Safety Trends
A Review of Accident Rates & Occupant Survivability

A study carried out on behalf of the
FAA & Transport Canada

Safety Trends
A Review of Accident Rates & Occupant Survivability

Accident Data Source

SAFETY TRENDS
ACCIDENT DATA SOURCE

- **The primary data source used in the study was the CSRTG Accident Database**
- **This Database is now web based and can be accessed via the FAA Technical Center website or directly via**

  http://www.rgwcherry-adb.co.uk/

SAFETY TRENDS
ACCIDENT DATA SOURCE

The Accident Database contains:

- Information on over 3900 Accidents to large transport aeroplanes type certificated for 20 seats or more occurring over the period 1967 to 2009
- Textual information, extracted from Accident Investigation reports on over 550 accidents
- Photographs

SAFETY TRENDS
ACCIDENT DATA SOURCE

There are certain gaps in the level of information contained in the Database – largely due to the lack of availability of Accident Reports for accidents occurring in some countries

Currently all major NTSB reports are being appended to the Accident Database – an updated version of the Database is scheduled for completion in December

SAFETY TRENDS
ACCIDENT DATA SOURCE

Data Analysis Tool

As part of the FAA/Transport Canada Research program a Data Analysis Tool has been developed that takes data extracted from the CSRTG Accident Database and develops graphs showing the trend in fatalities, accidents and occupant survivability.

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FAA/Transport Canada Study of Accident Rates & Occupant Survivability

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ACCIDENT SELECTION

Accidents were included in the study that met the following criteria:

- **The accident occurred over the period 1968 to 2007 inclusive**
- **The aircraft type was western built**
- **The aircraft was operating a passenger or combined passenger/cargo flight**
- **The accident was not caused by an act of terrorism or violence**

SAFETY TRENDS
ACCIDENT SELECTION

For the purposes of the study the following definitions were used.

Accident

"An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:
a) At least one person is fatally injured or
b) The aircraft is destroyed"

SAFETY TRENDS
ACCIDENT SELECTION

Non-Survivable Accident

"A Non-Survivable Accident is one in which all occupants sustain fatal injuries."

Survivable Accident

*"An Accident that is not **Non-Survivable**, but involves at least one Fatal Injury or the aircraft was destroyed. "*

