

AON

An Introduction to Aviation Insurance

**Insurance Institutes of
Sussex and North Downs**

13th October 2022

Robert Normand



An Introduction to Aviation Insurance

Robert began his career with Sedgwick Insurance Brokers in 1980 in aviation claims and then joined Stewart Wrightson in 1984, including 3 months with their Sydney office, which became Willis Faber after their purchase of Stewart Wrightson in 1987, until 1999. As a broker his roles included marketing and management of major airline clients globally, and claims management, with particular focus on the Middle East region.

After spending 5 years as an aviation underwriter at Lloyds, in 2004 he was appointed Insurance Manager at Gulf Air in Bahrain. In a positive programme of staff Nationalisation he was asked to develop the knowledge and skills of two Bahraini graduates for future management and to review the structure of the department over his three year appointment. Whilst with Gulf Air he was also the Secretary of the wider GCC Airline Insurance Programme.

On his return to London in 2007 Robert joined Aon and, for the last ten years, has led the management and growth of the Banks and Leasing client portfolio.

Robert organises and runs the annual four day Client Aviation Insurance Seminar in London and presents the Insurance module for the Irish Law Society's Diploma in Aviation Leasing and Finance in Dublin. He is also a member of the Insurance institute of London Aviation Committee.



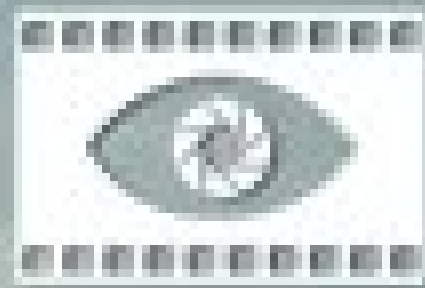
Content and Learning Objectives

- 1 – Aviation Industry**
- 2 – Aviation Risk**
- 3 – Aviation insurers and insurance premiums**
- 4 – Aviation Insurances**
- 5 – Claims**
- 6 – Russian Conflict**

By the end of this session attendees will:

- **understand the specific risks of this class of business**
- **be familiar with the breadth of insurance coverage provided by insurers**
- **see the typical limits and exposure purchased by the Aviation Industry and provided by insurers**
- **appreciate the issues faced by adjusters and lawyers working for the insurance market, where coverage is provided and the level of indemnity and liability incurred**

Courtesy of
Eyewitness
Animations



Where are the potential claims?

- **Cost of the Asset**
- **Litigation from the passengers - the families of the deceased and those passengers injured**
- **Injury to the Crew**
- **Costs of damage to airport property (runway, lights, etc) and possible pollution or contamination claim**
- **Costs, delays and loss of use/income by airport and other third parties**

Who may be responsible/cause of loss:

- **Airline**
- **Crew / training**
- **Air Traffic control**
- **Airport owner/operator**
- **Aircraft manufacturer or component supplier**
- **weather**

Can insurance be purchased....

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Aviation Industry

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The first hundred years

17th December 1903

Orville and Wilbur Wright

**first controlled, manned, powered flight - 37 metres at Kitty Hawk,
North Carolina**



Airbus A380-800

**First flew 27th April 2005 – first
delivery October 2007 to SIA**

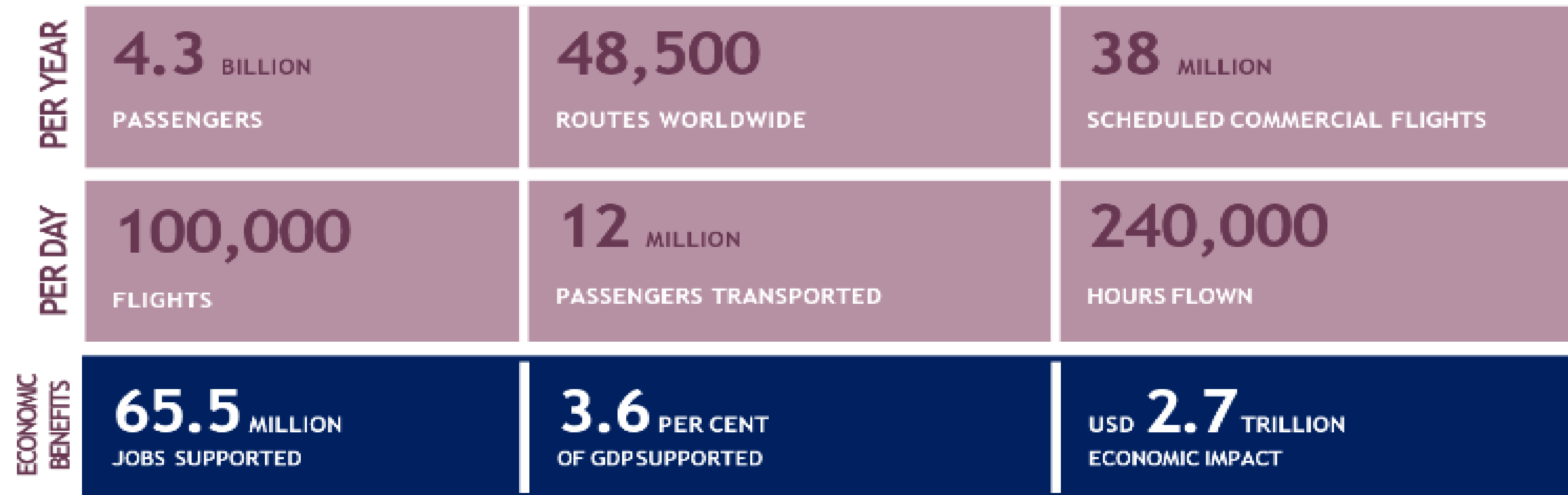
**Range – up to 15,700kms
(sufficient for New York to Hong
Kong)**

**Passengers – 450 mixed class up
to 850 all economy configuration**

Global Aviation Industry

Economic Context for Civil Aviation

Aviation provides the only rapid worldwide transportation network, which makes it essential for global business. It generates economic growth, creates jobs, and facilitates international trade and tourism.



Source: Aviation Benefits Report, 2019

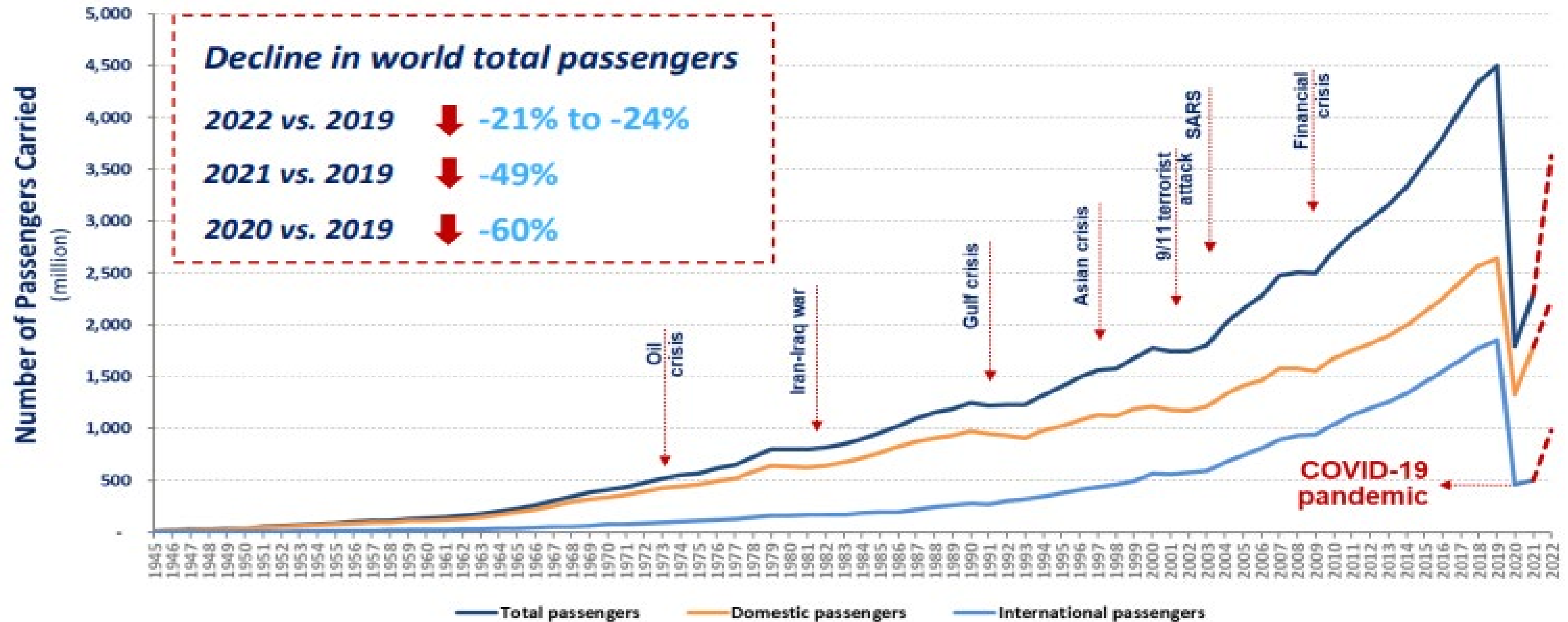
“Air Transport has become an essential economic and social conduit throughout the world”

