# MANAGING RISKS IN BUSINESS AVIATION

### A PRACTICAL GUIDE 2018





### Disclaimer

The information provided in this publication is general and may not apply in a specific situation. Professional advice should always be sought before taking any action based on the information provided. This information is not intended to create, nor does receipt of it constitute, an insuranceclient relationship. The EBAA and contributors accept no responsibility for any acts or omissions contained herein. Although the information provided is accurate as of May 2018, be advised that this is an evolving area.

### **Introductory Note**

We are delighted to present the booklet "Managing Risks in Business Aviation".

It has been a collaborative work between various stakeholders from the industry including insurers, insurance brokers, operators and lawyers. The European Business Aviation Association identified with its members a real need to improve understanding on risk management and insurance implications for operators. Through this project, we have had the chance to gather expertise from key professionals in the industry. We trust this work will bring knowledge to a diverse range of readers including business jet owners, operators, air service providers, lessors and banks as well as end customers including passengers using business aviation as a tool to be more efficient in their daily work.

In the booklet you will find details on the multiple insurance implications that form part of the Risk Management process at different stages of the operation. Our main focus has been to make key information accessible to any participant of the Business Aviation value chain to contribute to reinforced safety.

We are convinced that all Risk Management investments performed by each of us should be recognized and encouraged by the whole industry.

# Summary

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We extend our warmest thanks to all who contributed to this work and we recommend readers to stay in touch with risk management and insurance professionals to keep an accurate vision and understanding of the risks they are exposed to in the course of their activities.

Safe flight to you!

#### Simon Tardif

SWISS RE CORPORATE SOLUTIONS Chairman of the AMAC Insurance Subcommittee

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### **History of Aviation Insurance**

The history of aviation insurance closely follows the growth in aviation - all too quickly intrepid pioneers realised the value of insurance if (or perhaps, when) their flying machines crashed!

Despite the demonstrable risks posed by these early flights, insurance providers were willing to provide rudimentary insurance policies from the 1910s onward. These early providers were based in Germany and Italy as well as in the City of London.



The 1929 Warsaw Convention marked a significant milestone in the aviation insurance sector, establishing the principle of liability for passengers, boosting demand for aviation liability insurance which remains today, essentially, the only legal requirement for aircraft owners and operators, globally. EC regulation 785 in 2004 more formally "updated" minimum liability limits for all aircraft types including business aviation aircraft.

As scheduled passenger air travel began to expand after 1945, the need to "spread" aviation risks between insurers increased. These insurers needed to be recognised by national organisations.



The dual launch year of the Concorde and Boeing B747 in 1969 opened a new chapter in commercial aviation that has ultimately led to the globalisation of mass passenger air travel enjoyed today. At the same time, aviation insurance providers needed to widen and deepen their sector involvement, to diversify their risk base.

For aviation insurers, providing policy cover for the business and private aviation sector has always been a

critical element of their product portfolio – a logical extension to commercial airline insurance. The business or private aviation sector has grown in parallel to the commercial aviation sector although at a far smaller scale; the risks are largely the same as commercial aviation but with smaller exposures.

The relative size and scale of the business aviation sector has historically supported domestic insurance markets, resulting in the majority of business aviation / general aviation risks being insured in local, domestic or regional insurance markets; providing an entry level exposure to commercial airline insurance products.

Business Aviation insurance is built on three crucial foundations that are culturally typical of the sector it supports:

- Personal, individual relationships
- A community that works best when working together; and
- The willingness to adapt and change to meet the future.

Business aviation insurance will undoubtedly continue to learn from history to shape the future.



- 1783: First balloon Flight Montgolfier
- **1900:** First Zeppelin flight
- **1903:** First powered, manned, heavier than air, controlled flight – Wright Brothers
- **1910:** Start of rudimentary insurance policies
- **1927:** First solo transatlantic flight Charles Lindbergh
- 1929: Warsaw Convention
- **1945:** Aviation Risks begin to be spread between different carriers
- **1949:** First passenger jet airline with a "de Havilland Comet"
- 1954: Crash of BOAC Havilland Comet near Elba
- **1969:** Launch of B747 and Concorde: Mass passenger Air Travel
- **1977:** Tenerife Airport Disaster Collision of 2 Boeing 747
- 2001: 9/11 Attacks
- 2009: Crash of Air France flight 447
- **2014:** Crash of Malaysia Airlines flight MH370

# **Market Participants & Insurance Process**

A graphical representation and brief description of the key stages and participants in the insurance process.



