



FLIGHT SAFETY DURING AUSTERITY

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MAINTAINING FLIGHT SAFETY DURING A TIME OF AUSTERITY

THE CHALLENGE FOR AIRLINES, REGULATORS AND UNDERWRITERS IN 2016

In the next 20 years or so (2014-2033), according to Airbus' Global Market Forecast, passenger traffic will grow annually at 4.7% driving a need for around 31,400 new passenger and freighter aircraft (100 seats and above) worth US\$4.6 trillion. The passenger and freighter fleet will increase from today's 18,500 aircraft to 37,500 by 2033, an increase of nearly 19,000 aircraft. Some 12,400 older less fuel efficient passenger and freighter aircraft will be retired.

The economic growth rates in emerging markets such as Asia, Latin America, Africa and the Middle East, are outstripping more economically developed regions. One significant effect is that the middle classes in Asia are expected to quadruple in size by 2033 whereas globally they will double from 33% to 63% of world population. As a result of increased urbanisation and concentration of wealth, the number of aviation mega-cities worldwide will double to 91. These cities will be centres of world wealth creation with 35% of World GDP centred there, with more than 95% of all long haul traffic going to, from or through them.

A Confused Picture?

It is tempting to say that the world of aerospace has never had it so good. Yet the same thing, clearly, cannot be said of the global economic environment, which is as volatile as the airspace over the Middle East at the moment. From an underwriting perspective, the picture is confused. Aviation risk is proliferating as political and economic risks (some fuelled by concerns surrounding corruption),

business interruption, supply chain exposures, lack of sufficient regulatory oversight and new competition pressures are eclipsing the well understood risk of a major hull and liability incident.

Cuts to Government budgets caused by austerity programmes also have the potential to transfer economic risk to the private sector, as we outline later. Other political factors also come into play: corruption, for example. In this white paper we also ask the question: does the aviation market need more transparency over the insureds - and even their Governments and regulators - that are ultimately being insured and reinsured to properly enforce good accumulation controls?

Meeting international aviation standards in today's complex aviation environment is particularly important and increasingly critical given the recent dramatic growth in airlines and fleets and the ever increasing numbers of people flying between cities, countries and regions around the globe.

Meeting International Standards

That's why insurers were interested to read the - not entirely unexpected - announcement in December 2015 from the Federal Aviation Administration (FAA) that Thailand does not comply with International Civil Aviation Organization (ICAO) safety standards and has been assigned a Category 2 rating based on a reassessment of the country's civil aviation authority.

As aviation underwriters will know, a Category 2 International Aviation Safety Assessment (IASA) rating means that the country either lacks laws or regulations necessary to oversee air carriers in accordance with minimum international standards, or its civil aviation authority – a body equivalent to the FAA for aviation safety matters – is deficient in one or more areas, such as technical expertise, trained personnel, record-keeping, or inspection procedures.

According to the FAA, the International Civil Aviation Organization (“ICAO”) conducted an audit of the Thai Department of Civil Aviation (“DCA”) as part of its Universal Safety Oversight Audit Programme (“USOAP”). This Programme is intended to ensure a consistent global standard for aviation safety and the civil aviation authorities of ICAO member states are subject to regular audits under the USOAP by ICAO. The audit covers a broad range of areas relevant to aviation safety and airline operations but is intended to assess the performance and expertise of the civil aviation authority and not of individual airlines. Some of the key areas considered are personnel licensing and training, airworthiness assessment and certification, accident investigation and airline operations oversight and licensing.

Supervising the Growth of the Booming Aviation Business

With a Category 2 rating, Thailand’s carriers can continue existing services to the United States. They will not, however, be allowed to establish new services to the United States. The FAA cut Thailand’s safety rating to category 2 from the top-tier category 1 rating because of its concerns about the country’s ability to properly supervise the growth of the booming aviation business. Its announcement in Washington put Thailand alongside six other category 2 countries, including Ghana and Indonesia.

As a recent Bloomberg Business article reported: “Indonesian carriers, air traffic controllers, and Indonesian airspace in general have become notorious for weak safety regulations.”

In an age of global airline alliances and networks, which integrate the services of multiple carriers, each member airline plays a significant and critical role in the alliance and its network. A downgrading of Thailand and blacklisting of Thai carriers would be the first time this will have affected a major aviation and alliance hub in South East Asia and may have global repercussions. [Source AN ICAO DOWNGRADE: IMPLICATIONS AND ISSUES FOR THAI AVIATION – Watson Farley & Williams]

A downgrade may result in higher insurance premiums and Thai carriers may find it more difficult to acquire and lease aircraft given the potential operating restrictions. If the impact is limited to the US and EU, the majority of Thai operators should be able to continue to operate as they currently do.

The FAA’s downgrade comes amid growing concerns over airline safety in parts of Asia. A crash investigation report into the loss of AirAsia Flight 8501 in the waters between Surabaya, Indonesia, and Singapore last December, found that system malfunctions and improper pilot responses were to blame. All 162 people on board were killed.

