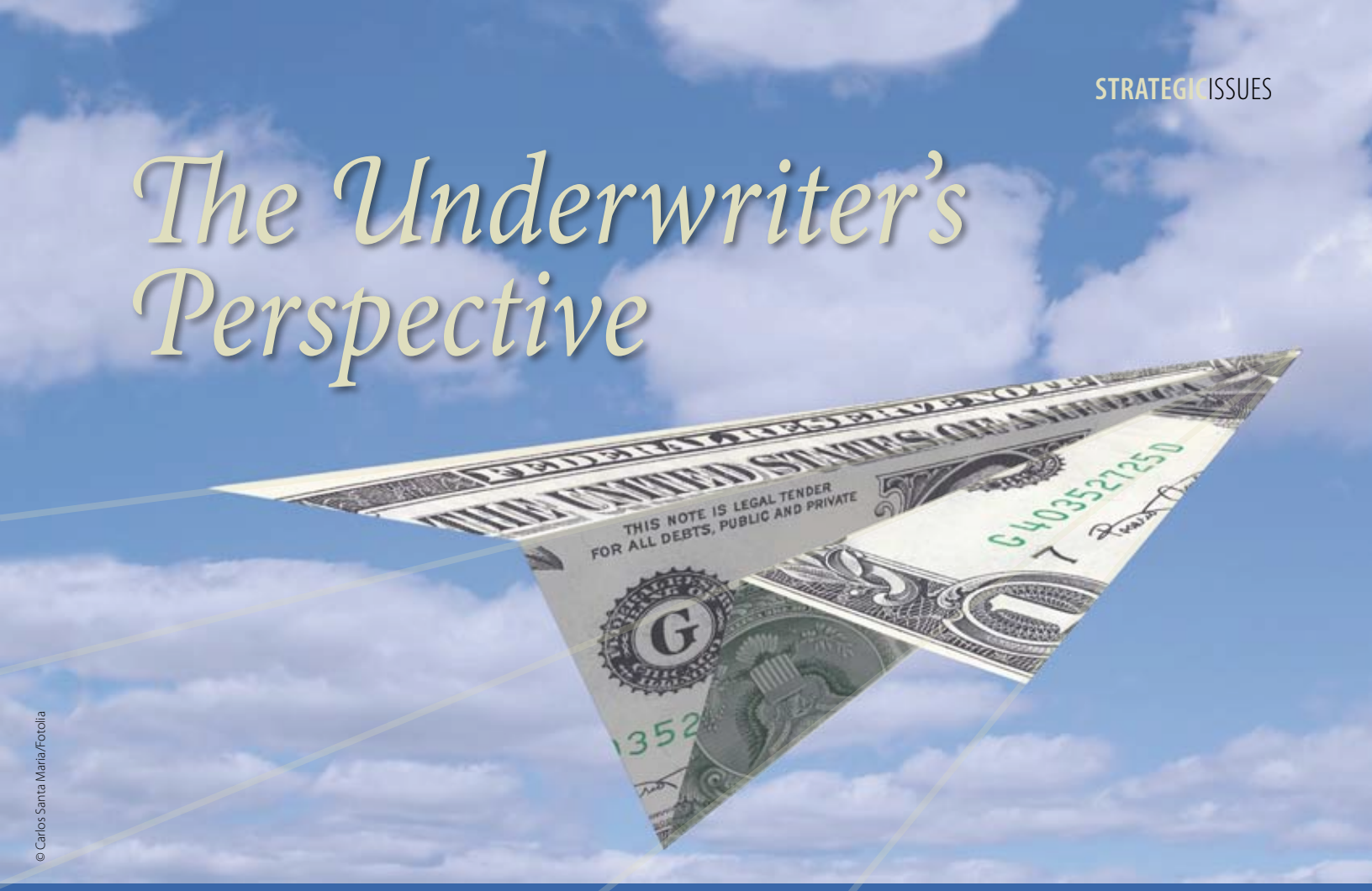
The Underwriter's Perspective



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Aviation insurers focus on airline safety practices that surpass baseline expectations.