Insurers / Underwriters will also purchase reinsurance protection on an entire portfolio of business. The Local Insurance Company may not be able to insure 100% of the risk and may require reinsurance support.

insuring a percentage share which

in total adds up to 100% of the risk

insured.

### **Insurance Glossary**

**Air Carrier** means an air transport undertaking with a valid operating licence in accordance with the relevant and applicable legal framework. A Community air carrier therefore means an air carrier with a valid operating licence granted by a EU Member State in accordance with the Regulation (EEC) No 2407/92.

**Aircraft** means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface (ICAO Convention, Annex 7).

**Aircraft operator** means the person or entity who has continual effective disposal of the use or operation of the aircraft. In this respect, the entity or corporation in whose name the aircraft is registered is presumed to be the operator, unless the latter can prove otherwise.

**Bodily Injury** means bodily injury, sickness or disease including death at any time resulting therefrom.

**Certificate of Insurance:** Document issued by the Insurer or the Insurance Broker which certifies the existence of insurance coverage and shows an abstract of the most important provisions of the Policy (e.g.: policy period, type of insurance coverage, sum insured).

**Chicago Convention:** The Convention on International Civil Aviation, signed at Chicago on 7 December 1944. It established the International Civil Aviation Organization (ICAO). The Chicago Convention is accompanied by 19 annexes on technical topics (from training to accidents investigations).

**Commercial operations:** The notion of commercial operation means an operation in return for remuneration or other valuable consideration, which is available to the public or, when not made available to the public, which is performed under a contract between an operator and a customer.

**Deductible:** The amount which is borne by the insured/ policyholder.

**Fixed Based Operator or "FBO":** An entity authorized to operate at the airport or nearby in order to provide support services such as fuelling, parking, maintenance, etc. to operators **Flight** means from the time the Aircraft moves forward in taking off or attempting to take off, whilst in the air, and until the Aircraft completes its landing run. A rotary-wing aircraft shall be deemed to be in Flight when the rotors are in motion as a result of engine power, the momentum generated therefrom, or autorotation.

Ground means while the Aircraft is not in Flight.

**Hull insurance:** The Hull insurance provides coverage in the event of a loss or damage to the insured aircraft. It may also cover covers fire, theft.

**Insurance Broker:** An entity or individual registered and/ or licensed as an adviser in accordance with the national regulations which role is to arrange an insurance cover with one or more insurers on behalf of a client.

**Insured:** A person who is insured under a Policy. Where there is one insured this person may also be referred to as the policyholder.

**Insurer:** Company that provides coverage, in the form of compensation resulting from loss, damages, injury, treatment in exchange for premium payments.

Liability insurance: Coverage written to cover all sums which the Insured shall become legally liable to pay as compensatory damages for Bodily Injury and/or Property Damage to Passengers, baggage, cargo and Third Parties caused by an Occurrence arising from the Use of the Aircraft by the Insured.

**Management Company:** An entity that offers a full spectrum of services and solutions in relation to jet aircrafts operation (such as Crew employment, HR, Training, Fuel purchasing, Flights planning and coordination, Finance and Compliance administration, etc.) to owners or users.

**Montreal Convention:** The Convention for the Unification of Certain Rules Relating to International Carriage by Air, agreed at Montreal on 28 May 1999. Its article 50 provides that air carriers shall be adequately insured to cover liability under that Convention. The Montreal Convention is expected to replace the rules of the Warsaw Convention of 1929 and its subsequent amendments.

**"MTOM":** Maximum Take-Off Mass as specified in the certificate of airworthiness of the aircraft. It triggers the various applicable insurance bands and the specific insurance levels under the Regulation (EC) No 785/2004.

**Occurrence** means an accident or a continued or repeated exposure to conditions occurring during the Period of Insurance, which results in Bodily Injury and/or Property Damage which is neither expected nor intended from the standpoint of the Insured. All liability arising out of such exposure to substantially the same general conditions shall be deemed to arise out of one Occurrence

**Passenger:** Any person who is on a flight with the consent of the air carrier or the aircraft operator, excluding on-duty members of both the flight crew and the cabin crew.

