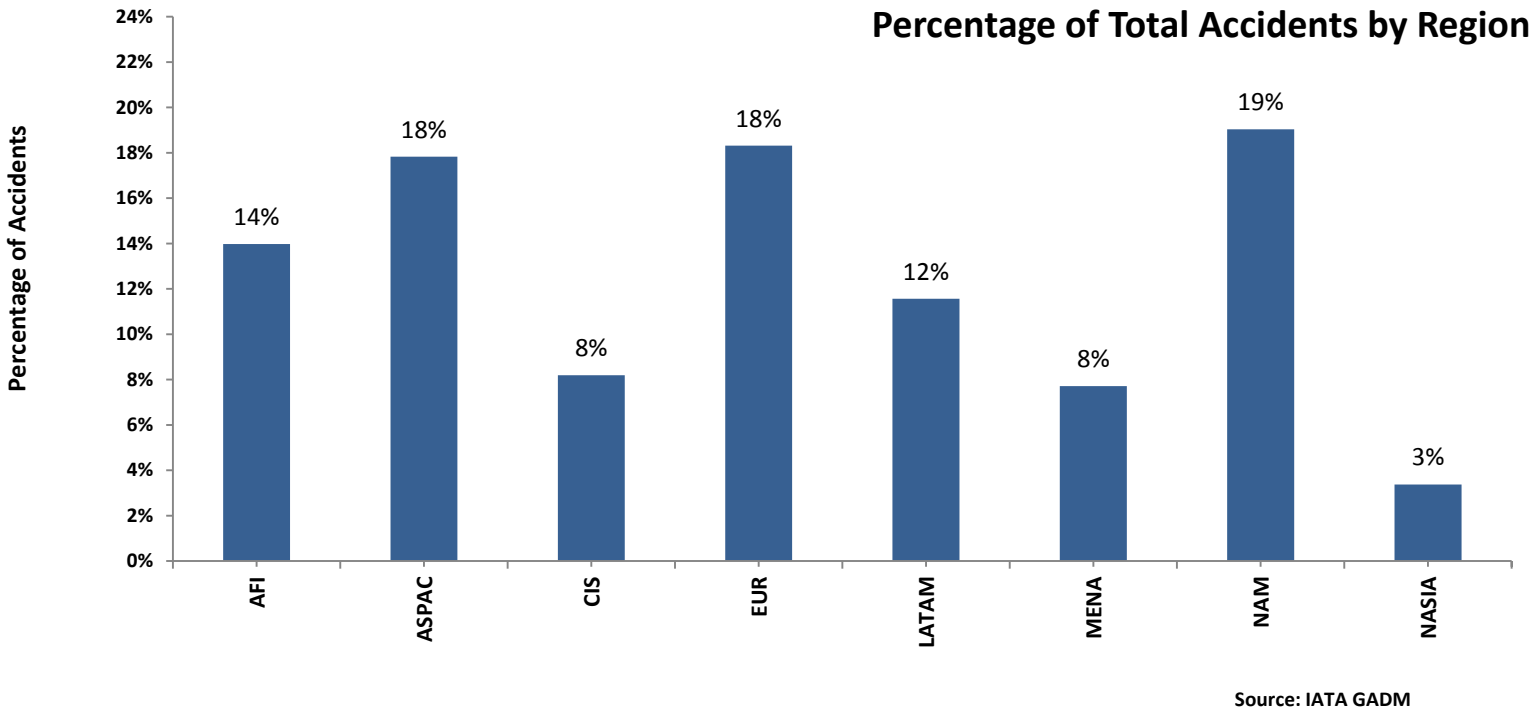
- A total of:
  - 415 accidents reported during this period:
    - 409 accidents have been assigned an accident category
  - 88 Fatal Accidents
    - 86 accidents have been assigned an accident category
  - 2,541 fatalities