BY WAYNE ROSENKRANS

Aviation insurers perceive the airline industry as one of the world's most highly regulated and safest, yet they still focus on each airline's risk-management orientation and its maturity within an industry sector and region, sometimes called its geosocial area, says Steve Doyle, global practice manager for Aon Aviation. Insurance brokers and underwriters also expect risk management by each airline to be the proactive side of the safety equation and aviation insurance to be the reactive side; so, when an airline handles risk management well, it is likely to elicit a favorable response from underwriters, Doyle said.

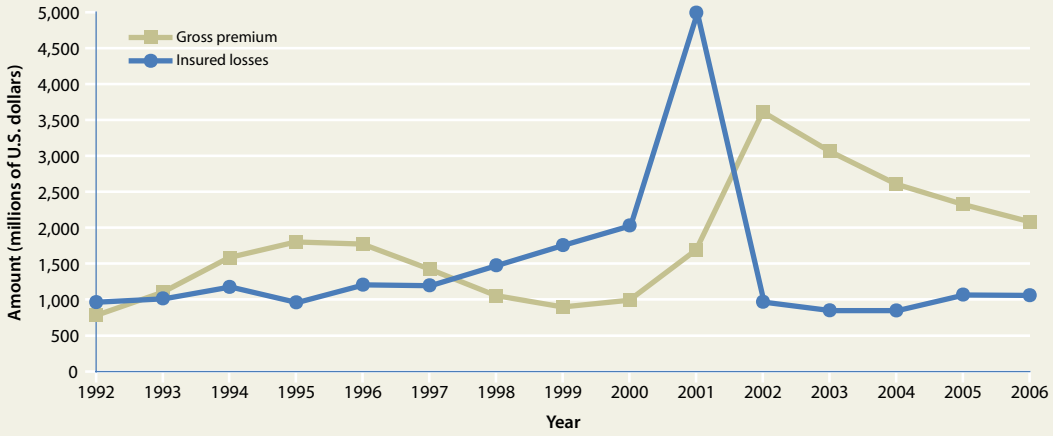
"From an aviation insurer's perspective, pricing — that is, catastrophe coverage limits for fairly low levels of premium — is reflective of the risk profile of a very safe industry," he said. "So, insurers today are reacting to the claims experience of the industry (Figure 1, p. 38) while, on the proactive side, the airlines are managing their risks to reduce the overall level of claims."

More than ever, insurers are attuned to collective efforts by the airline industry that demonstrate safety awareness and the capability to continue reducing the risk of accidents. In mid-2007, the International Air Transport Association (IATA) Operational Safety Audit (IOSA) program is a common interest.

"There is a baseline for the airline industry in IOSA, so it is only a question of 'How much better than the baseline are you?'" Doyle said, citing similarities between the interests of IOSA auditors and insurance underwriters. "The challenge is any airline's differentiation over and above that baseline — and over and above peers in terms of the adoption of technology, etc. If everybody or nearly everybody passes IOSA, it is a question of whether those not on the IOSA registry would be 'punished' by higher insurance premiums rather than whether those with IOSA would be credited. IOSA already is reflected much more in risk pricing than perhaps it was previously."

A Very Cyclic Aviation Insurance Market

Premium Versus Losses, 1992–2006



Note: The expected worldwide gross premium for aviation insurance is $1.5 billion for 2007, including an average $1.5 million per airline.

Source: Göran Forsberg

Figure 1

Spotlighting IOSA

Some observers consider the recognition of airlines' collective safety efforts by insurers to be mutually beneficial. "Clearly, the mandating of IOSA as a prerequisite for IATA membership is a force for good," said David Gasson, secretary general of the International Union of Aviation Insurers (IUAI). "It is also clear that passing an IOSA audit will carry some weight with an insurer. That said, insurers still require independent risk surveys of airlines when they believe circumstances merit it. In addition, the weight given to IOSA audits in risk evaluation will vary from underwriter to underwriter."

