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FROM HAWKER TO FLYING HIGH

Wang Junjin's extraordinary journey from roadside hawker to chairman of Shanghai's Juneyao Airlines

New Philippines president improves Manila airport operations says airline boss

ATR pursues market share with a reluctant China

Nok Air unfairly attacked says its CEO

Industry insight: Training in the Asia-Pacific: beyond the simulator


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COVER STORY

ADVERTISEMENT

A successful partnership spanning more than 50 years: Japan Airlines & ExxonMobil

Making smart decisions has helped Japan Airlines (JAL) become one of the world's premier carriers.

"Many decisions have contributed to our successes and choosing the right suppliers is one of them," says Hiroki Haraikawa, General Manager of Engine Maintenance Center at Japan Airlines. "We've relied on ExxonMobil lubricants to fly our planes safely for more than 50 years and given this, we believe this partnership is essential."

The relationship started in the early 1960s when JAL began using Mobil Jet™ Oil II, a high-performance aircraft-type gas turbine lubricant, which it still uses today.

Anchored by mutual trust and respect, the partnership continues to grow. Today, JAL also uses Mobilgrease™ 33 grease and Exxon HyJet™ hydraulic fluids.

"We value ExxonMobil's support in our ongoing efforts to become the world's most valued and preferred airline," Haraikawa said. "ExxonMobil's expertise and lubricant solutions help maximize the performance of our fleet."

Not surprisingly for a company that prides itself on punctuality, JAL has an enviable track record for fleet efficiency.

Recently, JAL was named the world's best airline for its on-time performance service by FlightStats Inc., an independent, aviation performance-tracking company. With an on-time arrival rate of 89.44 percent for domestic and international flights in 2015, JAL topped the rankings for the Major International Airlines and Asia-Pacific Major Airlines categories.

> "We value ExxonMobil's support in our ongoing efforts to become the world's most valued and preferred airline."
>
> — Hiroki Haraikawa, General Manager of Engine Maintenance Center at Japan Airlines

"We're proud of our achievements but we spend little time admiring them," Haraikawa said. "Instead, we focus on how to stay ahead of the industry and deliver outstanding experiences for our passengers."

This forward-looking philosophy is what propels JAL to seek out best-in-class lubrication technologies to optimize its fleet and minimize downtime.

In 2011, JAL became the first major airline to conduct a service evaluation for Mobil Jet™ Oil 387, ExxonMobil's latest advanced synthetic High Performance Capability (HPC) turbine engine oil.

Recording nearly 80,000 hours of on-wing time, the results far exceeded expectations of JAL's maintenance and management teams. Along with its exceptional deposit control, seal compatibility and wear protection, Haraikawa said that the oil's ability to minimize coking in gas turbine bearing components is equally impressive.

"We believe that ExxonMobil's advanced lubricant technologies, such as Mobil Jet Oil 387, are setting the industry standard," Haraikawa said. "As we consider the future needs of our fleet, our trusted partnership with ExxonMobil will continue to help in our efforts to be the world's most valued and preferred airline."

Image used with permission from Japan Airlines.

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Industry must unite to thwart terror assault

At long last the aviation industry is developing a global plan to better combat terror attacks aboard its aircraft and at its airports.

At the International Air Transport Association's (IATA) annual AVSEC conference, held last month in Kuala Lumpur, the association's director general and CEO, Alexandre de Juniac, made a powerful call for governments and the industry to work more closely to combat terror attacks.

Assaults on airlines are not new. They and their passengers have suffered from hijackings to 9/11 and from the downing of passenger aircraft to this year's ISIS inspired airport bombings.

Sadly, these increasingly frequent attacks illustrate that industry attempts to make their businesses and their passengers secure from terrorist assaults are failing. Not enough is being done to fight terrorism in aviation.

The most important message to emerge from last month's AVSEC was that all sides now appear committed to working better together. At the conference, IATA's de Juniac laid out a four principle plan to improve global aviation security.

Importantly, the International Civil Aviation Organization's (ICAO) secretary general, Liu Fang, announced at AVSEC that ICAO was developing a global aviation security plan. It was being fast-tracked, she said. A draft is scheduled for completion by May next year, with the goal of putting it before the ICAO council shortly after that.

This could be a problem as ICAO, with 192 member states, is not known for working at speed. So the deadline for ICAO council ratification could be pushed out.

In the meantime, IATA, perhaps emboldened by its success in winning global industry agreement for reducing greenhouse gases, is on the road talking to governments and other stakeholders about a standardized transparent security policy.

Issues to be addressed are rules for overflying conflict zones, improving landside security at airports, identifying insider threats from airline and airport staff, thwarting cyber security assaults and better harmonizing of Passenger Name Record and Advance Passenger Information requirements and airport checkpoints.

It is a big ask. Nevertheless, it is encouraging that for the first time all the interested parties, particularly governments, are prepared to unite in the fight to avoid more loss of life from terror attacks on airlines and at airports. ■

TOM BALLANTYNE
Chief Correspondent
Orient Aviation Media Group

COMING UP IN DECEMBER

COVER STORY
Orient Aviation profiles the best airline CEO in the region in our Person of the Year 2016 cover story

THE YEAR AHEAD
Chief correspondent, Tom Ballantyne, seeks the views of industry leaders about the issues they believe will dominate 2017

BONUS DISTRIBUTION
Orient Aviation Person of the Year Dinner and Awards
Hong Kong
Lunch with Orient Aviation
(Guest of Honor and Speaker, Malaysia Airlines CEO, Peter Bellew)
Hong Kong, January 18, 2017

Nok Air unfairly attacked says its CEO

Patee Sarasin, the flamboyant chief executive of **Nok Air**, has angrily rejected claims the Thai carrier has one of the worst reputations for cancelling or delaying flights.

The carrier hit the headlines in October when **Thailand's Transport Minister, Arkhom Termpittayapaisith**, asked the **Civil Aviation Authority of Thailand (CAAT)** to act against airlines with "troubled" flight schedules. **CAAT chief, Chula Sukmanop**, said Nok Air was one of the worst offenders and warned its management that its operating permit could be suspended.

That did not eventuate, but Patee was more than unhappy about being singled out. "Let's be fair, we are not as bad as some people, especially on social media, have portrayed us to be," he told Thai media. "We are subject to hate reports and comments that in many cases are trivial. They have been blown out of proportion by both traditional and social media."

Earlier this year, a pilot shortfall at Nok, provoked by a mass walkout of cockpit crew, escalated into a pilot strike. Cockpit crew said they were being forced to exceed standard flight hours. Nok lost many experienced pilots as a result of the dispute. The empty cockpits lead to mass cancellations of flights and did serious damage to Nok's reputation with the travelling public.

"That's history," said Patee last month. "We have an abundance of pilots, many of whom joined after the incident earlier this year. They support our growth."

He said the carrier's flight delays were mostly beyond the airlines' control and were caused by the rainy season. "Frankly, there was nothing much we could do about it. Such problems are not unique to Nok Air. They are experienced by other airlines. Nok Air is, unfortunately, singled out," he said.

Defending his airline, Patee quoted figures from global flight tracker, **FlightStats**, which had ranked Nok Air seventh out of 40 low-cost carriers in the Asia-Pacific for on-time performance in September - with an 81% score, he said.

"When things like flight delays affect passengers, we follow established industry procedures. We comply with regulatory standards including ticket refunding to show our responsibility," he said.

Patee also denied suggestions that its on-time performance or flight safety standards were caused by its aged aircraft, poor maintenance and over-utilization of its planes.

The bulk of Nok Air's fleet is relatively young, he said, with new B737-800s entering service at the carrier in the past few years, while older aircraft are around eight years old.

Nok operates 22 B737-800s, eight Bombardier Q800 NextGen turboprops and two ATR 72 turboprops. He said Nok aircraft are maintained by Lufthansa Technik, under global standards.

"On a daily average, we fly nine hours for each aircraft, and we can ramp up to 11 hours as per industry practice," he said.

Nok will launch flights to Kunming and Guangzhou next month, adding to its regional destinations of Yangon, Hanoi and Ho Chi Minh City. "China is clearly a very big market with significant traffic flow," said Patee. ■

Etihad and Jet still good friends

All is well. That was the message from Abu Dhabi's **Etihad Airways** and India's **Jet Airways** last month after India's **Economic Times** reported the two airlines were headed in different directions.

All the Etihad senior executives seconded to Jet "had quit" the Indian carrier in the last 18 months to take up other positions within the **Etihad Group**, the story said.

They included former Jet **chief executive, Cramer Ball, now CEO at Alitalia; Martin Drew vice president cargo; Rajeev Nambiar vice president sales; Renyl Rauf, vice president financial planning, reporting and projects** as well as consultants **Roy Kinnear now CEO of Air Seychelles** and **Rangesh Embar**. The newspaper said the management changes meant control of Jet had returned to its founder, Naresh Goyal.

Neither Jet nor Etihad, which has equity of 24% in Jet, were impressed by the report. Both partners "continue to enjoy a strong, healthy relationship since the forging of the partnership three years ago", a joint statement said. "The two airlines benefit from each other's networks and management skill sets. Sharing resources for the short,

medium and long-term has always been part of the agreement.

