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NEW NORMAL FOR CHINA AIRLINES

Chairman Nuan-Hsuan Ho has adapted the airline's strategy to Taiwan's changed political climate

Orient aviation 23 YEARS

China to open more civilian airspace

Japan's low-cost carrier, Peach Aviation, accepts bitcoin

THAI makes progress in leadership search

INDUSTRY INSIGHT
Big Data changing face of Asia-Pacific aviation

Orient aviation 23 YEARS

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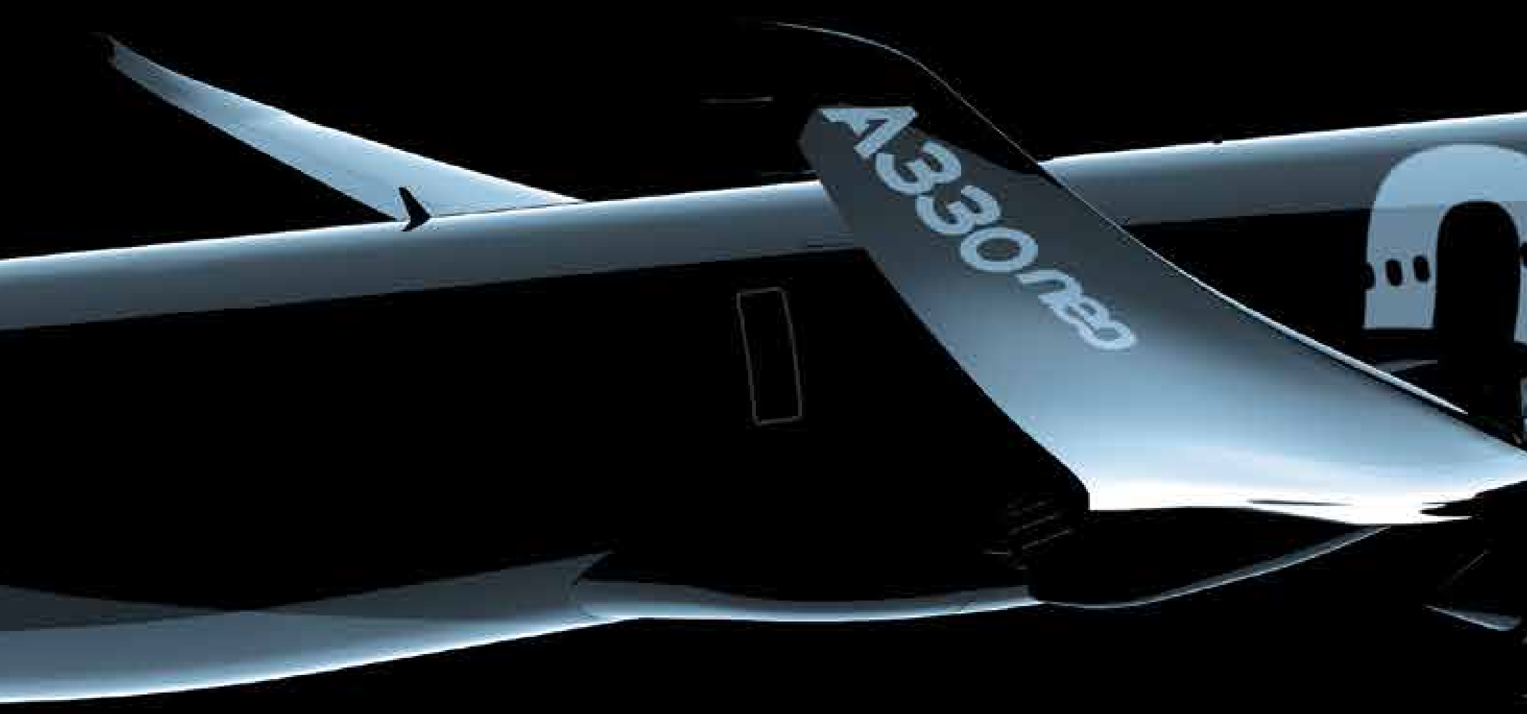

A330neo

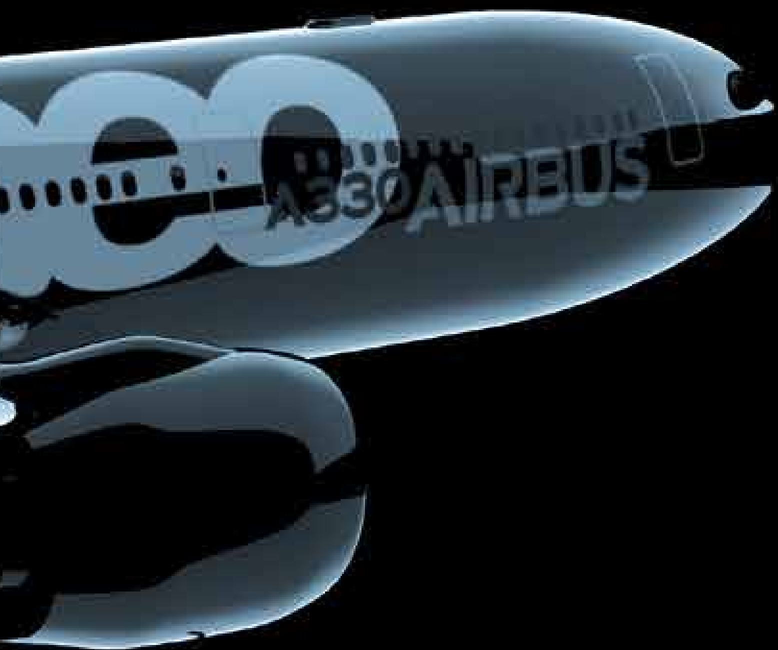
Almost everything about the A330neo is new

new A350 generation engines

new wings with A350 sharklets

new A350 cabin

Flying further with less fuel



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Baffled by bans

Even if the U.S. government does not extend its ban on passengers' personal electronic devices (PEDs) beyond the Middle East and North Africa, the present ruling raises serious issues of safety and security for airlines.

In May, both European and U.S. security officials confirmed bans on PEDs being carried into the cabin from more airports worldwide could be imposed; information that is greatly concerning to the International Air Transport Association and its 265 members.

Apart from the operational disruption it is unleashing in effected countries, the prohibition is producing knock on effects. Foreign tourists to the U.S. are dropping off and premium travel is being hit by business travelers who want to work on board with their laptops.

IATA said the impact on airlines also includes higher costs at carriers for extra handling for hold baggage, departure delays from increased screening procedures, airlines' liability for theft or damage to checked PEDs and a potential reduction in flight frequencies based on lower yields.

The airline association estimated the total impact of the bans will be $1.1 billion annually.

Imagine the cost to the industry if the bans spread to the Asia-Pacific and South America?

Just as alarming is the knowledge that several hundred lithium-powered PEDs are being stored in cargo holds, where they remain out of reach of crew and where they could catch fire.