Giovanni Bisignani, director general and CEO of IATA, said in an April 2007 speech that the association recently has applied the IOSA concept, designed for airlines, to airport ground handling through a new program called the IATA Safety Audit for Ground Operations (ISAGO). "Standard[s] development is under way, and the first audits will take place in 2008," Bisignani said. Notably, the IUAI is providing advice on risk management and insurance while participating in the IATA steering group that is introducing ISAGO, Gasson said.

Carole Gates, IATA's director of risk management and insurance, also has seen aviation insurers taking into account IOSA participation and implementation of a safety management system (SMS) as they examine each airline's risk profile and determine the premium to be charged. "Insurers have been actively involved in maintaining … aviation liability insurance, which is key to airlines' ability to operate," Gates said. "Insurers and brokers work together to provide risk-management assistance to their clients — particularly if there are areas of concern or special issues to be addressed, such as a recent fatal accident."

IATA also has been promoting more effective interaction within airlines between operations risk managers and the corporate financial risk managers, who interact most frequently with the aviation insurance broker and the lead insurance underwriter. "The purpose of our Integrated Airline Management System guide is exactly that: to engage risk managers and operations personnel in the overall assessment and control of risk," Gates said. "This was our objective in combining the two audiences in Montreal at our April 2007 conference, which was attended by over 600."

When an airline proposes safety improvements during insurance negotiations, some insurers offer incentives or participate financially. "Aviation insurers make investments in

airlines that wish them to do so, and generally make available funds built into placement slips — an amount of money set aside in the insurance purchase contract that can be used by the airline for risk-management activity — and that activity subsequently will be reflected in the risk pricing," Doyle said. Examples of safety improvements financed this way include comprehensive risk-management programs, consulting work by third-party specialists, programs for closer monitoring of daily operations, upgrading high-visibility clothing and procedures for placing safety cones around parked aircraft.

Similar Issues Long Ago

Observing the competition among several U.S. insurance groups to provide coverage to airlines in the late 1920s, Stephen Sweeney, an assistant professor of insurance at the University of Pennsylvania, told the 1928 meeting of the U.S. Casualty Actuarial Society (CAS) that although "the average operator does not know much about insurance," several developments were important. "Rates were materially reduced," Sweeney said. "Practically all aviation rates are the results of pure judgment. … As actuaries, you will probably be dissatisfied for some time to come with the aviation data available for rate-making purposes. … I think we might list [general considerations for coverage] as the pilot, the plane itself, the engine and the territory of operations. There have been attempts made to analyze these to determine their relative importance. Probably it is the consensus that the pilot is the most important element from the standpoint of the underwriter. … [An airline's] poor housekeeping, incomplete inspection routine, unsound financing, superficial experience in the case of those in charge of operations, undue pressure on pilots to take great chances — these are some of the things that must be watched for and guarded against most zealously by the underwriter who would survive."[1] Five years later, W.P. Comstock noted in a paper presented to the CAS, "Pilots are being educated to recognize that safety is as much dependent upon careful flying as upon structural design. … Casualty companies should point the way to safety in aviation and when necessary should establish their own safety standards."

After six more years, Barbara Woodward in a paper presented to the CAS meeting said, "For these reasons [that is, a wide range of airplane values and uses, and rapid changes in design and operating conditions], it can be seen that the time for placing aircraft insurance on an actuarial basis has not yet arrived. … A fundamental proposition for arriving at a proper rate is, however, followed by [two U.S. aviation insurance] groups in making rate quotations; namely, that the hazard in connection with any aviation risk is directly related to the amount of flying which is done." Commenting in 1939 on Woodward's paper, John A. Mills said, "The insurance companies are contributing their share towards promoting greater safety in flying through safety engineering. … Although statistics so far developed have been limited, they have nevertheless served a useful purpose in arriving at a base rate and also in judging the approximate proportion of the losses attributable to each of the major hazards connected with flying. Questions asked a prospective [airline] by aviation underwriters are designed to provide the underwriter with all data having an important bearing on the causes and circumstances surrounding airplane accidents. The underwriter knows the approximate part of the pure premium attributable to each of the factors on which information is required,

"When the Boeing 747 was introduced in the early 1970s [after its rollout ceremony below in September 1968], airlines paid so much more than they pay today to insure a 747," said Göran Forsberg, an aviation insurance manager based in Sweden.

