

Aviation Safety 2018: Successes and Challenges

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What Will Be Covered

- **Commercial Jet Aircraft**
(passenger and cargo)
- **Business Jet Aircraft**
- **Commercial Turboprop Aircraft**
- **Major Accidents**
 - **Aircraft destroyed or cost of repair greater than 50% of cost of aircraft**
 - **One fatality and substantial damage**
 - **More than one fatality**



The Fleets - 2018

<u>Type</u>	<u>Western Built</u>	<u>Eastern Built</u>	<u>Total</u>
Turbojets	27,355	595	27,950
Turboprops	4,583	835	5,418
Business Jets			20,104

Major Accidents Commercial Jets

1 January 2017 to 31 December 2017

CFIT
LOC
Excursion

Date	Operator	Aircraft	Location	Phase	Fatal
16 January	MyCargo Airlines	B-747	Bishkek, Kyrgyzstan	Go Around	4
28 March	Peruvian Air Line	B-737	Jauja, Peru	Landing	0
18 July	Tri-MG Airlines	B-737F	Wamena, Indonesia	Landing	0
29 July	Cavok Air	AN-74	San Tome and Principe	Takeoff	0

Major Accidents Commercial Jets

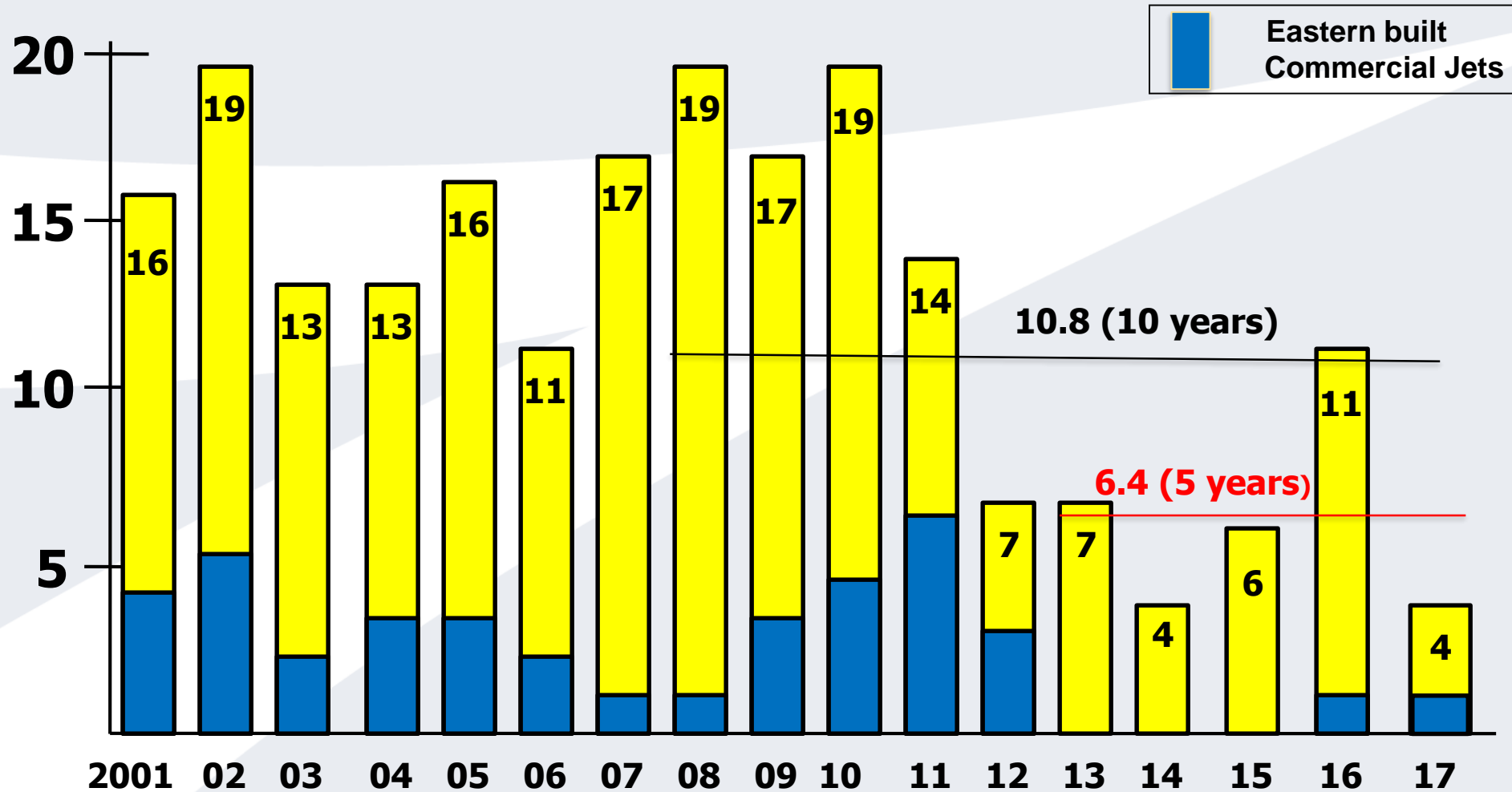
1 January 2018 to 12 November 2018

CFIT
LOC
Excursion

Date	Operator	Aircraft	Location	Phase	Fatal
13 January	Pegasus Airlines	B- 737	Trabzon, Turkey	Landing	0
11 February	Saratov Airlines	AN- 148	Moscow, Russia	Initial Climb	71
17 April	Southwest Airlines	B- 737	Philadelphia, USA	Enroute	1
18 May	Damogh Aerolíneas	B- 737	Havana, Cuba	Initial Climb	112
31 July	Aeromexico Connect	EMB-190	Durango, Mexico	Takeoff	0
16 August	Xiamen Airlines	B-737	Manila, Philippines	Landing	0
1 September	UTAir	B-737	Sochi, Russia	Landing	0
28 September	Air Niugini	B-737	Chuuk, Micronesia	Approach	1
10 October	Yakutia	Superjet	Yakutsk, Russia	Landing	0
29 October	Lion Air	B-737	Java Sea, Indonesia	Enroute	189
7 November	Sky Lease Cargo	B-747F	Halifax, Canada	Landing	0
9 November	Fly Jamaica	B-757	Georgetown, Guyana	Landing	0