“Air cargo has become the essential mode of transportation for high value and perishable goods, where 35-40% of all goods by value worldwide are transported by air”

Source: World Bank

World Passenger Traffic 1945 - 2022

World passenger traffic evolution 1945 – 2022



Source: ICAO Air Transport Reporting Form A and A-S plus ICAO estimates.

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Aviation Risk

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Airline Hull and Liability

Hull:

Aircraft asset

Spares

Liability:

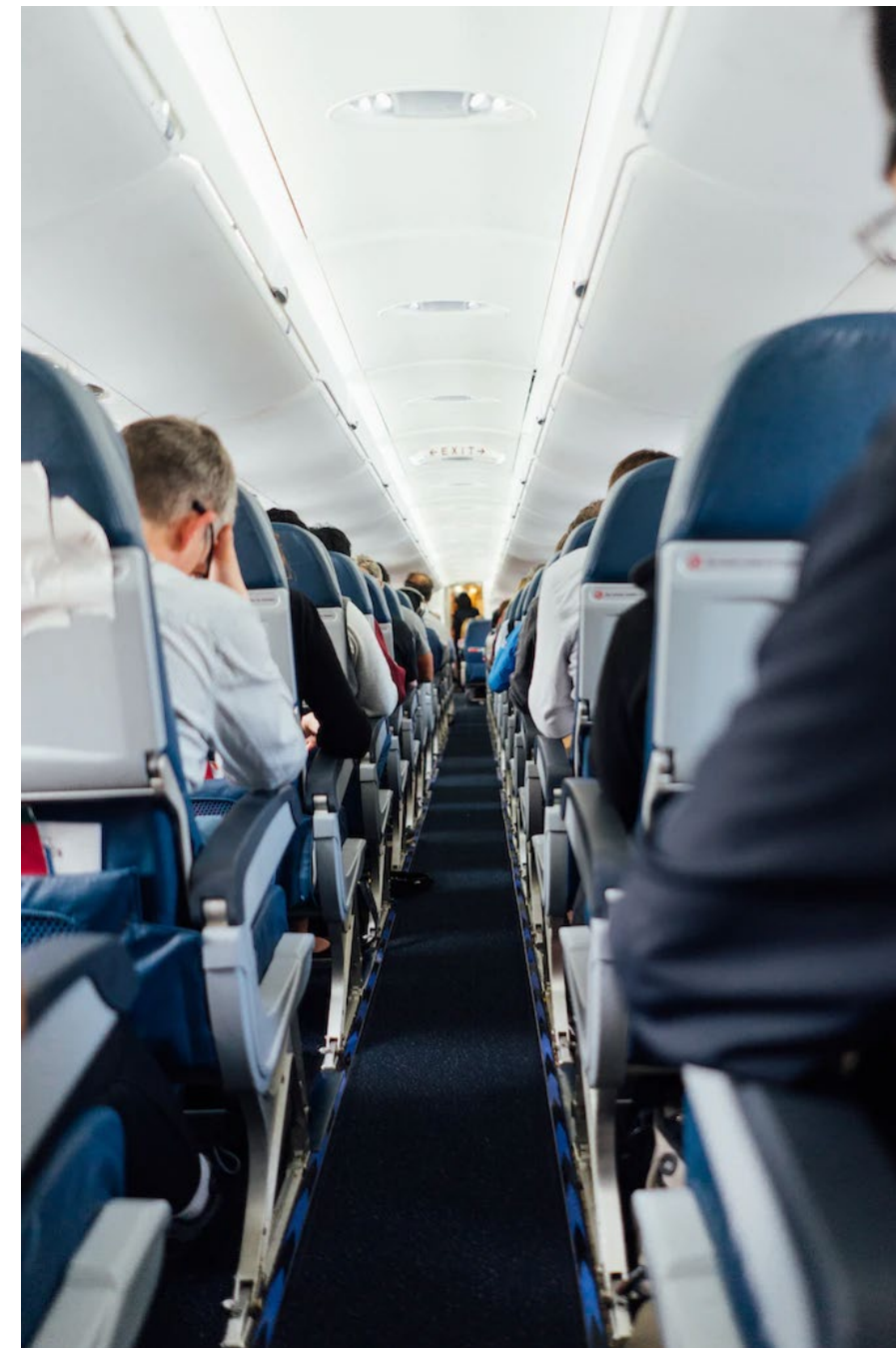
Passengers

Crew

Third Parties

Cargo, mail and baggage

Products



Aerospace Sector

For insurance purposes there are three main “Aerospace” groups:

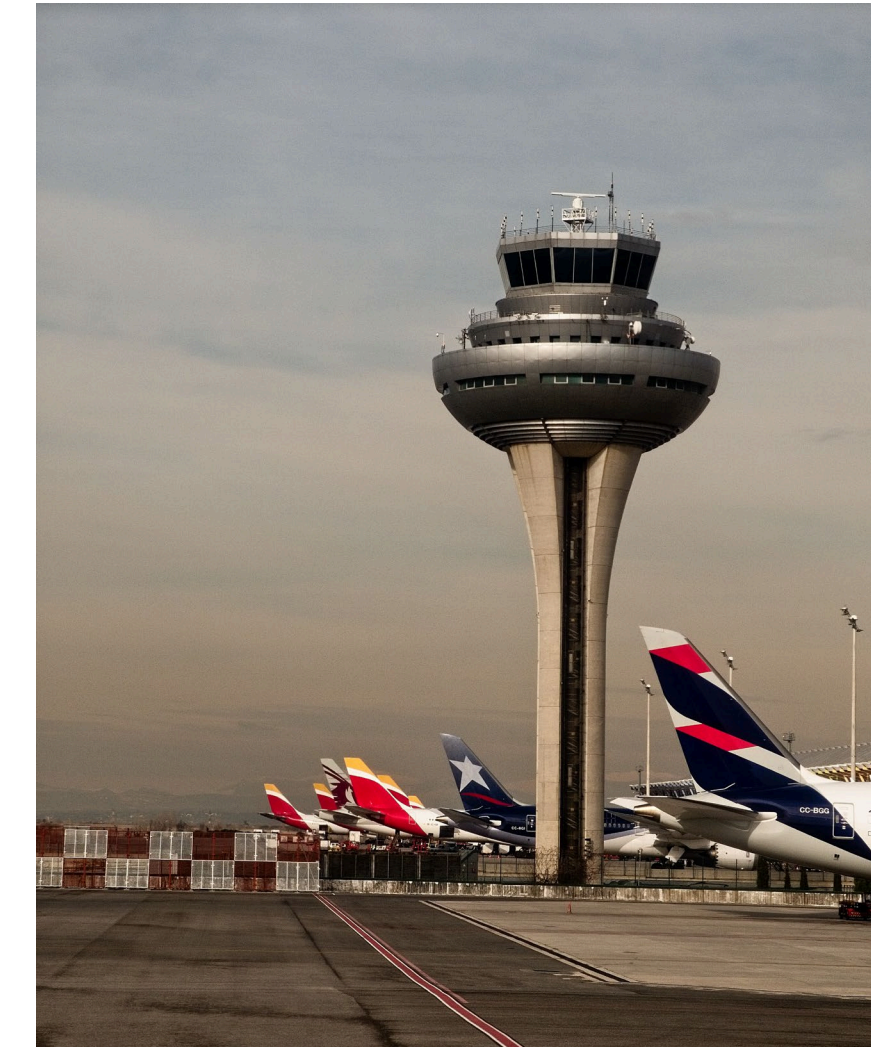
Manufacturers

Prime and component manufacturers

Airframe suppliers

Engines and parts

Maintenance, repair and overhaul



Airports

Airport Authorities

Air Traffic Control Authorities

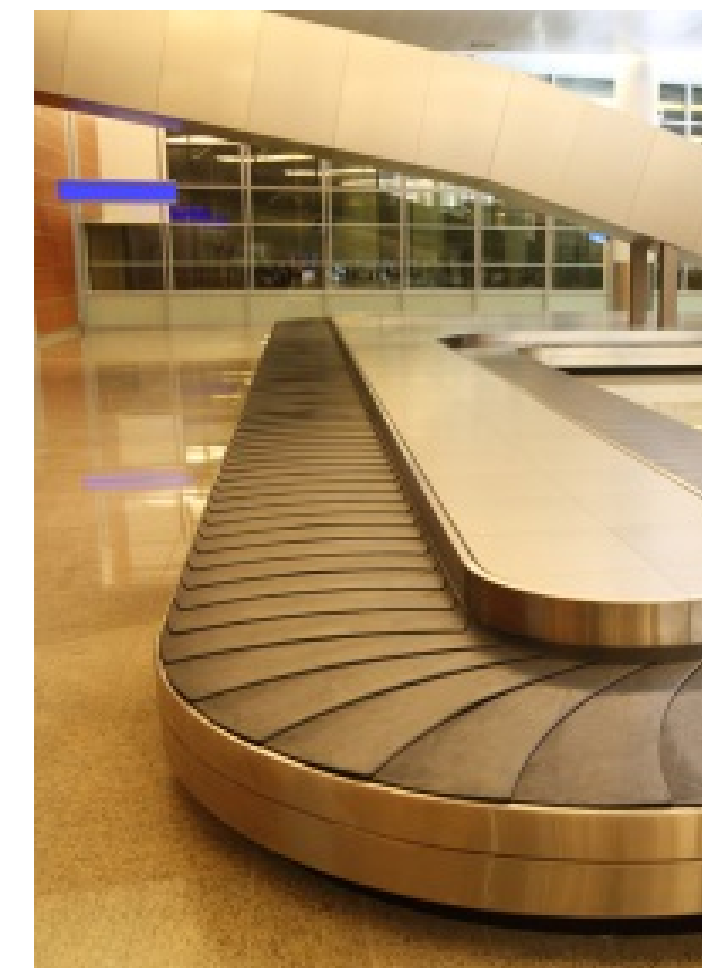
Service Providers

Refuellers

Ground handlers

Security providers

Caterers



General Aviation

LIGHT AVIATION:



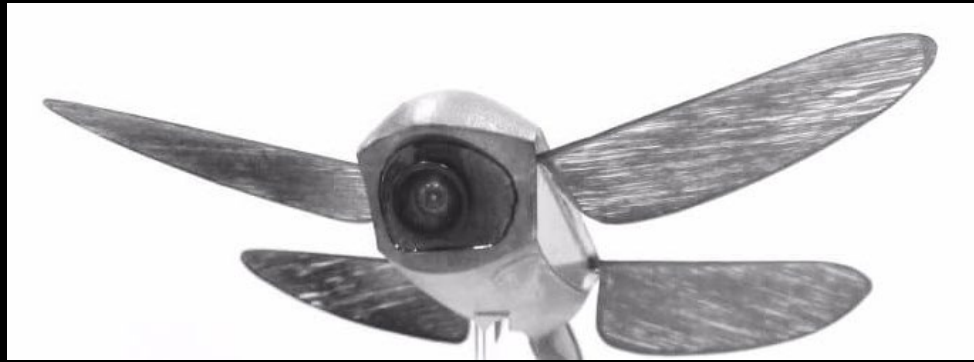
BALLOONS:



HELICOPTERS:



EMERGENT:



MILITARY AVIATION:



JETS:



WARBIRD:



Additional Aviation Insurance Policies, inter alia

- **Engine Mechanical Breakdown**
- **Personal Accident**
- **Loss of Licence**
- **Hull “Total Loss Only”**
- **Hull Deductible**
- **Non-Damage Business Interruption – wouldn’t it be nice if...?**

Designed to cover BI not resulting from an accident or occurrence. eg. loss in revenue as a consequence of cancellation or delay (volcanic ash, snow, SARS).

- **Space**



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Aviation Insurers and
insurance premium

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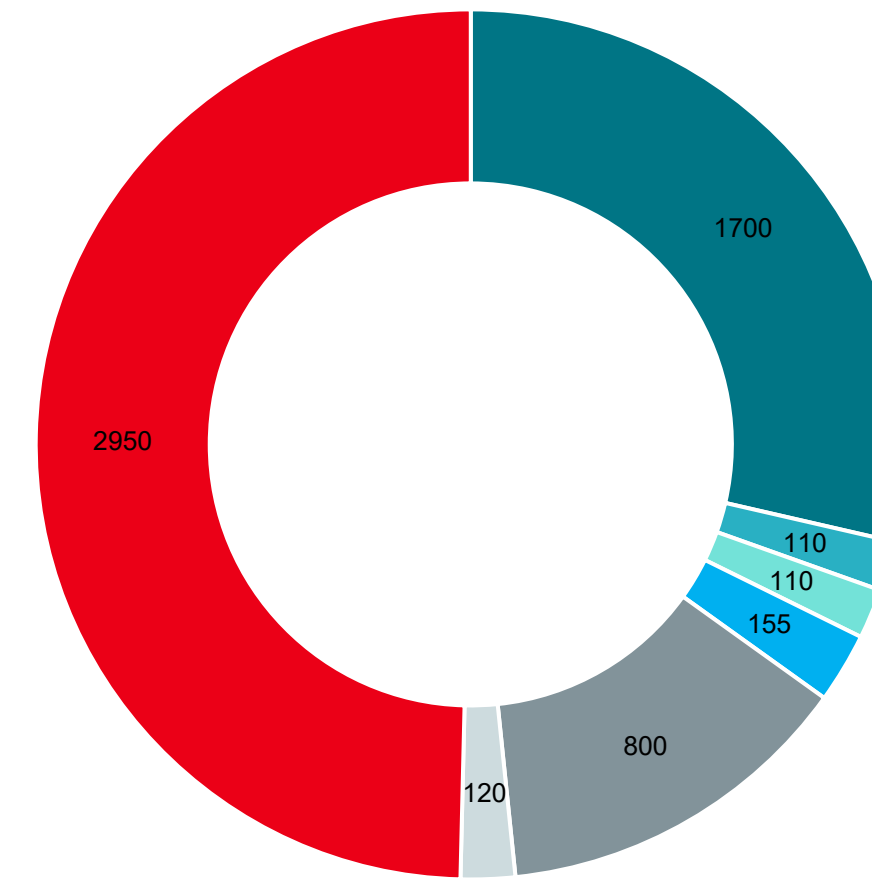


Estimated Aviation Insurance Net Premium

Category		2020 Estimated Net Premium (USDm)	2021 Estimated Net Premium (USDm)
Airline	Hull & Liability	1,700	1,800
	Hull War	110	125
	XS 52	110	120
	Deductible	155	170
Aerospace	Manufacturer	800	950
	Service Providers (inc. Airports)	120	130
GA	Industrial Aid / Commercial / PBP	2,950	3,650
Total		5,945	6,945