Boeing Commercial Airplanes

and the final rate quoted recognizes within practical limits the extent to which the individual risk can be expected to vary from the average."

Where Credit Is Due

In 2007, insurers' perspectives of airline safety tend to differ from those within an airline primarily in terms of scale, according to Doyle. "Global aviation insurers write insurance coverage and accept financial risk from the global airline industry as a whole," he said. "The fundamental principle is that the losses of the few are paid for by the many (Table 1), so although your airline is part of the many and has had no losses, if the industry as a whole has had losses, then your part of the global premium 'pie' is going to increase. If your geographic region has had an experience of losses and your industry sector has had an experience of losses, then you are in a different position than airlines outside that region or outside that sector."

"As brokers … we take the view that increased exposure is not necessarily translating into increased claims."

One complication for operations risk managers who welcome insurers' influence (*ASW*, 3/07, p. 22) is that some factors still do not translate between the two domains. Insurers focus more on the claims levels, the average cost of awards by courts for passenger liability, the global loss experience by aircraft type, the compliance of infrastructure in the airline's areas of operation with standards of the International Civil Aviation Organization, and the degree of political stability, Doyle said. Professionals in both domains, however, pay attention to potential risks linked to the growth of airlines and air traffic.

"Insurers take the view that because the airlines are growing, their exposure is growing, and that is very true," he said. "As brokers, we emphasize the strengths in the overall risk profile of an airline and we take the view that increased exposure is not necessarily translating into increased claims — that claims levels today are no higher in actual dollar terms than they were in excess of 15 years ago, and are less than they were pre-9/11 [Sept. 11, 2001, when four U.S. commercial jets were destroyed in a terrorist attack]. So, while the airline industry has demonstrated massively increased exposures, the level of losses — one of the key factors that drives the market and insurance pricing — has not increased, but the potential has increased as award levels have increased."

Limiting Common Practices

Airlines logically may be expected to have different explanations for specific safety improvements. "This is especially true as no airline wants to be named in connection with an accident due to the reputational loss that may follow," Gasson said. "Risk surveys, inspections, meetings, discussions and conferences of airlines and underwriters are common in today's aviation market," he said. "Good examples are alliances and code-share agreements, where all involved airlines want to benefit and therefore put a further positive emphasis on safety."

From the insurers' perspective, the

Top 10 Aviation Disasters by Cost of Insured Loss to Aviation Insurers

Losses incurred[1] as of Feb. 22, 2007

Airline	Date	Location	Fatalities	Loss (U.S. Dollars)
American Airlines	Sept. 11, 2001	New York, New York, U.S.	2,911	1,500–1,900 million
United Airlines	Sept. 11, 2001	New York, New York, U.S.	65	1,650–1,800 million
American Airlines	Nov. 12, 2001	Queens, New York, U.S.	265	~ 700 million
Alaska Airlines	Jan. 31, 2000	Pacific Ocean, U.S.	88	~ 400 million
SriLankan Airlines	July 24, 2001	Sri Lanka	0	~ 400 million
Singapore Airlines	Oct. 31, 2000	Taipei, Taiwan, China	83	~ 380 million
EgyptAir	Oct. 31, 1999	International waters	217	~ 340 million
American Airlines	Sept. 11, 2001	Arlington, Virginia, U.S.	188	~ 270 million
American Airlines	June 1, 1999	Little Rock, Arkansas, U.S.	10	~ 230 million
SAS Scandinavian Airlines	Oct. 8, 2001	Milan, Italy	118	~ 200 million

~ = approximately

Note:

1. Aircraft hull, passenger liability and third-party liability.

Source: Göran Forsberg

Table 1

absence of conformity in many of these practices is by design. "Every underwriter needs to analyze and interpret the information available and decide if she/he wants to insure the risk and the premium to be charged," Gasson said. "There cannot be and must not be a common approach, bearing in mind antitrust rules and regulations. This is where the independent risk assessment may provide the final evidence to influence the underwriting decision. It must never be forgotten that the aviation insurance market is fiercely competitive. Loss frequency is decreasing while loss severity is increasing, and this makes the pricing process even more difficult."