"It was planned for Etihad to provide support with personnel or executives until Jet Airways was able to source appropriately qualified people. Neither airline has moved away from this philosophy. Etihad Airways has representation on the Jet Airways' board of directors, and all decisions at board level are made collectively."

Etihad Group chief executive , James Hogan, and **Etihad's chief financial officer, James Rigney**, remain part of Jet Airways' board, the airline said.

Etihad bought into Jet three years ago, when the Indian carrier was losing money. The airline has been turned around and is in profit. "Etihad Airways entered into a strategic tie-up with Jet Airways to be part of one of the world's biggest economies," the statement added. ■

Chinese investors join Virgin Australia board

Two Chinese investors, who bought into Virgin Australia (VA) earlier this year, have named the executives that will join the Australian airline's board. **HNA Group**, parent of China's fourth largest carrier, **Hainan Airlines**, has chosen its chief innovation officer, **Nang Qi**, as their VA director. Qi was previously the company's deputy general manager of finance and president of HNA's import and export business.

The Nanshan Group, a huge Chinese conglomerate with interests that range from mining to property and aviation, has nominated **Chien-tsung Lu** as its VA board director. Lu is vice-chairman of the group's regional carrier, **Qingdao Airlines**, and a former dean of Nanshan Aeronautical College. At Qingdao, Lu was responsible for flight operations, revenue management and international engagement.

When Qi and Lu join the VA board, Virgin's directors will increase to 11. The appointments are expected to be ratified at VA's annual general meeting on November 16. The two Chinese companies own 40% of Virgin Australia after the airline negotiated a $1.1 billion capital raising to manage its debt and boost its balance sheet. ■

ATR pursues market share with reluctant China buyers

ATR Global head of sales, John Moore, forecasts that regional traffic demand in emerging countries like the Philippines will grow eight times faster than in more mature economies and that turbo props often are the only way to access remote airfields in several countries in the region.

Speaking to Orient Aviation in Boracay last month, at the entry into service of ATR's very first high-capacity ATR 72-600 at Cebu Pacific Air, Moore said ATR predicted the Asia-Pacific would have 750 new turbo prop aircraft in the next 20 years, with 600 new routes created, excluding China.

"There are still a lot of underserved or un-served airports across the Asia-Pacific," said Moore. "In the Philippines, only 30 of more than 100 airports can accept jets." However, it is still a difficult market at the moment for ATR with the fluctuating dollar acting as a drag on sales. "It's had a slowdown effect but overall, there is 4%-5% growth annually in the region," he said.

ATR holds 90% of the regional aircraft sector in Southeast Asia, with 337 ATRs in service at 60 carriers. Its largest markets are Indonesia, Malaysia, the Philippines, India and Thailand and its largest customer is Indonesia's **Lion Air**. **Lion Air's Wings** division has ordered 100 ATRs, with above 50 delivered to date.

But China is not proving to be as good a market for ATR as elsewhere in the Asia-Pacific. There are no ATRs in service on the Mainland, a fact which ATR hopes will change now it has opened a representative office at Beijing's Tianzhu Airport.

Moore said: "A few years ago, if you went to a Chinese airline or a Chinese government bureau and mentioned ATR, they would give you a puzzled look and be surprised when you said the aircraft was still in production,"

the Los Angeles native laughed. "So we've been building up our image and visibility. We have not closed any deals, but we're making progress." Moore added ATR would record another first for the company in China by exhibiting at Air Show China in Zhuhai this month.

He said there are very few regional airlines flying regional networks in the Mainland and that they make up just below 3% of the market. "The challenge in China is to find specific markets and regions small enough for turboprop operations. I don't think we'll sell ATRs to China Southern or Air China. Our potential customer is going to be an entrepreneur or a smaller airline started by a local province," he said.

Locally, ATR must compete with **Aviation Industry Corporation of China (AVIC)**, the Chinese state-owned aerospace and defence company that builds the MA-60. AVIC is an ATR supplier so the Europeans believe there should be "a give and take on industrial cooperation and commercial access to the market".

Another big China challenge is the AOC application process, often stalled and complicated, and shortages of qualified pilots. "Until I can find pilots I'm not going to buy your airplane," Moore has been told more than once in China. "We're looking at new ways as a manufacturer to supply that food chain," he said, including manufacturer driven initiatives to dispatch flight deck training crews and expanding its regional training centres in Bangkok and Singapore.

Safety remains the top priority at ATR and its turboprop rivals, specifically after several high-profile accidents in the past two years in Taiwan, Nepal and Indonesia that led industry regulators and the **Association of Asia Pacific Airlines** to highlight a surge in turboprop incidents.

Most of the accidents and incidents were caused by pilot error. In response, ATR has created a dedicated safety department whose staff report directly to the CEO. "We keep our ears and eyes open. If we sense that there are weaknesses we focus on airlines that may need extra help or extra support. We have to be a very active participant in the whole safety situation and processes," Moore said.

Under the leadership of new **ATR CEO, Christian Scherer**, the Franco-Italian OEM remains hell-bent on defending its market share, especially in the Asia-Pacific. Last month, **Air India's** regional airline confirmed its intention to add ten ATR72-600s to its twelve in-service ATR42/72s. ***By Dominic Lalk in Boracay.*** ■

Building on an extraordinary performance record

Air New Zealand, producing record profit after record profit, has been on a major international network expansion drive in the last 18 months. The next step in its strategy is to persuade Australians to abandon major rival, Qantas Airways, and fly Air New Zealand to the Americas via Auckland.

Tom Ballantyne reports

Air New Zealand (Air NZ) CEO, Christopher Luxon, has never been shy about his ambitions. "We're incredibly proud of our achievements in the last five years," he told Orient Aviation last month. "We don't just want to be a good Australasian company. We actually want to become a truly great and world class organization."

If the carrier's results are anything to go by, Luxon is well on the way to achieving that goal. "We've had 15 years of continuous profitability. In our last four years, we have set straight record results commercially year-on-year. We delivered 70% growth in our profitability with profits of US$628 million over that period," he said.

"What we have done is impressive, but how we have gone about it is what is really important. We have put profitable growth back at the heart of this company. So our revenues are up over 9%. Our capacity and our network have grown in the order of 12%. Our international long-haul network has expanded by 16%.

"Our Tasman traffic is up over 4% and when you think about GDP growth in Australia and NZ, that's a fantastic result."

The carrier's latest annual results, for the year ended June 30, saw it report a record pre-tax profit of $475 million and a net profit of $332 million. Earnings guidance for the year is that Air NZ is will deliver its second or third best profit result in the airline's 76-year history, despite the fact that competition and capacity has been flowing into New Zealand from the U.S., the Gulf and China at unprecedented levels.

Competition is not a concern, said Luxon. "We have dealt with Middle Eastern competitors, Chinese competitors, Australian and American competitors and we have done exceptionally well in the last 15 years. We love competing with everyone and anyone," he said.

The latest newcomer scheduled to arrive in New Zealand is China's Hainan Airlines flights from Shenzhen to Auckland in January. It does not faze Luxon, who pointed out that his carrier has joint ventures with Air China and Cathay Pacific Airways.

"When you go to Shanghai, there is a big enough catchment. It's a country in its own right so whether someone is coming at you from Chengdu or Tianjin or elsewhere it doesn't really impact us," he said.

There is a bigger picture as far as Luxon is concerned. "There's a

> We want a slice of the Australian long-haul market, especially the traffic that heads from Australia to North and South America. We are saying you can transit and hub that traffic very efficiently through Auckland
>
> **Christopher Luxon**
> Air New Zealand CEO

Follow that bird

When Air New Zealand (Air NZ) launches a new marketing campaign you can be sure it will quickly become a talking point and that was definitely the case when the Auckland-based carrier launched a multi-million dollar Australia-wide television advertising campaign last month.

Its content had viewers in stitches. Aimed at attracting more Australians to travel with the carrier to North and South America via Auckland, the campaign features a goose called Dave with his voice provided by veteran Australian movie star, Bryan Brown.

Essentially, instead of flapping its own wings for days to cross the Pacific, Dave boards an Air New Zealand flight and does the journey in just over a few hours, where he enjoys the benefits of the carrier's on-board service.

Speaking at the campaign's launch in Sydney, Brown said he accepted the role because no one had ever asked him to play a goose. "What's the one person that does not need to fly?" Brown said. "A bird. So if a bird's flying Air New Zealand it's got to be good."

Air NZ wants Australian passengers to transit through Auckland Airport rather than make a domestic-to-international change at Sydney Airport. "Many of them would be doing a domestic transfer after arriving at an airport like Sydney where it would take them half-an-hour to get across to the international terminal and a lot of mucking around," said Air NZ CEO, Christopher Luxon.

"Whereas with Air New Zealand you can check in internationally, go straight through to Auckland and proceed as a transit customer. There is no worry about customs or border control and you can seamlessly board your long-haul flight from there," he said.