**Policy:** The insurance contract between the Policyholder and the Insurer.

**Premium:** The amount of money paid in consideration of the insurance coverage. The Premium is determined and assessed by reference to various data and factors in relation to the Insured's situation, history and background.

**Property Damage** means physical loss of or damage to or destruction of tangible property, including the resultant loss of use of such property.

**Regulation (EC) No 785/2004:** It refers to the "Regulation (EC) No 785/2004 of the European Parliament and of the Council of 21 April 2004 on insurance requirements for air carriers and aircraft operators". Enacted in the aftermath of the 9/11 attacks, the Regulation ensures a proper minimum level of insurance to cover liability of air carriers in respect of passengers, baggage, cargo and third parties.

**SDR" or Special Drawing Right:** This currency has been created by the International Monetary Fund (IMF) in the 70's to supplement its member countries' official national reserves. Its value is set by reference to a pool of 5 major currencies being the US dollar, the euro, the Chinese renminbi (RMB), the Japanese yen, and the British pound sterling.

**Sum Insured:** The maximum amount that an insurer will pay under a Policy.

**Third Party** means any legal or natural person, excluding passengers and on-duty members of both the flight crew and the cabin crew.

**Total Loss** means: physical damage to the Aircraft where in the opinion of Insurers:

(i) the Aircraft is damaged to such an extent that it cannot be repaired; or

(ii) the cost of repairing the Aircraft is estimated to exceed its Agreed Value.

**Uses of Aircraft:** Details of the use of aircraft as declared to Insurers.



# The Risk in Business Aviation



# Aircraft purchase and contractual obligations



### Aircraft preparation at home base

Managing Risks in Business Aviation – A Practical Guide



There are various risks to be considered at different stages of the aircraft lifecycle. Elements of risk appear from initial aircraft delivery (purchase, contractual obligations) to its utilization (preparation at home base, ground handling and in-flight operations).

In this context, several risks could be transferred to insurance professionals such as damage to Hull of the Aircraft, Liabilities towards Third Parties or Passengers and Personal insurance for Crew members.

It is important to mention as well that many insurance aspects should be dealt with by specialized lawyers, who's role is to make sure that the contract, in its diverse aspects, respects the law of, in many cases, different countries.

The insurance industry has been working proactively for decades to find the most suitable solutions for each insured to provide increased reactivity, financial security and capacity. The Business Aviation industry has proven to be an evolving sector and as such is demanding on innovation, leading many participants in the field to improve and re-invent their products and commitment on the long-term basis.

The members of our working group have diligently contributed to the contents of this booklet from their own very diverse experience. As risk professionals, they remain eager to act efficiently and keep improving understanding of the business from the experts involved in flight and ground operations. We invite you to share with us your own experience of risk.



**Ground Handling & Parking** 

Aircraft En Route

# Aircraft Purchase & Contractual Obligations



#### When purchasing an aircraft

- The obligation to be insured usually commences at the time of the transfer of risks, which matches the transfer of title of ownership (which is evidenced by the bill of sale of the aircraft; manufacturers set accurate and complex delivery processes). It is at this stage the owner of the aircraft is obliged to be insured.
- The Purchaser must have taken all steps to make sure the aircraft is covered at the time of the transfer of risks. To evidence that all steps have been taken, the Purchaser will present a certificate of insurance, which summarizes his insurers coverage.

#### When leasing an aircraft

- The obligation to be insured usually commences at the time of delivery, where the lessee must present the insurance certificate and letter of undertaking.
- The Lessee is obliged to comply with the insurance conditions set by the Lessor. Lessors usually require an agreed hull value which is higher than the actual value of the aircraft.
- In addition, the Lessor will usually impose requirements as to the insurer's standards (valid, recognized security).
- At the time of the termination of the lease, the Lessor will usually impose a "Run-off" certificate according to which the Lessee's insurers will continue to cover risks arising out of the lease term for an agreed period of time.





#### When financing an aircraft

- Financiers are usually additional insured under the AVN 67 clause provisions according to which such finance parties will be paid directly in case of loss.
- Such coverage is usually capped to an agreed value.
- AVN 67 grants privileges to the financiers, in order that a breach of the policy by the insured will not invalidate the coverage in favour of the finance parties.