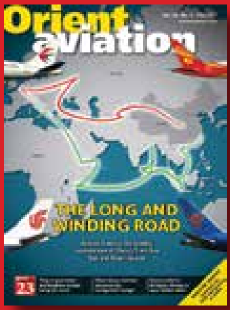
No one argues with the fact that the U.S. has the sovereign right to take additional security measures when intelligence information suggests it is necessary. But Washington's reaction is a perfect example of regulation on the run.

There was no informed consultation with the airline industry. The bans were announced without a common sense appraisal of unintended consequences of the bans. Airlines want all that to change.

IATA wants governments to increase checks on the ground before passengers board their flights. They would like sniffer dogs at airports where PEDs are perceived as threats and believe security staff should receive more specialized training to screen PEDs.

And one more point. Once again, airlines are largely bearing the cost and logistical burdens of implementing government policy. Is that fair? ■

TOM BALLANTYNE
Chief Correspondent
Orient Aviation Media Group


Counter intuitive Bellew strikes again

Malaysia Airlines Berhad (MAB) group managing director and CEO, Peter Bellew, is bucking the industry trend by including a four-seat first class in the airline's new A350s. He also has decided, again against current industry practice, that MAB will not have premium economy on the new Airbus jets.

Bellew told **Orient Aviation** in May that the first class cabin would be smaller than the eight suites on each of its six A380s, but that the airline had more demand than four seats right now. "It is actually not enough," he said.

Instead, MAB will install 25 extra leg room seats in economy that can be bought as an ancillary add-on. They will have a 36-inch seat pitch and will be sold as XL in size.

"We believe premium economy will damage our business class revenue in a very negative way," Bellew said, and added "the carrier will be creating a world class business product in the next 12 months and that needs a very sharp focus''.

MAB is evaluating a 25-30 wide body order. It is assessing the A330neo, the A350 and the B787-9. "We do not have an attractive enough offer yet. We are waiting for a good offer from the manufacturers," Bellew said. ***By Dominic Lalk*** ■

China to open more airspace for civilian flights

A **deputy director of China's Air Traffic Control Commission, Cai Jun**, told a Beijing forum the Mainland government had recognized the problem of the country's crowded skies and would announce a new "airspace management system" this month. More than 80% of China's skies are controlled by the military and its aircraft always has priority over civilian passenger planes.

The new **Civil Aviation Administration of China (CAAC)** plan would "integrate management of civil and military aviation". It will widen the air traffic from key traffic hubs, including the Pearl River and Yangtze River Deltas and the Beijing-Shanghai-Guangzhou corridor.

Approximately 22%-25% of flights were delayed in China last year, with weather and air traffic congestion causing most of the disruptions. "We understand that reforming the management of the airspace is an essential need," Cai told the forum's delegates. ■

Air India boss defends his staff as "the finest there is"

Air India chairman and managing director, Ashwani Lohani, does not accept criticism lightly. Besieged by complaints about the carrier's dire financial performance, he has taken to **Facebook** to defend the company and its employees.

In a hard hitting post, Lohani laid the blame for his airline's losses at the door of India's previous United Progressive Alliance (UPA) government, a coalition of centre-left political parties.

"Air India went down due to the ill-fated decision to merge government-owned Air India and domestic Indian Airlines in 2007. It was not destined to be and was coupled with many other wrong decisions by the regime," he wrote.

As a result, the airline's $7.5 billion debt is "insurmountable" and is "at the root of all the problems that manifest as symptoms to all and sundry", he said.

Air India is surviving on a $4.7 billion government 10-year bailout package and is struggling to improve its financial position. For the current fiscal year, the government has allocated $280.1 million to the carrier. To date, it has received $3.75 billion in government support.

In its previous financial year, Air India posted an operating profit of $16.4 million, mainly as a result of lower fuel prices and improved passenger demand.

Lohani said the grim financial scenario "cannot be denied or wished away", but accused many arm chair critics of "a gross lack of understanding of the issue" and of unfairly blaming the company and its employees for all of Air India's woes.

He acknowledged that "gross mismanagement" at senior management levels of Air India had played a part in its rapid downward slide and questioned "the prudence of a government which appoints senior management functionaries" to such positions.

He stoutly defended his entire workforce, including pilots and engineers, and said it needs to be appreciated that Air India always had and still has "the finest employees be it pilots, cabin crew, engineers or the rest". ■

Asia's airline association adds voice to laptop ban protests

The ripple effects of the recent laptop bans and their proposed expansion produce no tangible public security benefits, the region's airline association said last month.

"They would only serve to further the aims of the terrorists, who measure their success by how much society over-reacts to their provocations," said the **director general of the Association of Asia-Pacific Airlines, Andrew Herdman**.

"Rather than focus on generalized screening of innocent passengers, past experience with evolving threats and terrorist plots repeatedly highlights the critical importance of effective intelligence gathering and analysis."

Herdman said airline passengers travel with multiple personal electronic devices (PED) and expect to work, watch films and stay connected to the internet and social media onboard. "Airlines are responding to these demands by investing heavily in inflight connectivity in newer passenger aircraft," he said.

"Already, passengers are subject to onerous and inconsistent security screening measures before boarding a flight and endure wide variations in screening procedures at different airports. Many of them are calling for the streamlining of passenger processing at airports."

Bans on large PEDs implemented by the U.S. and UK on inbound flights from specific foreign airports "raise many unanswered questions" and have had led to significant changes in airline operations and disruption to the travelling public, the AAPA said.

"Implemented at short notice without prior consultation with the airline industry, the bans have resulted in confusion at affected airports as airlines scramble to comply with the directives while dealing with unhappy passengers who can no longer take their PEDs into the cabin," he said.

"In addition, safety issues related to large numbers of lithium battery powered PEDs being stowed in aircraft cargo holds is contrary to recognized best safety practices and remain unresolved."

"Despite recent events, public confidence in the safety and security of air travel remains high. It would be a tragedy if this confidence was undermined by ill-judged reactionary measures being misguidedly imposed by those entrusted with maintaining public safety." See **Unintended Consequences** page 12. ■

Japan's Peach aviation accepts bitcoin fares

Successful Japanese low-cost carrier, **Peach Aviation**, will be the first airline in the country to accept payment for fares in bitcoin. Kansai-based Peach has embraced bitcoin to exploit Japan's fascination with the crypto currency. Acceptance of the virtual money for fare payments is aimed at Peach's younger Chinese passengers, reported the **Financial Times** from Japan. **Peach's chief executive, Shinichi Inoue**, said: "We want to encourage visitors from overseas and also the revitalization of Japan's regions."