Commercial Jet Major Accidents

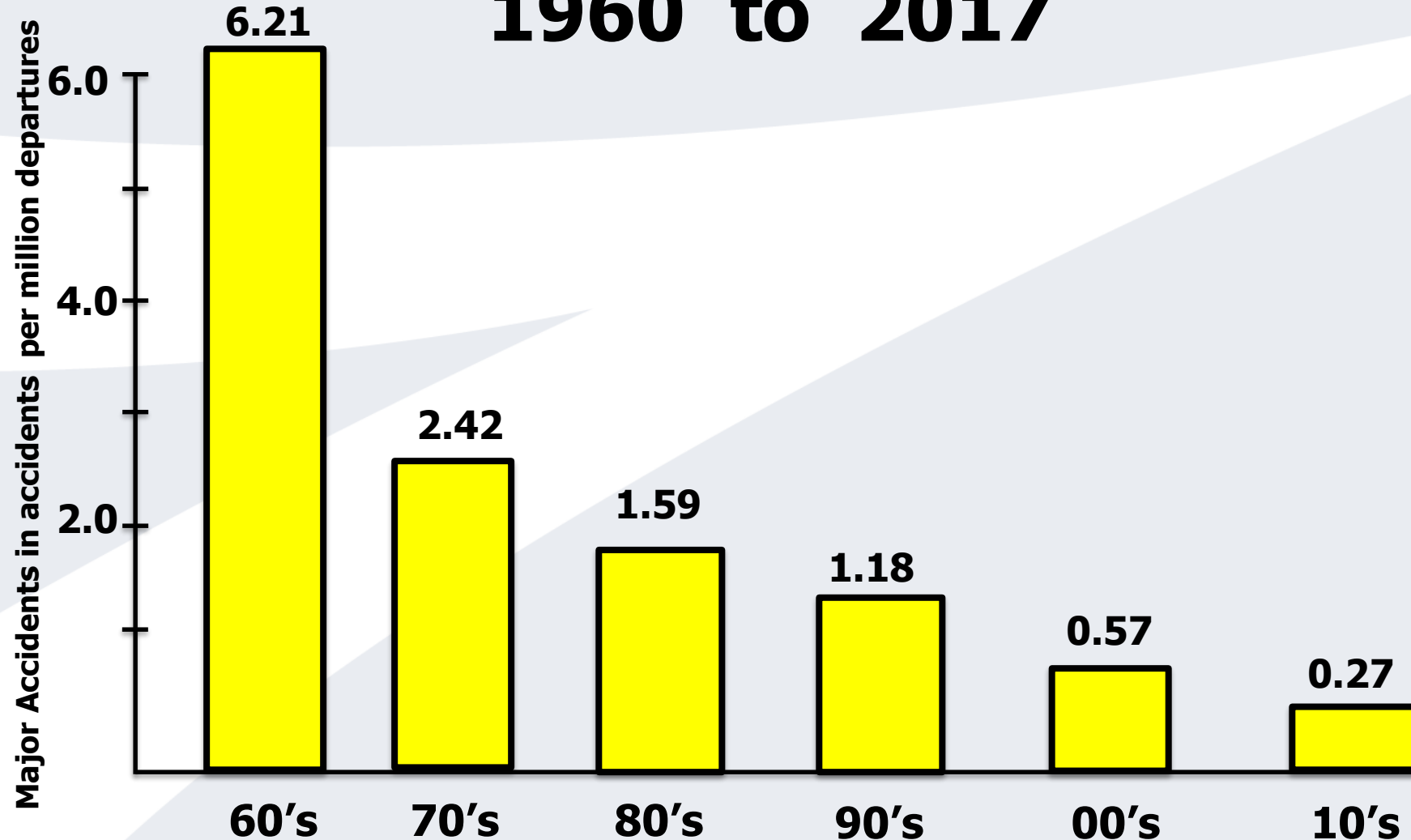
2001 through 2017



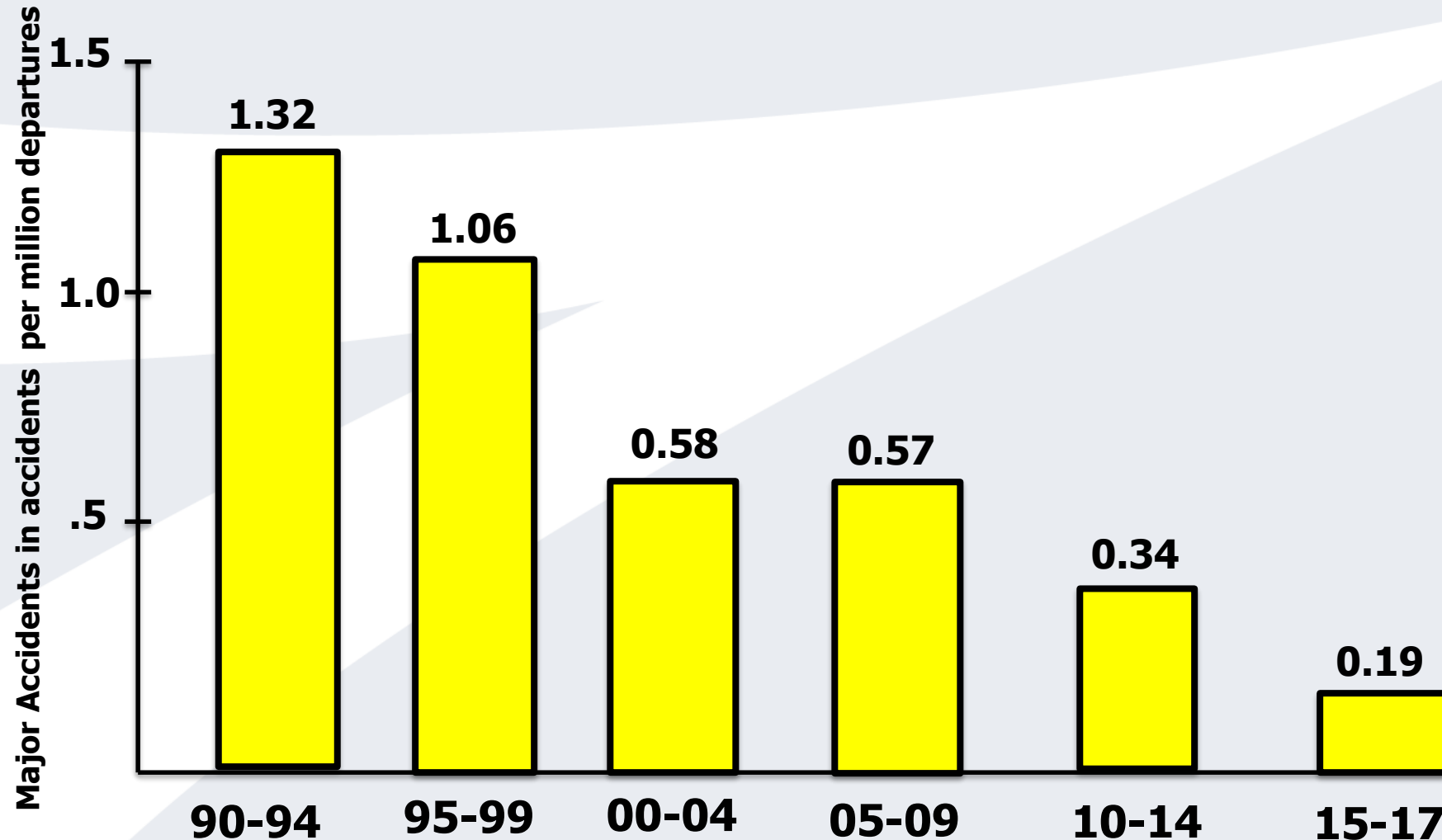
Major Accident Rates by Decade