It could take some time for Thailand to recover its top-tier ranking with the FAA, though. It took Israel four years to regain its category 1 status after a downgrade, and the Philippines had to wait more than five after it was downgraded in 2008, although upgrades can happen sooner.

It took India just over a year to regain its category 1 status after a downgrade last year, enabling it to add additional flights to the U.S., while Mexico recovered its top-tier ranking after four months after those countries quickly addressed the FAA’s concerns.

The Impact of Corruption on Efficiency

In their 2014 White Paper Effects of Government Quality and Institutional Choice on Efficiency of the U.S. Commercial Airports, the authors focus on the impact of corruption on airport efficiency. They write:

“In our analysis, corruption matters for airport efficiency by affecting airports’ decision making. We explain such impacts based on the fact that the accountability of public policy outcomes in highly corrupt environments is low. As a result of low accountability of public policy outcomes, the board of an airport authority puts low efforts in monitoring. Therefore, transferring airport management from local governments to airport authorities cannot improve airport productivity in corrupt environments. Furthermore, airport authorities in corrupt environments tend to use outsourcing to replace in-house labor.”

The authors of that paper were primarily interested in the efficiency/productivity gains and a debate surrounding a local Government as opposed to a private model of airport authority control, however, they do not explicitly refer to the impact of corruption on safety or risk management best practice.

In another paper focusing on the impact of corruption on European airports Effects of Corruption on Efficiency of the European Airports, the author’s state:

“We find strong evidence that corruption has negative impacts on airport operating efficiency; and the effects depend on the ownership form of the airport. The results suggest that airports under mixed public-private ownership with private majority achieve lower levels of efficiency when located in more corrupt countries.”

Airports are an intensely political risk. The seemingly never ending debate about a new runway for Heathrow confirms that airports will always

feature in the public consciousness and airports are indeed often symbols of national prestige. The other point to make about airports is that their governance structure has been until relatively recently, state-owned. But that all changed in the 1980s.

Since then, among a sample of 47 airports during the 2003-2009 period, 5 were fully private, 7 were owned and/or operated by mixed public-private enterprises with private majority, 9 were owned and/or operated by mixed public-private enterprises with government majority, and 21 were owned and/or operated or by 100% government (or public corporations).

Airports, their geographical environments, the people that work in them are defined by their political jurisdiction, which is important. Paulo Mauro argues in his 1995 white paper *Corruption and Growth* that "the efficiency of institutions is relevant for any firm operating in the country of interest, since they are assessed independently of macroeconomic variables. Therefore, we include government stability, quality of bureaucracy, internal and external conflict and law and order as indicators of institutional quality variables."

What of the rest of the world? As the authors of the *Effects of Corruption on Efficiency of the European Airports*, state, the impact of corruption may be heightened and you can also throw extra credit and surety risk into the equation. Although they do not explicitly mention credit and surety risk, they report that:

"This research, which is limited to Europe, can be extended to airports in other regions including Asia, Oceania and more specifically developing countries and highly corrupted regions. Major air infrastructures in developing countries are funded by the World Bank and/or funding agencies. If corruption not only causes misuse of resources but also impacts on airport operating efficiency, the recipient countries may not be able to pay back the loans. As such, the infrastructure projects lenders may want to retain a certain percentage of their loans, and use it for the country to set up clean project bidding and tendering processes with proper checks and balances, to educate and train officials and employees, and auditing during the project implementation period as well as ex-post auditing."

Suffice to say that many commentators have been scathing about standards in Asia, which has suffered a rash of accidents in the last couple of years. A 2014 Bloomberg Business article addresses the potential causes head on when it reports: "To some extent, the three Malaysian air disasters are just brutal bad luck. Still, they point to several disturbing trends that raise the question of whether flying in peninsular Southeast Asia is completely safe. The air market in the region has embraced low-cost carriers, leading to a proliferation of flights throughout Southeast Asia, stretching air traffic controllers, and possibly allowing some airlines to expand too rapidly. Indonesian carriers, air traffic

controllers, and Indonesian airspace in general have become notorious for weak safety regulations."

Aerospace is now Fiercely Competitive

As we have seen, the rapidly growing world - particularly in emerging markets - of aerospace is now fiercely competitive and that brings a whole host of opportunities as well as threats to airline carriers as well as their insurers. Traditional "full service" carriers and low-cost budget operators alike are under pressure from their investors and regulators to deliver increasing value to passengers and stakeholders so how does that translate into customer safety? Is there an expectation that risk management standards could be compromised in the search for profitability?

It must be a concern, however, some aerospace commentators remain relatively sanguine.

Getting Away with Sub-standard Safety Practices?

"Low-cost carriers get their savings from efficiency and less money spent on customer service rather than by skimping on safety issues," said Max Leitschuh, a transportation analyst for iJET International. "In places like North America and Europe, where there's a well-regulated airline industry, they are not going to let any airlines get away with sub-standard safety practices. The major budget carriers have very good safety records. In fact, many of them have never had a crash before."

Asia, where regulatory standards vary widely and low-cost carriers are booming, is not as clear cut. Budget carrier AirAsia, for example, suffered a major crash in January but had a spotless record until then. But Indonesia's Lion Air -- with eight incidents since 2002 -- has an atrocious safety rating and has actually been banned by the EU.