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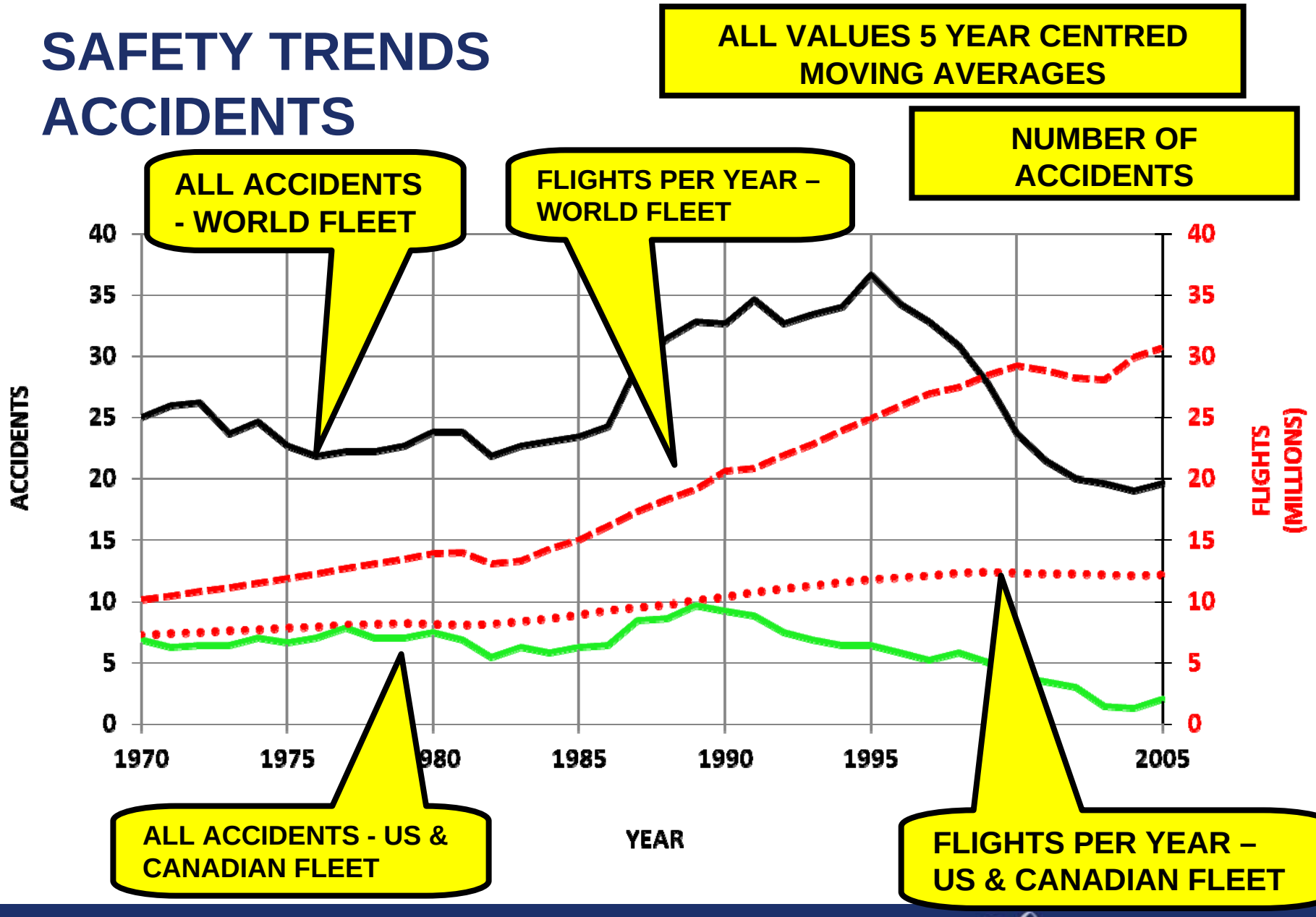