Worldwide Commercial Jets

1960 to 2017



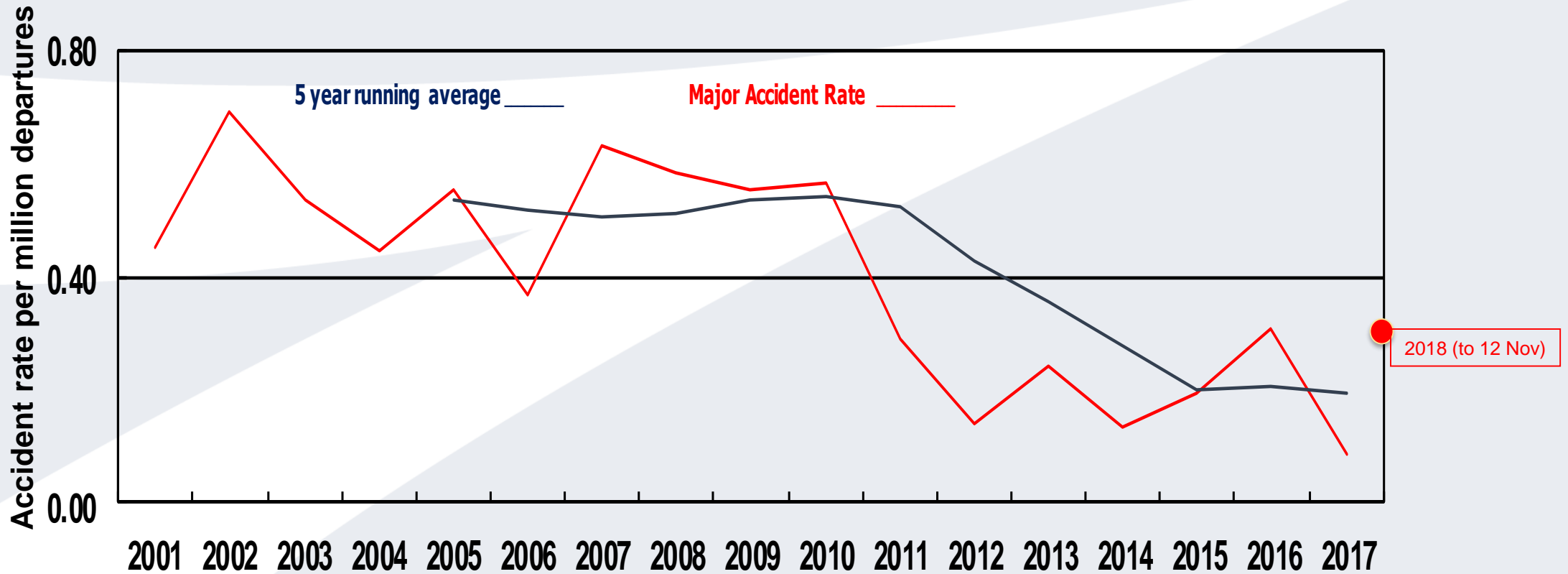
Major Accident Rates – A Closer Look Worldwide Commercial Jets