The Japanese government has established a licensing system for the currency exchanges and fund transfer companies that accept bitcoin. The market driven decision takes Peach into a group of 5,000 businesses that are seeking the custom of high spending Chinese tourists. The big spenders pay with bitcoin via intermediary settlement systems, the newspaper said. Peach, which has focused its growth on North Asia, is 66% owned by **ANA HOLDINGS**, the parent company of **All Nippon Airways**. ■

Airbus announces independent compliance panel

Airbus announced last month it would establish a three-member independent panel to review the company's compliance with contemporary anti-bribery laws. Panel members are litigation lawyer, **Lord Gold**, former French minister for European Affairs and a member of France's highest court on administration and tax, **Noelle Lenoir**, and former German finance minister, **Theodor Waigel**.

Airbus is being investigated for alleged corrupt behavior when securing orders for aircraft, including deals made for airplane purchases in Thailand and Indonesia. French and British authorities are examining the alleged use of middle men to win business for Airbus . **Airbus Group CEO, Tom Enders**, said the aircraft manufacturing group has been co-operating fully with UK and French investigators and that improving Airbus' compliance system was obviously "our number one priority now".

"To embed irreproachable behaviours in all our business undertakings sustainably, we must take a hard look at both our systems and our cultures," he said. ■

AirAsia wins the region's prize - AirAsia China

Malaysia's AirAsia Group has built a stable of budget subsidiaries across the Asia-Pacific. Now it is set to put the icing on the no-frills cake with a joint venture carrier in China, an achievement that will take the group's business to a new level.

Tom Ballantyne reports

Many airlines across the region have been avidly seeking a share of China's fast growing air passenger market, but it was revealed in May that Malaysia's AirAsia Group has pretty much beaten everyone to the punch with the surprise announcement that there will soon be an AirAsia China.

AirAsia Group CEO, Tony Fernandes, has signed a Memorandum of Understanding (MoU) with China Everbright Financial Holdings and the provincial government of Henan to establish budget carrier, AirAsia China, in the province's capital of Zhengzhou.

The new partners will invest in the development of a low-cost terminal at Xinzheng International Airport, an MRO facility and a training academy for airline crew.

"This Chinese venture represents the final piece of the AirAsia puzzle," said Fernandes. "In just 16 years, we have successfully built a presence in Malaysia, Thailand, Indonesia, the Philippines, India and Japan, with China closing the loop on all major territories in the region.

"AirAsia can now live up to its name as the only airline that connects travellers across the Asia-Pacific – from China, Japan and South Korea in the north, Australia and New Zealand to the south,

India and the Middle East to the west, and ASEAN at the centre.

"It represents an unbelievable foundation to drive growth for our partners and catapult change in the region."

Why Zhengzhou? Built on the southern bank of the Yellow River, it is one of the Eight Great Ancient Capitals of China. More importantly, for a budget airline, it has a population of 9.3 million in a province of 95 million people.

In a report by The Economist Intelligence Unit on China, Zhengzhou was named as one of the 13 emerging megacities on the Mainland. Zhengzhou's airport handles just over 20 million passengers annually and has forecast a sharp increase in passengers in coming years.

No details of the carrier's launch date, fleet and aircraft type have been announced by the joint venture partners nor has the breakdown of the shareholding of each partner in the planned LCC been revealed.

The AirAsia Group has ordered 294 A20neo and 100 A321neo. Some of these aircraft could be earmarked for AirAsia China. In 2005, AirAsia became the first foreign LCC to fly into China. It has carried more than 40 million passengers on its flights to and from the Mainland. The budget carrier and a subsidiary, AirAsia X, fly to 15 destinations in China.

Fernandes, Everbright's executive director and president, Wang Weifeng, and Henan Airport Group's vice chairman and president, Li Weidong, signed the MoU in Zhengzhou in the presence of Malaysia's prime minister, Najib Razak.

"We chose Zhengzhou as our base because of its strategic location and importance as a logistics hub. As China's gateway to Europe, Zhengzhou sits at the centre of a vast rail, highway and air transport network that forms the lynchpin of China's development plans for its central and western regions," said Fernandes.

Henan government's deputy governor, Shu Qing, said: "Zhengzhou was once the capital of ancient China; with AirAsia supporting the city's aeropolis – an industrial, commercial and logistics zone five times the size of Manhattan with the airport at its heart – we have absolute confidence we will succeed in transforming Zhengzhou into the new hub for global transport and logistics."

China Everbright Group vice chairman and president, Gao Yunlong, said China "is ready for the world's leading LCC. We feel AirAsia can deliver on that promise by providing real value to Chinese travellers thanks to its unique combination of low fares and world-class service."

AirAsia co-founder and executive chairman, Datuk Kamarudin Meranun, said the MoU was the latest in a long line of strategic collaborations with Chinese companies, from Tencent, Alipay and Union Pay to ICBC for aircraft financing and CALC for aircraft leasing.

"We are working closely with Huawei to create a digital airline and a smart airport to transform the way we fly. We also have started exploring the COMAC C919. China has been good to us. We want to give back in a big way," he said. ■

UNINTENDED CONSEQUENCES

Airlines have mounted a campaign for "smarter" application of bans on onboard personal electronic devices.

Tom Ballantyne reports

Plans by the U.S. government to extend its March ban on onboard Personal Electronic Devices (PEDs) beyond the Middle East and North Africa have propelled the controversial ruling to the top of the global airline agenda. Carriers fear that cargo holds stacked with hundreds of lithium-powered PEDs will threaten safe flight and add layers of cost to airlines already being challenged by over-capacity and reduced yields, the International Air Transport Association said in official correspondence with U.S. and European security and immigration officials.

Last month, when it was revealed the U.S. government was considering an extension to its onboard PED ban beyond the countries announced in March, airline safety experts said they were concerned about the danger of inflight fires in an area of an aircraft that cannot accessed by crew.

In mid-May, the U.S. Department of Homeland Security spokesman, David Lapan, told reporters in Washington DC that countries being assessed were "not solely Europe" and that an expansion of the bans "was likely". He said "talks would consider the scale and scope" of the ban.

As the news circulated in the industry, the International Air Transport Association (IATA) announced that its director general and CEO, Alexandre de Juniac, had written to the U.S. Homeland Security chief, John F. Kelly, and the European Commission's commissioner for Transport, Violeta Bulc, to inform them of the "serious concern" its 265 member airlines had about the PED ban.

"If, despite this negative impact, governments agree additional security measures are necessary, we urge the adoption of several short-term measures as alternatives to the broad extension of the current ban," de Junaic said.

"These alternative measures would avoid the concentration of lithium battery-powered devices in the cargo holds of passenger aircraft, which is deemed to create an additional safety threat."

De Juniac said the current U.S. PED ban affects 350 flights per week from the Middle East and North Africa. If extended to all of Europe, it would additionally impact 390 flights a day or more than 2,500 flights a week. This figure could peak at 3,250 flights weekly in Europe during the peak northern summer holiday season.

IATA estimated the impact of an extended PED ban amounted to $1.1 billion annually. It warned the U.S. and Europe that businesses would cancel trips rather than risk laptops that contained confidential company information being removed from their owners before boarding. "This would have implications for future investment and business transactions," the association said.