Frequency of Total Accidents



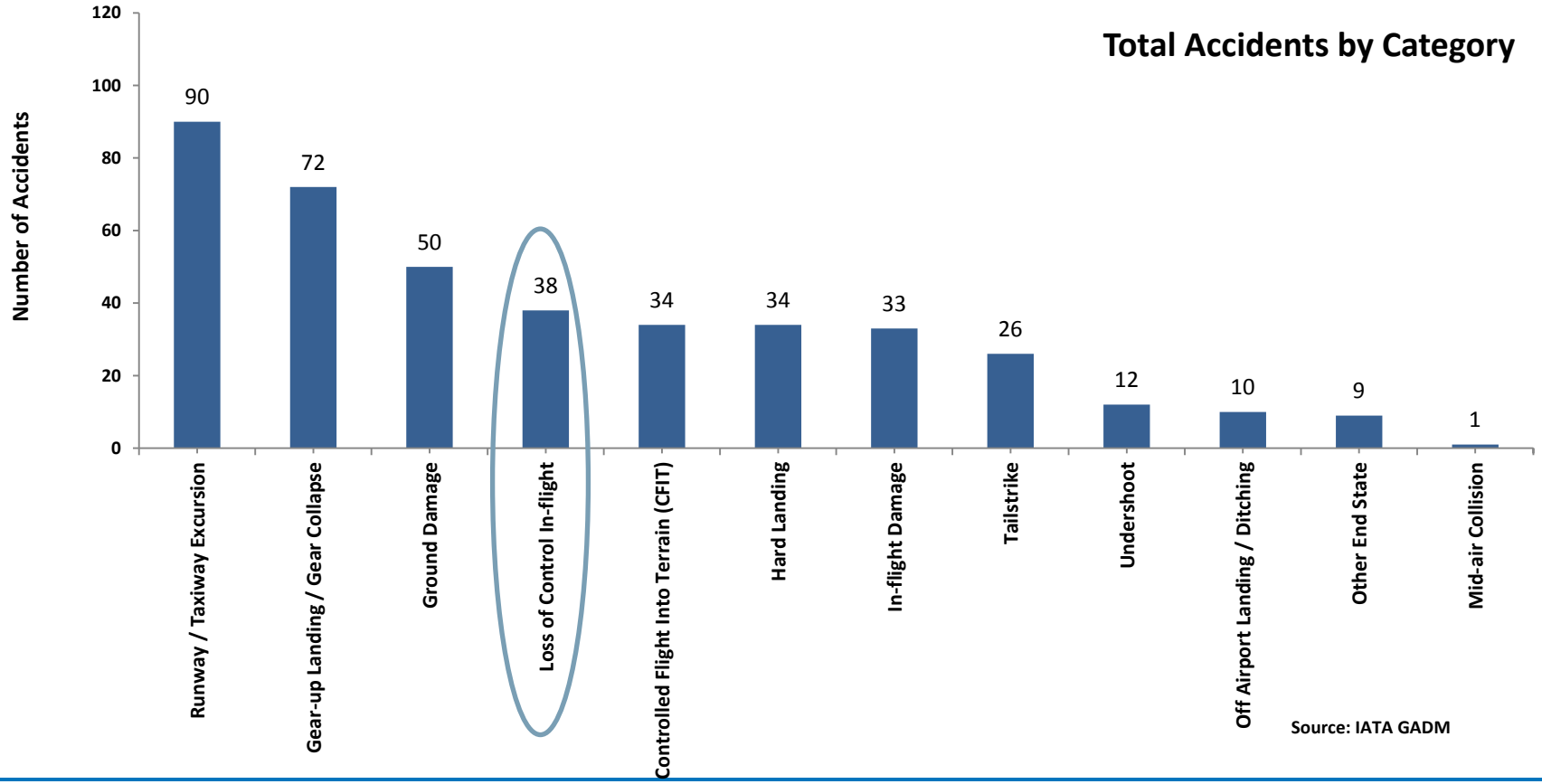
Source: IATA GADM

Percentage of Total Accidents by Region

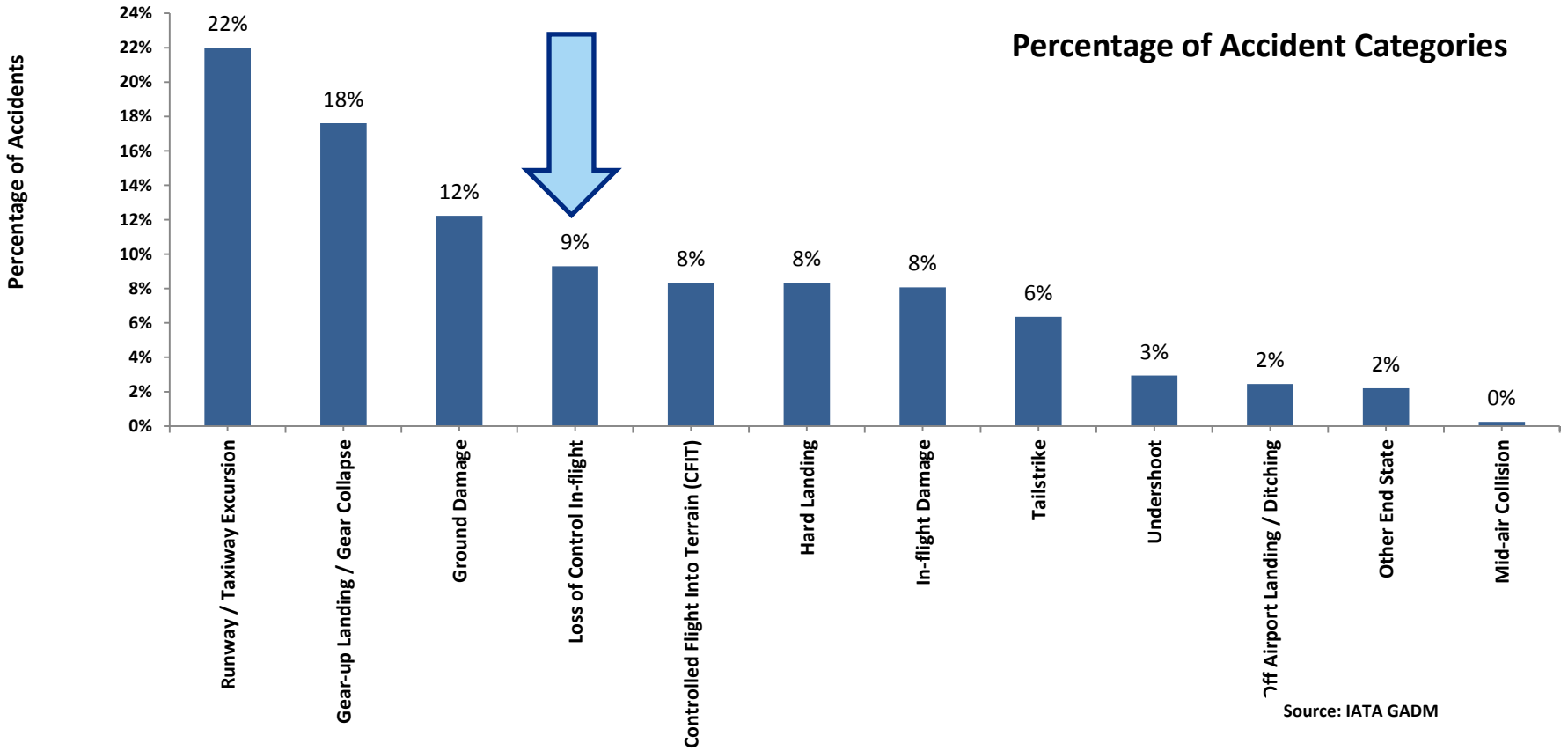


Source: IATA GADM

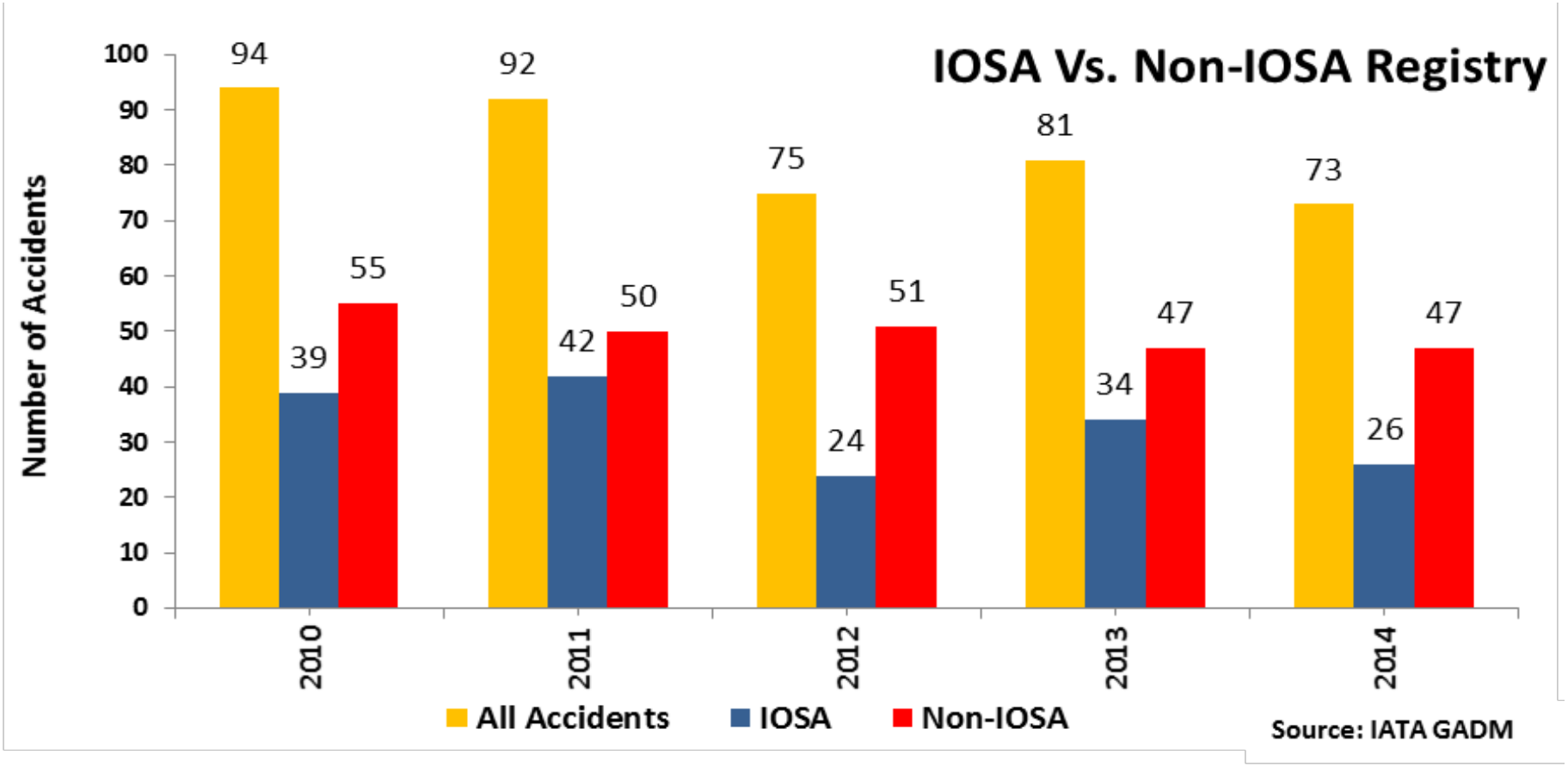
Frequency of Total Accident by Accident Categories



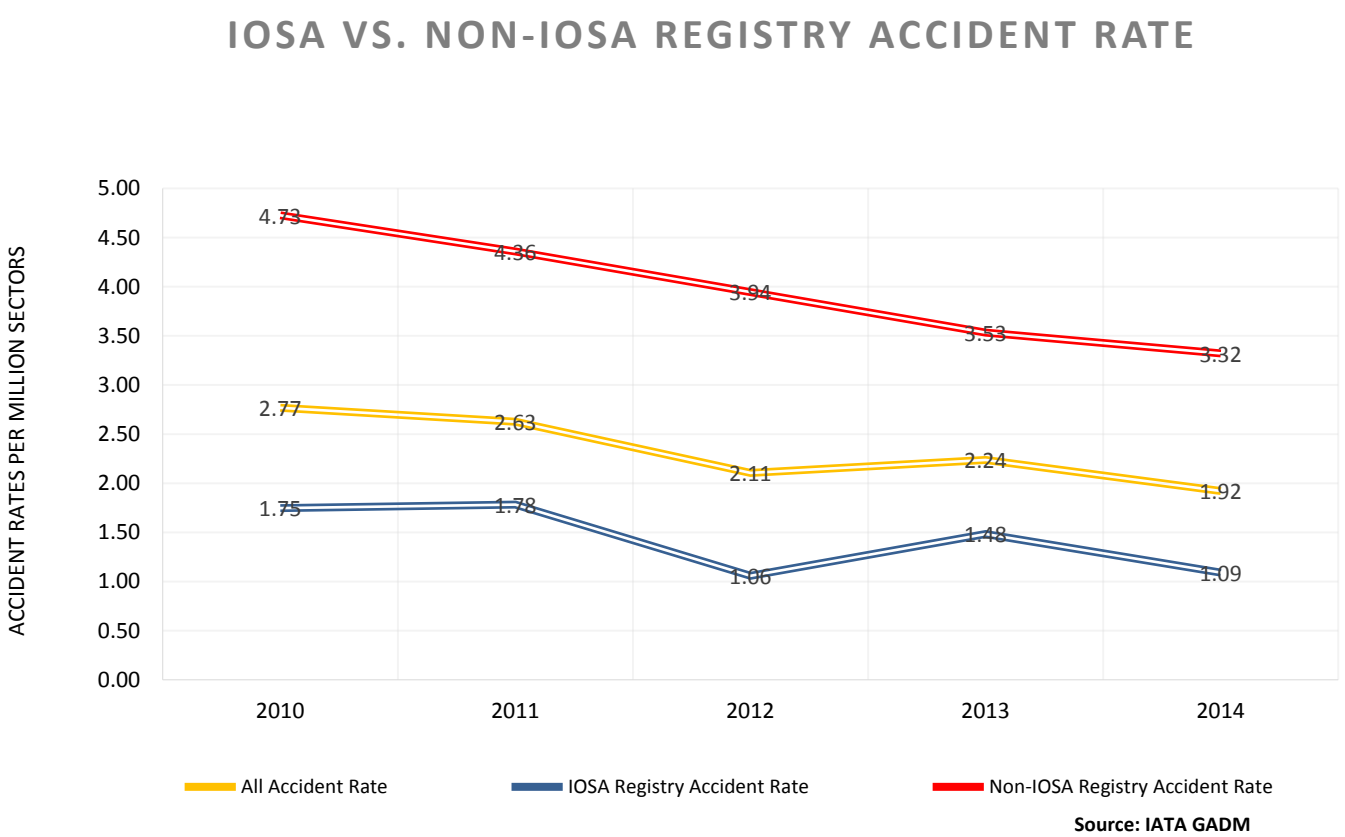
Percentage of Global Accident Categories