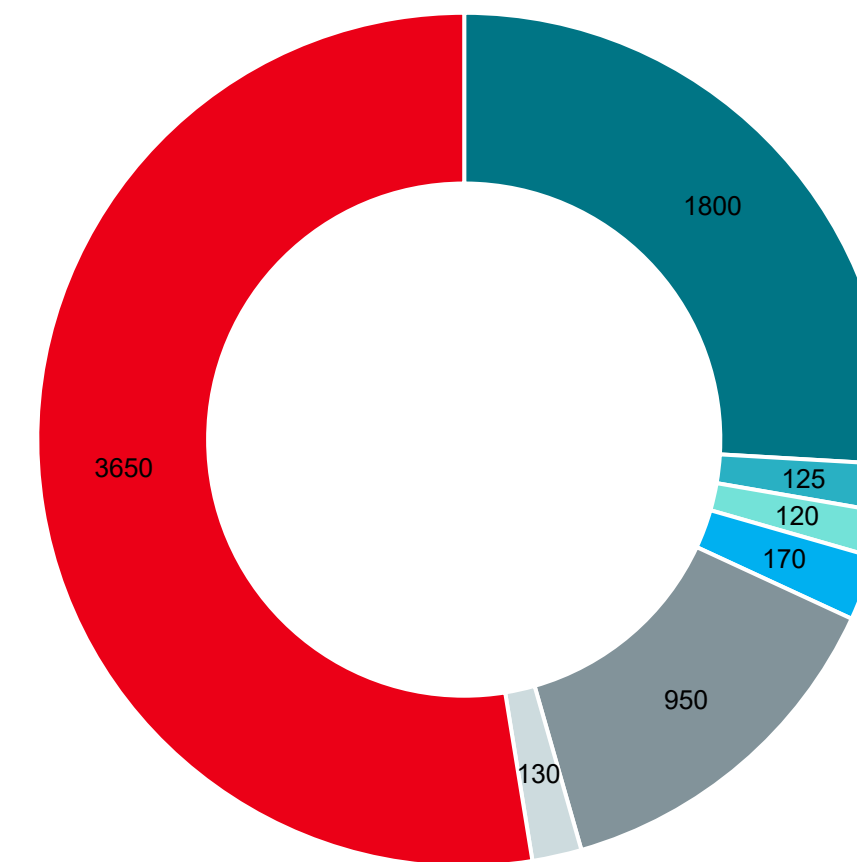
Notes: Figures are net premiums after brokerage
 Figures are underwriting year based estimates only

2020 Estimated Premium



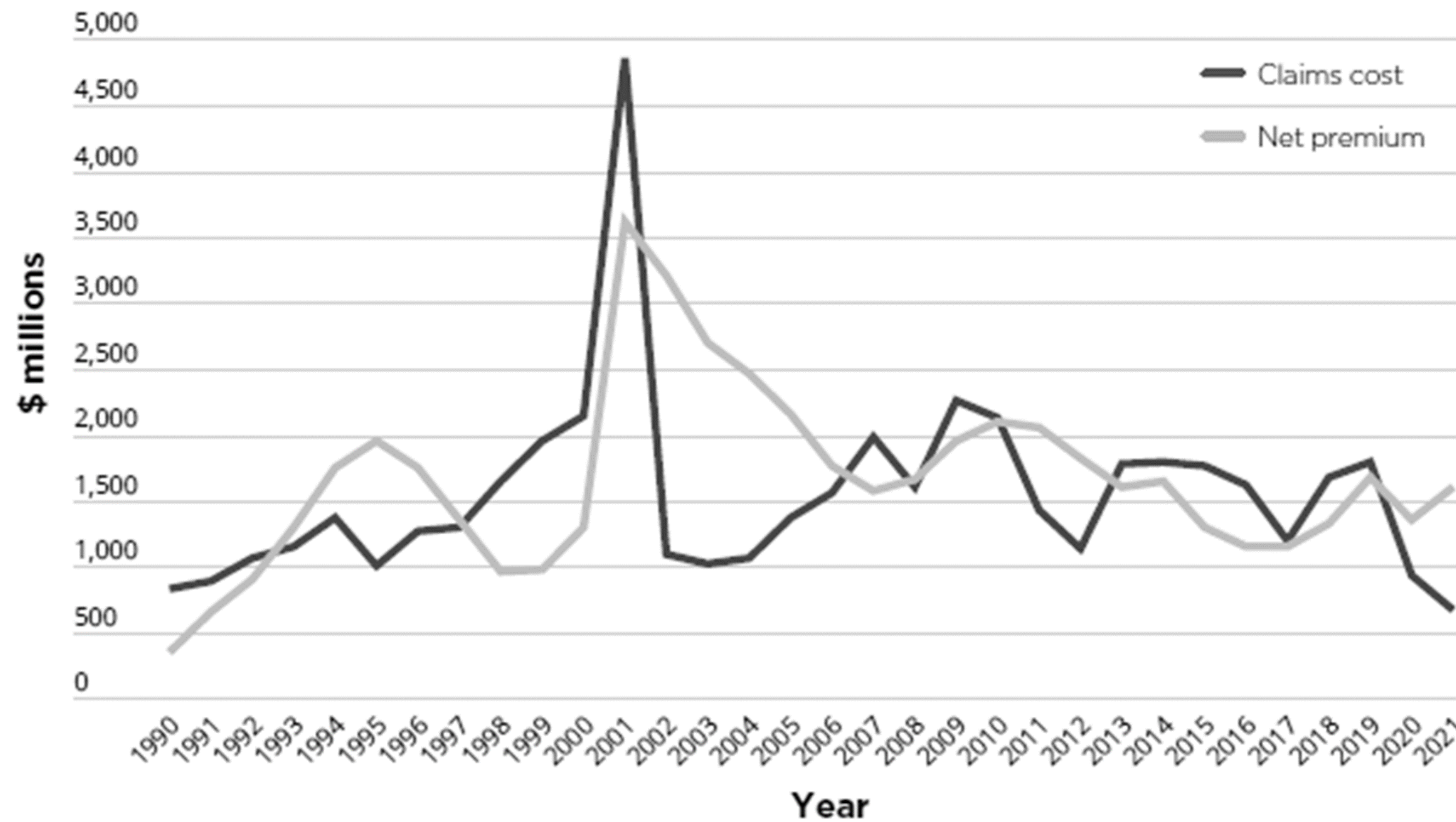
- Airline Hull & Liability
- Airline Hull War
- Airline XS 52
- Airline Deductible
- Aerospace Manufacturer
- Aerospace Service Providers
- GA

2021 Estimated Premium



Airline Hull and Liability 30 year record

Airline hull & liability claims cost and premium (excludes hull war & excess TP war)

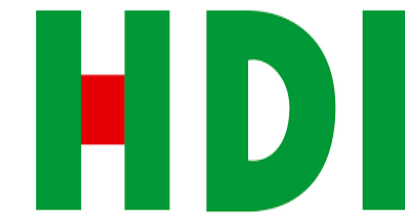


There was only one fatal jet airliner accident in 2021.

2021 was one of the safest on record although 2021 as a result of Covid was a year of reduced traffic and passenger numbers.

On this basis fatality rates were slightly below recent trends.

