Skies are safer, but new risk environment and rising cost of claims challenge aviation industry, says Allianz report

- This year’s aviation losses contradict long-term trend of fewer than two passenger deaths for every 100 million commercial passengers
- Increasing complexity of aircraft design impacting costs. New materials, ground equipment damage and risk of grounding are additional drivers of risk exposure while the cost of aviation claims is rising
- Increasing fleet values and passenger growth will push value of risk exposure through $1 trillion barrier in near-future
- North America and Europe head safety improvement, Africa is lagging behind
- Cyber attacks perceived as growing risks due to reliance on interconnected systems

London/Munich/New York City/Paris/Singapore/Rio de Janeiro, 4 December 2014 – This year’s aviation disasters contradict the industry’s long-term improvement in safety with currently fewer than two passenger deaths for every 100 million passengers on commercial flights, according to a new report by aviation insurer Allianz Global Corporate & Specialty SE (AGCS). By comparison during an early decade of the jet age (1962-1971) there were 133 passenger deaths out of every 100 million passengers.

However, the aviation industry’s safety management record will be tested further in future by a number of potential new risk scenarios. These include the increasing likelihood of cyber attacks, greater reliance on automation and the anticipated growth of drones in commercial use according to AGCS’s “Global Aviation Safety Study”. The report is published in association with Embry-Riddle Aeronautical University and charts the improvement in the safety record of the aviation industry from the beginning of the jet age in 1952.

Safety drivers
The study shows that over the past 60 years skies have become much safer. Today, it is estimated there is more chance of being killed by lightning (1 in 10.5 million) than dying in a plane crash in the US and Europe (1 in 29 million). This is despite growth in the sector which will see an estimated 3.3 billion passengers fly this year compared with just 106 million in 1960.

“Air safety has improved greatly, underpinned by technology, navigation systems, engine improvement and design implementations such as fail-safe design criteria and fly-by-wire control”, says Joe Strickland, Global Head of Aviation, Americas at AGCS. “At the same time the standard of training of crew and safety management have become notably higher. Innovations such as digital message communications systems – enabling pilots and controllers to “text” each other – are enhancing the aviation safety environment further.”

**Top causes of loss**

Despite the much-improved safety record, the cost of aviation claims is rising, driven by the widespread use of new materials in plane design, as well as ever-more demanding regulation and growth of liability-based litigation. “Today there are fewer fatalities or total hull losses compared with the past, but new types of risk and losses, such as composite repairs, ground equipment damage or the risk of grounding, are additional drivers of exposure”, explains Henning Haagen, Global Head of Aviation EMEA and Asia Pacific at AGCS. Increasing fleet values and a rise in passenger numbers is expected to push the value of risk exposure through the $1 trillion barrier by 2020, possibly even earlier.

In analysis of large insurance claims in excess of $1.36 million (€1 million), unsurprisingly, plane crashes are the major cause of loss in terms of number of insurance claims generated (23%) and subsequent value (37%). However, almost as many aviation claims by number (18%) relate to ground handling claims and 16% to mechanical failure.

**Regional gaps in safety**

While North America and Europe have the best commercial safety records, Africa is the poorest performer. In 2012 88% of global aviation fatalities occurred in Africa (45%) and Asia (43%). Africa currently uses the highest percentage of second generation aircraft – over 50% of the total fleet analyzed. Upgrading the airline fleet to current generation aircraft is one of the safety initiatives which have lowered the global accident rate. In some parts of Africa, safety and training standards are comparable to those of 50 years ago in the US or Europe.

**Man versus machine**

In commercial aviation operations, it is estimated 70% of fatal accidents are related to human error with pilot fatigue a major contributor. Initiatives such as crew resource management and the automated cockpit have improved safety levels, but automation can also have a downside. A
number of incidents have raised the question of whether pilots are too reliant on automation in the cockpit. "More focus should be placed on continuous training with pilots flying with and without automation. Basic airmanship remains essential to safely operate any aircraft and in particular if, for any reason, automation is unavailable”, says Sebastien Saillard, Head of Aviation Claims, AGCS.

Improved safety records also means many people in the aviation industry have not been involved in a major accident. This lack of experience is one of the biggest problems in emergency response preparation.

**Future challenges**
A number of new potential loss scenarios are emerging. Examples include the increasing likelihood of cyber attacks, the expected increase of drones (Unmanned Aerial Vehicles/UAVs) in commercial use, an anticipated future shortage of a skilled workforce including pilots and the prospect of increasing turbulence, driven by the changing climate. In particular there is increasing concern about cyber attacks. "New generation aircraft are highly exposed to cyber crime due to the prevalent use of data networks, onboard computer systems and navigation systems. Data breaches and cyber attacks are perceived to be growing risks”, explains Ludovic Arnoux, AGCS’s Global Head of Aviation Risk Consulting.

Other highlights of the AGCS Global Aviation Safety Study include:

- **Accidents by phase of flight:** Analysis over 10 years (2003-2012) shows most accidents occur during Descent & Landing (57%), followed by the Climb stage of the flight (24%). Just 9% occur during the Cruise stage. Analysis also shows there is no such thing as a safest seat on a flight, as no two crashes are comparable.
- **Damage from foreign objects** continues to be an issue for the aviation sector, with this being the fifth highest generator of insurance claims by number. Bird strikes are a notable cause but incidents on runways with animals such as zebras and cows can also cause losses.
- **Ramp accidents** can cost the aviation industry a reported $10bn a year. Ineffective communication is at the heart of most incidents. Contact between airplanes and ground service equipment accounts for more than 80% of incidents.
- **Future of traffic and safety management:** The tragic loss of MH370 highlights the challenges of air traffic management in keeping track of more than 30 million flights a year. Safety requires close cooperation between regulators, airlines and other stakeholders. Innovations such as a cloud-based black box could represent a quantum leap forward, allowing aircraft to stream real-time data about the aircraft systems which are normally recorded by the on-board black boxes.
To view or download the full Global Aviation Safety Study 2014 visit:

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