IOSA vs. Non-IOSA Accidents

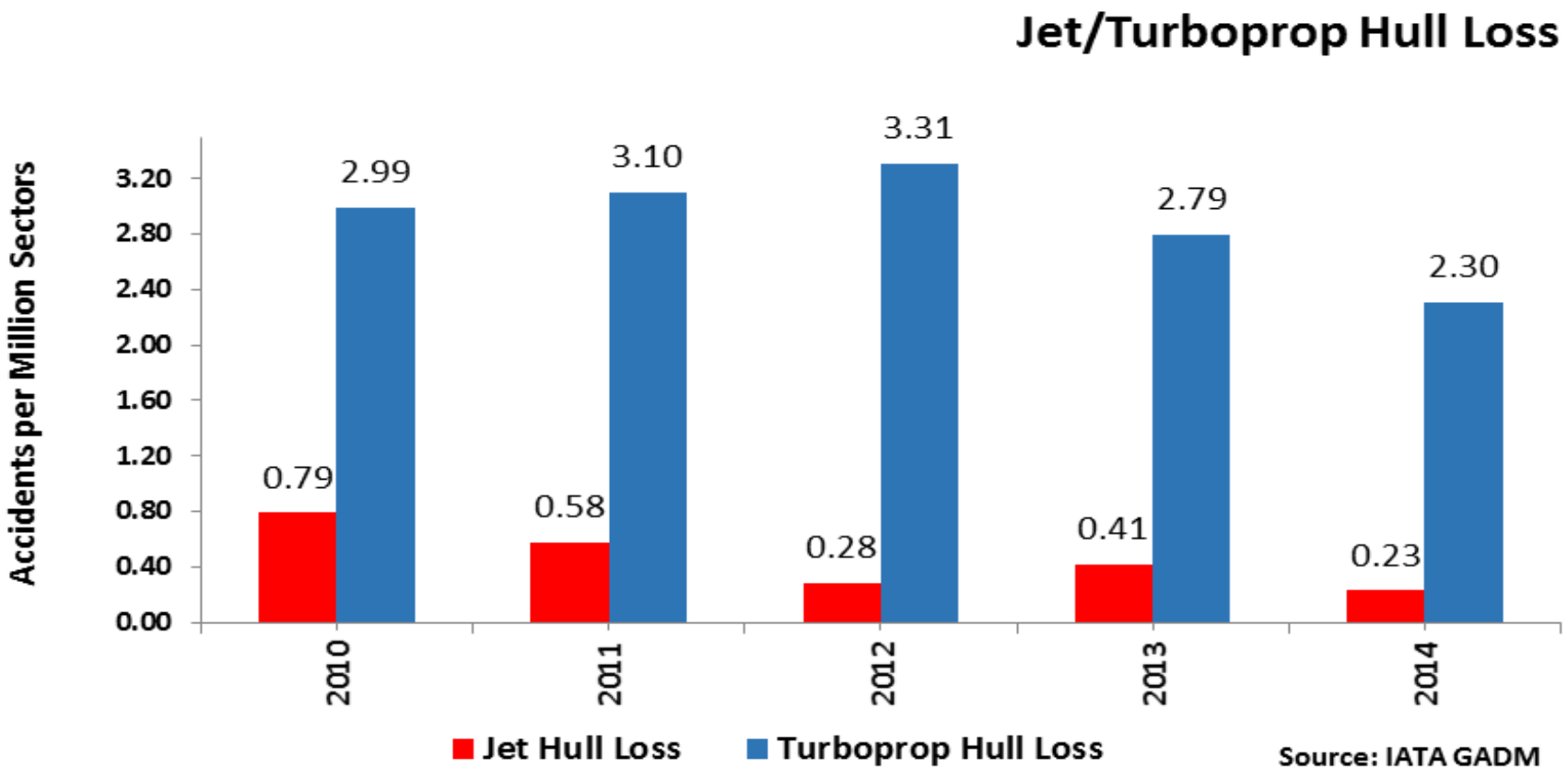


IOSA vs. Non-IOSA Total Accident Rates

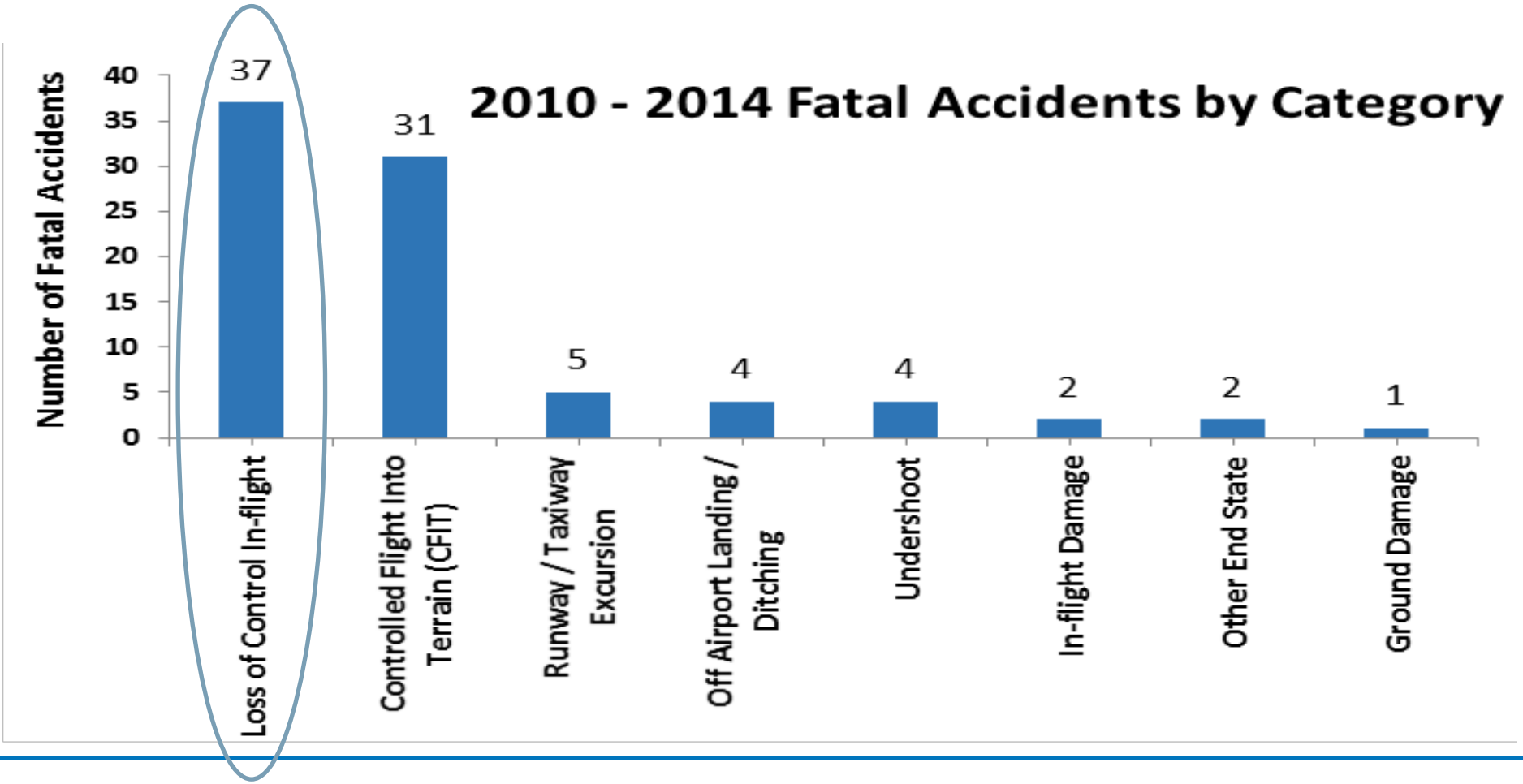


Source: IATA GADM

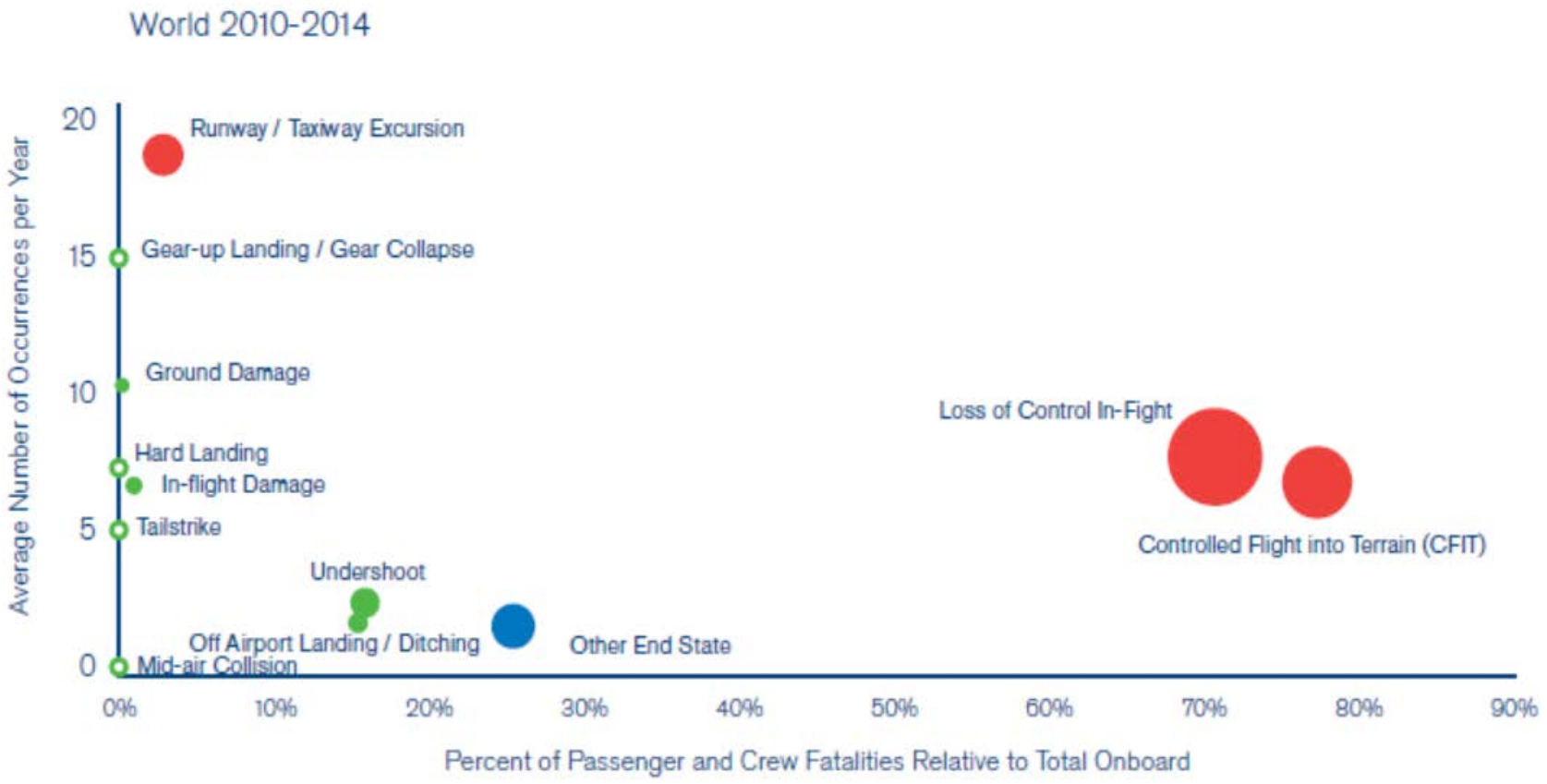
Aircraft Propulsion: Jet / Turboprop Hull Loss