London and International Company Insurance Market



PartnerRe

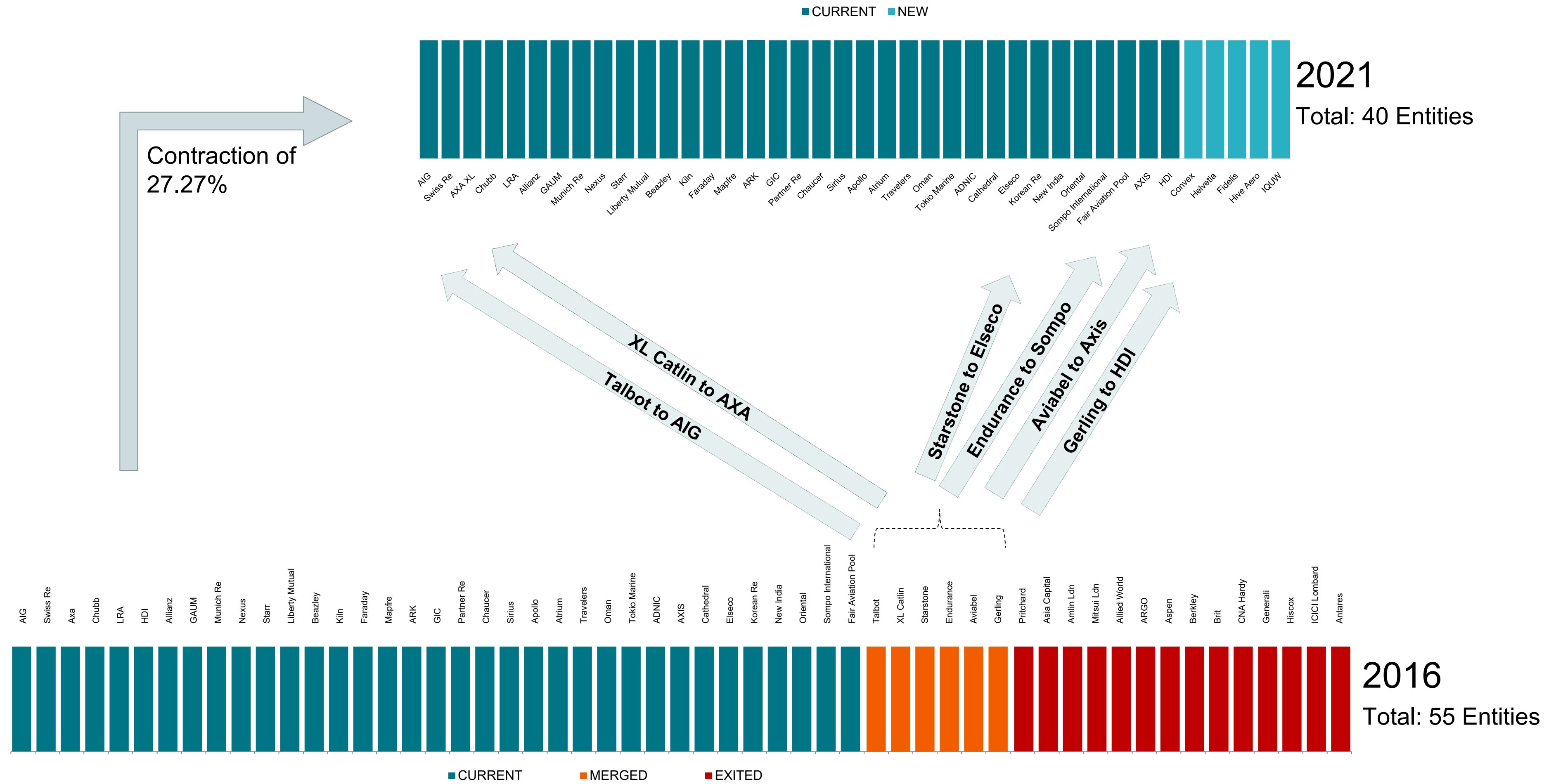


elseco



Insurance Market Capacity

Non-US Airline Consolidation & Contraction of Insurers 2016 to 2021



A contraction of capacity and a growing premium base highlights the importance of reinsurance

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Aviation Insurances

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Insurer Data needs

Key points for risk rating

Airline

- Fleet Schedule – aircraft type
- Estimated Average Fleet Value (AFV)
- Passengers and departures
- Maintenance provider
- Maximum agreed aircraft value
- Liability limits
- Pilot experience / training
- Geographical areas of operations and route network
- Claims history

Aerospace

- Estimated annual aviation revenue
- Description of parts manufactured or sold to allow insurers to assess criticality
- Domicile of the Insured and sales split per territory
- Limits of liability
- Aircraft movements (Airports/Air Traffic Control)
- Passengers (Airports and ground handlers)
- Throughput (Refuellers/Refiners)
- Claims history

General Aviation

- Value of Aircraft
- Risk appetite re deductible / excess
- Liability limits:- as required by EC785/2004 (if Europe) or higher
- Nature of operation
- Locations being flown to
- Are the aircraft hangered
- Maintenance providers
- Utilisation last and next 12 months
- Claims history
- Contract parties / financiers requiring specific contractual information
- Owned or Managed Aircraft
- Pilots:- OPW basis or named pilots or both
- Recurrency training for pilots
- Any Airside exposure
- Use of Unlicensed landing grounds

Hull All Risks

Hull and Liability policies are commonly based upon AVN1c although airlines will have bespoke variations on this Clause Coverage

Covers all risks of loss of or damage to aircraft including flight and ground risks for total or partial losses

Main Exclusions

- **Mechanical Breakdown/Wear and Tear**
- **War, Hi-jacking and Other Perils Exclusion Clause AVN 48B**
- **Nuclear Risks Exclusion Clause AVN 38B**
- **Loss of Use**

Sum Insured

- **Insured on agreed value basis (subject maximum hull value) -not an insured or market value
Possibly up to USD450m**

Jet Deductibles – not applicable to total loss / constructive total loss / arranged total loss

- **Wide-bodied US\$1,000,000**
- **Hybrid US\$ 750,000**
- **Narrow bodied US\$ 500,000**

Aviation Legal Liability

Coverage

Will indemnify against legal liability for bodily injury or property damage suffered by third parties (including passengers baggage and cargo) arising from the aviation operations of the airline and caused by an Occurrence (aircraft third party, passenger, baggage, cargo, aviation general third party (premises / hangarkeepers / products liability)).

What is an occurrence?

“Occurrence” means an accident, happening or event or a continuous or repeated exposure to conditions occurring during the period of this Policy which results in Bodily Injury and/or Property Damage neither expected nor intended from the standpoint of the Insured

Limits

Combined Single Limit (Bodily Injury/Property Damage/Personal Injury) of USD XXXXXXXXX for liabilities any one occurrence but in the aggregate in respect of products liability and subject to the following sub-limitations:

Third Party War and Allied Perils Liability AVN52E sub-limited between US\$50m to US\$350m

Maximum limit around USD2,500,000,000

Aviation Legal Liability

NON-AVIATION LIABILITY CLAUSE

This Policy does not cover the Insured's liability unless it arises from one or more of the following:-

- 1. Occurrences involving aircraft or parts or equipment relating thereto.**
- 2. Occurrences arising at airport locations.**
- 3. Occurrences arising at any other location in connection with the Insured's business of transporting passengers or goods by air.**
- 4. Occurrences arising out of the supply of goods or services to others (i) in connection with the use and/or operation of aircraft (ii) involved in the air transport industry.**

AVN 59

1.10.96

What determines the limit purchased?

Regulatory Requirements – EC785, HKCAD

Corporate Governance – balance sheet protection

Contractual Obligation – lease commitments / code sharing

Appetite for Risk – self-insured retentions / captives

Aircraft Type/Operation - jets/props domestic/international

Geographic Scope - domicile / area of operation

Aerospace coverages

Products Liability Coverage

Ariel Form and AVN98 are common market clauses

The Insured's legal liability to Third Parties for Bodily Injury or Property Damage arising from products or services provided to Third Parties by the insured

A common definition used is:

The possession, use, consumption or handling of any goods or products manufactured, constructed, altered, repaired, serviced, treated, sold, supplied or distributed by the Insured or his employees, but only in respect of such goods or products which form part of or are used in conjunction with aircraft, and then only after such goods or products have ceased to be in the possession or under the control of the Insured

- **Products do not have to be tangible items – services**
- **Occurrence based but the limit of indemnity applies in the annual aggregate**
- **The product is in use/circulation long after delivery**
- **Liability can remain for many years – “long tail” liability**
- **Usually no deductible - geared to catastrophe**

Addressing War Risk Exclusions – market solutions

Core Hull & Liability Insurance
but with War Exclusion Clause (AVN48B)

Hull & Allied Perils Insurance
LSW555D

Covers loss of or damage to aircraft by war and allied perils as excluded from all risks policy by AVN48B to the fullest extent available

War Liability Insurance
AVN52E

Primary War Liability and Excess Third Party AVN52 coverage as excluded from all risks policy by AVN48B to the fullest extent available

War coverage (ex primary liability), underwritten in specialist war & terrorism markets