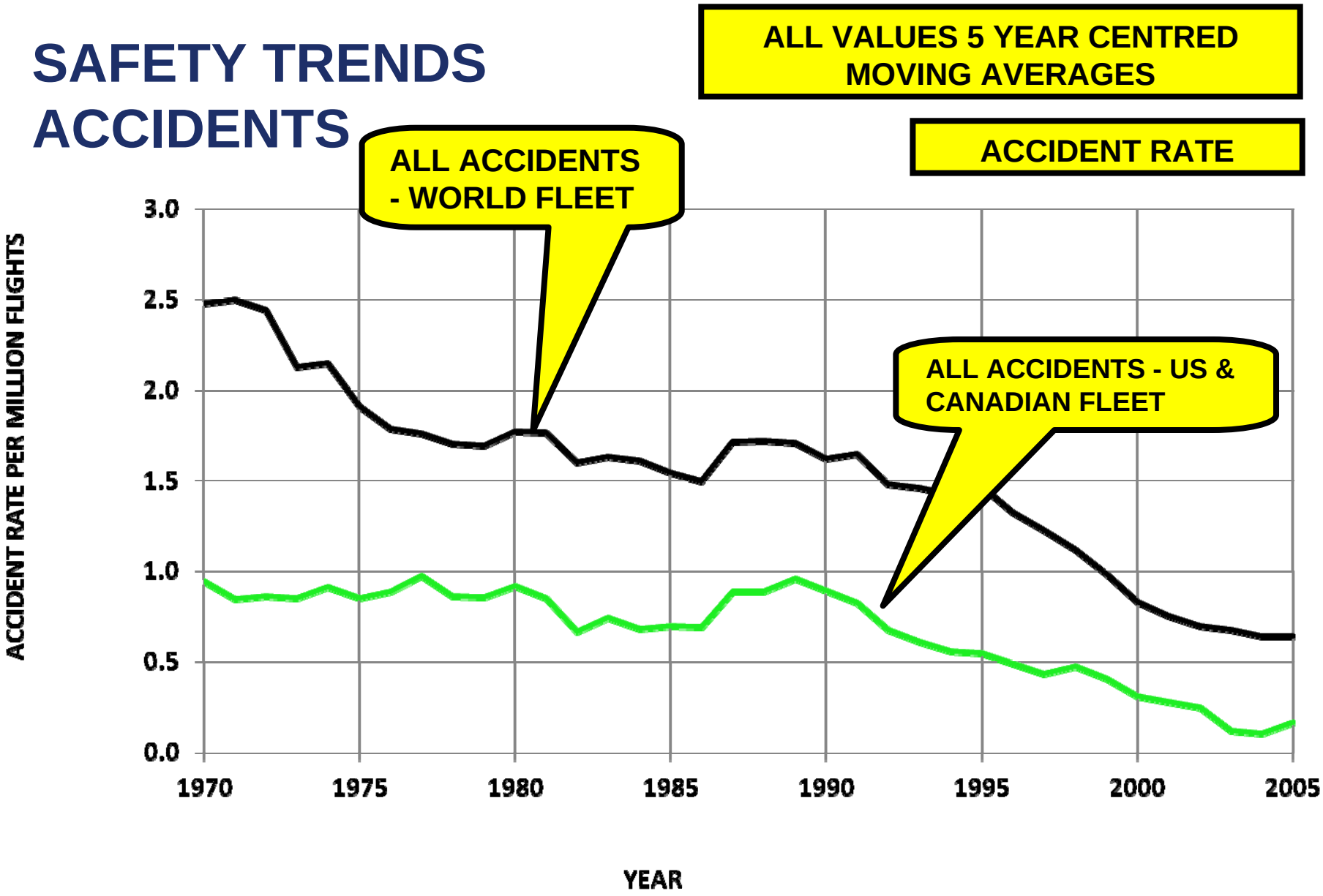
FAA/Transport Canada Study Results