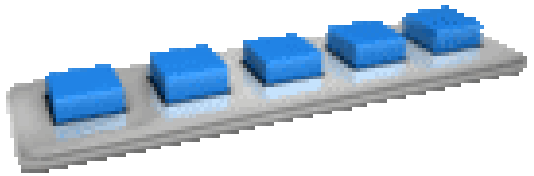
Fatal Accidents by Categories



Accident Frequency and Survivability



LOC-I Accident Analysis

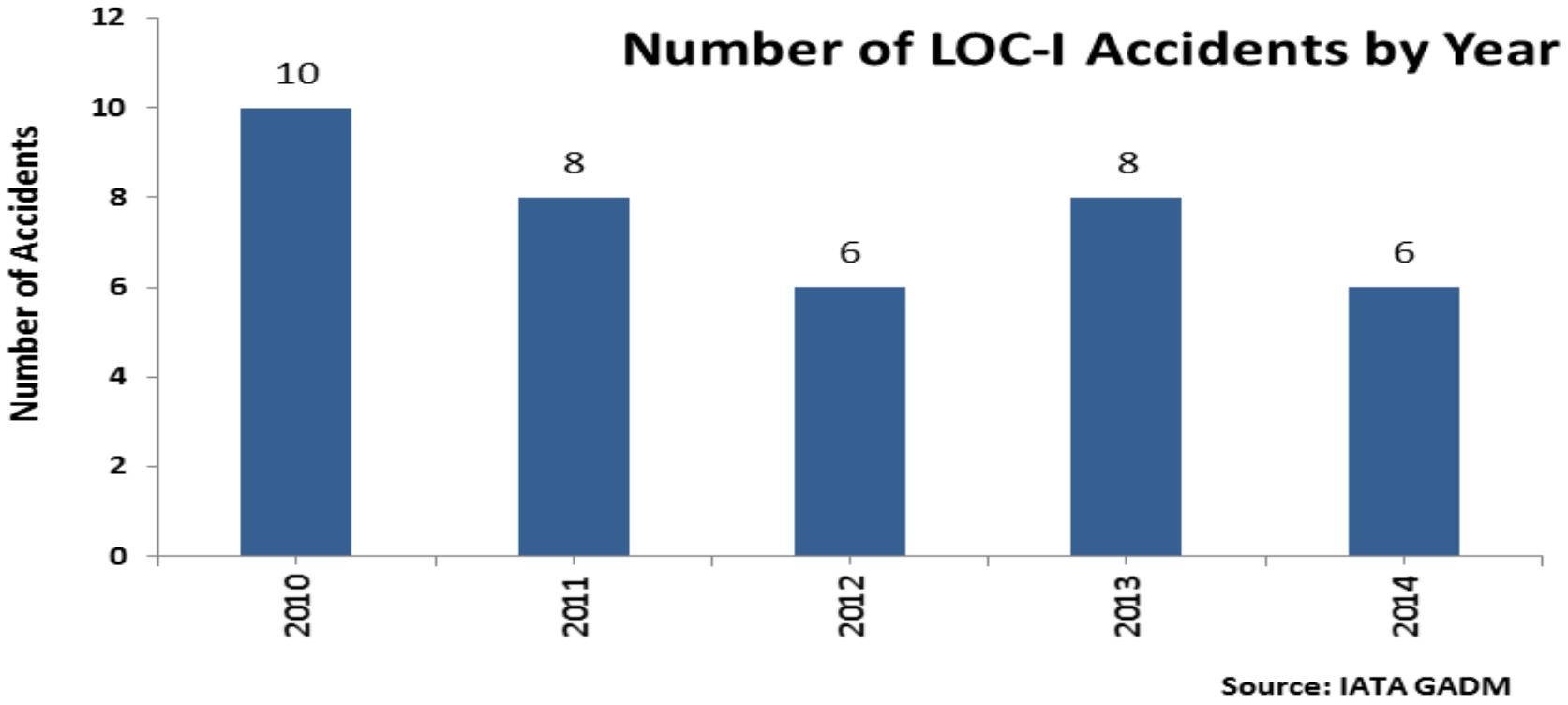


Loss of Control Inflight Accidents 2010 - 2014

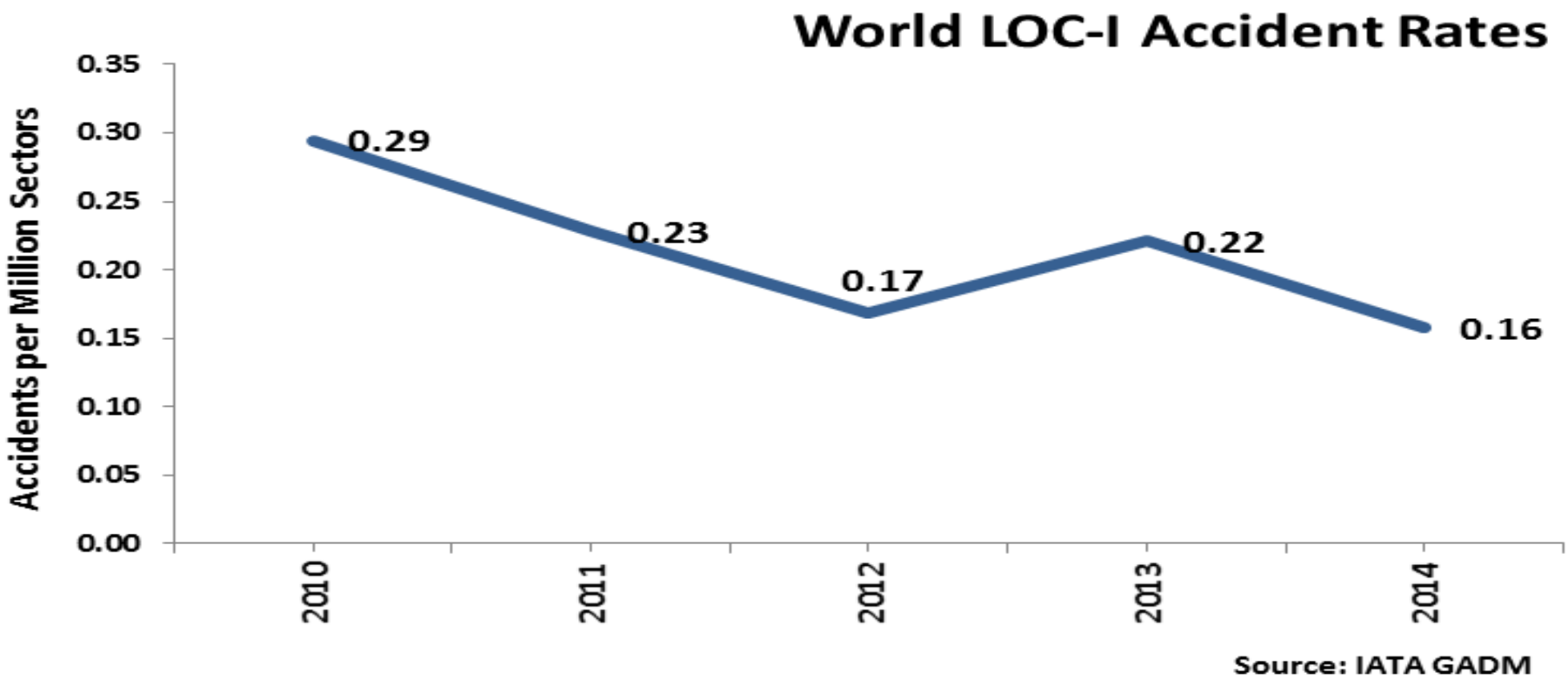
There were a total of 415 commercial accidents during this period:

- 38 of these accidents were LOC-I
  - 37 were fatal accidents
  - Resulted in 1,242 out of 2,541 fatalities