While the campaign is targeted solely at Australia for now, Dave the goose may be adapted for use in other overseas markets such as Japan, China and the U.S., the airline said.

world that has 7.4 billion people in it and it's going to go to nine or 10 or 11 billion by the end of the century, depending on which forecast you believe," he said.

"What Australia and New Zealand have to offer as a tourism proposition is immense. We are living in a world that is increasingly densified, increasingly middle class. There is a tidal wave of demand sitting out there and coming our way whether you are sitting in Asia, the Americas or Australasia. And it is coming whether we are ready or not."

Luxon conceded things may be "a bit more choppy" this year as a result of additional competition. He said that for Air NZ it means there will be a period of adjustment as demand and supply regains equilibrium.

"In the short term, we have had a tremendous amount of competition showing up in New Zealand in a very concentrated period of time. But let's get a little bit of perspective. I think the competitive thing is a little overplayed. I am very confident in the long, medium and even short term performance of our business," he said.

At the same time that revenue has been growing at Air NZ, costs are being carefully controlled. "Fuel has helped us a lot, but we have the most modern fuel efficient fleet in this part of the world. We derive a lot of benefits from that, including a tripling of our cash flow and, obviously, an upgrade in our investment grade rating," Luxon said.

Air NZ operates 56 jets: 29 A320-200s (with 13 A320s and A321neo on order), three B767-300ER, eight B777-200ER, seven B877-300ER and nine B787-9 Dreamliners, with more to arrive at the carrier.

"All of that commercial success is important because it is allowing us to plough these profits straight back into the company. In the last four years we have been upgrading to new modern aircraft in our fleet," he said.

"We were first to launch the B787 Dreamliner -9. It has been a superb aircraft for us. We did 16% more flying on our long-haul fleet last year, but our fuel consumption was only 12% up and that's purely speaking to the fuel efficiency of those aircraft. In the next three years we will spend another $2 billion on our fleet."

Since mid-2015, Air NZ has inaugurated services to Singapore, Beijing, Houston, Buenos Aires, Osaka and Ho Chi Minh City. Now it wants a bigger share of the Australian market.

Already, two of Air NZ's newer routes are attracting Australian traffic: 40% of travelers on its flights to Buenos Aires and 20% of passengers to Houston are Australian. "The challenge we have is that only four out of ten Australians understand we fly beyond New Zealand to destinations such as Vancouver, San Francisco, Houston, Los Angeles and Buenos Aires," he said.

On that other matter of his airline's decision to sell its holding in Virgin Australia earlier this year, Luxon said: "Both companies are incredibly committed to everything that has been quite successful for all of us. We look forward to deepening that in the coming years.

"The reality is that our relationship with VA always has been compartmentalized into three, so us coming out of the shareholding is purely a commercial and investment decision. The alliance has gone from strength to strength. There is real mutual value for both organizations.

"John (VA chief executive John Borghetti) and I are hugely committed to the alliance. And then on the third side, we maintain a lot of Virgin aircraft at our maintenance facilities in New Zealand." ■

MORE ACTION, LESS TALK

Aviation industry members must work together to identify and repel threats to airline and airport operations experts told delegates at the annual International Air Transport Association Aviation Security conference last month.

Tom Ballantyne reports from Kuala Lumpur

Four principles to reduce terror attacks in aviation were presented in a landmark address by the director general of the International Air Transport Association (IATA) director general, Alexandre de Juniac, at the industry's annual AVSEC conference, held this year in Kuala Lumpur.

The IATA strategy aimed to reduce threats to airline and airport processing systems, eliminate attacks on air passengers at airports and when over flying conflict zones, identify terror focused staff who have insider information and upgrade the accuracy and speed of sharing passenger information between airlines and governments.

"Speed is of the essence. Threats emerge quickly. And they evolve fast," de Juniac told the hundreds of delegates at AVSEC.

It became clear at the AVSEC conference that airlines were not alone in wanting speedier reforms to the industry's security practices and regulations.

International Civil Aviation Organization (ICAO) secretary general, Liu Fang, said all nations should work more closely to combat security breaches and attacks. At ICAO's triennial conference in September, she said, member states agreed to fast track a new global aviation security plan.

The United Nations Security Council unanimously has

"Paradoxically, the good that aviation brings also makes it a target for terror. No single entity has all the answers. That's why partnerships are essential to address our major security challenges with the speed needed to stay a step ahead of those who would do our industry harm"

Alexandre de Juniac
International Air Transport Association
director general and CEO

> Civil aviation particularly is at risk of cyberattacks because all parts of the industry are highly interdependent. Present cyber defence systems are not adequate for dealing with this rapidly evolving threat. ICAO will be studying new preventive measures to deal with cyberattacks. ICAO will also work to develop an international framework from which civil aviation stakeholders can address cybersecurity threats effectively
>
> **Liu Fang**
> International Civil Aviation Organization (ICAO) secretary general

adopted resolution 2309 that calls on all States to work with each other and ICAO to continuously adapt measures to meet the "ever-evolving global threat" of terrorism, ICAO said.

"The new plan will create a dependable and co-operative framework that allows States to move in line with the industry and law enforcement stakeholders," said Liu. "It will help define the roles and responsibilities of all the agencies and lead to more progressive and co-ordinated aviation security enforcement." A draft of the plan will be available in May next year with a view to making it available for consideration by the ICAO Council shortly after that, Liu said.

The director-general of the European Commission's directorate-general for mobility and transport (DG MOVE), Henrik Hololei, told AVSEC delegates that following the Paris, Nice, Brussels and Istanbul terrorist attacks, European citizens ranked the issue of security as their number one priority.

"It has been said many times that we must never waste a good crisis. So, we should use UN Resolution 2309, and the events of the past 12 months, to provide the necessary momentum to increase aviation security," he said.

Speaking on a panel on 'Terrorism and Radicalization', the U.S. Transportation Security Administration (TSA) assistant administrator, office of global strategies, Paul Fujimura, said: "Terrorism continues to evolve and change. There are new actors appearing and people are being radicalized through social media and the Internet. The lone actors are harder to catch and difficult to disrupt. We are also seeing a shrinking timeline from when they are first recruited and then radicalized to actually carrying out an attack on a self-initiated basis."

He said the UN security resolution agreed in September was a positive step, but there was not much time to "plan where we are going to go and what we are going to do or how we will accomplish this," he said.

"We need to have the oversight to assure each other that the right measures are being undertaken and that countries that need assistance with regulatory oversight receive it so they are not left behind."

At the conference de Juniac elaborated on the six priority areas identified by IATA for addressing security challenges:

Conflict zones: Timely and accurate information is needed to support risk assessments when overflying conflict zones. "The ICAO conflict zone information repository was an initial step. But it is not the solution. We need to evolve to a system that can function on a continuing basis with a free and fast flow of useful information. Information sharing is not just about conflict zones. If a government has any information about a risk to an airline's operation, sharing it with the airline could save lives. There is a responsibility to get that information to the airline quickly and by effective means," said de Juniac.

Landside security at airports: "Recent attacks in Brussels and Istanbul have brought this vulnerability to the fore. Local authorities must use intelligence to keep terrorists far away from airports and keep public areas free from threats. In parallel, the industry was working on solutions to reduce risk by processing passengers more quickly, said de Juniac.

Insider threats: "Eight million people are employed in air transport, so the threat from insiders is a big challenge. A perfect vetting system has yet to be invented. So intelligence analysis—from governments—is our most potent tool to identify threats, especially from radicalization," said de Juniac.

Cyber security: Nimble layers of protection—a security culture—and advanced detection capabilities are needed. They must be powered by intelligence and information sharing. Cooperation with governments and across the industry is essential, said IATA.

Harmonization of Advance Passenger Information (API) and Passenger Name Record (PNR) information requirements: Airlines contribute to intelligence gathering with API and PNR information. Global standards existed for the collection and provision of this information. These are maintained by IATA, the World Customs Organization and ICAO.

"Despite the global standards for API and PNR, there are far too many exceptions to data collected and it's transmission to governments. The complexity does not make us more secure. In fact, it could lead to risk. The situation is already difficult enough. And it could get much worse. There is no international agreement that spells out obligations for handling the exchange of such information," said de Juniac.

Security checkpoints at airports: Airport checkpoints must be effective and convenient—the goal of the joint IATA-ACI Smart Security initiative. "Processes have improved, but can still be inconvenient and even intrusive. Smart Security is helping with a growing footprint at airports. But we need to see much faster progress," said de Juniac.

Given the landside attacks at Brussels and Istanbul, airport security was a major topic of discussion at AVSEC. Hololei said: "I must be clear and state that landside security cannot be the sole responsibility of the aviation sector. Landside goes far beyond the airport terminal."

He said the European Commission favoured a multi-pronged approach of risk based security, technology, mutual recognition and co-operation and a security culture to improve landside security. "Over-regulation is not the solution and one size does not fit all. Different situations require different solutions."