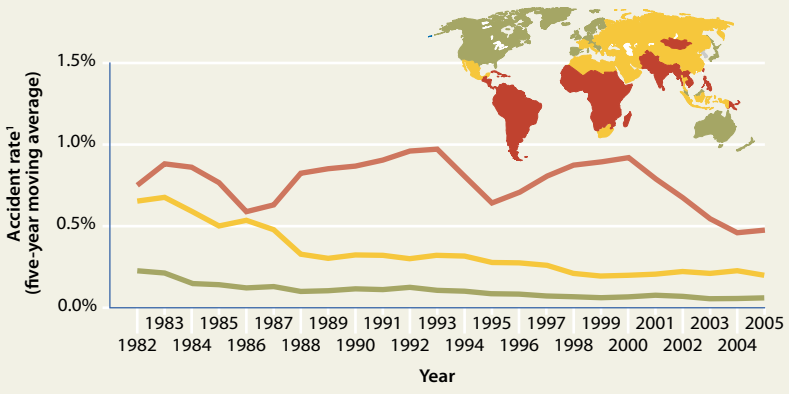
One actuarially oriented method used by underwriters is to assign airlines to geosocial areas (Figure 2) by accident rates, age of aircraft and onboard technology, regulatory oversight, infrastructure and various other factors, said Göran Forsberg, general manager, International Insurance Co. of Hannover Ltd. England Filial, and a member of the Flight Safety Foundation (FSF) European Advisory Committee. This practice also enables airlines to distinguish themselves from peers within a geosocial area, Forsberg said. Significant safety improvements can be easier to achieve, technically speaking, for airlines in the most challenging geosocial environments, he emphasized.

"From the passengers' point of view, the perception of the global airline industry would be affected very positively if operators in these geosocial areas improved their safety," he said. "To do that, they need a combination of modern technology of fourth-generation aircraft, an SMS, intense utilization of the FSF *Approach and Landing Accident Reduction Tool Kit,* etc. Not the least is auditing under IOSA, so the question we often ask airlines is 'Have you done the IOSA audit?'"

In contrast, one of the most difficult challenges is further safety improvement among airlines in geosocial areas that already have adopted best practices and achieved the world's lowest accident rates. In these areas, the costs of any accident to insurers are vastly higher because of the level of liability based on passenger demographics, jurisdiction and the typical awards/settlements for fatalities and injuries in some developed countries. "The costs of indemnification in these areas probably would be on the higher end of the scale," Forsberg said.

An Actuarial Perspective of Accidents by Geosocial Area

Worldwide Large Operators, 1982–2005



Note:

1. Large commercial jet total loss accidents as a percentage of the total fleet of these aircraft in each color-coded geosocial area.

Source: Göran Forsberg

Figure 2

The lead insurer selected by the broker has the best opportunity to assess and influence an airline's risk-management efforts. "We are a lead insurer in the Nordic area so when we have a Nordic airline, we ask the questions from a checklist, discuss their attitudes toward audits and SMS, rate the particular exposures and set terms and conditions of the policy," he said. "We have our own actuarial approach to risk assessment, including a proprietary information technology–based rating tool." Aircraft generation, size of airline and geosocial area are three of the factors considered by the rating tool, he said.●

Notes

1. In proceedings of the annual meetings of the U.S. Casualty Actuarial Society: Sweeney, Stephen B. "Aircraft Insurance." 1928. Comstock, W.P. "Aviation Casualty Insurance." 1933. Woodward, Barbara H. "Aviation Insurance." 1938. Mills, John A. 1939.

2. Forsberg, Göran. "Aviation Insurance: The Way It Works." In proceedings of the Flight Safety Foundation European Aviation Safety Seminar, Amsterdam, March 13, 2007, and interview by Wayne Rosenkrans, April 4, 2007.