Major Accident Rate

Western-Built Commercial Jets

2001 – 2017



Business Jets



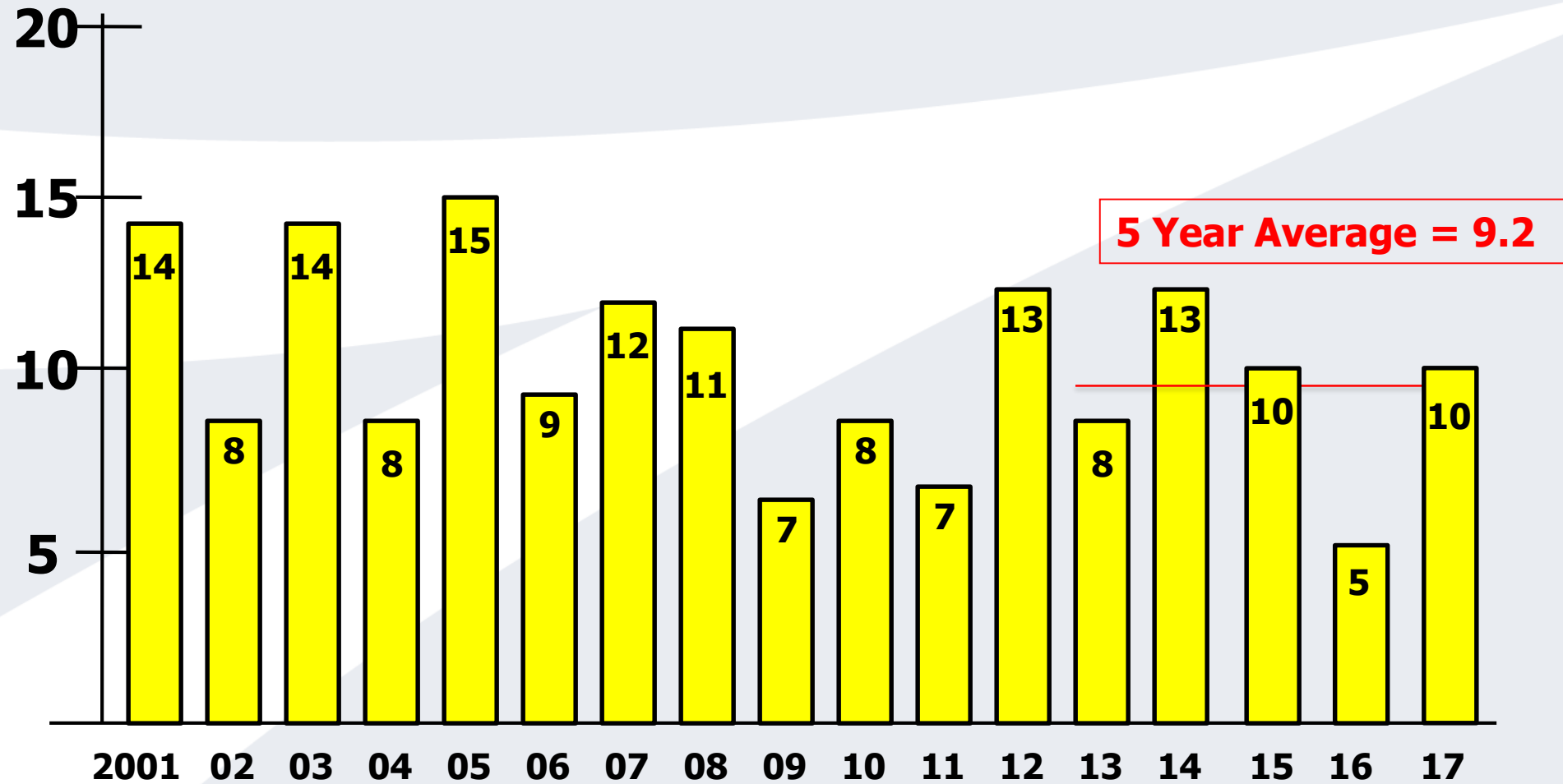
Major Accidents Business Jets

1 January 2018 to 12 November 2018

Date	Operator	Aircraft	Location	Phase	Fatal
11 January	Basaran Holdings	Challenger 604	Shahr-e-Kur, Iran	Enroute	11
2 April	Avis Industrial	Citation CJ4	Marion, IN, USA	Landing	0
15 April	Augusta Aviation	Citation 525	Crozet, VA, USA	Enroute	1