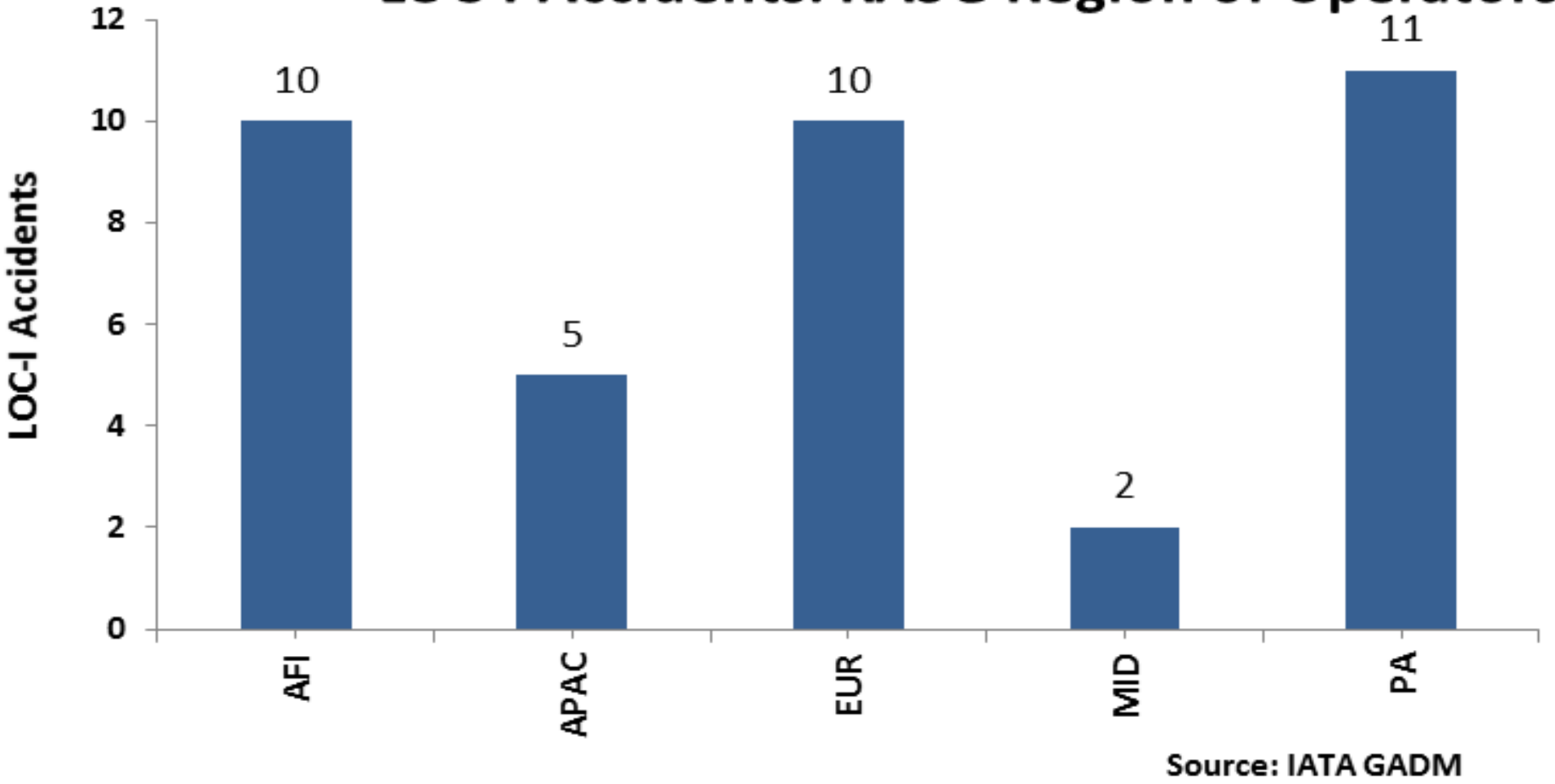
Frequency of LOC-I Accidents per year



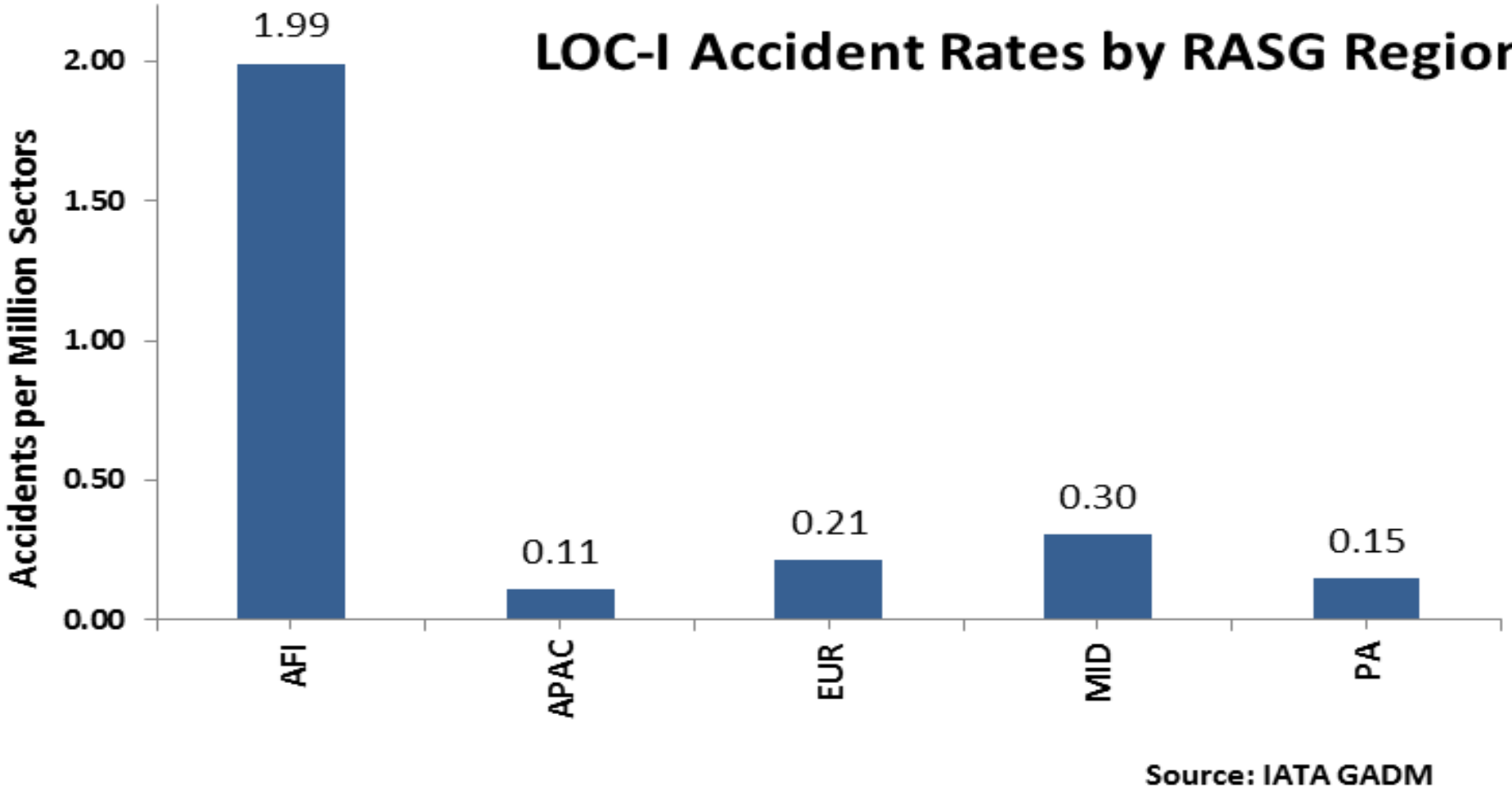
LOC-I Accident Rates



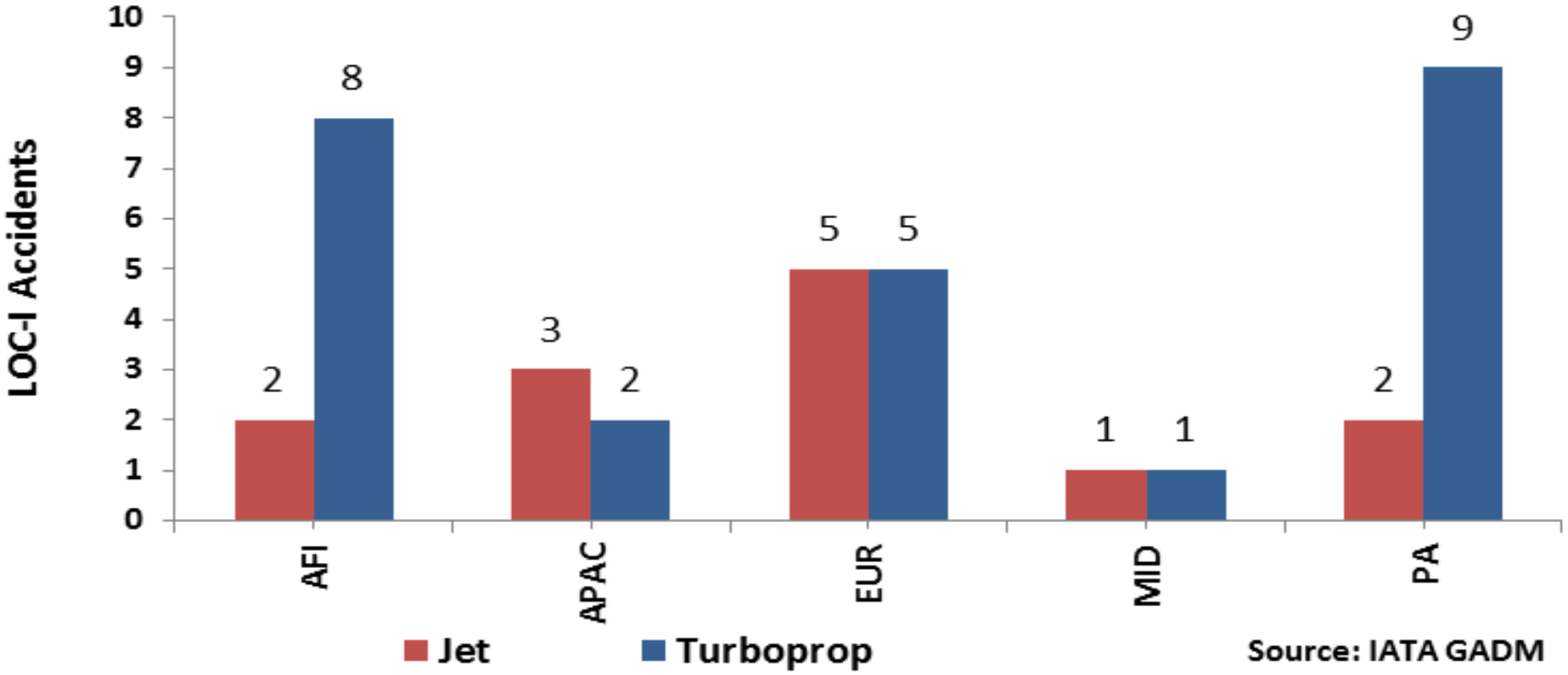
LOC-I Accidents: RASG Region of Operators



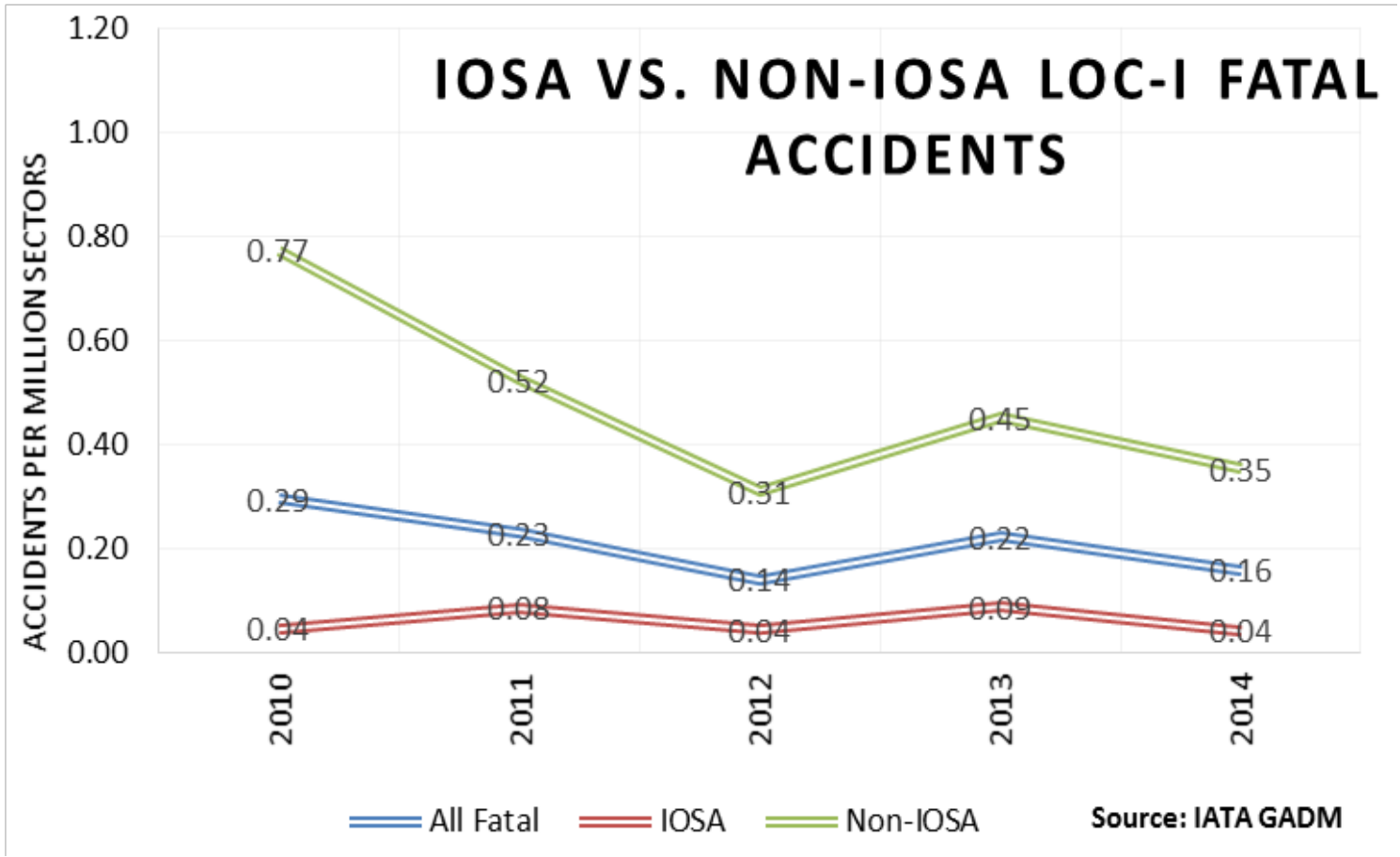
Source: IATA GADM


LOC-I Accident Rates by RASG Region
Accidents per Million Sectors
2.00
1.50
1.00
0.50
0.00
1.99
0.11
0.21
0.30
0.15
AFI
APAC
EUR
MID
PA
Source: IATA GADM