> "Terrorism continues to evolve and change. There are new actors appearing and people are being radicalized through social media and the Internet. The lone actors are harder to catch and difficult to disrupt. We are also seeing a shrinking timeline from when they are first recruited and then radicalized to actually carrying out an attack on a self-initiated basis"
>
> **Paul Fujimura**
> U.S. Transportation Security Administration (TSA) assistant administrator, office of global strategies

IATA's aviation security strategy

* Risk-based measures to ensure that limited resources are applied where the threats are greatest.
* Information sharing among governments and with industry to enable effective risk-assessments.
* The implementation of global standards in security systems worldwide to support effective collaboration between all parties in all locations.
* Capacity building supporting the mutual recognition of standards to improve effectiveness and efficiency.

Director general of Airports Council International (ACI), Angela Gittens, said: "Expensive technology is not always the solution." Greater collaboration, improved training and the implementation of a security culture could prove to be more important, she said.

"Vigilance and security awareness is one of our great defences. All staff should have acquired knowledge that will allow them to detect, take note and report suspicious behaviour."

ACI's practical solutions for improving security include reducing crowds and queues, patrolling, surveillance and intelligence sharing. The recommended practices, including automated screening lanes, advanced X-ray equipment, centralized image processing for remote cabin baggage screening and speeding up passenger processing were being applied at airports worldwide.

"Cyber security is high on the agenda. ACI has launched an airport IT benchmarking tool, which allows airports to improve their IT security," Gittens said.

Liu said all stakeholders wanted improved cyber security. "Civil aviation particularly is at risk of cyberattacks because all parts of the industry are highly interdependent," she said. "Present cyber defence systems are not adequate for dealing with this rapidly evolving threat.

"ICAO will be studying new preventive measures to deal with cyberattacks. ICAO will also work to develop an international framework from which civil aviation stakeholders can address cybersecurity more effectively."

From cyberattacks to airport landside attacks, there was agreement at AVSEC that the key to meeting the security challenge is co-operation among all effected sectors.

De Juniac said security is fundamentally a government responsibility but making flying ever safer and more secure "is engrained in the DNA of all air transport stakeholders".

"Paradoxically, the good that aviation brings also makes it a target for terror. No single entity has all the answers. That's why partnerships are essential to address our major security challenges with the speed needed to stay a step ahead of those who would do our industry harm," he said. ■


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New Philippines president improves operations at Manila airport says Cebu Pacific

By Dominic Lalk in Boracay

Congestion at Manila's Ninoy Aquino International Airport (NAIA) has greatly eased since the election in September of the controversial new president of the Philippines, Rodrigo Duterte, the CEO of low-cost carrier, Cebgo, told Orient aviation last month.

Since September, after the election of the new president, said Alexander Lao, "this particular administration has put in place the policies we have suggested for the longest time, including the removal of general aviation from NAIA.

"All of a sudden, airlines have improved their on-time performance from 40%-50% to approximately 70%-80%. Frankly speaking, a very simple move by the government brought big benefits."

In the lead up to the president's imposed policy changes, British consultancy, NATS, submitted more than 100 recommendations to increase capacity at NAIA, based on its experience of expanding Mumbai's Chhatrapati Shivaji International Airport. Both airports have a major problem. They are contained by their urban sites.

Lao said NATS engineers increased capacity at Mumbai from 36 movements an hour to 50, so he "hopes to see the same at Manila where today we're at 40 movements per hour. But maybe we can go up to 50 or even 60 movements", he said.

> Since the election of the new president, said Alexander Lao, "this particular administration has put in place the policies we have suggested for the longest time, including the removal of general aviation from NAIA
>
> **Alexander Lao**
> Cebgo CEO

The energetic CEO also is flexible about the site for the city's much needed new international airport. "We don't mind where the new airport is built as long as it's near Manila," he said. "Anywhere within 25kms of the city will be good for us. It can be in Sangley Point in Cavite or in Manila Bay. Both are perfect for us as long as the government makes a decision before the end of the year."

Independently, it has been reported that the Manila Bay option, on reclaimed land, has been rejected by the government. Lao and his parent airline, Cebu Pacific oppose converting Clark Airport into the new Manila airport because it is 100kms north of downtown Manila. The former military base has no mass transit network to serve passengers.

"Clark is too far. In fact, if Clark was designated Manila's capital airport it would be the farthest primary airport in the world," said Lao.

NAIA's limitations are not the only problems Lao has to manage in running Cebgo. "Seventy per cent of airports in the Philippines are not jet-capable," he said. "We need the ATRs to service these airfields. The runway at Caticlan (Boracay) used to be about 1,000 metres long, so we needed a turboprop to fly there," he said. Shuttles to Caticlan are Cebgo's bread-and-butter business, with up to 12 daily flights from Manila and Cebu to the resort island.

Speaking to Orient Aviation after the arrival of the first ATR72-600 into the Cebu Pacific

Air (CEB) group fleet, Lao, who also is vice president commercial at the parent airline, said he believed in the future of the turboprop and that it remains critical for the development of new markets for his budget carrier.

"Being in charge of a low-cost carrier (LCC), I have to focus, focus, focus on lowering costs," Lao said. "We ordered the new high-capacity ATR because we could fit in six more seats and pass on those savings to our customers."

CEB's first ATR72-600 will be flown by Cebgo and is part of the airline group's 2015 $673-million order for 16 of the type. All the aircraft have been bought under direct purchase agreements and will be fitted with a new high-density configuration and a seat pitch of 28 inches.

Lao added: "The Required Navigation Performance-Authorization Required (RNP AR) and Vertical Navigation (VNAV) capability of our new ATR 72-600 fleet will increase airfield access and facilitate more efficient air traffic management."

Cebgo and parent CEB will progressively replace its fleet of eight ATR 72-500s, configured with 72 seats, with 16 ATR 72-600s with 78 seats. Deliveries of the -600s will run until 2020. CEB, now the Philippines' largest airline, is continuing its quick growth trajectory with six A319s, 36 A320s, six 436-seater A330s and the eight ATR 72-500s. Between 2016 and 2021, CEB expects to take delivery of 32 A321neos, two more A330s and 16 ATR 72-600s.

To fill this current and future capacity, Lao believed CEB must be open to all revenue opportunities. "Our online sales have grown significantly. Today, we're at 60%. We pioneered mobile check-in in the Philippines," he said. Nevertheless, Lao is not ready to write off the traditional global distribution system (GDS).

"GDS are pretty expensive. We want to encourage as many direct sales as we can," he said. "I guess the challenge for us is: 'How can we make our brand more popular in non-Filipino dominated markets'?"

"In China we don't use a lot of GDS, mostly because we see a lot of web savvy customers. We know there also is a lot of web savviness in Japan and South Korea, but the markets we are targeting there are mainly group markets, so we need the GDS."

Ancillary sales account for 18%-20% of the carrier's total revenue, Lao said, so GDS and CEB have opportunities to capture these extra dollars.

Challenges remain for both airlines. Intense competition fuels low fares and depresses yields. Philippines AirAsia has returned to expansion and full service carrier, Philippine Airlines (PAL), has reinforced its commitment to the domestic inter-island market with a Letter of Intent for "up to twelve" Dash 8-Q400s from ATR rival, Canada's Bombardier.

Lao said the pilot shortage is challenging, but the situation has improved for CEB and his LCC since they invested in the Philippine Academy for Aviation Training, a joint-venture with simulator manufacturer, CAE, near Clark International Airport in Luzon. ■

FROM HAWKER TO FLYING HIGH

Juneyao Airlines chairman Wang Junjin and his two brothers started their working lives as roadside hawkers. The clever trio rode China's economic wave and along the way the business of aviation caught their eye. Aerospace is now part of the Juneyao conglomerate with middle brother Junjin running a full service carrier that is one of the fastest growing airlines in China.

Dominic Lalk reports from Shanghai

Juneyao Group chairman and owner of Shanghai's Juneyao Airlines, Wang Junjin, started his working life as a teenage hawker of milk and yoghurt, alongside his two brothers, in the poor fishing village of Dayuzhen in Zhejiang province. Today, the 47-year-old entrepreneur is ranked 180th on China's Rich List and the Juneyao Group he leads is ranked 177th on the China Top 500 Companies List.

Junjin and his brothers, Junyao and Junhao, were always determined to move to the big city. Junyao, the eldest of the three, dropped out of school to become a hawker. His brothers soon joined him and set off on their path to a better life.

After they arrived in Shanghai, where they continued to peddle dairy products, they expanded their offerings to stickers, badges and flags as the 1990 Asian Games in Beijing approached. It was the first time the Games were to be held in China and the clever young trio fed pent-up demand for patriotic souvenirs in a market with little competition. The enterprise made the Wangs their first million.

"Sleeping over a dozen hours under the bench on trains was a common thing," Wang told Orient Aviation in Shanghai last month, as he revealed how the brothers built their businesses.

In 1991, they founded the Juneyao Group in Wenzhou. On July 28 of that year, as an Antonov An-24 touched down in Wenzhou, they made their first foray into aviation—China's first business jet charter company.

Juneyao transported entrepreneurs, business associates and anyone who could afford it on their business jet. The first services were between Wenzhou and Changsha followed quickly by flights to other domestic Mainland destinations. In typical Chinese fashion, the brothers expanded their empire at breakneck speed by investing in real estate, financial services (including their own bank), retail and commerce subsidiaries and, of course, dairy products.