#### **Insurance certificates**

- Insurance certificates must be presented to Buyers, Lessors and Financiers. Such certificates summarize the coverage.
- Purchasers and Lessees must take the time to verify that they are properly insured and that the certificate reflects the underlying policy.
- Over the life of an aircraft, its ownership is often transferred, especially in the lease industry, by novation agreements. One must carefully review that the history of ownership, finance and underlying securities is updated at the time of each new transaction.



# **Aircraft Preparation at Home Base**

#### 1. Aircraft under Hangar

- Third party damaging the aircraft: another aircraft, mechanics, etc.
- Hangar itself: falling roof (due to weather or other), fire damage, flooding / water damage
- Handling / towing ex: damage to an aircraft being towed, wingtip hitting the hangar door ex: during handling manoeuver, towing twisting the nose landing gear





#### Questions to be asked to avoid or prevent risk:

### Check / ask who and how the hangar is covered

- Are there any waiver of recourse asked or signed with the hanger provider
- Do they have coverage for aircraft under hangar?

### Handling / maintenance / towing: who is the supplier?

- Did we read carefully and duly negotiate the contract with our supplier, which may be an independent handling agent or the airport?
- Does such contract include a SGHA, what is the handling agent liability limit and coverage, etc?

#### 2. Aircraft taxing

- Handling: during towing or guided by handling / marshaller, hitting a fence, hangar, wall etc.
- Hitting or being hit by motor vehicle, aircraft (any third parties).



#### 3. Aircraft parked

- Weather: ex: hail storm, etc
- Forgetting the chocks, so the aircraft is moving on its own until hitting a fence, or wall, or building...
- Any motor vehicle that hit the aircraft .
- Third party aircraft hitting the parked aircraft, or producing such blast it can damage the other aircraft (projection of stone, ....).
- **Preparation for flight:** among others, use of improper product, toilet servicing mistake, wrong type of fuel, fuel trap badly closed...









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Ground services are defined as any assistance provided to an aircraft at an airport in preparation for and in conclusion of a flight and include:

- Passenger and baggage services: check-in, boarding and gate arrival services, customer service counters and lounges, baggage sorting and loading.
- During embarking or disembarking an international flight, if a passenger is injured he will be indemnified as if in flight, without having to prove negligence of the FBO. A passenger is considered to be embarking even if the boarding pass has not been remitted to the air carrier.
- Services provided to aviation crew require a special risk assessment.
- **Ramp services** support the aircraft between the time it arrives at a terminal gate and the time it departs: fueling, aircraft towing and push-backs, de-icing, catering and cleaning.

Most of the time, the operator and the ground handling company sign a Standard Ground Handling Agreement (SGHA) that limits the liability of the ground handling company for material damage and excludes its liability for any consequential damage in case of an accident/incident in the course of the ground handling operations. In certain jurisdictions, the limits of liability of the SGHA may not be enforced.

#### 1. Ramp Service Operations and Parking

- Aircraft grounded for structural repair because the ramp service operator moved a loading bridge while the ground power plug was still connected to the aircraft and therefore damaged the aircraft receptacle;
- During a push back, the push tractor slid on the ice of the taxiway, skidded around the tow bar and collided with the aircraft. The lower left hand part of the Aircraft's fuselage was damaged;
- Under instruction from the ground agent, the engine thrust of an aircraft leaving its airport parking area blasted several shop windows.



### 2. Damage to third party aircraft or property

- Collision of the wing of an aircraft being towed by a ramp service company and the nose of a parked aircraft;
- A ground agent guiding an aircraft failed to anticipate that the engine thrust would project luggage being loaded on another aircraft;
- Under instruction from the ground agent, the engine thrust of an aircraft leaving its parking destroyed several shop windows.