An extended PED ban meant more airlines would have to pay for extra handling of hold baggage and also for departure delays prompted by increased baggage screening measures. The delays would have a follow on impact on subsequent flights from the same gates.

The ban also increased airlines' liability for theft or damage of checked PEDs and had the potential to reduce flight frequencies as yields fell because of fewer corporate customers.

There are indications PED bans in the passenger cabin could extend to the Asia-Pacific. Last month, Australia's prime minister, Malcolm Turnbull, said he was considering following the example of the U.S. and Britain by banning PEDs onboard.

Turnbull said his government was "looking very closely" at bans on flights from some Middle Eastern countries. Australia would "work very closely with our partners around the world" in constantly reviewing aviation security, he said.

The U.S. PED prohibition affects airline passengers travelling from Amman, Jordan, Kuwait City, Cairo, Istanbul, Jeddah, Riyadh, Casablanca, Morocco, Doha, Dubai and Abu Dhabi.

The British ban covers air journeys from Turkey, Lebanon, Jordan, Egypt, Tunisia and Saudi Arabia. The U.S. announced the PEDs ban in March and said it would cover electronic devices if they are bigger than a regular cell phone. Washington feared terrorists could hide a bomb in a laptop made from materials that cannot be detected by airport security screening.

After insistent urging from IATA, the International Civil Aviation Organization (ICAO) opened debate with member states on the standardization of rules for PEDs onboard.

Executive director of the European Aviation Safety Agency (EASA), Patrick Ky, said EASA is responsible for aviation safety in 32 countries and that lithium batteries, considered as dangerous goods, pose a risk of accidental fire. Such outbreaks of fire would be even more difficult to contain if they happened in an aircraft's cargo hold, he said.

EASA wants airlines to avoid packing all passenger PEDs in a single container. "Should we go further? I don't think so for the time being. But if we have a fire risk that we think is high, then of course we would take the necessary action," he said.

ICAO agreed to discussions on the PED ban after the United Arab Emirates, Egypt and other countries affected by it complained their airlines have been unfairly penalized. An ICAO working paper suggested laptops are a greater security risk in the passenger cabin than in the hold, because hidden explosives could be detonated manually.

"The threat to aircraft from concealed Improvised Explosive Devices (IED) has been the greatest security risk to commercial aircraft for some years," it said.

ICAO asked its experts to weigh this threat against the safety risk of storing a larger number of unattended flammable batteries in a commercial aircraft's baggage compartment. ICAO's aviation security panel is expected to deliver its recommendations this month, the organization said.

ICAO cannot impose binding rules, although its influence on safety and security standards meant its findings are largely followed by its 191 member states. According to the working paper, ICAO is looking to "to identify a possible global approach to mitigate the security risk associated with large portable electronic devices".

Speaking in Seoul at IATA's Safety and Flight Operations Conference in April, de Juniac called for increased dialogue between regulators and the industry to ensure that industry experience and know-how are incorporated into new regulations and standards on PEDs.

Think before banning

IATA is seeking more considered implementation of bans on in-cabin personal electronic devices (PEDs). The recommendations are:

- **Utilizing Explosive Trace Detection (ETD)** at primary and secondary checkpoints. It is a widely available and simple tool that can be used on a continuous and random basis on passengers and bags at the boarding gate, without undue negative consequences to service and facilitation levels.
- **Conducting trace analysis on the PED** by visually inspecting the device for signs of tampering and determining the provenance of the device by questioning the passenger as to the purposes for carrying a device. This may include turning on the device.
- **Deploying behavioral detection officers** on both land and airside and use trained canines as a deterrent.
- **Recognizing trusted traveler programs** and the identification of high risk/low risk passengers.
- **Increasing training of screeners** to detect this PED-based threat.

"The safety and security of civil air transport are top priorities for IATA and its members. IATA fully acknowledges that security remains the primary responsibility of States, and we understand that the U.S., the UK and other States have compelling reasons to mandate the implementation of counter-measures in response to credible threat intelligence. In doing so, however, we urge all regulators to weigh the impacts of such measures on the passenger, the economy and the airlines and therefore consider implementing actions to support our shared objective in this regard"

Alexandre de Juniac
International Air Transport Association
director general and CEO

"We have a common interest in safe and secure flights. Yet last month the U.S. and the UK announced that large electronic devices would be banned from passenger cabins on some flights from the Middle East and North Africa," he said.

"There was no consultation with airlines and the measure challenged public confidence with inconsistencies, while the safety concerns about concentrations of lithium batteries in the aircraft hold have not been adequately considered or addressed.

"The lessons from this are many: governments need to share information. They need to consult with industry and they need to support ICAO as it develops a global aviation security plan.

"The safety and security of civil air transport are top priorities for IATA and its members. IATA fully acknowledges that security remains the primary responsibility of States and we understand that the U.S., the UK and other States have compelling reasons to mandate the implementation of counter-measures in response to credible threat intelligence.

"In doing so, however, we urge all regulators to weigh the impacts of such measures on the passenger, the economy and airlines and consider implementing our recommanded actions to support our shared objective in this regard." ■

Star loosens rules to attract new members

By Dominic Lalk in Shanghai

Doomsayers have long predicated the golden years of global airline alliances were over, but Star begs to differ. It believes its leaner Connecting Partner Model (CPM) and digital transformation in the industry will ensure its continuing success.

Star board chairman and CEO of Copa Airlines, Pedro Heilbron, told Orient Aviation at the alliance's 20th anniversary ceremonies in Frankfurt last month that gaps remain in the alliance's network, most notably in Australia and Russia, but attracting new members was not a priority. "There are not many airlines interested in joining that Star is interested in having join, although membership is not closed," Heilbron said.

Star's recent membership focus has been the CPM, which allows regional, low-cost or hybrid airlines to be cost efficiently linked to the Star Alliance network without being full members. Juneyao Airlines became the first CPM member to be inducted into Star, at its home base in Shanghai on May 23.

"The CPM was designed to recapture market share lost to low-cost and hybrid carriers. It also has allowed us to grow more strategically in certain locations," Star CEO, Jeffrey Goh, told Orient Aviation in Shanghai.

"No more than a handful" of other airlines were likely to become Star CPs in the next two years, Goh said. Air India Express, SilkAir and THAI Smile would make ideal candidates, but Goh said they could only become members if they added value to the Star network.

"When Shanghai Airlines left Star Alliance, we and Air China thought that Air China would add connectivity from Shanghai. But Pudong, and Hongqiao in particular, are starved of slots. We have not achieved what we had hoped in Shanghai so Juneyao became an interesting proposition," Goh said. Air China sponsored Juneyao's CPM membership.

A former IATA lawyer, Goh said things looked "a little more flexible" at the new airport in Beijing. "As soon as the CAAC (Civil Aviation Administration of China) announced who was moving to the new airport, we and Air China established a working group with BCIA (Beijing Capital International Airport). It is planned that China Eastern and China Southern Airlines will move to Daxing but the Star carriers will remain at BCIA.