"In the past three decades, since China launched its reform and opening up policy, the Juneyao Group has benefited from the government's preferential policies to encourage private undertakings. As private company owners, we are not solely relying on ourselves to achieve success. We happen to have been born at the right time, " said Wang.

"If not for the great tide of reform and opening up, which awoke the entrepreneurial spirit hidden in our hearts, I might still be an honest fisherman like people in my father's generation." Fortune has been favourable to their labours, the Wangs believe. They are firm believers in corporate social responsibility and fund charities including a poverty alleviation programme for migrants in the Three Gorges Dam area.

Sadly, the eldest brother of the trio, Junyao, has not lived to enjoy the success of the Juneyao Group. He died of cancer in 2004 , aged 38, after he bequeathed the group's chair to Junjin and the vice-chair to Junhao, the youngest of the siblings.

Juneyao Airlines was officially established a year later, although the carrier's maiden flight did not take off from its Shanghai Hongqiao base until 2006.

Juneyao Group has more than 10,000 employees. It listed on the Shanghai Stock Exchange in May 2015 for US$1 billion. Junjin's estimated $1.42 billion fortune includes 26% of the group's airline and 14% of listed department store group, the Wuxi Commercial Mansion Grand Orient Co. Wang Junyao's bachelor son, 28-year-old Wang Han, was left 27% of Juneyao Airlines by his late father.

Wang said he always knew that if his airline was to succeed, it would have to be a different product in the market. It must have a reputation for quality that set it apart from the Big Three state-controlled carriers.

"Competitiveness is very important for private companies like us if we want to win a share in the aviation market. We have been focusing on quality services to improve our competitiveness. For instance, we've installed more comfortable seats on our planes with more leg room." he said.

"In aviation in China today, there is a lot of room for airlines to improve the quality of their services, for example on-time flight performance. We pay attention to details that others often neglect. In this way, we are maintaining above average service."

> We've also been cooperating with China Eastern for a long time. It's a mutual relationship, but we're in talks with many airlines about how we could move forward by working together
>
> **Wang Junjin**
> Chairman Juneyao Airlines

Juneyao Airlines is determined to be different. It has developed a solid reputation with Mainland business and leisure travellers alike. The airline likes to call itself a "high-value carrier". It invests up to 20% more on in-flight meals and beverages than the Big Three airlines.

And it works. When your Orient Aviation correspondent took a Juneyao flight from Shanghai to Hong Kong following this interview, the service included a bilingual menu with a choice of Chinese or Western cuisine. Neither meal choice nor bilingual menus are available on your average chinese legacy carrier flight.

Wang said Juneyao allows its passengers to check in late when a flight is delayed, and will inform drivers, through SMS, of its registered business passengers' arrival to make sure they are boarded as soon as their flight has landed.

After flying for two years out of Hongqiao, Juneyao opened a second base at Shanghai Pudong to avoid congestion at smaller, downtown Hongqiao. In 2015, it held 8.65% of the market at the two airports, putting it ahead of flag carrier, Air China. It is the third largest airline in the city after China Eastern Airlines and China Southern Airlines.

Committed to safety

Safety remains the top priority at Juneyao. The airline has a good record and passed the International Air Transport Association Operational Safety Audit (IOSA) in July 2009. The decade has only seen one minor incident at the carrier, albeit with wide-ranging consequences.

In 2011, the South Korean pilot of Juneyao Flight 1112 out of Shenzhen disregarded six consecutive orders from Hongqiao Air Traffic Control in seven minutes to abort his approach, after another incoming aircraft had declared a fuel emergency.

The Civil Aviation Administration of China (CAAC) permanently revoked the pilot's license and temporarily suspended Juneyao from recruiting foreign flight crew after imposing a 10% capacity curb on the carrier for three months. It also ordered Juneyao to conduct at least 40 hours of ground theoretical training courses for its foreign pilots within a month of the incident.

Juneyao has since returned to the CAAC's good books. Foreign pilots make up approximately 15% of its flight deck crew, with the majority of them recruited from South Korea and Mexico. Juneyao has pilot pay packages of up $300,000 for an A320 captain, according to postings at ASSA, a Hong Kong-based pilot recruiter. The airline employs a fair number of female flight deck crew, a progressive approached for a Mainland carrier.

In its first year, Juneyao Airlines flew three GECAS-leased A320 Family aircraft on five domestic routes. Its Airbus fleet doubled in the second year, then grew to 17 aircraft in 2010, 30 in 2012 and 50 in 2015. At the end of 2016, it expects to have 41 A320s and 16 A321s, which will make it the airline with the youngest fleet in China, with its planes averaging 3.8 years in age.

Until now, Juneyao has stayed loyal to Airbus, but this could change when it launches long-haul operations to Australia, the U.S. and Europe from 2020. Wang said the airline is considering the A350 and the B787 for its long-haul expansion, with an announcement due before the end of the year. As for the A380, the chairman said Juneyao "will not consider this based on efficiency and economic considerations".

If the posters lining the walls of Juneyao's headquarters at Hongqiao are an indication of its fleet planning, the B787 appears to have a good shot at breaking Airbus' monopoly at the carrier. Boeing has definitely done its Chinese homework, as carrier after carrier orders the Dreamliner. Earlier this year, Kunming-based Ruili Airlines celebrated its second anniversary by firming an order for six -9s and a few weeks later Shenzhen start-up, Donghai Airlines, ordered five B787s. HNA Group's Lucky Air will receive -9s as China's first long-haul low-cost carrier (LCC), operating out of Kunming, with a secondary base planned from 2020 at Chengdu's under construction Tianfu International airport.

Wang said Juneyao wanted to start with ten widebodies, but he stopped short of listing their inaugural destinations. As the airline continues to strengthen its ties with Star Alliance, it would be logical for Juneyao to feed into the alliance's hubs at Frankfurt, Chicago, San Francisco and Vancouver. Wang has ruled out purchasing the "Made in China" ARJ21. He said the regional jet was designed to fly 70-80 passengers on short hops and was too small for Juneyao given its Shanghai base.

Juneyao's passenger numbers have grown at an average annual rate of 19.1%, with 10.5 million passengers boarded last year. Its operation is heavily focused on its Shanghai hubs with 88.2% of its passengers handled at the two airports. In 2015, passenger numbers grew 29.7% year-on-year, with domestic growth of 28.72% and international expansion of 61.33%. Like many of its Mainland rivals, it lost ground in Hong Kong, Macau and Taiwan, with an 18.55% decline in passengers carried.

The airline has been in the black for the last decade. In 2015, Juneyao reported a net profit 1.05 billion yuan (US$162 million). As of June 30, its net profit was 706 million yuan, a 41% year-on-year improvement. It was achieved on revenue of 4.75 billion yuan against four billion yuan in costs. Juneyao Airlines' total assets are $2.9 billion yuan against $1.7 billion yuan in liabilities.

The airline serves 69 destinations: 51 in Mainland China, 14 international destinations, as well as "the regions" of Hong Kong, Macau, Taipei and Kaohsiung. It has a

particularly strong presence in Thailand, with multiple daily flights from Shanghai to Bangkok, Phuket, Chiang Mai and Krabi. Following a relaxation of visa policy in January 2015, Japan also sees Juneyao flights at Tokyo Haneda, Osaka, Nagoya, Fukuoka, Tottori, Obihiro and Okinawa.

Earlier this year, the carrier launched a thrice-weekly Pudong-Irkutsk service, its longest route to date. It then added a daily Chengdu-Krabi service and Nanjing-Okinawa flights, which signalled a move away from its traditional hubs.

Juneyao is often mistaken for a budget airline. Nothing could be further from the truth, said the "high-value carrier". It is "cost-efficient", but it re-emphasised it spends more on in-flight offerings than its competitors.

The Wangs are nonetheless well aware of China's LCC potential. As early as 2006, Juneyao Group purchased a 71% equity in Okay Airways' largest shareholder, Beijing Okay Investment Co, and obtained a 45% indirect holding in the Tianjin-based LCC. Four years later, Juneyao sold its shares in Okay Airways to DTW Group, for 200 million yuan, after reported disputes with the LCC's minority owners.

Wang cemented his commitment to the budget sector by founding Jiuyuan Airlines—variously branded "9 Air" or "nine yuan" for its lowest airfare—in Guangzhou in December 2014. The setting up of the airline followed closely on the heels of Beijing's advocacy for more LCCs, following the success of privately-owned Spring Airlines, also headquartered at Hongqiao.

Jiuyuan got off to a rocky start after missing out on the good slots at Guangzhou Baiyun, which delayed its launch and stunted its initial growth. The LCC now flies 16 domestic routes to 11 cities on ten B737-800s. it has some "tag" routes departing from Guangzhou before 7am for multiple stops before returning to the Pearl River Delta after midnight.

The LCC has an order backlog with Boeing for 20 B737-800s and 30 B737 MAXs. Wang hoped it would break even by year-end. Juneyao and Jiuyuan do not codeshare or interline due to IT integration issues.