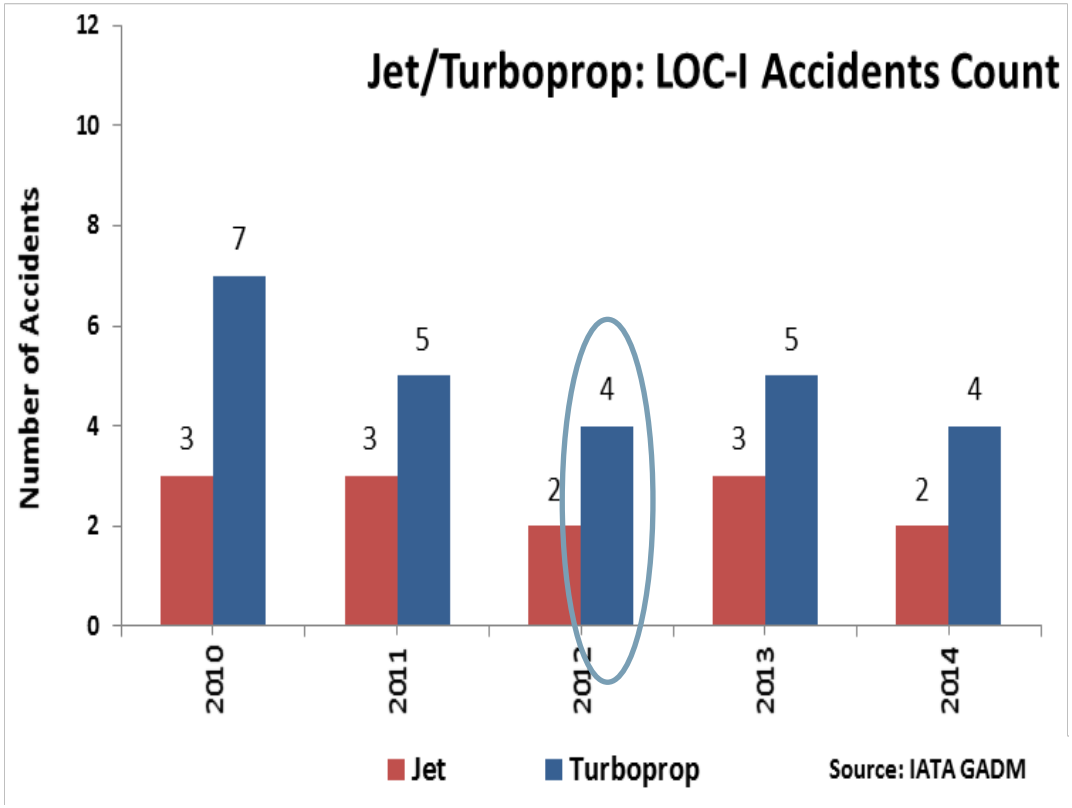
Jet/Turboprop: LOC-I Accidents: RASG Region of Operator



Source: IATA GADM

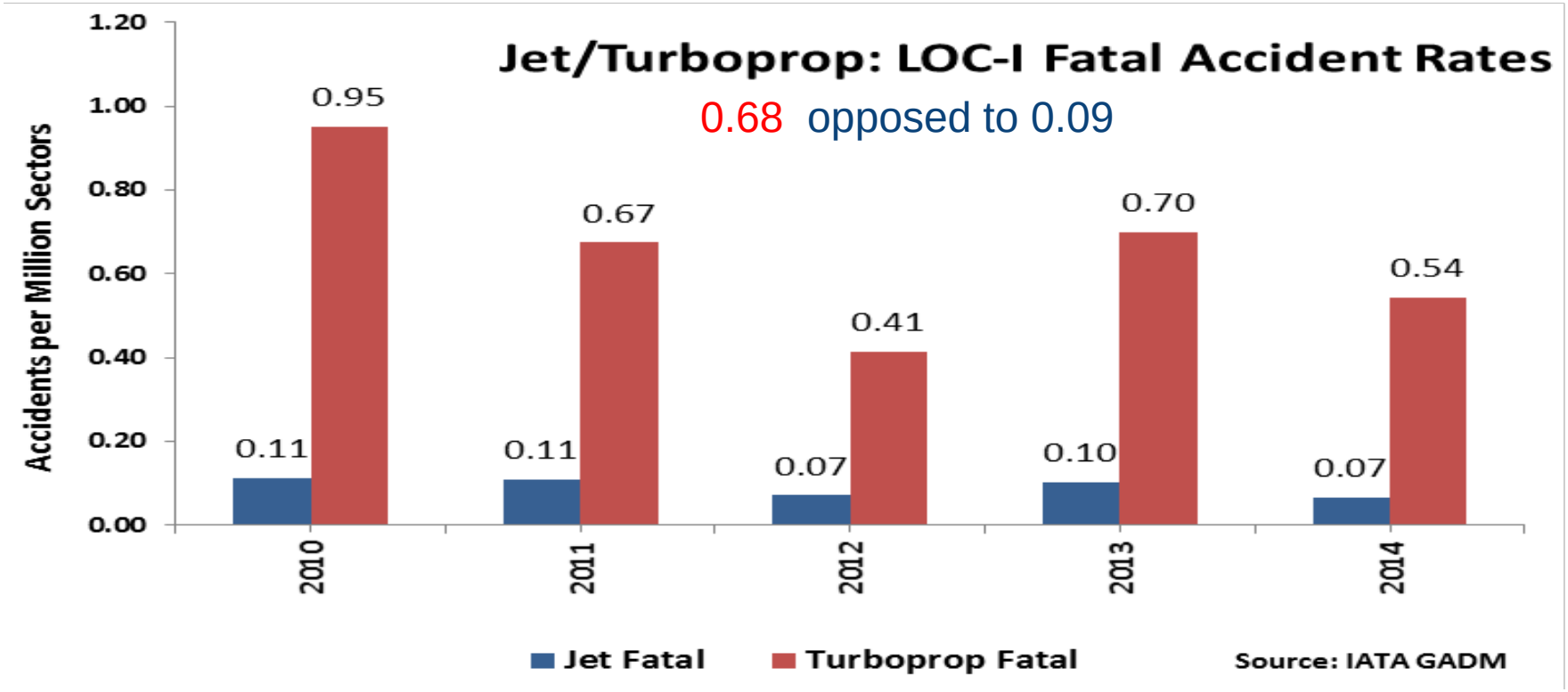

IOSA VS. NON-IOSA LOC-I FATAL ACCIDENTS
ACCIDENTS PER MILLION SECTORS
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.77
0.52
0.31
0.45
0.35
0.29
0.23
0.14
0.22
0.16
0.04
0.08
0.04
0.09
0.04
2010
2011
2012
2013
2014
All Fatal
IOSA
Non-IOSA
Source: IATA GADM

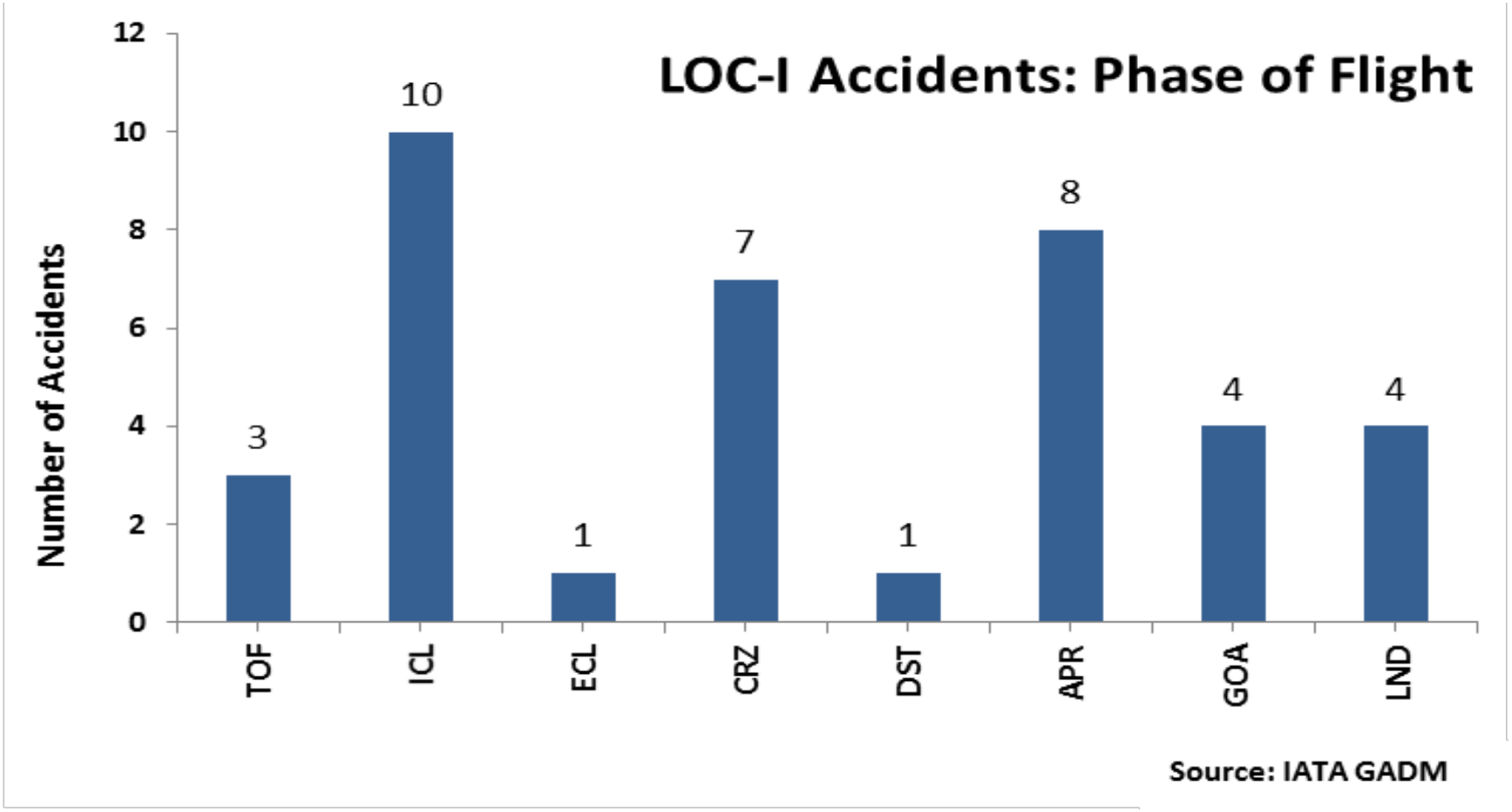
Aircraft Propulsion: Jet vs. Turboprop



- Jet aircraft were involved in 13 accidents
- Turboprop aircraft were involved in 25 accidents