Goh said 'Star Gold Track' priority services were part of the discussion with BCIA, but the talks involved customs and border authorities which complicated matters. "The airport authorities need to understand that this is part of the seamless experience we need to offer to our customers. There is no point putting an alliance in one terminal if the process does not work," Goh said.

Goh said "there were no airlines in Russia that make sense for us. We are not going to recruit an airline just for the sake of it".

Star regards its coverage as improving in Australia. "It's almost the backyard of Singapore Airlines and Air New Zealand. Air China is launching a lot of flights into Australia too," Goh said.

The Star chief dismissed persistent rumours that Etihad Airways would join the alliance, despite Etihad's warming relations with Star founding member, Lufthansa. "A lot of these developments are on the aviation side – MRO, catering and other services," Goh said.

"On the airline side, it is still limited. Lufthansa and other Star member carriers will work with Etihad on an exceptional basis because Etihad goes to places that some of our members don't. When it comes to full membership, that is a long road, somewhere further."

Star's immediate focus is transforming the 20-year-old alliance into an organization that uses digital technology to deliver on the seamless service promise.

"We want to be much more focused on our customer proposition. They expect a seamless and trouble free journey," he said. Star carrier front line employees now have access to inter-Star feeder and connecting flight information. Until recently, these transactions at times required calling the other airline involved in rebooking a journey.

The alliance has introduced a baggage hub system that tracks bags across alliance member airlines. It also plans improvements in retroactive mileage claims and check-in processes.

Star carriers fly more than 690 million passengers a year. Asia-Pacific members are Air China, Air India, Air New Zealand, All Nippon Airways, Asiana Airlines, EVA Airways, Shenzhen Airlines, Singapore Airlines and Thai Airways International. ■

Air New Zealand leaves competitors in slip stream

By Dominic Lalk in Frankfurt

Mainland Chinese carriers may be rapidly increasing their capacity into Australia and New Zealand, but Air New Zealand (Air NZ) CEO, Christopher Luxon, and his Air New Zealanders are thriving on the competition.

"It's been an absolutely fabulous year for us. Ten new competitors showed up in our space in the last 12 months, including some of the biggest airlines in the world, but we've competed incredibly strongly and incredibly well," the Air NZ boss told Orient Aviation on the side lines of the Star Alliance 20th Anniversary gala in Frankfurt last month.

"We've taken some yield pressure, as everyone across the industry has, but having said that we're rather unique. Our unit costs are down 3.5%, excluding fuel. We have worked really hard running this as a business, not just an airline."

Air NZ will announce its fiscal year results in August and Luxon said the carrier is "on track for a very good result indeed".

The capacity assault has "certainly been decreasing in the last few months. American [Airlines] has announced it is out of the market for two months. People are being rational with capacity management", he said.

"We also have some Chinese carriers removing capacity for the winter months. They did not do it in 2016, but this year they are cancelling some flights. There is a lot of rationalisation in the market," Luxon observed.

"People get confronted with economics. You have to start being smart at some point," the ex-Unilever top executive said.

"The carriers coming from secondary or tertiary cities in China are not too much of a worry for us. When I look at the performances of those airlines that have been in Australia and New Zealand for a year or two, their load factors are abysmal.

"They are really struggling economically to make those routes work. We're going after a very different sector of the market. We are not interested in a lot of customers that other airlines take because we know they're low-yield and low value."

Air NZ continues to defy the industry's declining performance. "Upfront is doing really well. We have four more B787-9s coming in this year. They will be in a configuration that will be a lot more Business Premier, a lot more premium economy and less economy," he said.

Luxon said both Houston and Buenos Aires are outperforming forecasts. "Buenos Aires has exceeded our expectations. We have just announced a frequency increase from three to five weekly B787-9s. The key factor is that 40% of the traffic is Australians coming through Auckland and onto Buenos. The same goes for Houston," Luxon said.

Air NZ just won a new round of customer service and preferred employer awards. "Sixty per cent of New Zealanders said they wanted to work for us. We had 45,000 people apply for 3,000 jobs in the last year, but we've only had 6%-7% in staff turnover so we know we have good morale," he said.

Are the golden years of global airline alliances over? "Star Alliance has been a pretty great story for us. It's been a great way to get our global connectivity and network together. Obviously, in more recent years, we've done more bilateral deals and other joint ventures, but that does not mean we are not fully committed to Star," he said.

"The focus [at Star] has shifted in the last six to nine months to asking how do we keep perfecting the customer experience and how do we make it a much more seamless and joined up experience. There's lot of irritation and pain points that need to be solved for customers along the way, so we are saying lets renew our energy and do exactly that."

Areas for improvement, Luxon said, were joint opportunities in bag tracking, a more seamless check-in process and retroactive mileage claims.

"The way we are going to achieve this is by digital enablement and greater digitalization. It is the big focus as we go forward. It will be an exciting period as we try to make the member airlines work together in a more seamless way for our customers," he said. ■

> We've taken some yield pressure, as everyone across the industry has, but having said that we're rather unique. Our unit costs are down 3.5%, excluding fuel. We have worked really hard running this as a business, not just an airline
>
> **Christopher Luxon**
> Air New Zealand CEO

China slow to succumb to Hawaii's charms

Mainland China's air passengers are a priority target for most of the world's airlines. But three years after it launched its flights to Beijing, Hawaiian Airlines is doing it hard in its bid to win over the country's leisure travelers.

Tom Ballantyne reports

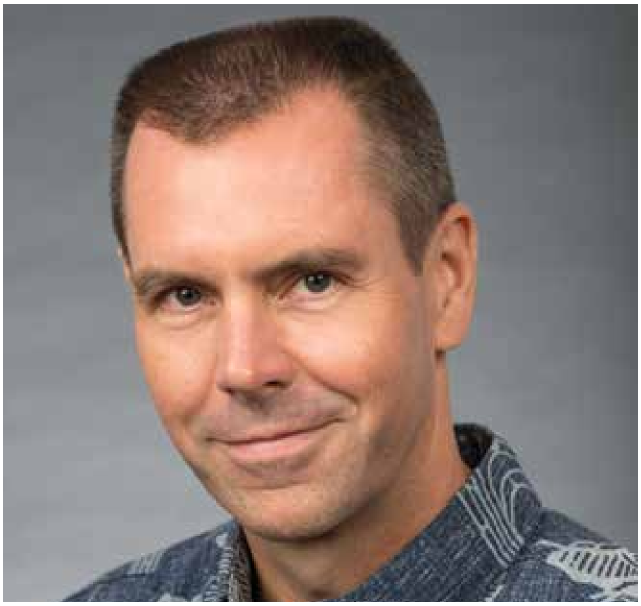
Hawaii may be one of the world's best known island destinations; a place of palm trees, endless beaches and Polynesian music, but for the growing millions of Chinese hitting the international airways it is not top of their travel hit list, Hawaiian Airlines has discovered.