After three years of negotiations, at the urging of Air China, Juneyao has announced it would join Star Alliance as a connecting partner early in 2017. "This tie-up allows us to achieve our goals, lower our costs and provide more services to our passengers," Wang said.

While he did not spell out the costs of joining Star, the Juneyao boss said he would wait to see how the partnership with Star develops before he decides to become a full-fledged member of the alliance. "We have weighed in on which alliance would be better for us. We have decided to sign a memorandum with Star Alliance because costs are lower, their business is more aligned with ours and it's more efficient," Wang said.

Wherever its allegiance may lie, Juneyao will continue its codeshare partnership with fellow Shanghai carrier and SkyTeam member, China Eastern Airlines. "We decided to do this for the benefit of the traveller and not for our business. We're open to collaboration with any airline, specifically any airline that flies to Shanghai, as long as it can bring convenience for the traveller," he said.

In the meantime, "we offer 53 additional routes that will complement Star Alliance's

existing services from Shanghai and will no doubt attract more connecting passengers to our two home hub airports", he said.

"We've also been cooperating with China Eastern for a long time," Wang emphasised. "It's a mutual relationship, but we're in talks with many airlines about how we could move forward by working together."

In particular, Wang mentioned Air New Zealand and Air Canada. The latter is preparing to launch a daily Montreal-Pudong service in February, complementing its existing daily flights to Toronto and Vancouver.

Wang is regarded as an unassuming, hands-on leader, ever committed to his family conglomerate and the airline. "Wang's extraordinary courage and insight together with other entrepreneurs in China with pioneering spirits might lead China's private economy to take off," the New York Times said back in the early 2000s.

Sure enough, the economy took off and so did the Wangs and their Juneyao Group. The group can lay claim to be one of the first private aviation pioneers in the nation. It broke through the bureaucracy of state ownership and tight regulation and is delivering a consumer-centric experience to the Chinese air passenger. ■

Juneyao Airlines expands Star presence in Shanghai

By Dominic Lalk

Star Alliance and Juneyao Airlines have formally sealed a strategic partnership which will see the Shanghai-based carrier become a "Connecting Partner (CP)" of Star Alliance, "hopefully before April 2017," the airline newlyweds told Orient Aviation at a ceremony at Shanghai's iconic Jin Mao Tower last month.

The tie-up will allow Hongqiao-headquartered Juneyao to offer services such as through-check-in, lounge access and additional baggage allowance to qualifying passengers traveling on connecting itineraries with Star carriers, including Air China, Air India, Air New Zealand, All Nippon Airways, Asiana Airlines, EVA Air, Shenzhen Airlines, Singapore Airlines and Thai Airways International.

"Shanghai did present a significant gap for us, so Juneyao is a terrific addition to our network proposition in China and particularly in Shanghai," outgoing Star Alliance CEO, Mark Schwab, said.

Seventeen Star carriers operate close to 1,600 weekly services in and out of Shanghai's two airports, Pudong International and Hongqiao International, and Juneyao serves both of them. With a fleet of 56 aircraft, it flies 1,700 flights a week to 69 destinations in eight countries and "regions" – the Mainland's description of Hong Kong, Macau and Taiwan.

"We will offer 53 additional routes that will complement

Star Alliance's existing services from Shanghai and attract more connecting passengers to our two home hub airports," said Juneyao's chairman, Wang Junjin.

Juneyao's marriage with Star potentially provides access to 1,300 airports served by the alliance's carriers, while significantly increasing its chances of success when it launches long-haul operations with ten B787s from 2020. For Star and Air China, Shanghai-based Juneyao gives them a bigger presence in China's key financial hub dominated by SkyTeam's China Eastern Airlines.

Star took a big hit in 2010 when Shanghai Airlines left the alliance after it was taken over by China Eastern. Analysts have predicted Star could feed up to 2,000 more passengers a day into Juneyao's network, which will generate an extra $20 million in annual revenue, numbers that in the long-term outweigh the costs of becoming a Star CP, particularly with regards to IT integration issues. "Their platform here is Travelsky. We've done integration with Travelsky before, so all sides know how it works and there shouldn't be any big problems," Schwab said.

"A full member needs to have full commercial relationships with all members of Star Alliance," Schwab said, while "as a CP, that carrier only needs to establish commercial relationships with airlines that make sense, in this case airlines flying to China, so that in itself creates a significant difference in the cost of integration." The Frankfurt-headquartered airline grouping has been investing heavily in building new technology to make the customer proposition easier.

Schwab told Orient Aviation that negotiations between the alliance and Juneyao had been on-going for three years, "right as we welcomed EVA Air to the family in 2013", adding he was "impressed by the carrier's professionalism and operational efficiencies" from the beginning of their discussions.

Star launched the CPM model last December in partnership with South Africa's Mango Airlines, but slower-than-expected necessary technological and commercial links, paired with a leadership change at the low-cost-carrier, put the brakes on implementation.

Schwab said the alliance was in negotiations with "a handful" of other airlines about joining as CP members, "although not in China [or Australia]". "I don't think there's an obvious candidate there," Schwab said. Orient Aviation understands Air India Express and Thai Smile Air could be the next CP Star partners.

Schwab will retire in January and be succeeded by Star COO, Malaysian-born Jeffrey Goh. ■

The hard work begins

After six years of often torturous negotiations, the International Civil Aviation Organization (ICAO) has agreed to a framework to reduce carbon emissions from aviation. The pact marked the first time a global industry had voluntarily committed to reducing its emissions. But not every country is on board – for now.

By Tom Ballantyne

When representatives of the world's aviation regulators, airlines and other interested parties gathered in Montreal in late September for the International Civil Aviation Organisation's triennial Assembly, they expected the world's first carbon offsetting scheme for the industry would be approved. It was but with caveats.

One hundred and ninety one states ratified the Carbon Offset and Reduction Scheme for International Aviation (CORSIA), but only 68 of them committed to the initial, voluntary stage of the scheme.

Opting out, for the time being, is India, presently the world's fastest growing aviation market. Vietnam, the Philippines, Laos, Cambodia and Myanmar also are waiting and seeing. Major dissenter, Russia, told the ICAO Assembly the agreed emissions cap, to apply from 2020, was "unrealistic" and that it was not ready to join the framework.

First in the Asia-Pacific to participate in the voluntary initial phase are China, Indonesia, Singapore, Japan, Malaysia, New Zealand, Korea, Australia, Thailand, Papua New Guinea and the Marshal Islands. Ultimately, India will have to join the mandatory scheme, which will cost airlines as much as $23.9 billion annually by 2035.

India's decision was disappointing, but not unexpected. New Delhi believes, as do some fellow developing nations, that the scheme will disadvantage the nation's economy.

India's decision was announced only days after it had ratified the Paris Agreement on Climate Change. It said capping emissions from aviation from 2020 would be "an injustice" to the country's growing economy. It wants to remain outside the mechanism for the next few years.

Like India, several developing countries believe the market-based taxation regime would impose an inappropriate economic burden on them.

India's position was approved at a cabinet meeting chaired by the country's prime minister, Narendra Modi.

"There is an attempt to bring a cap on emissions in civil aviation by 2020. We have said that for the developing world the proposal is unfair. When the economy is growing, you cannot cap our emissions from aviation. A cap by 2020 will be injustice," said India's Minister for Human Resources, Prakash Javadekar.

Airlines regard CORSIA as a huge victory for the industry. It removes the threat of a patchwork of regional environmental regulations and taxes that were forecast to be even more costly than the ICAO scheme.

CORSIA only covers international flights and rather than enforcing emissions reductions, it allows airlines to increase pollution in exchange for buying credits that support renewable energy development, forest preservation and other environmental endeavours. Under CORSIA, the cost per flight for emissions will be low enough not to impact airfares.

Association of Asia Pacific Airlines (AAPA) director general, Andrew Herdman, who was a member of the aviation cross-industry delegation at the ICAO Assembly, said it was a landmark agreement.

"We commend the 68 States who demonstrated leadership with their commitment to the voluntary stage of CORSIA. We look to other States to follow this lead and declare their

CORSIA timeline

The CORSIA will be applied to international aviation in phases:

- 2021 to 2023 – a 'pilot' voluntary phase for countries who have volunteered to be part of the scheme. Sixty eight of the 191 member states who voted for ICAO's CORSIA, which together represents more than 85% of air traffic, have volunteered to be included in the scheme from its outset.
- A 2022 review will be undertaken to determine if CORSIA needs operational revision before it moves to its next stage of activation.
- 2024 to 2026 – the first implementation phase, on a voluntary basis.
- 2027 to 2035 – the second phase, which will include all States except the least developed small island states and countries with a small amount of international air traffic. The excluded states make up less than 0.5% of global air traffic.

voluntary participation in the CORSIA," he said.

The AAPA has been actively involved in developing the industry strategy on environmental sustainability, Herdman said, and added that "although a great deal of work has gone into achieving this outcome, challenges lie ahead to ensure the scheme is implemented effectively.

ICAO secretary-general, China's Fang Liu, said CORSIA was a "balanced, pragmatic and a very positive development".