"Asia is much more of a mixed bag, both in terms of the airlines and the regulatory authorities," said Leitschuh. Certain authorities like Singapore's are excellent. Malaysia's regulatory agency is mediocre, while Indonesia has major problems, he said. "But just because there's poor regulation still doesn't mean the carrier is unsafe -- it's just on the carrier to regulate itself."

Until recently, Lufthansa subsidiary Germanwings had an unblemished safety record in its 13-year history. While investigators have not yet determined the cause of its tragedy - the official investigation into German Wings Alps crash closes 13 March so until the report is released everything else must be based on assumption - it's unlikely that it had anything to do with Germanwings' low-cost status. The problem is not necessarily the carriers but more so the approach to their regulation.

Inspectors Not Qualified for the Job

According to the Flight Safety Foundation, "regulators across the world have always had a difficult time recruiting and retaining operations inspectors. It is very difficult to find someone who is

qualified for the job and who is not already flying for an airline that will pay a lot more money. If they find someone to take the job, the civil aviation authority (CAA) is lucky if these recruits stay in the government for five years, unlike typical young bureaucrats that stay for 30.

“The problem is that these inspectors are vital. Without them, the papers move through the bureaucracy and fees are paid, but the operators can do pretty much as they please. When there is a shortage of operations inspectors, airplanes tend to crash.” It is a lesson that has been learned over and over again and the International Civil Aviation Organization (ICAO) reportedly has the facts to prove it.

Austerity: the Big Secret

As the Flight Safety Foundation reports: “This leads us to the big secret that many people know but few are willing to discuss. Many of the major regulators in Europe are desperately short of operations inspectors, and the government budget austerity measures being taken across Europe likely will take the situation from desperate to dangerous.”

It is not just the regulators and lower cost budget carriers that are under pressure, however, as the example of Air France reveals. It was reported that a tense employee meeting at the French flag carrier turned violent when Xavier Broseta, the HR director, was descended on by an angry mob who tore off his shirt and forced him to flee half-naked over a fence.

With labour relations at a low point, analysts and some individuals close to the company worry that Air France could go ahead with inefficient reforms that do not improve its ability to compete sufficiently. This increases the risk that Air France becomes a second-tier player in the global aviation industry.

That is not to suggest in any shape or form that Air France is more of a safety hazard as a result but the company’s travails do help to illustrate the pressures of operating an airline at, dare we say it, the highest level!

Proliferating Aviation Risks

As international air-fleets increase in size and scope in line with a growing and increasingly prosperous travel-hungry global population there may be a risk of not being able to see the wood for the trees. If it is difficult enough for increasingly stretched regulators to keep up with the growing demand for air travel, how complicated is it going to be for international insurers underwriting growing books of aerospace risks, which encompass the creation of new airports, new planes and technologies, and new dangerous flight routes across war torn territories and terrorist enclaves?

As Russell Group has written in previous white papers this year on the subject of airport ground accumulation risks and other aviation perils, we are

confronted by a murky geo-political picture that shows few imminent signs of clearing up while new threats such as drone and cyber risks increasingly cause underwriters more concern.

Meanwhile, as an Allianz Global Corporate and Specialty Global Aviation Safety Study outlines:

“Every day the aviation sector faces a multitude of risks that can potentially jeopardize the success of their operations if they are not managed adequately. Business interruption (both physical and non-physical damage) and supply chain risks are currently the greatest concern for aviation practitioners.” The AGCS study reports: “Intensified competition and market stagnation/decline, natural hazard risk, regulatory change and technological innovation also rank highly on this risk register.”

According to the same AGCS survey of risk consultants and claims experts, business interruption, supply chain risks (for example, damage to machinery) features high on the risk register for 35% of respondents while intensified competition (35%), market stagnation or decline (30%) and our old friend changes in legislation and regulation (24%) also disrupted people’s beauty sleep.

Risk Selection is Key

In such an environment, do we truly know our peak aggregate risks in the way that we probably did 20, 30 or 40 years ago? Furthermore, if we in the aviation risk management community are going to be honest with ourselves can we say 100% that we can actually name our – proliferating – risks?

In other words does the aviation market need more transparency over the insureds that are ultimately being insured and reinsured to properly enforce good accumulation controls? Is there now a need for expanding the aviation market questionnaire? Finally, is a more efficient naming convention required which (re)insurers could use with confidence knowing that they are talking about the same insured risk?

The key challenge that underlies this soft competitive environment is that underwriters need improved risk selection controls which allow capital to be smoothly diversified across the portfolio in order to achieve premium income targets. This in turn requires controls which enforce deeper knowledge of the portfolio’s underlying risk and accumulating exposure.

Russell Group is a leading risk management software and service company that provides a truly integrated risk management framework for (re)insurance clients operating across the specialty classes through its ALPS suite of products. Underwriting risk is, or should be, the primary concern of specialty (re)insurance companies in quantifying portfolio exposure, pricing risk, optimising reinsurance purchase and evaluating the amount of capital needed to support the portfolio.

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