22 May	Private	Gulfstream 200	Tegucigalpa, Honduras	Landing	0
7 August	Alliance Air Charter	Falcon 20	Penasco, Mexico	Approach	0
27 September	Global Aircraft, LLC	Falcon 50	Greenville, SC, USA	Landing	2

Business Jet Major Accidents

2001 through 2017



Turboprops



Major Accidents

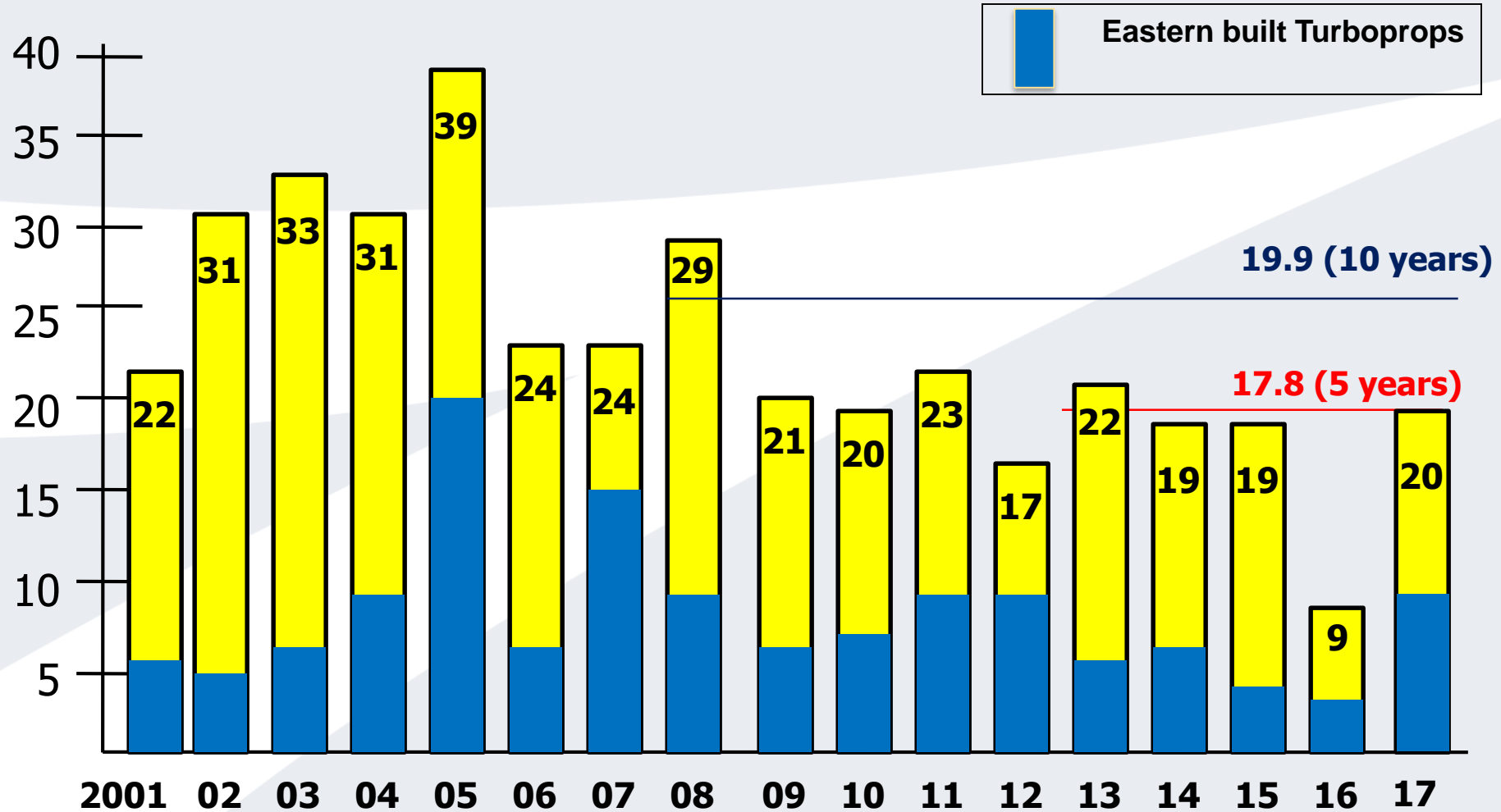
CFIT

Turboprops (ICAO mass group 3 or above or > 14 seats)
1 January 2018 to 12 November 2018