Jet/Turboprop LOC-I Fatal Accidents



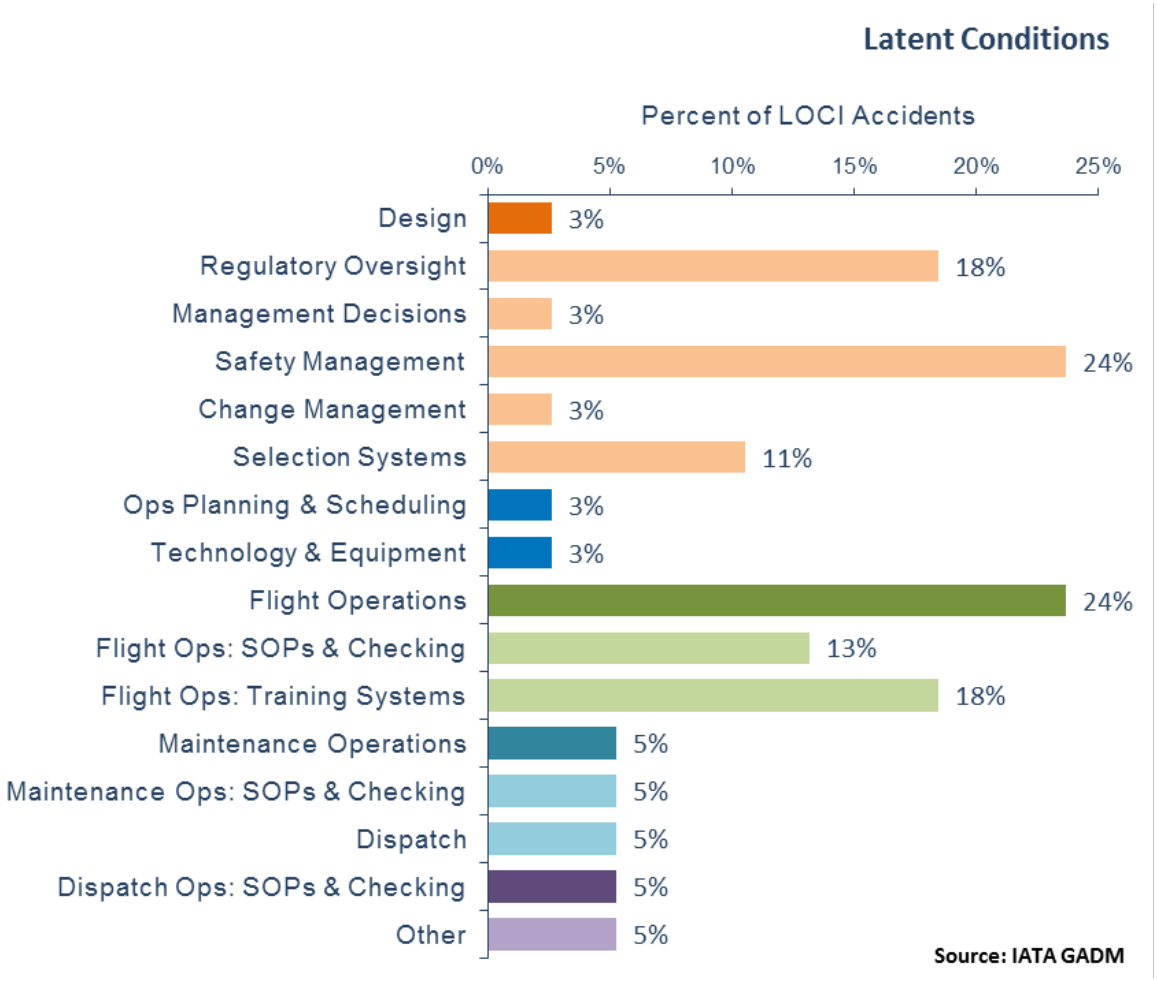

LOC-I Accidents: Phase of Flight
Number of Accidents
12
10
8
6
4
2
0
3
10
1
7
1
8
4
4
TOF
ICL
ECL
CRZ
DST
APR
GOA
LND
Source: IATA GADM

Contributing Factors

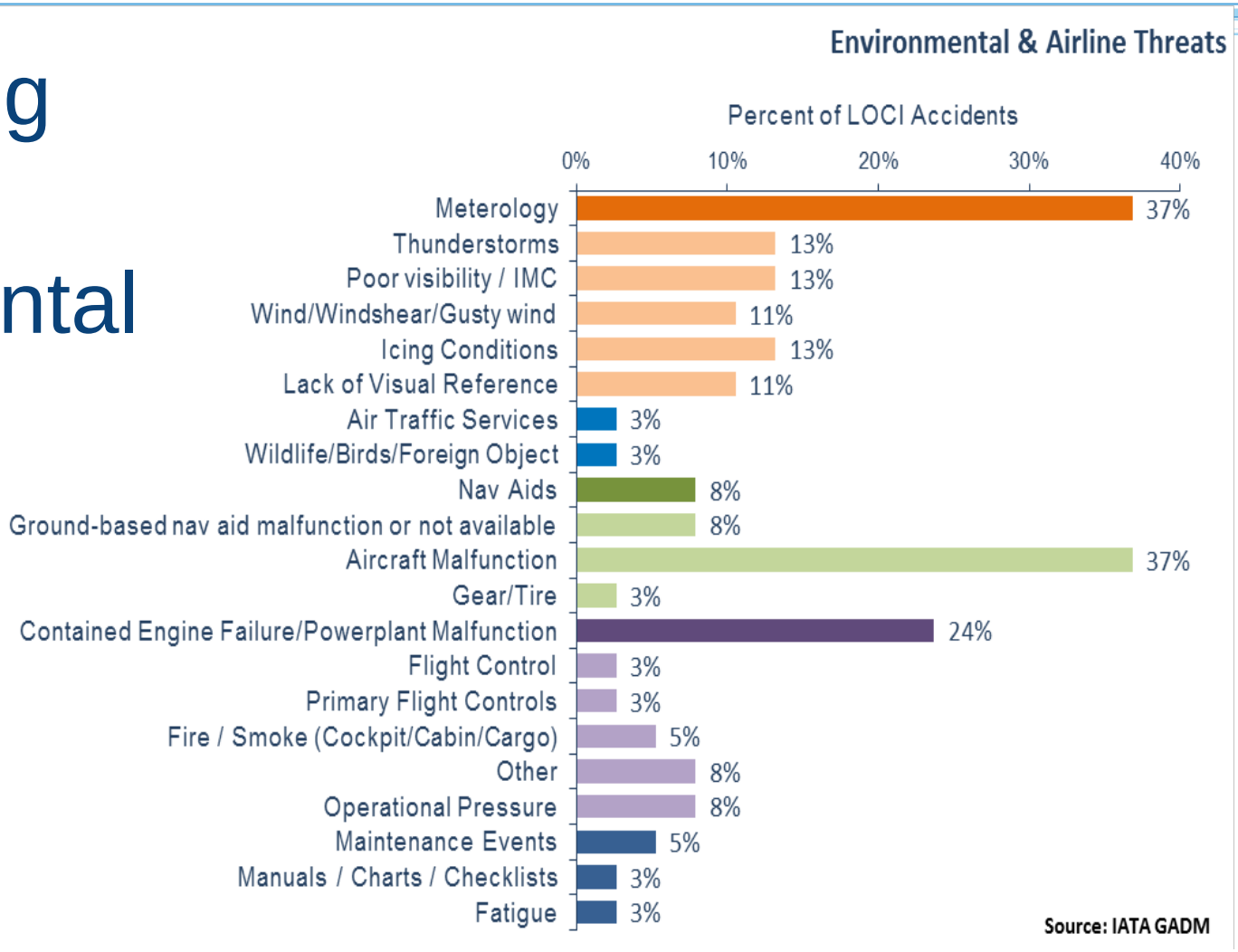
Latent Conditions (deficiencies in...)	
Flight Operations	24%
Safety Management	24%
Flight Ops: Training Systems	18%
Regulatory Oversight	18%
Flight Ops: SOPs & Checking	13%
Environmental Threats	
Meteorology	37%
Icing Conditions	13%
Poor visibility / IMC	13%
Thunderstorms	13%
Lack of Visual Reference	11%
Airline Threats	
Aircraft Malfunction	37%
Contained Engine Failure/Powerplant Malfunction	24%
Operational Pressure	8%
Fire / Smoke (Cockpit/Cabin/Cargo)	5%

Errors (related to…)	
Manual Handling / Flight Controls	29%
SOP Adherence / SOP Cross-verification	26%
Intentional	16%
Unintentional	11%
Callouts	8%
Undesired Aircraft States	
Vertical / Lateral / Speed Deviation	21%
Operation Outside Aircraft Limitations	16%
Unnecessary Weather Penetration	16%
Unstable Approach	11%
Abrupt Aircraft Control	5%
Countermeasures	
Overall Crew Performance	32%
Contingency Management	16%
Captain should show leadership	11%
Leadership	11%
Monitor / Cross-check	11%