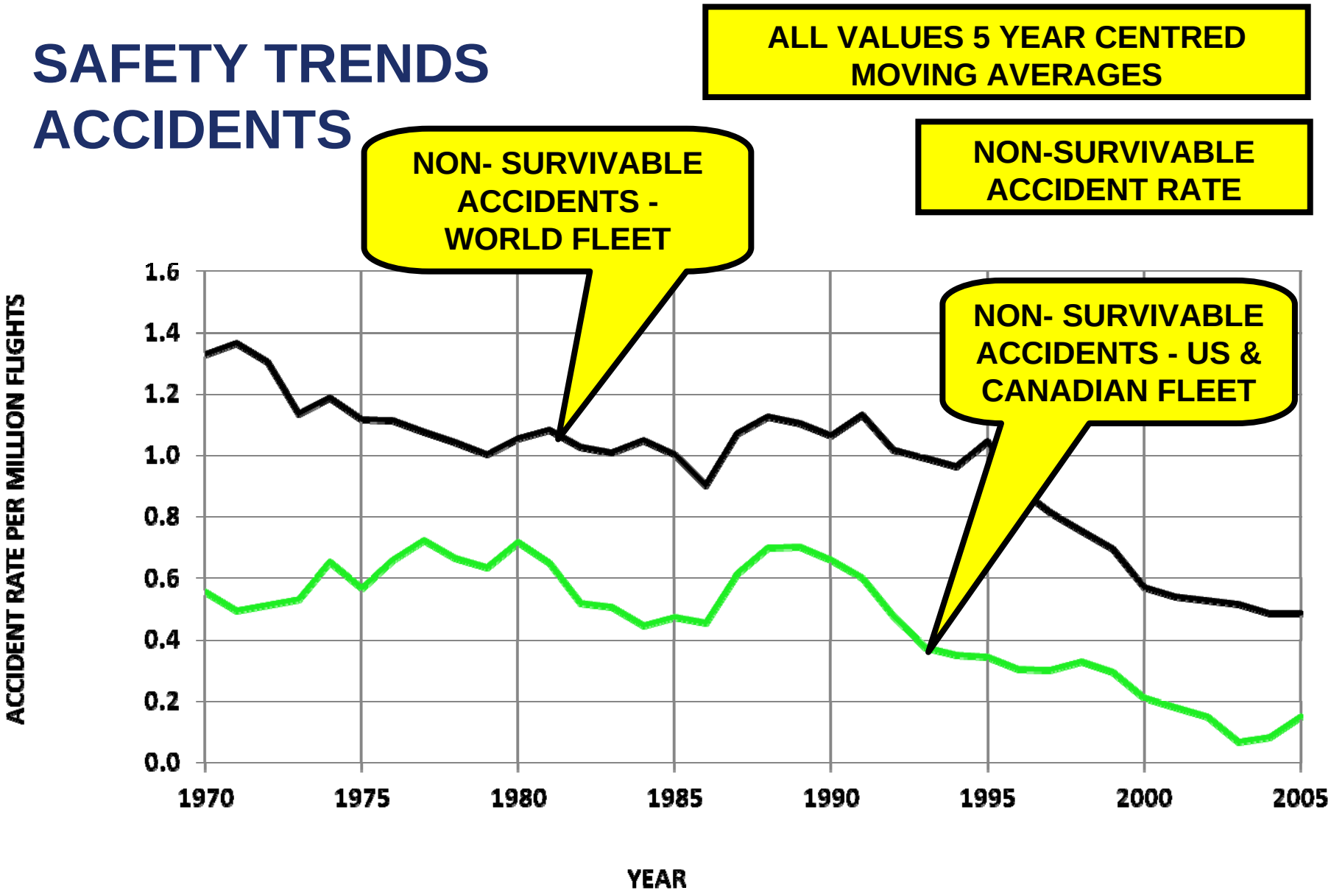
SAFETY TRENDS
ACCIDENTS



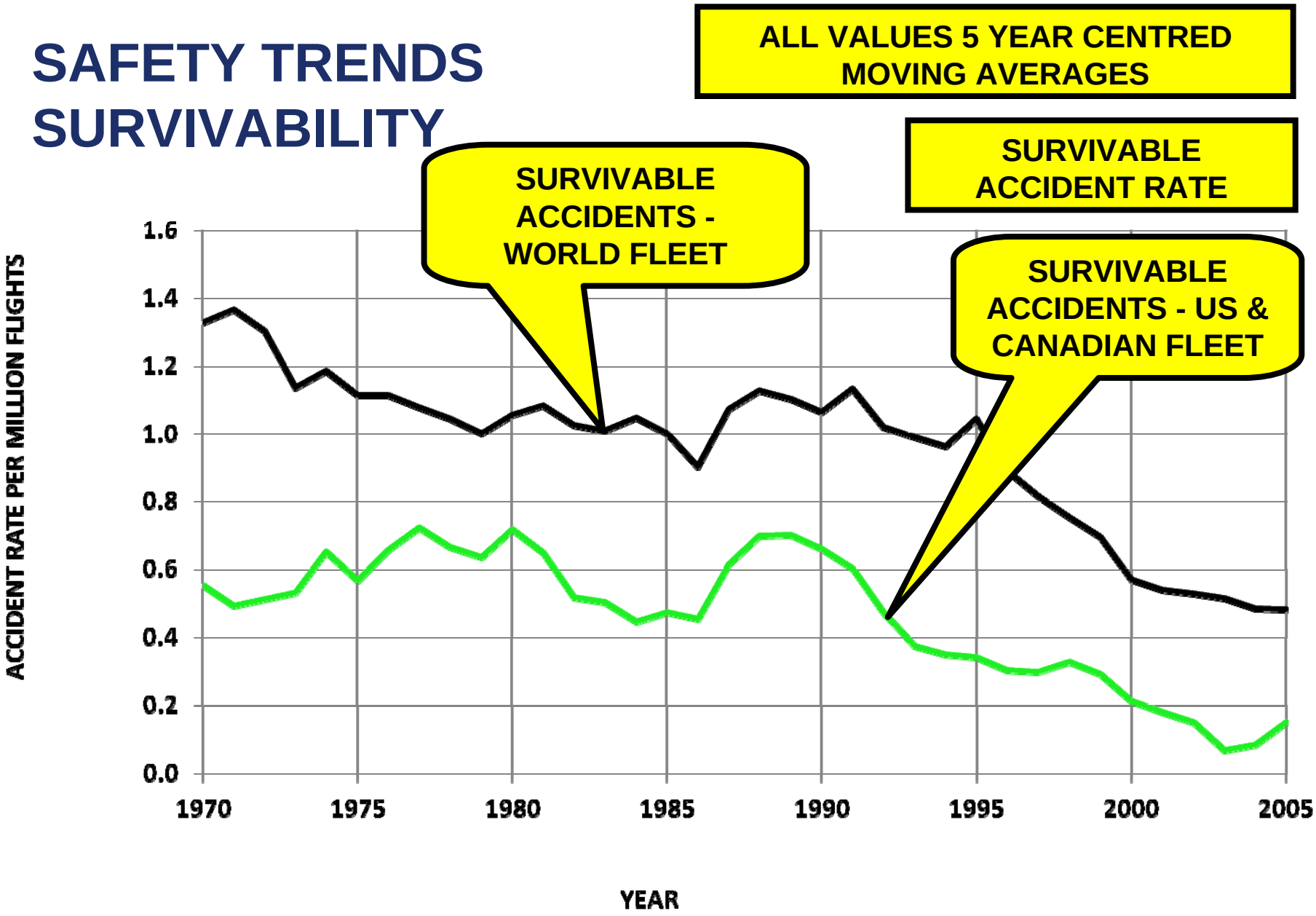
SAFETY TRENDS
ACCIDENTS



SAFETY TRENDS
ACCIDENTS



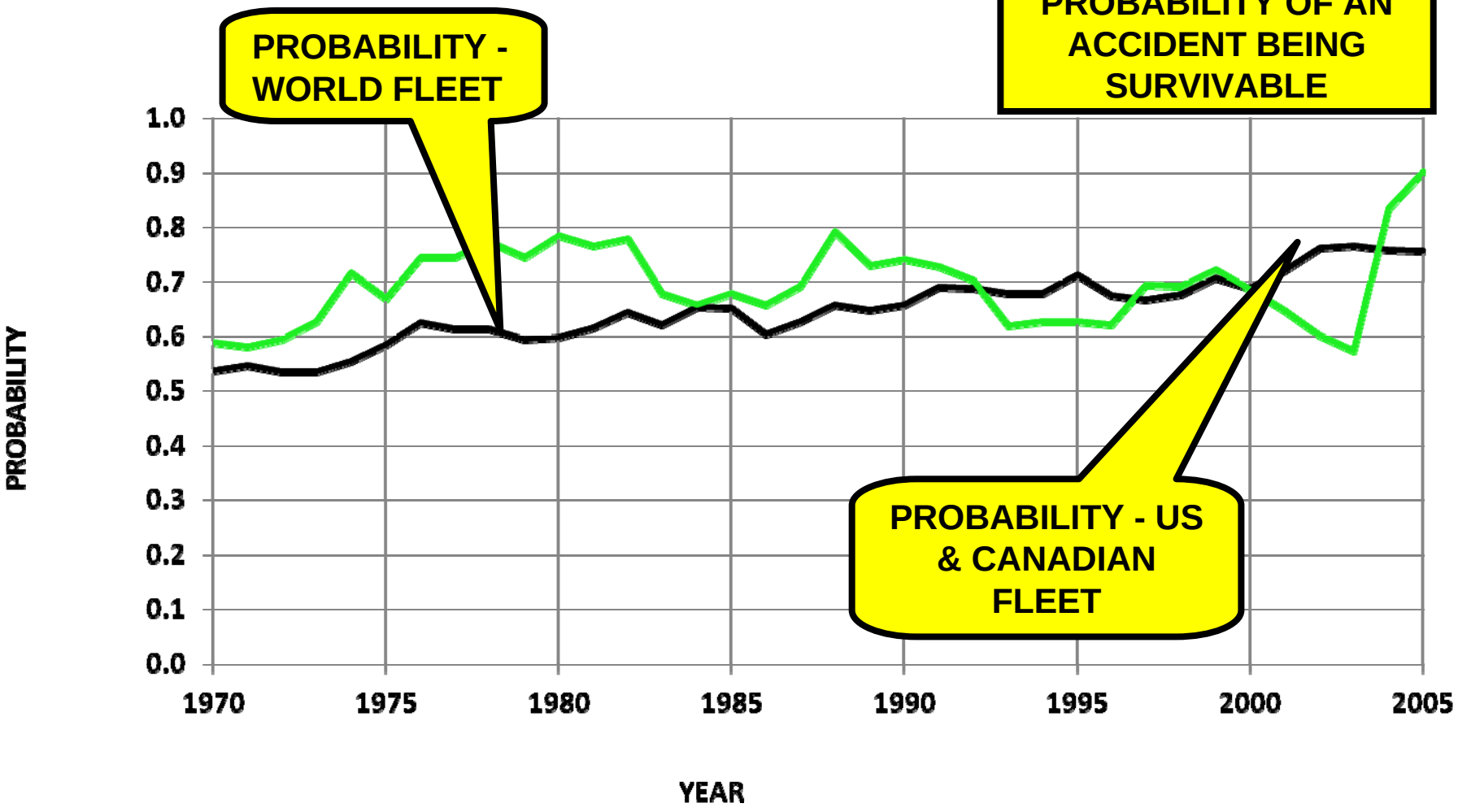
SAFETY TRENDS
SURVIVABILITY



SAFETY TRENDS
SURVIVABILITY

ALL VALUES 5 YEAR CENTRED MOVING AVERAGES

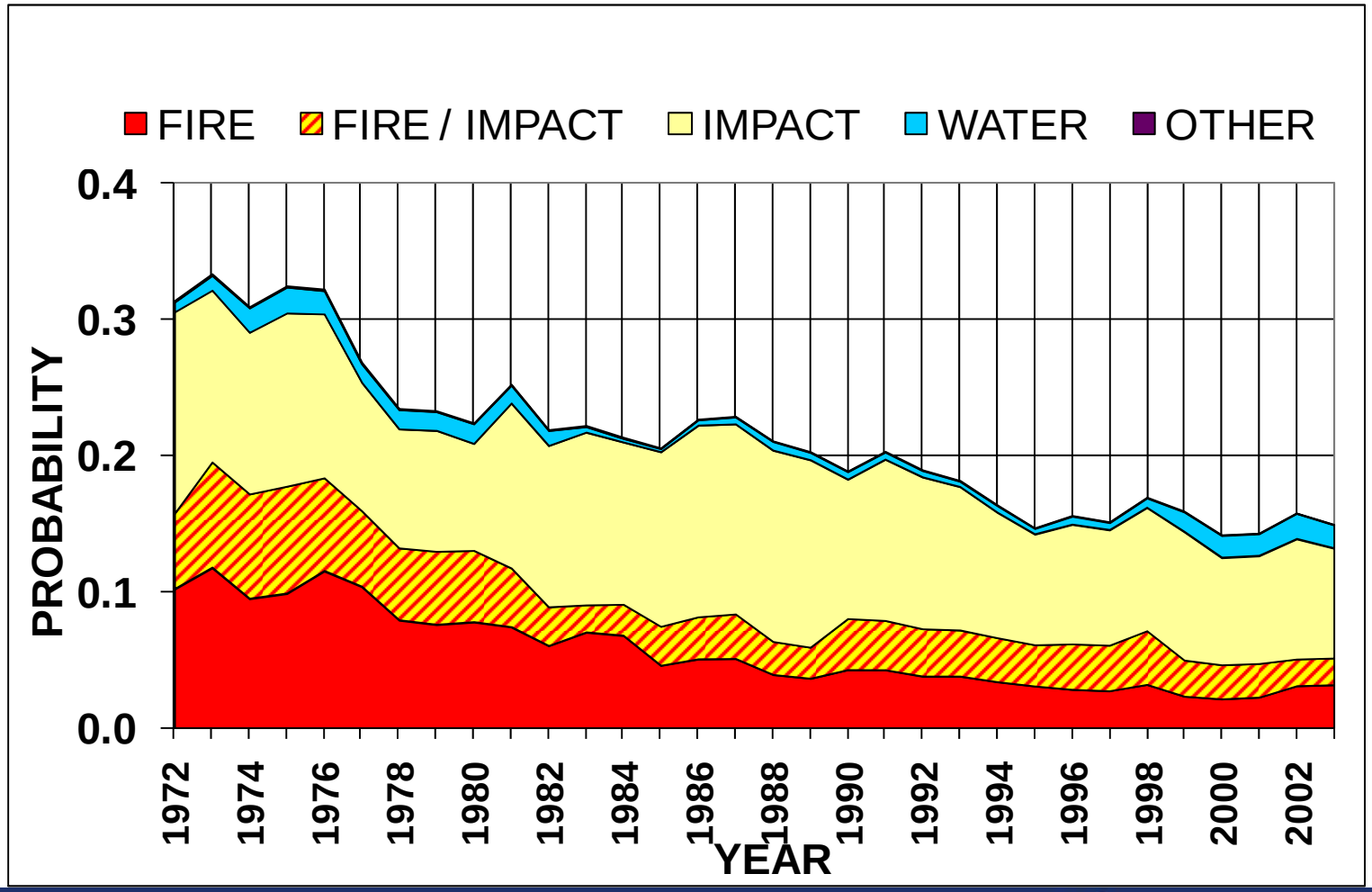
PROBABILITY OF AN ACCIDENT BEING SURVIVABLE



SAFETY TRENDS
SURVIVABILITY

9 YEAR CENTRED MOVING AVERAGES

PROBABILITY & CAUSE OF DEATH IN A SURVIVABLE ACCIDENT



SAFETY TRENDS
CONCLUSIONS

There has been a marked improvement over recent years in the:

- **Number of Accidents**
- **Accident Rates**
- **Occupant Survivability**

This improvement is reflected in both the World Fleet of Airplanes and the US/Canadian Fleets

SAFETY TRENDS
CONCLUSIONS

However these statistics should be viewed with some caution and should be viewed in the light of the following:

- **Changes in the composition of the in-service fleet**

CHANGES IN THE COMPOSITION OF THE IN-SERVICE FLEET

A Study carried out on behalf of EASA in 2007 estimated that by 2030 70% of the world fleet will comprise of aircraft types not yet in service.

SAFETY TRENDS
CONCLUSIONS

However these statistics should be viewed with some caution and should be viewed in the light of the following:

- **Changes in the composition of the in-service fleet**
- **Larger Aircraft**

LARGER AIRCRAFT

Growth in Aircraft Size
- A Market survey by Airbus states:

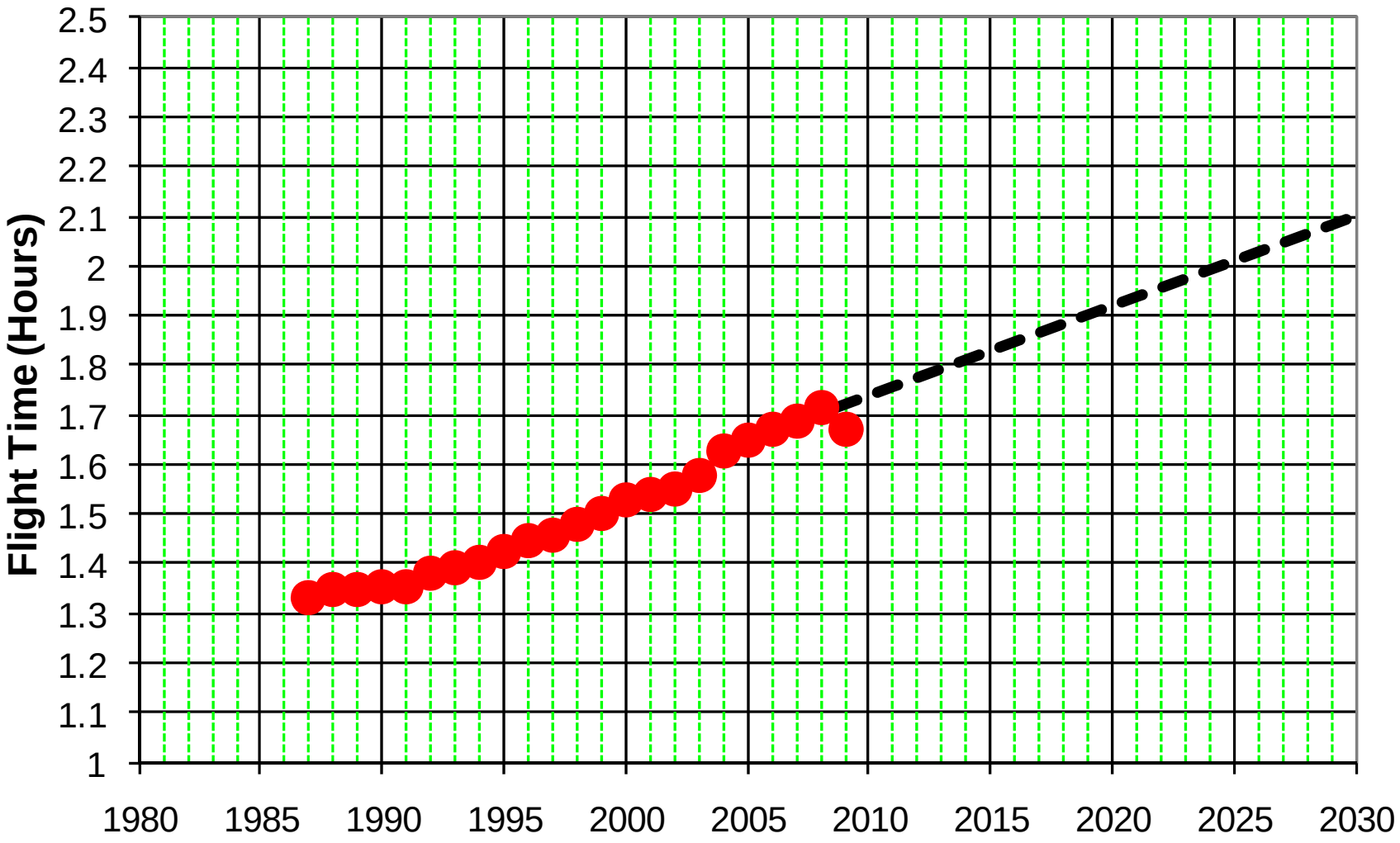
".....the composition of the world fleet will shift towards larger aircraft. By 2023 mainline single-aisles will make up 69% of the fleet, compared with 77% in 2003. At the same time very large aircraft will account for 6% of the world passenger fleet; approximately the same percentage as represented by 747s today. The role played by very large aircraft is more clearly seen in terms of capacity. By 2023, these aircraft will provide 15% of all seats in service".

SAFETY TRENDS
CONCLUSIONS

However these statistics should be viewed with some caution and should be viewed in the light of the following:

- **Changes in the Composition of the in-service fleet**
- **Larger Aircraft**
- **Longer Flight Times**

LONGER FLIGHT TIMES



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THANK YOU