Significant Hull War Losses

- Korean Airlines: 1983 Flight 007, lost off Sakhalin Island**
- Air India: 1985: Flight 182 Aircraft lost over the Irish Sea**
- Iran Air: 1988 Flight 655, A300 shot down by USS Vincennes over Strait of Hormuz**
- Kuwait Airways: 1990/91 Multiple loss of aircraft at KIA during Iraqi invasion**
- Ethiopian Airlines: 1996 In-flight hi-jack, aircraft lost off Comoros Islands due fuel starvation**
- World Trade Centre: 2001 American Airlines and United Airlines hijacked**
- Sri Lanka: 2001 Air Lanka fleet attacked by Tamil Tigers**
- DHL: 2004 Baghdad, aircraft irreparable following missile attack after take-off**
- Malaysian Airlines: 2014 MH370 and MH17**
- Libya and Pakistan: 2014 various aircraft damaged or destroyed by terrorists**
- Germanwings: 2015 Flight 9525, Pilot deliberate action to destroy the aircraft**
- Metrojet: 2015 Metro Jet bomb explosion on board after take off from Sharm El Sheikh**
- Ukraine Airlines: 2020 Ukraine Airlines flight PS752, B737-800 shot down**

Hull War and Allied Perils – LSW555D

Covers loss of or damage to aircraft by war and allied perils as excluded from all risks policy by AVN48B, including

- **War, invasion, civil war, rebellion, revolution, military coup etc**
- **Strikes, riots, civil commotion**
- **Acts for political or terrorist purposes**
- **Malicious acts**
- **Confiscation/requisition of aircraft by Government (other than govt/state of registration), etc**
- **Hi-Jacking**

BUT NOT:

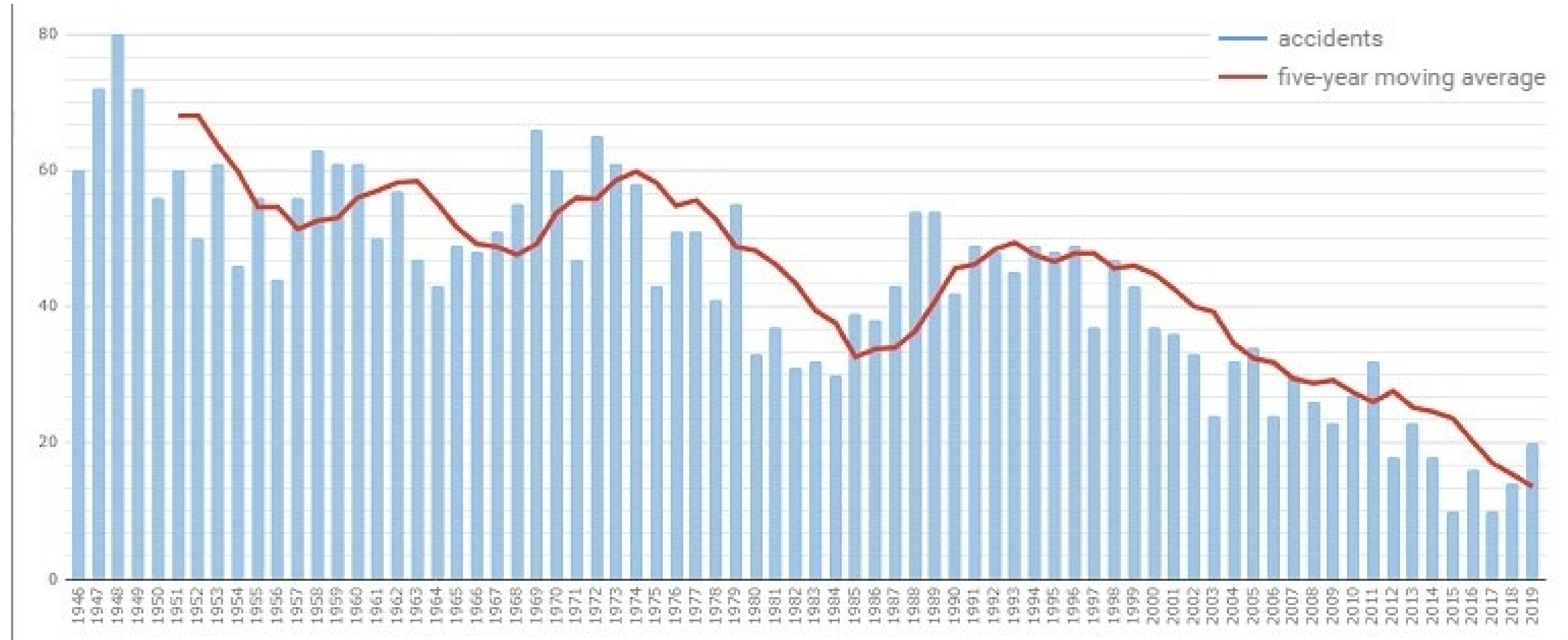
- **b) Any hostile detonation of any weapon of war employing atomic or nuclear fission and/or fusion or other like reaction or radioactive force or matter**

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Aviation Claims



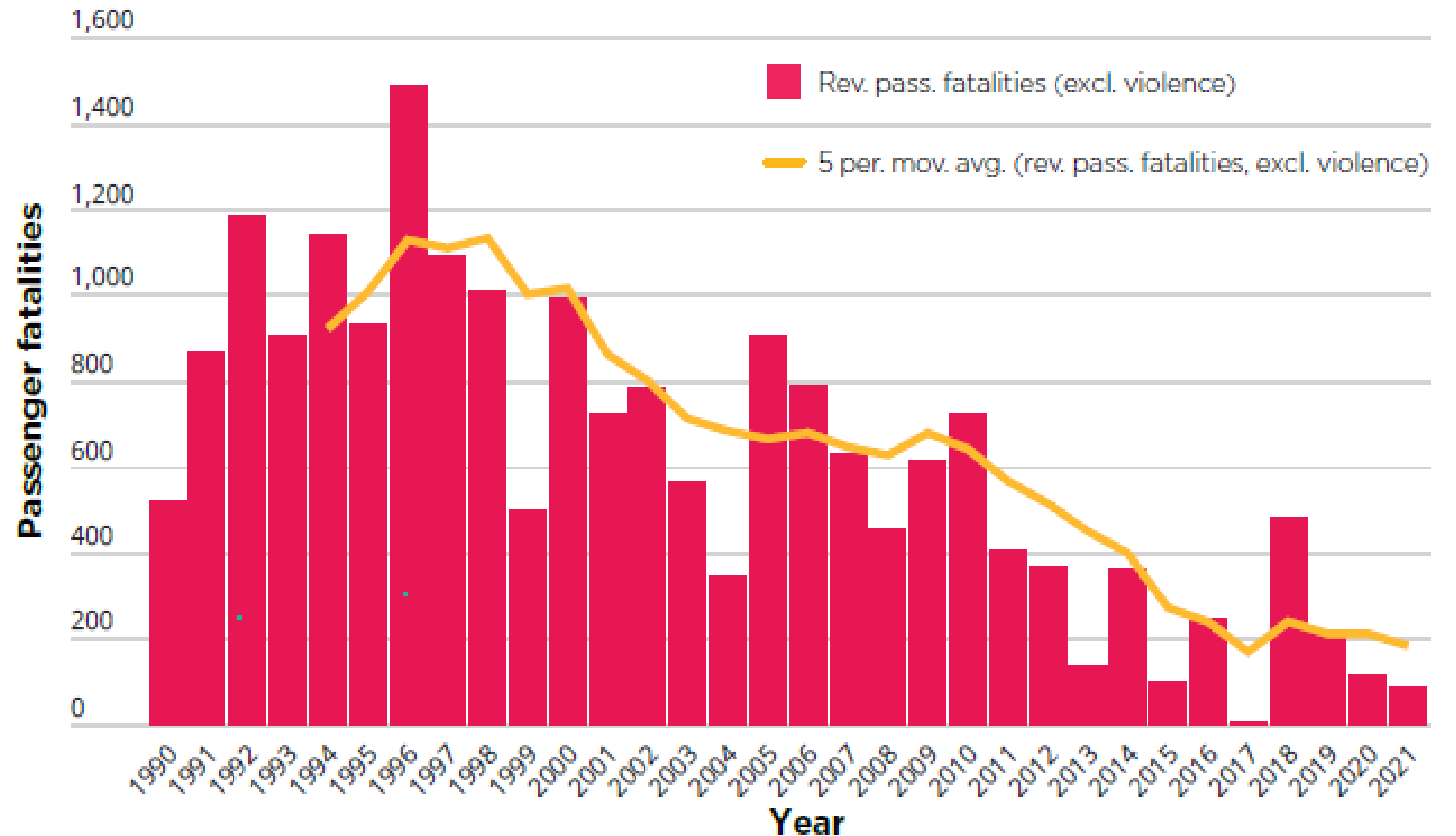
Number of airline accidents



Passenger Fatalities on Revenue Flights

2021

The annual average number of passenger fatalities for the last decade (2010-2019) is 303.5, less than half the average for the previous decade, which was 680.4, and very considerably less than the average for the 1990s, which was 962.0. The average for the 1970's was 1,289.3.