Despite three years of flying between Honolulu and Beijing, the carrier said China is still in the early stages of passenger brand recognition on the Mainland. Hawaiian serves Beijing-Honolulu three times week. Air China flies to Honolulu from Beijing and China Eastern from Shanghai.

So, why the slow pick up? Speaking to Orient Aviation during a visit to Australia last month, Hawaiian Airlines chief commercial officer, Peter Ingram, said: "Hawaii and Hawaiian Airlines are very well known in Australia and in Japan, where there is an incredible affinity for Hawaiian travel. But it is still relatively new in China."

Additionally, the rapid growth in China's outbound traffic has been more focused on short-haul destinations. Long-haul destinations have struggled to achieve the same growth. The majority of China's international leisure travelers head for Thailand and Japan, the airline said.

An operating constraint is that Hawaiian's long-haul fleet is fully committed so it cannot increase it China services until at least 2018. As well, the Zone 1 cities under the current bilateral air treaty between the U. S. and China: China - Beijing, Shanghai and Guangzhou are fully allocated.



"We would love to improve our slot times in Beijing. We are not operating at the most convenient times for our guests. It's a 2am departure and a 5am arrival," he said.

However slow the pick-up for Hawaiian in China, the carrier is confident its investment will pay off. Chinese visitors to the island state have increased steadily since 2009: from 41,924 eight years ago to 161,375 in 2014 and 181,000 in 2015. Hawaiian tourism authorities forecast that number will be 360,000 by 2020.

For now, the carrier's biggest Asian market is Japan. "Japan is the number one source of international visitors for Hawaii," said Ingram. "We have introduced two Tokyo services in addition to the daily Haneda flight that began in 2010. Recently, we added a Narita service. We also have a second Haneda flight that is split four times a week to Honolulu and three times a week to Kona. We serve Osaka daily and Sapporo three times a week."

The increase in frequencies to Tokyo means the fleet is fully utilized for the rest of the year. Hawaiian operates 23 A330-200s with another of the aircraft type to arrive at the airline this year.

The Airbus airliners are gradually replacing its B767s, which are down to eight from 14. The new A330s are being fitted with lie-flat beds in Business Class, a first for Hawaiian. Also on order are six A330neo from 2019.

"The next step for us fleet wise is incorporating our 16 on order A321neo into the fleet," said Ingram.

The first delivery has been delayed from July to October, a result of issues with the production line of Pratt & Whitney engines. "Candidly it is a little fluid right now. But we have great confidence about the long-term success of this plane," said Ingram. The arrival of the A321s will free up A330s now flying U.S. West Coast routes to service destinations in Australia and Asia.

Hawaiian's first quarter profit to March 31, slipped 28% year-on-year, to $37 million, amid higher fuel and staff costs. Operating revenue for the period grew 11.4%, to $614 million, and costs increased by 20.4% to $546.9 million.

Hawaiian has a new livery, first revealed on one of its B717s last month. "It embodies a stronger, more contemporary representation of Hawaiian Airlines' culture of service and hospitality," the airline said. ■

New normal for Taiwan's China Airlines

Industry newcomer, China Airlines Chairman, Nuan-Hsuan Ho, has the singular goal of returning his airline to profit as the shadow of politics falls across every facet of the carrier's operations.

Dominic Lalk reports from Taiwan

For years, Taiwanese carriers were excited by an expected breakthrough in cross strait transfer traffic from the Mainland. They hoped the Chinese government would lift bans on travellers transiting onward from the Mainland to North America and beyond. But not for the first time in Taiwanese aviation, politics intervened.

In May 2016, Taiwan's pro-independence Democratic Progressive Party (DPP), led by Tsai Ing-wen, came to power. China Airlines' strategy for growth was one of the first casualties of the victory.

Very quickly after she won office, president Tsai made it clear her government would not recognise the "1992 consensus" as the singular foundation for cross strait exchanges. Her policy position forced the 58-year-old carrier to abandon the Mainland transit passenger strategy that was a linchpin in its plans for a return to sustainable profits.

To conform with the "New Southward Policy" of the Taiwanese government, CAL had to shift from its former focus on China's transit market to connecting passengers from Southeast Asia to its five European destinations and four gateways in North America, via Taipei.

"For Southeast Asia, transfer traffic to Europe and the U.S. is strong and there is a very solid tourist customer base going that way. And don't forget about the many ethnic Chinese in Southeast Asia who go home a few times a year," CAL chairman Nuan-Hsuan Ho, told Orient Aviation at his CAL Park headquarters in Taoyaun, adjacent to the international airport, last month. "This is very substantial traffic with a lot of growth."

The Mainland stalemate, however, endures. When Orient Aviation asked if a breakthrough was likely this year, the CAL chairman smiled and shook his head. "Unfortunately, there have not been any developments in the cross strait transfer traffic situation. It's not a very liberal market."

Since cross strait flights became largely unrestricted in 2008, CAL has expanded its regional network to 152 flights a week to 32 cities in China and now offers 75,000 seats a weekly between the Mainland and Taiwan. The flag carrier is the largest cross-strait airline in available seat kilometres (ASK) and holds 30% of the market.

Of the 2.6 million Mainland Chinese tourists who visit the U.S. annually, 60% transit through third party airports such as Hong Kong, Seoul and Tokyo, records the U.S. Department of Commerce. Lifting transit restrictions that would present Taiwan to the Chinese travelling abroad as an appealing alternative to the three other transit hubs would give CAL access to a large and new segment of the trans-Pacific market.

Two years ago, when Ho's predecessor, Huang-Hsian Sun, spoke to Orient Aviation, the future for CAL looked very different. The then boss predicted a major breakthrough on the issue was likely in 2015.

But sensitive political relationships are just one of the challenges CAL faces. The competitive landscape has become more difficult for CAL in the past two years. An onslaught of low-cost carriers (LCCs) flying to Japan and South Korea has forced the flag carrier to reduce frequencies and capacity to North Asia, an operating environment that is not expected to change soon.

In the meantime, Mainland Chinese tourists to Taiwan slumped 50.2% year-on-year in the first four months of 2017, to 610,524, reported the Mainland Affairs Council (MAC), with figures drawn from National Immigration Agency statistics.

Tour and independent arrivals dropped by 61% and 36.3%, respectively. To date this year, tour groups made up 43.8% of all arrivals. CAL has cut its capacity, which has improved its cross strait load factor from 77% last year to 79% this year.

CAL closed 2015 with a net profit, but returned to the red last year as it began writing off the majority of its A340 and B747-400 passenger fleet. "We continue experiencing financial duress because of the retirement of the A340 and B747. This year will be challenging, but we're looking at a more positive result in 2018," Ho said.

"We have a brand new fleet of A350 and B777 aircraft which will improve our service quality in the long-haul market. With our comprehensive regional network and improved aircraft rotation and scheduling, we offer better transfer connections than ever."

"Up to May, we saw very strong forward bookings. It's a very good sign, especially as this time of the year is usually less busy for CAL."