Date	Operator	Aircraft	Location	Phase	Fatal
18 February	Iran Aseman	ATR- 72	Yasuj, Iran	Approach	66
12 March	US-Bangla Airline	DHC- 8	Kathmandu, Nepal	Landing	51
24 June	Eagle Air	LET- 410	Sougeta, Guinea	Enroute	4
20 July	Kaz Transair	AN-26	Al Alamain, Egypt	Enroute	0
9 September	Slaver Company	LET-410	Yirol, South Sudan	Approach	20
4 August	Ju-Air	JU-52	Piz Segnas, Switzerlad	Enroute	20

Turboprop Major Accidents

2001 through 2017



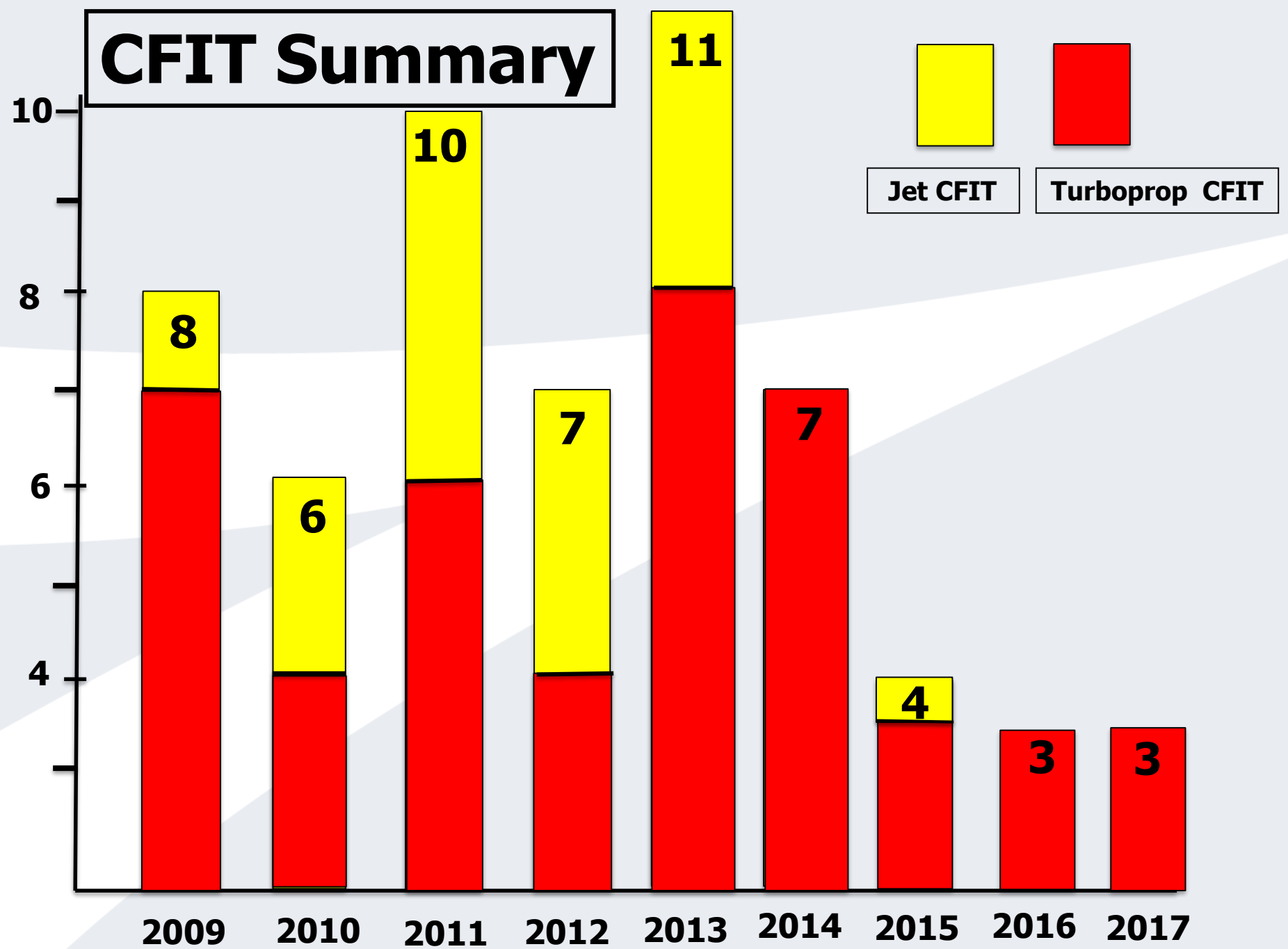


Approach and Landing Major Accidents Commercial Jets


1 January 2018 to 12 November 2018

Date	Operator	Aircraft	Location	Phase	Fatal
13 January	Pegasus Airlines	B- 737	Trabzon, Turkey	Landing	0
16 August	Xiamen Airlines	B-737	Manila, Philippines	Landing	0
1 September	UTAir	B-737	Sochi, Russia	Landing	0
28 September	Air Niugini	B-737	Chuuk, Micronesia	Approach	1
10 October	Yakutia	Superjet	Yakutsk, Russia	Landing	0
7 November	Sky Lease Cargo	B-747F	Halifax, Canada	Landing	0
9 November	Fly Jamaica	B-757	Georgetown, Guyana	Landing	0