#### Question to be asked in order to further assess FBO risks

- If aircraft are hangered in a hangar belonging to a third party, how is the liability of the hangar owner covered and what are the limits of insurance?
- Check whether the ground handler liability is limited in case of damage to the aircraft;

#### **Preventing risks and Insurance Solutions**

- Consider a Hull and third party/passenger liability Policy (which should also cover damage on the ground):
- If you supply or store aviation fuel or chemicals on airport grounds, this will not be covered by most aviation policies.
   You will need a specific environmental insurance to cover pollution clean-up, third party claims for bodily injury and property damage etc.
- Make sure your FBO is well covered by an "Aviation Products, Grounding and Other Aviation Liabilities Insurance". This insurance does not apply when the insured's own aircraft or property is damaged, or when the insured is engaged in the operation of the aircraft as an air carrier or a pilot. However it will protect the FBO (and therefore also the operator) for damages:
- to customers or others
- for bodily injury or material losses
- caused by an accident
- occurring during the performance of their aviation ground services

This insurance will also apply to accidents caused by a motor vehicle of the ground handler when they occur on the airside (or air traffic) grounds of an airport, and if:

- they occur in a country where motor vehicle insurance is not legally required (and the FBO does not have one by choice);
- or when damages exceed the limit of the motor vehicle insurance in place.



### Aircraft en Route

#### 1. Improper Pilot qualification/training:

- Crew fail to follow the remediation procedures set out by the aircraft manufacturer in case of one engine failure at take-off: after an engine failure the pilot is supposed to turn off the engine to avoid fire, in one case, the pilot turned off the wrong engine - the one that was still working...
- Crew failed to interpret correctly flight directors when trying to land during very bad weather conditions younger co-pilot failed to challenge the pilot: issue of crew resource management;
- An aircraft seemed to have run out of fuel and pilot carried out an emergency landing on a public highway that led to structural damage to the aircraft (total loss). The accident investigation proved that the owner of the aircraft had bought an auxiliary fuel tank to increase the plane's range and the Pilot, who was not qualified to do so, connected the auxiliary fuel tank but omitted to test connection between the right wing fuel tank and pipe leading to the fuel supply cock. The pilot had therefore not discovered the erroneous connection of hoses before the flight. Flight was executed without testing correct functioning of fuel supply and fuel in right wing tank could not be used.
- Unruly passengers (eg. on charter flights)

### 2. Mid-air collision with another aircraft, pilot did not respect the rule of the air;

- Misconduct by ATC
- Misconduct by pilots

Potential operator liability for inadequate pilot training

#### 3. Other

- Both pilots' sickness
- Suicide (German Wings 9525)
- Wake Turbulence that can result in either a structural damage to the aircraft or loss of control (the latter may potentially lead to a crash)
- Cargo issues (such as dangerous goods)

Operator potentially liable for not taking into account pilot's mental health conditions;

#### 4. Human error from third party

#### Maintenance

- After touchdown the nose landing gear of an aircraft unexpectedly retracted and thereby control of the aircraft was lost and resulted in a collision. Investigations deemed that the landing gear was probably damaged upon retraction after takeoff by a foreign object, later known to be a tool left inside the gear bay after the 50-hours inspection carried out by the maintenance company
- Electrical breakdown (e.g. smoke in the cabin, SWR111 / Halifax)

#### Landing issues / Airport liability

- Contaminated runway: ice, snow that led to a collision of the aircraft (passenger injuries and damage to aircraft: Company in charge of managing the airport did not comply with its maintenance and monitoring duties of the movement areas);
- Collision with a person while landing resulting in death airport failed to prevent people from crossing the runway.

#### Preventing risks and Insurance Solutions

- Purchase Hull and third party/passenger liability Policy;
- Make sure your pilots have the adequate training qualification (and also attend crew resource management training);
- Make sure to have extended contractual warranty from the aircraft manufacturer.
- Make sure to have a Noise policy and war risks policy

### Aircraft en Route

#### 5. Technical reason

- One engine failure after take-off leading to a forced landing that damaged the aircraft, the remediation procedure of the aircraft manufacturer was followed perfectly by the pilots but did not permit avoidance of damage to aircraft
- Performance restrictions (high speed stall / low speed stall, AF447);
- Pilots experience a technical problem in getting the left hand main landing gear locked down so that the aircraft touched down first with the right main landing gear, then with the left main landing gear only partially extended, and finally with the nose landing gear.