Environmentalists, however, had a lukewarm response to the agreement. "We are far from the finish line in curbing carbon pollution from international aviation," said Lou Leonard of the World Wildlife Fund. "But this is the starting block. It's a foundation we must build on over time," he said.

Greenpeace UK chief scientist, Doug Parr, said: "This agreement is a timid step in the right direction when we need to be sprinting. For years, the aviation industry has managed to get away with doing nothing about its growing carbon emission problem. Now it is giving itself even more years to do very little.''

International Air Transport Association (IATA) director general and CEO, Alexandre de Juniac, said the historic significance of the agreement cannot be overestimated. "CORSIA is the first global scheme covering an entire industrial sector. The CORSIA agreement has turned years of preparation into an effective solution for airlines to manage their carbon footprint," he said.

"This agreement ensures the aviation industry's economic and social contributions are matched with cutting-edge efforts on sustainability."

By itself, de Juniac said, CORSIA would not lead to a sustainable future for aviation. "The industry will continue to drive its four pillar strategy on climate change: improvements in technology, operations and infrastructure complemented by CORSIA. It also will ask governments to support commercialization of sustainable alternative fuels for aviation," he said.

Civil Air Navigation Services Organisation (CANSO) director general, Jeff Poole, said CANSO would continue to focus on pillars two and three of the industry's climate change strategy: more efficient aircraft operations and upgraded infrastructure.

Pillar two aimed to reduce emissions with air traffic management solutions that allow aircraft to fly shorter, optimum routes and take off and land with smoother trajectories. Pillar three is focused on industry and government efforts to increase capacity and reduce delays with better airport facilities and their associated services.

Executive Director of the cross-industry Air Transport Action Group (ATAG), Michael Gill, said: "What was a visionary approach seven years ago has become a reality." Angela Gittens, director general of Airports Council International (ACI) World, said: "This historic climate agreement follows an ACI Resolution supporting CORSIA and the signing of a Memorandum of Understanding between ACI and ICAO for enhanced cooperation on environmental related initiatives."

Aircraft manufacturers Boeing, Airbus and Embraer, all producing new generation, more fuel efficient aircraft, welcomed CORSIA and pledged their commitment to build more environmentally friendly airliners. ■

ASPIRE spreads its wings

Singapore Airlines' new route, the "Capital Express" between Singapore, Australia's capital city of Canberra and Wellington in New Zealand is the latest addition to the Asia South Pacific Initiative to Reduce Emissions (ASPIRE) program.

The Civil Aviation Authority Singapore (CAAS), Singapore Airlines, Airservices Australia and Airways New Zealand said the flights will be environmentally friendly by making use of favourable winds, reducing airborne holding times, enabling efficient 'continuous descent' arrivals and reducing taxi times.

The ASPIRE program is a partnership of six air navigation agencies and ten airlines and is focused on reducing the environmental impact of aviation in the Asia-Pacific. The inaugural Capital Express flights on September 20 and 21 saved almost 7,000 kg of fuel across the four sectors, which equated to an approximate saving of around 22,000 kg of carbon emissions.

It is calculated that ASPIRE will save the Capital Express route around 1.5 million kilograms of fuel and 4.6 million kilograms of emissions (equivalent to removing 970 vehicles from the road) annually – the equivalent of removing 970 cars from the road.

CAAS director-general, Kevin Shum, said: "CAAS has been an active ASPIRE participant since 2010. We are delighted the program continues to grow and make impactful progress. By working closely together and adopting best practices in air navigation, we can enhance air transport operations and reduce aviation emissions."

SIA senior vice president flight operations, Captain C.E. Quay, said: "We believe we have a long-term responsibility to help protect the environment. We constantly ensure our operations are carried out in a responsible manner through a framework designed to manage issues related to carbon emissions, waste, noise and the consumption of energy and resources."

Since ASPIRE was established in 2008, its partner airlines and air navigation agencies have implemented 30 ASPIRE daily city pairs across the Asia-Pacific. SIA was the first airline to fly a multi-sector demonstration green flight in 2010, when SQ11 flew from Singapore to Los Angeles, via Tokyo. Applying ASPIRE practices, the journey saved 10,686 kg of fuel and reduced carbon emissions by 33,769 kg.

Beyond the simulator

The AirAsia Group and Canada's CAE are testing a Next Gen training system for pilots that seeks to erase industry doubts about current cockpit teaching.

Tom Ballantyne reports

This month, Canadian simulator manufacturer and pilot training group, CAE, and the AirAsia Group will begin testing a pilot training system intended to improve the objective performances of pilots by exploiting the brave new world of data analytics.

The Next Generation Training System, which has been installed on one of the Airbus A320 simulators at the Asian Aviation Centre of Excellence (AACE) in Kuala Lumpur, is being heralded by CAE as a breakthrough in the industry.

Said Nick Leontidis, CAE's Group President, Civil Aviation Training Solutions: "Supported by innovative data collection and analysis techniques, this system promises to improve training quality and efficiency by integrating untapped data-driven insights into training."

And as the debate continues about pilots' reliance on automation in the cockpit, CAE said the new system will train pilots to fly commercially as well as teach them to react appropriately when things go wrong.

"The basic notion behind our Next Gen Training System is to give instructors a better capability to objectively measure the critical skills needed by pilots. We also need methods to train people for a particular airline's requirements," said Leontidis.

"We have developed a system where pilots can have their skills measured in critical situations. The training is a structured list of skills that must be mastered. We will measure those skills and do it in a way that the airline wants the measurements done.

"We will give the instructor the ability not only to subjectively assess the performance of a trainee, but also the ability to deliver an objective assessment [of the trainee]."

While manual flying is one of the skills a pilot must master, Leontidis said it is airlines that dictate the amount of manual flying their pilots must do in their Standard Operating Procedures (SOP).

"Manual flying is an area of discussion and debate, but there are others issues too. Upset prevention and recovery is one. There have been incidents where people have stalled aircraft and unfortunately that has resulted in loss of life," he said.

"We believe we don't need to teach people manual flying, but we need to train them to get out of trouble when they are in trouble. These are the times when most of these accidents have occurred. Pilots get into trouble and do not recognize the situation they are in. This puts them in a place where the aircraft is uncontrollable.

"I think most pilots, even the younger ones, understand how to fly an aircraft in a controlled environment. It's the uncontrolled environment that is the threat."

"We think upset prevention and recovery training should be added to training programs. Many airlines have made it part of their pilot training and it is included in CAE's curriculum as well," he said.

"Pilots have to be ready for that moment when something

does go wrong. It's not learning 'hey, here's how an A350 flies around'. It's what you do when the A350 decides it does not want to fly anymore."

Leontidis said Next Gen training has been developed because there are a lot of young pilots in the system and it would be beneficial to know if they are operating correctly. If they are not, the system can catch them early and correct their mistakes.

"We are looking for insights about what is going on. It's useful to the individual because the results are assessed objectively. It's useful to the instructor because he can decide how to help if required. It's useful for management because they will have a better understanding of their pilots.

"Everybody wins in this type of system. We believe it will bring the quality of the training to another level."

CAE's Asia-Pacific business is thriving. It has 15 training schools across the region: Asia (9), India (4) and Australia (2). "Our big operations are in Zhuhai, southern China, Kuala Lumpur and Tokyo," said Leontidis.

There also is a training centre in Singapore, part of its joint venture with AirAsia, as well as joint venture centres with Cebu

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>
> **Nick Leontidis**
> CAE's Group President, Civil Aviation Training Solutions

Training flourishes as pilot demand escalates

Forecasts predict Asia-Pacific airlines will buy between 13,000 and 15,000 new aircraft, worth more than $2 trillion, in the next two decades. Contrary to general thinking, there is growing evidence training organizations will produce enough pilots to crew the region's airline fleet.

Given the rapid growth of Vietnam's airline industry, it is surprising the country does not have a single pilot training school. Apart from Viet Flight Training JSC (BayViet), which provides aviation ground training in Ho Chi Minh City, Vietnam has no civilian flight training organization. Yet there is an unabated shortage of qualified flight instructors and flight examination staff at every airline in the nation.

But that is about to change. Early next year, New Zealand's Eagle Flight Training Ltd, which has been training Vietnamese pilots at its base at Ardmore Airport in Auckland for many years, will open a flight school at Chulai Airport in central Vietnam's Quang Nam province.

"A nation of 92 million people cannot develop its aviation industry without training and examining new pilots in the airspace where domestic airlines operate," said Eagle Flight Training Ltd's CEO, Alexander Zapisetskiy.

The project has an ambitious target of training more than 300 pilot students a year by 2020. Students will be taken to Private Pilot Licence level in Vietnam and complete their commercial pilot training in New Zealand.

Vietnam is not alone scrambling for crew to fill in the growing number of cockpits across the region. As airlines struggle to stop their experienced pilots from being lured away by Middle East and Chinese airlines or large budget carriers, meeting demand for qualified pilots has become a challenge for the industry.