Upset Aircraft

- 
- Over 10 degrees nose down
 - Over 25 degrees nose up
 - Greater than 45 degrees bank
 - Airspeed inappropriate for conditions

Upset Aircraft Major Accidents Commercial Jets

1 January 2018 to 12 November 2018

Date	Operator	Aircraft	Location	Phase	Fatal
11 February	Saratov Airlines	AN-148	Moscow, Russia	Initial Climb	71
18 May	Damogh Aerolíneas	B- 737	Havana, Cuba	Initial Climb	112
29 October	Lion Air	B-737	JavaSea,Indonesia	Enroute	189

Commercial Jet Upset Major Accidents

2001 through 2017

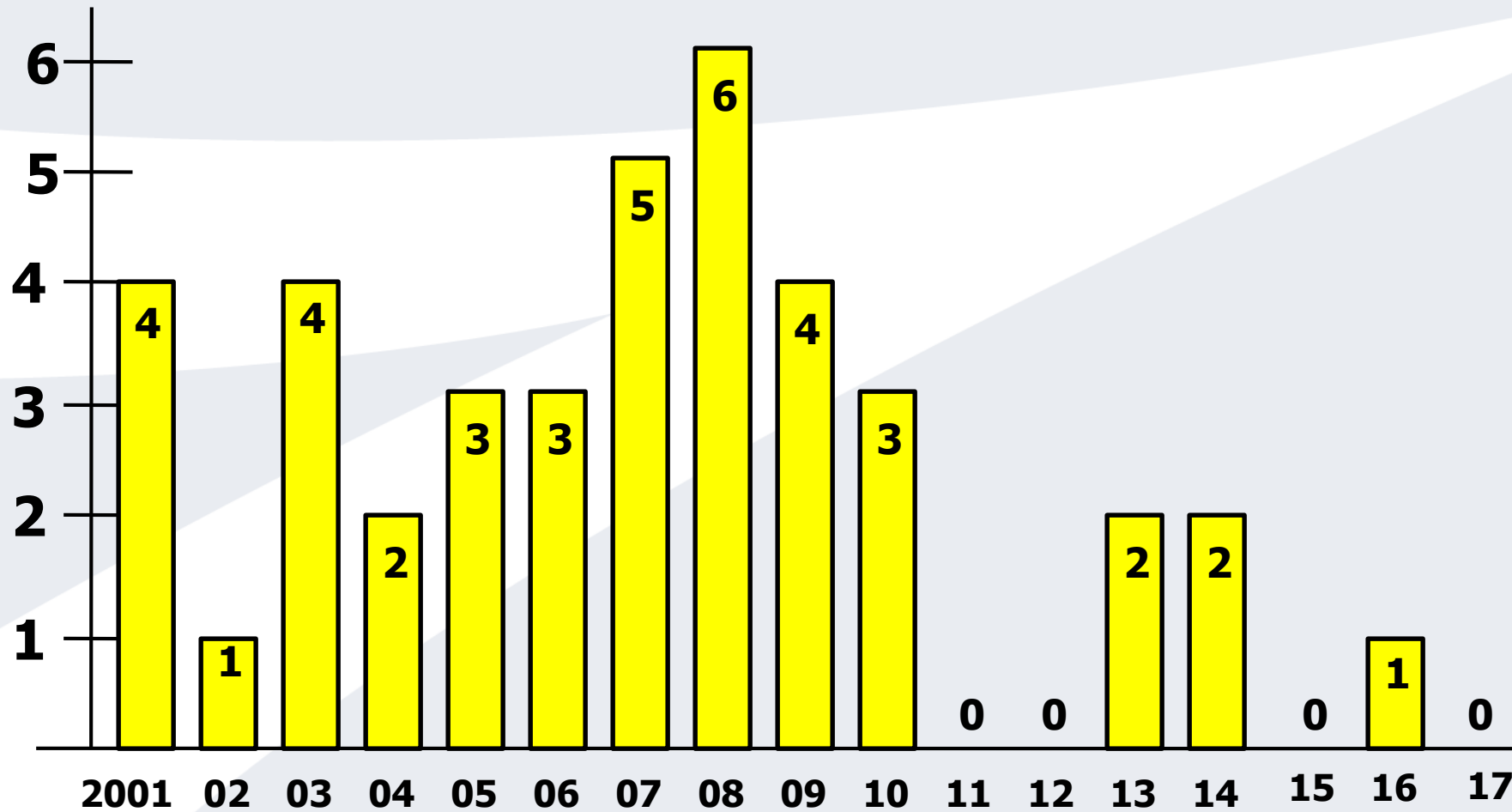




Photo by Craig Murray

<http://www.Airliners.net>

Risk Management



Risk Management



Risk Management



Risk Management



2001 5 13



The Spectrum of Risk Management

Reactive —————→ **Proactive** —————→ **Predictive**

Fly-crash-fix-fly

Identify hazards
as they appear in
accidents

Study past accidents and
incidents to identify hazards
and reduce risk

Utilize data from normal
operations to identify trends
and reduce risk before an
accident happens