Damage to the aircraft



#### 6. Collision

- Collision with drones (UAV);
- Bird strike (both engines): the Hudson River story;

#### 7. Weather hazard

- Lightning strike
- Hail storm;
- Volcano, ash clouds
- Turbulence due to meteorological conditions

Aircraft damage and potential injury to passengers

#### 8. Ground damage

- Crash/forced landing but also object dropping/falling from the aircraft;
- Noise damage (could result in fine by local authorities);
- Ground contamination

#### Miscellaneous

- Laser attacks
- Cyber attack
- War risks (missiles, MH17/Ukraine)
- Hi-Jacking
- Diversion to dangerous countries

#### Hull War

- Your hull all risks insurance policy will typically exclude war or war-like risks. These can be written back under a specific hull war insurance policy. This policy will cover you for malicious acts against your aircraft(s), including confiscation or detention, as well as vandalism. Adequate hull war insurance is usually a legal requirement.
- You or your clients may have business in difficult or distressed territories. In addition to covering you for the war risks whilst operating to these countries, hull war insurers may be able to assist with advice regarding threats to your aircraft or personnel.



# To Do in Case of an Incident



#### 1. Notification of incident/accident

The terms of your insurance policy require that you make immediate contact with your broker and/or insurer after an accident has occurred. You will need :

- to provide your contact details, the aircraft registration number and manufacturer serial number;
- to state when and how the incident/accident occurred;
- to indicate where the aircraft is located.

These first elements will enable your broker and insurer to confirm coverage of your loss.

#### 2. Accident investigation

- Take all reasonable steps to ensure a proper investigation and evaluation of every accident which may be covered under your policy. Your insurer will investigate the circumstances of the accident and may elect to appoint a loss adjuster and/or outside legal counsel.
- If a loss adjuster is appointed, he/she will collect the information required to confirm that there is a valid claim under the policy and to assess the level of hull damage.
- In respect of liability claims, where third party property damage or bodily injury has occurred, especially in the event of known or suspected deaths or serious injuries, your insurer may instruct outside legal counsel to represent both your and insurer's interests.



• You should also consider the need to disclose information upon governmental authorities' request for purposes of investigating the accident. This should be coordinated with the adjuster and/or legal counsel.



#### 3. Cooperation

Make sure to involve your insurer in the investigation, evaluation, settlement, defence and/or handling of any accident or claim or proceeding that may affect your insurer's liability.

You must "fully" cooperate with your insurer by providing access to all relevant information and granting him the opportunity to participate in the settlement process.

Do not make any repair on the aircraft or settle any claims without first consulting with

and obtaining consent from your insurer when such repair payments or settlements involve your insurer.

#### 4. Indemnification

**Hull:** In case of physical damage to your aircraft (i.e. partial loss), the insurer will pay for the repair of the aircraft by the most economical means, minus the applicable deductibles.

In case of total loss of the aircraft, the insurer will pay up to the amount insured under your Policy.

**Liability – Passengers and third party claims:** Your insurer will indemnify all sums you become legally liable to pay as compensatory damages in respect of accidental bodily injury and accidental damage to property caused by the aircraft. The amount of compensation will depend on the severity of the victims' injuries and on the liability regime under the applicable law, i.e. national law, international law such as the Montreal Convention or European regulation.

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After an indemnity is paid under your policy, your insurer shall be subrogated to all of your rights against any person or entity legally responsible for the loss indemnified. You shall cooperate with and do all things necessary to assist your insurer to exercise such rights and remedies.

### **Points of Attention**

#### Coverage

In order for coverage to apply, ensure that your flights comply with the terms and conditions of your insurance policy.

Ensure that you perform all flights within the scope of your policy and in accordance with the Use of Aircraft definition in the policy. If you need to change the scope of cover for a flight (e.g. operating your aircraft in an excluded geographical area), contact your broker or your insurer before such flight takes place in order to have the scope of cover amended as necessary. Ensure that your license, medical and aircraft documents (e.g. certificate of airworthiness) are valid, as these will be required by your insurer when assessing your claim.





#### Training

Ensure pilots are kept current through bi-annual simulator training. This will help to make sure you are in compliance with policy requirements, as well as evidencing to insurers that your pilots are of the standard required.

#### **Sanctions**

If flying to territories where sanctions may apply, then make sure to inform your insurers well in advance of any trip. There may be a need to provide addition information regarding the purpose of any visit, as well as passenger details. Insurers may need to perform their own additional due diligence checks which might require some time to complete, so timely advice is strongly recommended.