CAL has a fleet of 67 passenger aircraft: six A350-900s,

24 A330-300s and one A340-300X to go, and six B747-400s, 10 B777-300ERs and 20 B737-800s. Its subsidiary, Mandarin Airlines, has six E190s and its Tigerair Taiwan budget offshoot operates 10 A320ceo.

The A340 will be decommissioned this year and the B747s will follow by 2018. CAL is expected to have 10 A350s by year-end and all 14 firm order XWBs in 2018. "We are very satisfied with the A350 aircraft. We started flying it non-stop on long-haul routes to Europe, which replaced the A340 and B747 aircraft operating via Bangkok. We have a very positive load factor to Europe that is averaging 87%," Ho said.

Rostering the A350 to Europe meant some capacity changes. CAL's XWB is configured with 306 seats. The carrier used to fly a 380-seater B747 to Amsterdam and has served Frankfurt, Rome and Vienna with 276-seat A340s.

As for the six options it has for the A350, Ho told Orient Aviation he would fly to France the day after the interview for discussions with Airbus. "At the moment, we don't think the A350ULR variant is an option for us. We have direct flights from Taipei to New York on B777s, which is our longest route. We have started a deeper partnership with Delta Air Lines and they are helping us with connecting passengers through the U.S. gateways," Ho said.

Ho admitted the airline was losing money on the five times a week service, but he is not alone when it comes to the route. Hong Kong's Cathay Pacific Airways signalled trouble this year with its flights to New York and said yields were declining. Singapore Airlines and Thai Airways International dropped their nonstop flights to New York because they were losing money.

"Everybody is flying into JFK [New York], but not everybody is turning a profit on the route. It's a very saturated market," said Ho. But CAL is not prepared to relinquish its flagship service. "Even though the profit margin is very low and it's a very stressful market, it's still an important one that you cannot give up. It's something we need to work on," he said.

CAL said its reinvigorated partnership with Delta could mend its bottom line on the New York route. "For now, the route is unprofitable, but we will retain the current frequency into JFK," he said.

Until last month, CAL flew the A350 to Europe and the B777-300ER to North America. It only began operating the A350XWB to San Francisco on May 14. From August, CAL will replace its five times a week B747 Vancouver services with the A350.

"One of the reasons we fly the A350 to Europe is that it is much easier to obtain supplies and spare parts when we need them, especially since it's a relatively new type of aircraft," Ho said. "As we take more deliveries, we need to roster the A350 into other long haul markets, so we have requested Airbus to focus more on the North American supply chain in order to support our operations there."

CAL is overdue for a single aisle order, with the topic on the table for more than two years. But a leadership change, tenser relations with Beijing, previous uncertainty about the CAL/Tigerair relationship and the market pivot from North to Southeast Asia have conspired to delay the decision.

Ho knows he must act fast. Some of CAL's 20 B737-800s are almost 20 years old. "We want to lower the average age of our short-haul fleet. We are studying the A320neo and the B737 MAX series," he said, and added he hoped to make a decision about the order this year.

"Like I said, I will be visiting France later this week, but I also will be visiting Boeing in June," Ho said. "Both manufacturers are giving us more or less the same offers on the items we are considering."

Also on Ho's to-do list is a replacement for its older A330 fleet in the medium-term. "We have mapped out the life cycle for the A330 fleet, but have not made a decision on its replacement yet," he said.

"For now, we are focusing on the single aisle order. We need to determine the market before we decide if we want to replace the A330 fleet one-for-one or if we want to grow with the replacement order."

Compared with rival EVA Air's massive wide body backlog, Ho said CAL tended to be "more conservative" because the airline "wants to strike a real balance between supply and demand".

EVA is forecast to become Taiwan's largest airline in passengers carried and revenues earned by 2018. It has a passenger fleet of 33 B777-300ERs with three more on order, two B747s, 10 A330s and 22 A321s.

Airbus and Nordam to partner with China Airlines

In January, CAL and Airbus signed a Memorandum of Understanding (MoU) to jointly develop the airline's maintenance, engineering and technical training capabilities in Taiwan. Under the agreement, CAL and Airbus will evaluate technical and business solutions to develop the carrier's services for all Airbus aircraft it operates, including the A350 XWB, A330/A340 and A320.

The partners will jointly evaluate and promote CAL's retrofit activities and cabin and airframe modifications, as well as considering the expansion of the maintenance training centre in Taiwan from ab-initio programmes to courses for mechanics. In addition, they will evaluate the benefits of the Satair Group and other Airbus affiliates becoming key parts providers for CAL.

"Through Airbus' industry know-how, CAL and our associated Taiwan Aircraft Maintenance & Engineering Co. (TAMECO) maintenance subsidiary are going to accelerate our maintenance and engineering capabilities for the major Airbus aircraft types, including the newly introduced A350 XWB," Ho said.

CAL also signed a MoU with the NORDAM Aerospace Maintenance Group in March. The two parties plan a Taipei-based MRO for thrust reversers and other composite parts in the Asia-Pacific, including nacelles, radomes and flight controls. It would be the Oklahoma company's only commercial MRO facility in the region.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In 2015, EVA signed Taiwan's largest commercial aircraft order in the country's history: a US$8 billion commitment for 18 B787-10s plus six options, and two additional -300ERs. EVA plans to lease another two -10s and four B787-9s from Air Lease Corporation (ALC).

Did Ho believe the market can absorb such steep capacity increases? "Our biggest competitor, EVA Airways, and CAL have a very different customer bases," he said. "For example, we differentiate ourselves with flights to Europe. EVA offers one-stop connections from Taiwan to Europe via Bangkok. CAL offers nonstop flights with our new A350s."

"We have a totally different frequent flyer base from EVA. They use Star Alliance, but we are a member of SkyTeam. This makes us attractive to some and less attractive to others, but at least we're not necessarily fighting for the same passengers. The differentiation is very obvious. Consider it like the NBA (U.S. National Basketball Association). The different teams have different fan bases. Each of them is loyal to their base. It's kind of like that."

From December 1, the airline will return to London after a five-year absence. CAL used to operate into Heathrow, but will now serve Gatwick Airport three times a week with the A350. "There are slot restrictions at Heathrow. At Gatwick, they are offering good slots. There are a lot of services and conditions provided by Gatwick. Gatwick has been very welcoming," he said.

CAL wanted to add Paris to its route map, but did not win access to Charles de Gaulle Airport. "We do not have traffic rights to fly into Paris. One problem is EVA flies there, but we're working on that," he said.

CAL is considering other European destinations this year. "We would really like to fly into Milan, but we are flying into Rome so the market might not be big enough," Ho said.

"Recently, a lot of foreign dignitaries have come to me and asked for possible developments on routes to their countries. Examples are Brazil, Mexico, Israel, the Czech Republic and even Latvia and Slovakia. A lot of requests are coming in. Of course, they have to fit into the overall network."