Data Availability

Single Accident Data-----**Consolidated Accident/Incident Data** -----**Accident/Incident/Operational Data**

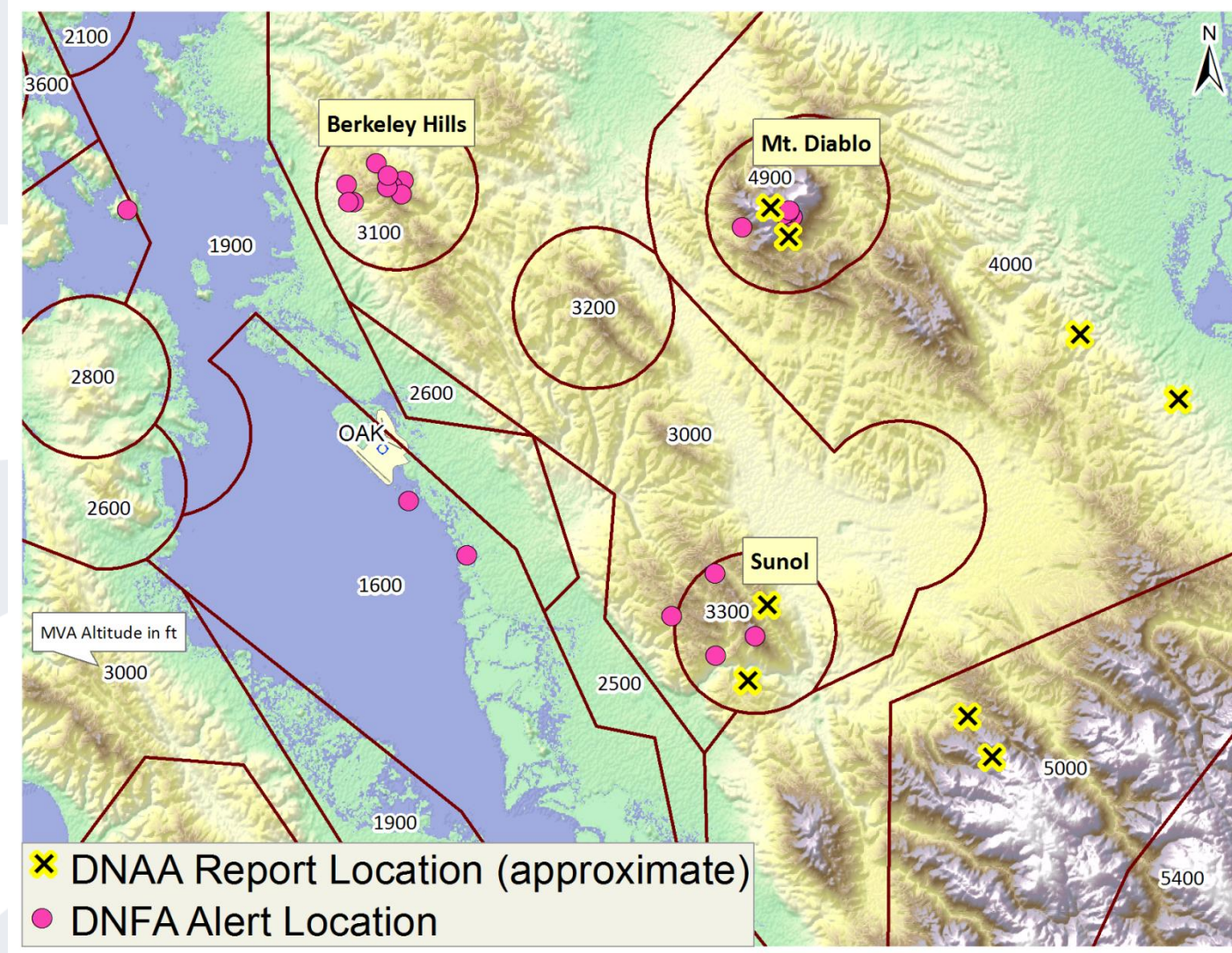
Key to Risk Reduction

1. Data





ASAP and FOQA Analysis of OAK Arrivals Receiving TAWS Alerts



TOO BIG DATA





TWA - 800

BA - 038



Key to Risk Reduction

1. Data

2. Information

3. Information Sharing



Being Predictive



Required: A Change of Paradigm

Negative Outcome Based
(Accident and Incident data)



Event Based
(Operational data)



Risk Management

1. Identify Hazard

- Reactive**
- Proactive**
- Predictive**

2. Develop Interventions

Risk Reduction Tools

- * Technology**
- * Training**
- * Procedures**
- * Regulation**
- * Information**

Reducing Risk

1. Identify Hazard

- Reactive**
- Proactive**
- Predictive**

2. Develop Interventions

3. Implement Interventions

Aviation Safety 2018

Successes

- 1. Commercial aviation safety – great and getting better**
- 2. Risk Management– data and information are key**
- 3. Information sharing is important - and it is improving**

Aviation Safety 2018 Challenges

- 1. Turboprops have a CFIT challenge**
- 2. Can we be successful at being predictive in a reactive world?**
- 3. Identifying new hazards is important but maybe not the most important challenge**
- 4. We need to make sure that the interventions we have worked so diligently at developing are being used**

THANK YOU