#### And for the TEAM who allow us to fly safely and happy

Captain, first officers, attendants, hostesses and ground staff. For permanent Staff and/or short term mission contracts; Operators and owners can\* include in their "insurance package" access to a protection for their employees and clients.

- Health and Accident protection
- Loss of income due to accident or illness
- Loss of licence

- Personal accident including death and disability programs.
- Kidnap and ransom cover
- Maternity benefits

Long term protection as retirement benefits are to be considered for long term contracts.

\*in certain juridiction part of the benefits listed are compulsory as a duty to the contractor and/or the employee.

### **Future of Insurance**

Ten years after the financial crisis, business aviation is fuelled by a realistic optimism. While the aircraft utilization rates of 2008 may never be reached again, the industry reports a steady upward trend. With 676,202 total departures in Europe and a 7.6% market share in 2017, business aviation traffic is up by 4.6% from 2016. The surge in charter flight requests continues in 2018.

Several global factors will likely shake-up the aviation sector.



#### New technologies

After fly-by-wire technology, transportation by air is being transformed by fly-by-data services. Cloud-

based platforms assist end-users in obtaining ad hoc services. They maximize resource efficiency globally and give airlines an overview of their fleet operations in real-time for increased reliability and risk control. A selection of airlines and operators have also entered data sharing agreements to connect their aircraft fleets.

In parallel, the threat and the impact of cyber-attacks and system failures are raised.

IT failures whether caused by human error or hacking have already resulted in major outages of reservation systems, check-in operations and flight planning as well as the loss of private and corporate data. To protect the industry and aviation safety, stakeholders will have to invest in comprehensive cyber risk programs. It is also critical that risk managers engage in a thorough analysis of their exposure to obtain adapted insurance protection.

The FAA projects that by 2020 almost seven million drones could be sold in the US alone. Pilots are reporting serious cases of Unmanned Aircraft Systems (UAS) or drone near-misses and are concerned that they could have catastrophic consequences. Due to their stiff structure and dense battery mass, drones will cause more impact damage to the aircraft than bird strikes of equivalent size and speed. Specific aviation insurance is available to owners of UAS. Some insurers are suggesting that UAS insurance be subject to prior safety training of the operators.

Meanwhile insurers are turning to Al to change the way risks are appraised and managed. A renown insurer is expanding its use of the cloud to increase the accuracy of individual customer data in the UK in real-time. Cognitive technology also fast tracks claim processes.



#### Atmospheric changes

The International Energy Agency forecasts that

turbulence on the North Atlantic flight corridor could increase from 40% to 170% if carbon dioxide emissions double by 2050. As a consequence significantly more injuries and material losses associated with clear-air turbulence are expected.

Extreme weather conditions are also likely to cause disruptions. Professor Paul Williams of the University of Reading predicts that with a sea-level rise of +/- 3 to 4 cm per decade, more than 30 European airports could see their runway capacity threatened and suffer property damage.

It is also anticipated that the number of lightning strikes will increase by 12% per degree C° in the USA, while hailstorms will also be more common – both likely to cause significant damage to aircraft and possible injuries on flights.

Addressing the environmental hazards generated by the Co2 emissions, ICAO urges contracting states to engage in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). It's goal is to achieve carbon neutral growth from 2020 onwards through a carbon credit system.



#### Finally the political context and BREXIT

As community air carriers, UK aircraft operators presently benefit from

all nine traffic freedoms within the European Common Aviation Area. They are able to transport paying passengers from any European city to another, including on national routes (i.e. Paris to Nice) without stopping in the UK. With BREXIT, UK and EU commercial operators could lose some of the traffic freedoms so far available to them. The UK membership to EASA is also at stake. As EASA is responsible for setting the standards for aviation licences and for the certification of aircraft, all sectors of the aviation industry are affected and must prepare for a turbulent exit scenario.

Similarly, UK aviation insurers are taking steps to minimise coverage disruption and provide clients with some contract certainty. The Aviation Insurance Clause Group has drafted a new clause (AVN 121) allowing a (re) insurer who, would due to Brexit decisions yet unknown, becomes no longer permitted to (re)insure the risk to transfer its participation to a member of the same corporate group and under the same conditions.



### Greetings

Swiss Re Corporate Solutions







HFW







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### $\wedge$ T R I U M



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