Jet and turboprop aircraft of more than 14 seats

Bodily Injury and death claim settlements - variants

Different countries = different rules

Victims are “worth” different amounts according to insurance industry standards and national expectations

Social level, income, surviving spouse, children, “extended” family and dependents, future expectation, culture, religion,...

Material damages (quantifiable), moral damages (bereavement “loss”)

U.S. Jury “sympathy” decisions

Example –

Law360 (October 25, 2021, 9:59 PM EDT) –

A Texas state jury awarded against Allied Aviation Fueling Co. of Houston Inc. and one of its drivers a \$352.8 million verdict

Eleven of the 12 jurors agreed that Allied was 70% responsible for the September 2019 accident that left Ulysses Cruz, who was 48 at the time, a paraplegic, while van driver Reginald Willis is responsible for 30% of the injuries. Cruz was found not at all responsible for the accident. Allied was negligent for its failure to properly train Willis, the jury found.

Future physical pain: USD\$70million

Past physical pain and mental anguish: USD\$15 million each

Past physical impairment: USD\$15 million

Past disfigurement: USD\$10 million

Future mental anguish: USD\$70 million

Future medical expenses: USD\$30 million

Future physical impairment: USD\$35 million

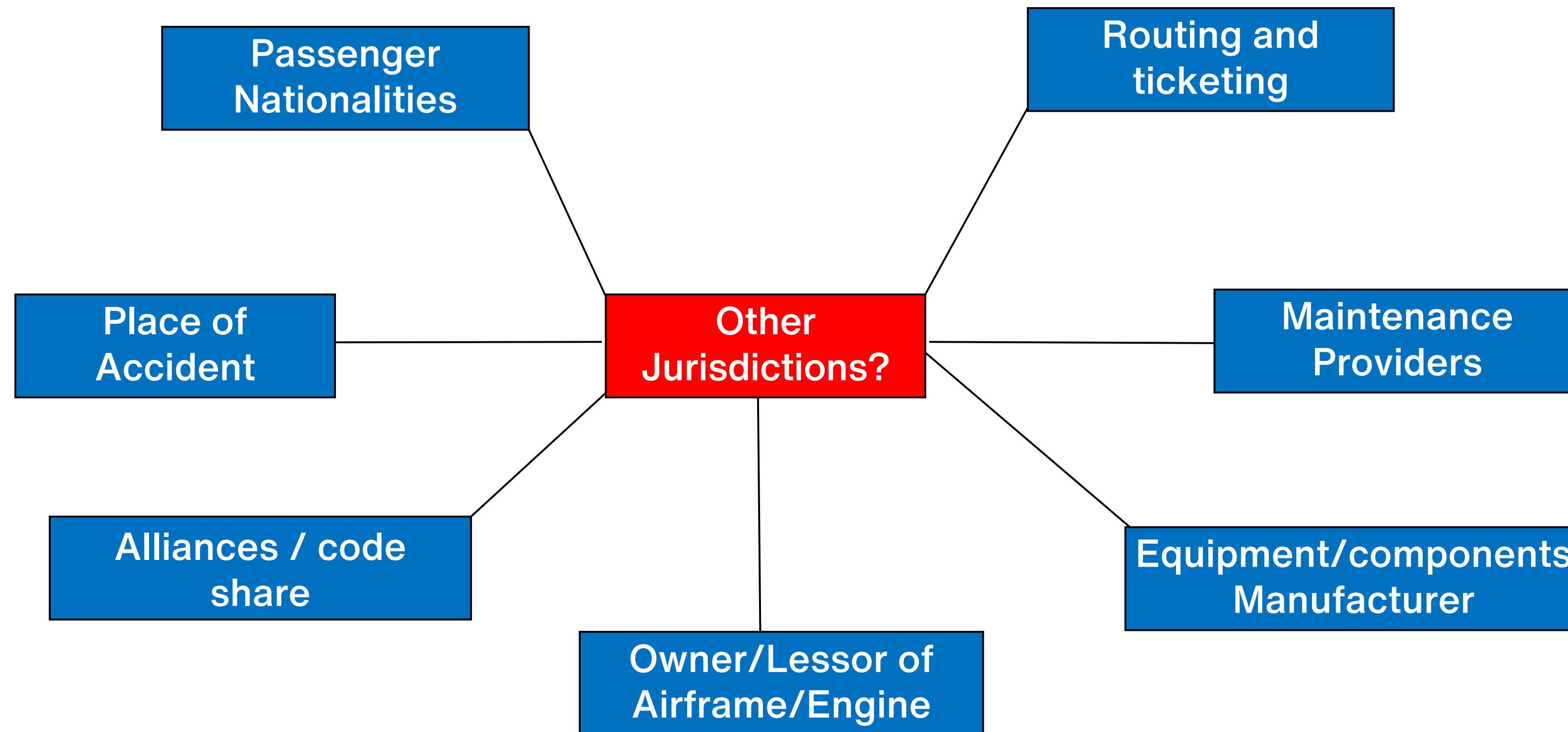
Future disfigurement at \$22.5 million

Average Compensation in USD

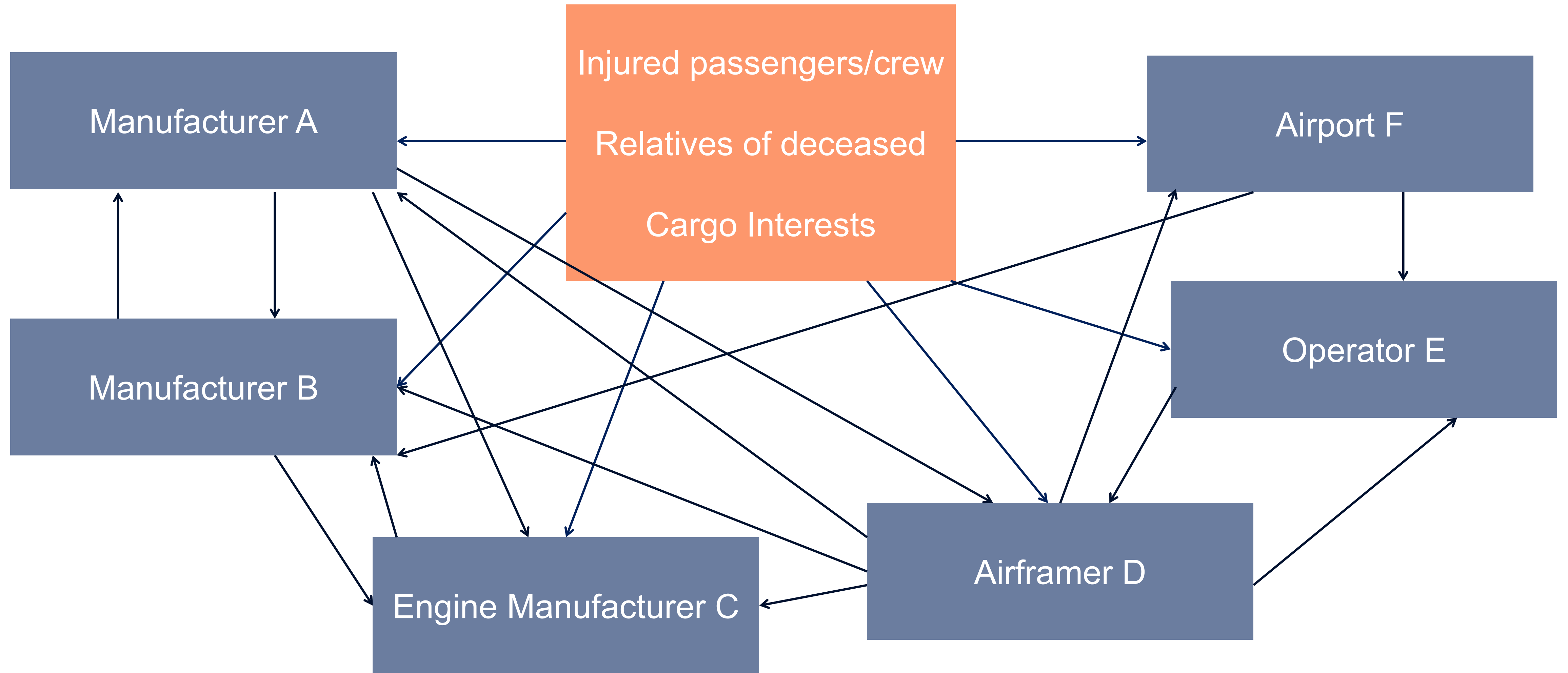
Country	Low	High	Average
Canada	600,000	1,000,000	800,000
USA	2,750,000	10,000,000	6,375,000
Caribbean	500,000	1,000,000	750,000
South America	50,000	5,500,000	2,775,000
Western Europe	500,000	4,500,000	2,500,000
Former CIS	50,000	500,000	275,000
Indian Sub Cont.	20,000	500,000	275,000
Africa	100,000	500,000	300,000
Middle East	40,000	1,500,000	500,000
Asia	60,000	3,200,000	1,630,000
Australia – Pacific	200,000	1,500,000	850,000
Japan	1,500,000	3,500,000	2,500,000