Boeing's latest forecast said 1.5 million pilots and technicians will be required by the industry in the next 20 years, an increase of 10.5% for pilots and 11.3% for technicians, over the company's forecast 12 months ago. An estimated 40% of them will be needed in Asia-Pacific.

Most of the region's major full-service airlines have their own highly efficient pilot training programs, although they too are losing some experienced pilots to better paying jobs in the Gulf and on the Mainland.

However, training organizations are expanding their operations in the region, the world's fastest growing aviation market, with Boeing and Airbus leading the way and many smaller training companies setting up in their wake.

Last year, China's Sichuan Haite High-Tech Co. Ltd, part of the Chengdu HAITE Group set up HAITE Singapore, a 21,000 square metre training centre at Changi Business Park. It is the largest independent aircraft pilot training centre in Singapore and is HAITE's first aviation training facility outside China.

It trains pilots and aviation-related crews,, including cadets from commercial airlines, that do not operate have their own simulators or academies. "Our first training session commenced last May and we have been gradually increasing our training volume ever since. We have trained 1,500 air crew from airlines and training organizations in ASEAN," said the managing director of HAITE Singapore, Marc Nadeau.

HAITE is evaluating the market with the intention of adding training devices to its network of centres, including Singapore. HAITE Singapore Aviation Training Centre is equipped with a B737-800W Full Flight Simulator, an A320 Full Flight Simulator and an A320 Integrated Procedure Trainer (IPT).

In the next four years, it intends to progressively expand

Pacific, China Southern Airlines, China Eastern Airlines and Japan Airlines (JAL).

In August, CAE signed a five-year commercial aviation training contract with South Korean budget carrier, Air Seoul, for the training of the carrier's A320 cockpit crew. Air Seoul pilots began their CAE training on August 1 at the CAE Korea Training Centre.

Earlier in the year, the company agreed to a training equipment contract that included the sale of three Boeing 737MAX, a simulator A320NEO and an ATR72-600, to support Indonesian LCC, Lion Air's, expanding training requirements. It also has extended its existing training contracts with South Korea's Jeju Air and Japan Airlines (JAL). The JAL contract, a Multi-Crew Pilot License (MPL) First Officer Program, has been extended by three years to 2023.

"We have the capacity to do more. We see ourselves adding more simulators, more instructors and more capacity to train people," Leontidis said. ■

New Zealand joint venture to train Vietnamese aircraft technicians

The Eagle Flight Training Ltd joint venture in Vietnam will not be limited to producing qualified pilots. A year ago, the company signed a Business Cooperation Agreement with Vietnam's Aerospace Engineering Services JSC (AESC). Established in 2008, AESC is the first private company approved and certified by the Civil Aviation Administration of Vietnam (CAAV) as a VAR 145 Maintenance Organization.

After five years of development, it has expanded its business to include aviation consulting and aviation training. AESC will be responsible for aircraft maintenance and aviation technician training under the joint agreement.

"It will be a highly diverse operation with a mixture of flight instructors and managers from New Zealand and Vietnam. This project will require strong support from the aviation authorities of both countries, said Eagle Flight Training Ltd CEO, Alexander Zapisetskiy.

"We also expect collaboration with BayViet, domestic airlines and the ministries of transport and education in Vietnam. Our Vietnamese mission is to replicate the successful New Zealand model of pilot training."

to its full seven-bay capacity. By then, the facility could provide more than 40,000 hours of training per year and attract up to US$24 million in direct and indirect revenue annually for the Singapore economy.

In the Philippines, the Alpha Aviation Group (AAG) is increasing its investment at its subsidiary, AAG Philippines, with the delivery of a new Airbus A320 Fixed Based Simulator (FBS) acquired from manufacturer Multi Pilot Simulation. The multi-million dollar MPS A320 FBS, the first to be operated in Southeast Asia, will be ready for use by AAG Philippines 240 cadets and airline partners.

AAG Philippine's new simulator is not unique. A recent research report by Stratistics MRC said the global flight simulator market is expected to grow from $5.89 billion in 2015 to $8.03 billion by 2022, with the number of simulators in Asia-Pacific to grow faster than any other region. ■

Challenges of the automated flight deck

As more highly automated aircraft - A380s, B787s, A350s and other new types - take to the sky, the industry is asking if pilots and engineers are being properly trained to fly and maintain them.

The International Civil Aviation Organization (ICAO) has identified loss of control of highly automated aircraft as the single most significant threat to aviation safety. The ruling has sparked widespread industry discussion about aircraft training curriculums for pilots and maintenance engineers as a result of several recent accidents and incidents.

A prime example of the debate was the Air France A330 AF 447 crash in the South Atlantic in June 2009. The aircraft was en route from Brazil to Paris when it disappeared.

When the black box was recovered two years later, it was discovered that the crew reacted incorrectly when the aircraft approached a stall. The pilot pulled back on the sidestick, the reverse of what he should have done.

Five years later, in June 2014, Asiana Airlines flight 214 crashed on landing at San Francisco International Airport in the U.S. The country's National Transportation Board (NTSB) found the crew mismanaged the approach.

The investigators said the pilots' over-reliance on automation and their lack of systems understanding were major contributing factors to the crash landing. The NTSB also said the pilot's faulty mental model of the aircraft's automation logic led to his inadvertent deactivation of

the automatic airspeed control.

In addition, the safety body said the airline's automation policy emphasized the full use of all automation and did not encourage manual flight during line operations.

Such accidents have been used to advance the view that pilot training curriculums do not train cockpit crew to handle the sophisticated automation of a modern flight deck. The doubts about crew training have been exacerbated by the fact there are no global standards in place for pilot training.

So the questions to be addressed are: is the new breed of airline pilot, surrounded by high technology, losing his or her basic flying skills? And if so, what is being done about it?

At Airbus, pilot training has undergone a radical redesign since its latest aircraft, the A350, was introduced into service. It has been successful so the new curriculum is being extended to pilot training programs for all of the manufacturer's aircraft types.

At Boeing, its approach to modern flight training also has shifted with the arrival of its Next Gen jet, the B787, with customers from earlier in the decade. In response to the technology built into a Dreamliner cockpit, Boeing has developed an all-digital, Internet-based teaching system for flight and maintenance training on the aircraft.

At a recent Association of Asia-Pacific Airlines air safety seminar, Airbus' regional senior director south and Southeast Asia, Captain Michel Menestrot, said: "The message we want to pass on is we must think and re-think the training. The work has changed. The technology has changed.

> **In the simulator, we want to train people in the whole flight envelope, but to stay within the envelope. We want to train people to fly without autopilot, without a flight director, without all the IT. With all that off**
>
> **Captain Michel Menestrot**
> Airbus regional senior director south and Southeast Asia

"We have changed. I have some white hair now that I didn't have 35 years ago when I did my first instructing. We have to use the new technology. But in a way we have to go back to the basics of flying skills and also look at what the basics of training are."

Menestrot said when Airbus reviewed its training program as the A350 was being developed, new tools were introduced, including the Airbus Cockpit Experience (ACE). ACE is a laptop program featuring the A350 cockpit that allows self-paced study and functional learning for theory and practice.

Students can be taken through every possible procedure step by step, right down to parking the aircraft, either alone or with an instructor's support. "Everybody is mobile today. Students can take the training to the street. The idea is to make pilot training mobile so we have put the cockpit on a tablet and training can done anywhere," said Menestrot.

Computer Based Training (CBT), where trainees sit in front of a computer animation of the technical systems, also has been revolutionized with new equipment. The Airbus Pilot Transition trainer (APT) is a more realistic training tool that is making CBT obsolete.

"Look at young people. They never open a manual. They learn by doing. They take the device and start playing with it so now that is part of the A350 training philosophy,'' said Menestrot.

"What do we want to train?" asks Menestrot. "We want to train some theoretical knowledge. We want to train manual flying skills. We want to train threat and error management. We want to train decision-making and crew communication, together with attitude to achieve this good airmanship. We want to have people we call engaged pilots. We want to avoid complacency. We want pilots to improve their knowledge and their skills."

At Boeing, it was decided the digital technology of the B787 Dreamliner required a digital training solution. Boeing's training subsidiary, Alteon, introduced major changes to its training programs to accommodate B787 training requirements.

"The use of personal desktop computers, interactive computer-based training, three dimensional images and desktop simulation make it possible to do much more efficient training," said Boeing. "Modern flight training devices and simulators combined with these tools and digital delivery offer significantly shorter courses than previous Boeing training programs. The training system and new simulation devices for the B787 use technology that takes learning to the next level."

For the B787 training program, which mirrors many of the advanced technologies of the aircraft, Boeing built an electronic performance support system rather than a traditional training program.

It is an integrated electronic environment that's available to trainees at any time.

The effectiveness of this approach also means training is shorter and more efficient. "A B777 pilot can complete B787 flight differences training in five days with no full-flight simulator," said Boeing. "The maintenance training line and base course is 50% shorter than the B777 course. Distance learning options reduce time at the training center and prepare students for formal training."

The Seattle manufacturer also has introduced real time simulation in maintenance training. Trainees practice on the same tools in the classroom that the mechanics use in the field on the aircraft. ■