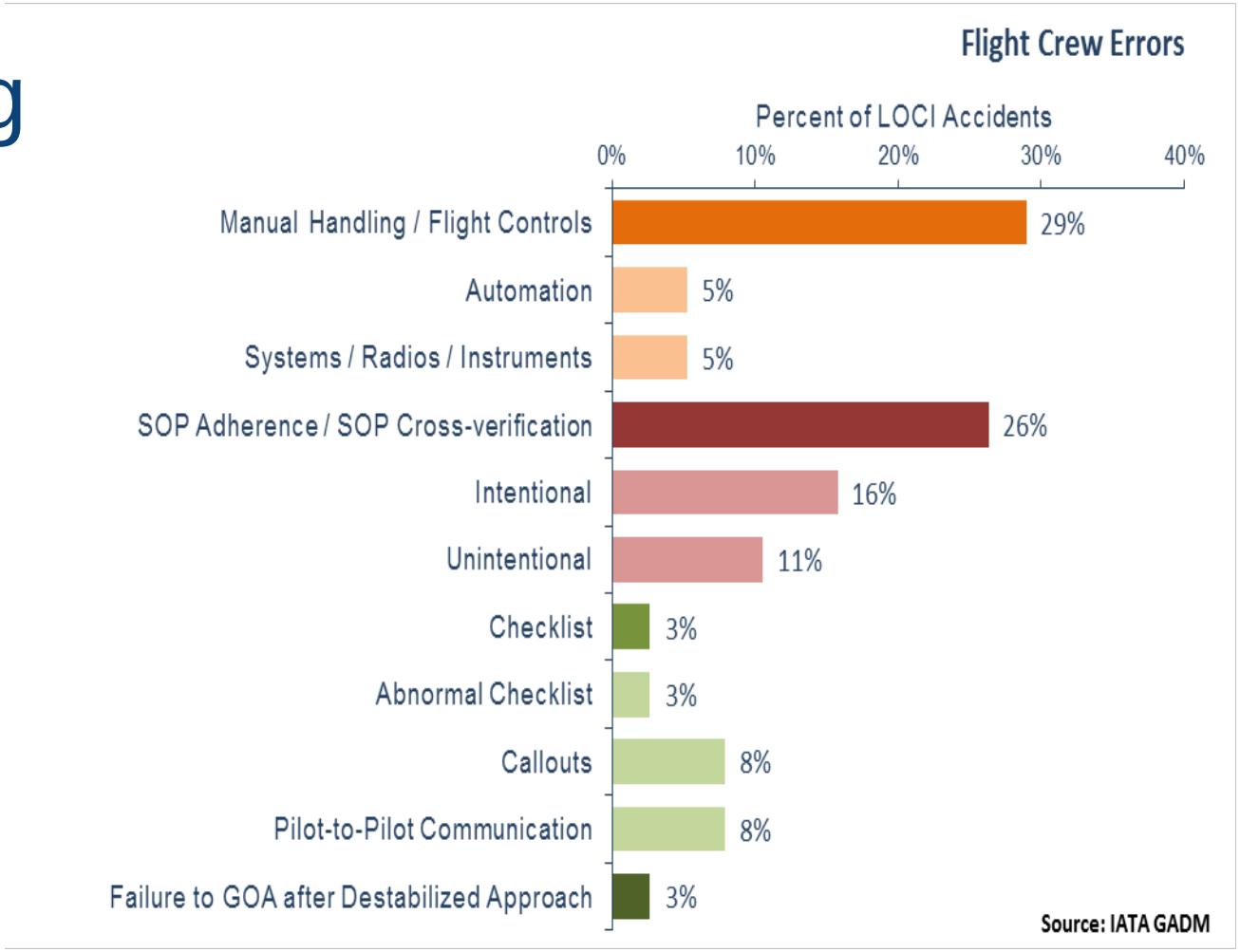
Contributing Factors – Latent Conditions



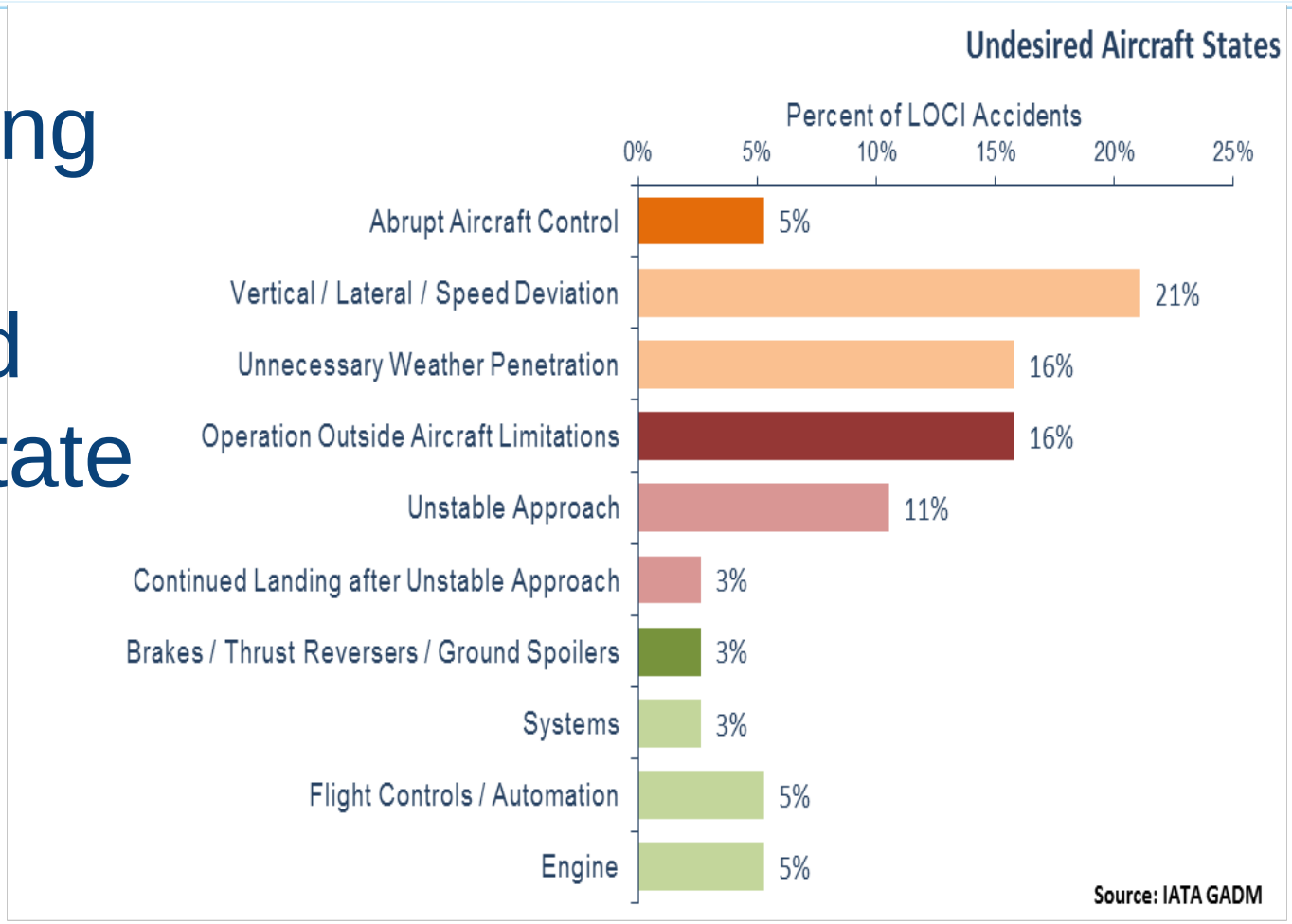
Contributing Factors – Environmental and Airline Threats



Contributing Factors – Flight Crew Error

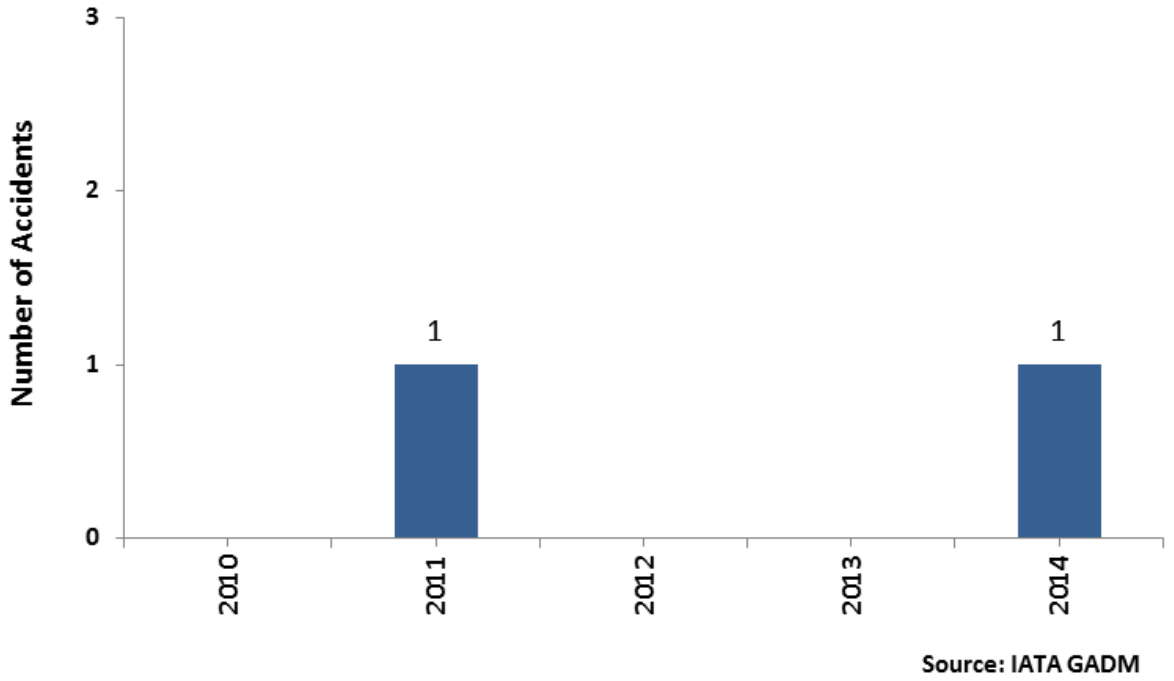


Contributing Factors – Undesired Aircraft State



LOC-I Accidents in MENA

LOC-I Accidents in MENA per Year



Contributing Factors in LOC-I: MENA Region

Meteorology and Aircraft Malfunction were cited as contributing factors

to represent, lead and serve the airline industry