Source: Holman Fenwick and Willan

Forum Shopping



Source: Holman Fenwick Willan



Claim example

Claim by Ethiopian Airlines for B787 fire damage, July 2013

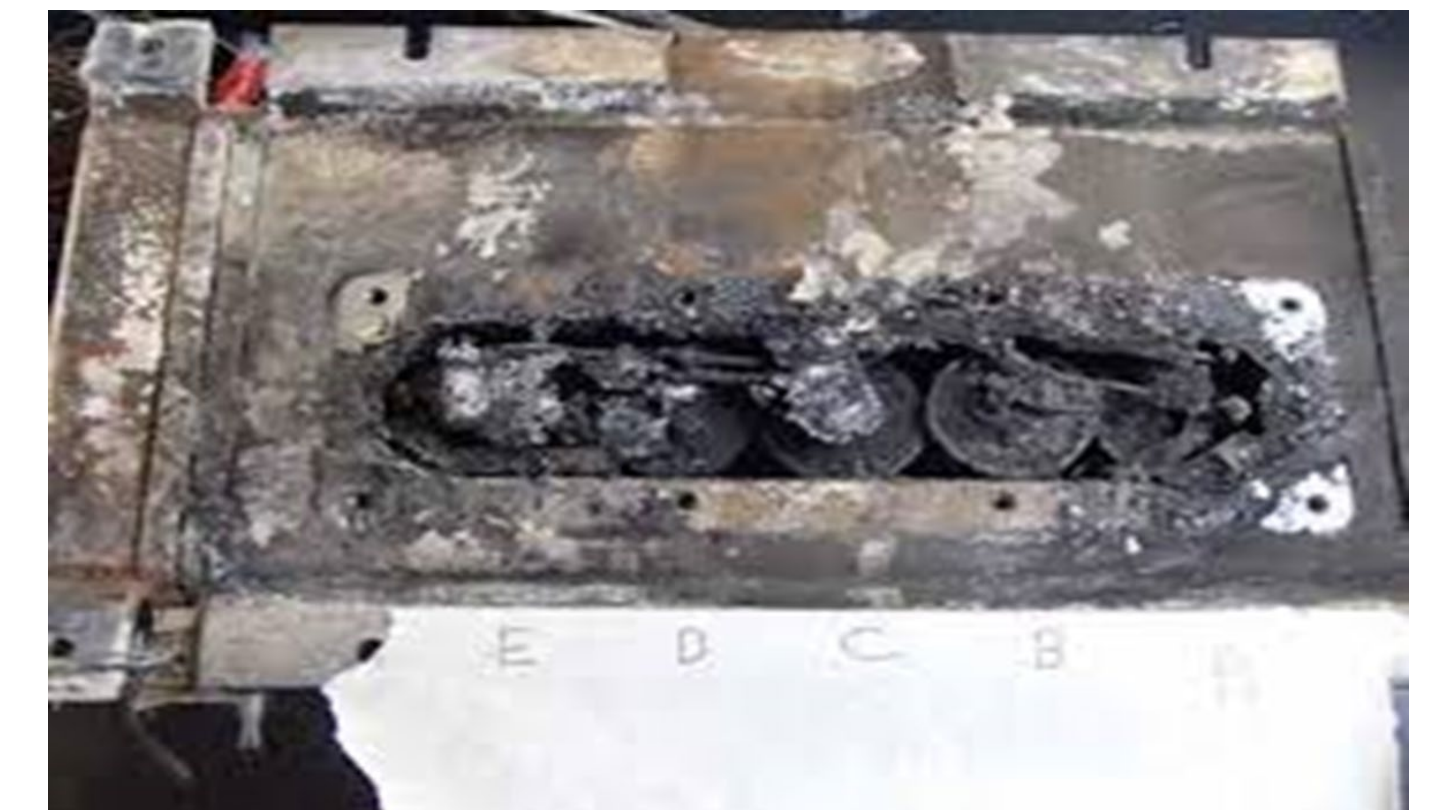


Claim for USD60m repair and other losses

AAIB investigation – lithium battery in emergency locator beacon

Claims made against:

- Manufacturer of beacon
- Manufacturer of lithium battery
- Manufacturer of battery casing



6

Russia / Ukraine Conflict

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Russia invasion of Ukraine

- **Russia invades Ukraine 24th February 2022**
- **EU imposes Sanctions 26th February – preventing any insurance of an asset within Russia or operated by Russian entity**
 - *“3 c 2. It shall be prohibited to provide insurance and reinsurance, directly or indirectly, in relation to goods and technology listed in Annex XI to any person, entity or body in Russia or for use in Russia.”*
- **Requires all Lessors to terminate leases with Russian airlines and take back all aircraft by 28th March 2022**
- **Russian airlines have 980 passenger jets in service, of which 777 are leased, of which around 515 jets, with an estimated insured value of about \$10 billion, are leased from western lessors (Courtesy CIRIUM).**
- **Bermuda, Ireland and other countries suspend aircraft registrations and certificates of airworthiness**
- **14 March: Putin puts into law that aircraft are now registered in Russia and can continue to fly domestically**
- **Around 20 lessors are affected with aircraft in Russia or Ukraine**
- **Some have now submitted claims to the insurance markets – for either Theft or confiscation: AERCAP USD3.5bn**
- **July 2022: AERCAP, the largest global Lessor, filed lawsuit against insurers. AIG/LIC answered that there is no proof of total loss, Sanctions Clause prevents any payment, no accurate representation of actual loss.**

AVN48B exclusion:

Confiscation, nationalisation, seizure, restraint, detention, appropriation, requisition for title or use by or under the order of any Government (whether civil military or de facto) or public or local authority

- **But written back into most Hull War Policies**

Conclusion – Summary of Learning Objectives

Now we are at the end of this session I hope that attendees:

- understand the specific risks of this class of business
- be familiar with the breadth of insurance coverage provided by insurers
- see the typical limits and exposure purchased by the Aviation Industry and provided by insurers
- appreciate the issues faced by adjusters and lawyers working for the insurance market, where coverage is provided and the level of indemnity and liability incurred

Aviation Clauses -

http://www.aicg.co.uk/AICG_Web/Activity.aspx

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Thank you: any questions?

13th October 2022