CAL joined SkyTeam in September 2011, which increased its international destinations from 118 to 1,052, but this does not exclude the carrier from looking elsewhere for partnerships that could be both lucrative and more convenient for passengers.

CAL has code shares with Qantas Airways, China Southern Airlines, China Eastern Airlines, Shanghai Airlines, Xiamen Airlines, Delta Air Lines, Garuda Indonesia, Vietnam Airlines, Korean Air, Czech Airlines, KLM, Alitalia, Japan Airlines, Hawaiian Airlines, Virgin America and WestJet.

It has retired its first-class cabin and now offers business, premium economy and economy classes. "We no longer see the feasibility of first class service in the market. Our new business class product is mostly fulfilling the needs of the first-class passenger," Ho said.

The CAL chief had a surprising response to the premium

"CAL is a proponent of a separate low-cost terminal at overcrowded Taoyuan International Airport. Full-service and LCC are completely different. The airport needs to build a separate LCC terminal to cope with the onslaught of budget carriers into Taoyuan"

Nuan-Hsuan Ho
China Airlines chairman

yield decline across Asia-Pacific carriers in the past 18 months. "For us it's different. We actually have very healthy premium loads. It's been steady for CAL. We're very, very satisfied with the launch of our premium economy class," Ho beamed. "Launching the premium economy class is a reflection of the overall Taiwanese economy. More passengers are able to afford a level of premium nowadays."

Nevertheless, the CAL chairman recognized the growing importance of LCCs."They are here to stay," he said. CAL took full control of its Tigerair subsidiary in 2016, but has no code share or interlining agreements with the LCC.

"LCCs usually fly into markets not served by full-service carriers. For us it's the same. Tigerair serves specific markets that CAL does not serve. But it's harder in Southeast Asia to differentiate. You usually see two brands in the same market," he said.

"We try to cooperate with each other, for instance in the form of short-term wet leases between CAL, Mandarin and Tigerair, to adjust capacity to demand.

"We do not have a seamless product between CAL and Tigerair, but when you are looking at the CAL group of airlines, you may consider Mandarin Airlines. We code share and interline with it. That said, we always are looking for synergies between our three airline brands. It's primarily about resource sharing under the same roof." The three airlines have a joint aircraft procurement policy and share crew deployment.

CAL wants a separate LCC terminal. "Terminal 3 and the third runway are vital for us to alleviate all the constraints we are experiencing. It something we hope will happen in the near future," he said.

Taoyuan has frequent delays, leading to disruptions in the wider network. "We have a very close relationship with the Taoyuan International Airport authorities. We have set priority for flights for which delays are unacceptable," Ho said.

Whatever the challenges ahead, Ho is prepared for them. "At CAL, our best asset is our employees. This is critical for us to stay sustainable and competitive in the Taiwanese air travel market," he said.

Ho was credited with swiftly and amicably solving last year's cabin crew strike, immediately after taking over at CAL in June. It was the first time flight attendants in Taiwan had exercised their legal right to strike.

Ho's popularity among the executives at CAL Park was palpable during your correspondent's visit. The former chairman of Taoyuan Metro Corp. comes across as a very kind and gentle leader.

Ho finds his balance in daily exercise. An athlete in college and a record-holder in the scholastic 200m and 400m sprints, a pair of trainers travels with Ho wherever he goes. "It's very important to me to exercise every day. It keeps me calm and makes me more content when working in the stressful aviation industry." The 64-year-old jogs at a steady trot for an hour every day, before returning to his chairman's suite. ■

THAI makes progress in leadership search

By Dominic Lalk

Thai Airways International's (THAI's) acting president and executive vice president of its business aviation unit, Khun Usanee Sangsingkeo, will not be confirmed as permanent president at the flag carrier, that much is certain.

Khun Usanee is not doing a bad job at the airline. Rather, aged 59, she will be hitting Thailand's official retirement age next year, which bars her from continuing to steer THAI through its challenging operational landscape as well as complicated internal issues.

There has long been talk of lifting the cap on the official retirement age of civil servants in Thailand, from 60 to 65, or to 70, but until now the Department of Labour has not signed off on changes to the status quo.

Khun Usanee was appointed acting president of THAI in February. Her previous job was chief of the airline's business aviation unit. She also has been managing director of THAI's ground services department and a director of the in-flight equipment planning and controlling department, the Suvarnabhumi Airport Hotel Co. Ltd., Wingspan Services Co. Ltd and Phuket Air Catering Co. Ltd.

The search for a new president capable of completing the state-controlled carrier's transformation is underway. Orient Aviation understands that four candidates, internal and external, have passed a first round of consideration. An official announcement will be made later this year.

THAI continues to experience financial duress, but it restructuring measures are finally having some effect with the 57-year-old carrier forecasting a return to the black in 2018.

On May 21, the carrier's board made a landmark decision when it decided not to acquire additional shares in Nok Air, a low-cost subsidiary led by CEO, Patee Sarasin. THAI owns 39.2% of the LCC. The THAI board decided "it was not the right time" for the cash strapped carrier to increase its investment in Nok Air, even if this meant its shareholding in the budget airline may be diluted.

Nok has reported several consecutive quarters of losses. For the full 2016 year, the LCC lost $95.7 million. In April, THAI said it was to run THAI, Thai Smile and Nok Air with a joint management and a single board of directors. Under the cooperation framework, THAI would be the major international carrier; THAI Smile the domestic and Indo-China network carrier and Nok Air the budget partner.

THAI's executive vice-president for corporate strategy and sustainable development, Flt. Lt. Montree Jumrieng, said co-operation between the carriers would include routes, marketing, ground services, allocation of parking bays and maintenance services. "In the future, the three airlines will form an aviation network," said Flt. Lt. Montree, who added the carriers would feed transit traffic onto each other's airlines. ■

By the book at HNA Group

Mainland-headquartered conglomerate, HNA Group, has revealed the scale of the group's ambitions in a series of six booklets, HNA's Mysterious Code, that include a preface written by group's founder, Chen Feng.

The booklets outlined the group's 2011-2016 Super X Plan, which aimed for the company to become one of the top 500 biggest companies in the world. By year end 2016, it had achieved its goal when it was listed 353rd in Fortune magazine's list of the world's biggest companies. In 2015, it ranked no. 454. This year, it is shooting for inclusion in the top 100.

HNA's goal is to be a financial holding company by 2020, it said, and for it to become one of the top 10 companies globally, with annual revenues of US$240 billion and an asset value of US$11.6 trillion.

HNA Group co-chairman, Wang Jian, said the group wanted to control upstream and downstream industries including tourism, hotels, logistics, financial services and leasing as well as its stable of airlines. The seeds of the HNA Group were planted in 1988 when the Hainan provincial government was made a free economic zone. Chen, a Civil Aviation Administration of China employee, and three colleagues, took control of Hainan Provincial Airlines, which had two aircraft in its fleet.

Today, the group has 851 airplanes after it successfully rode the wave of economic reforms in China in the 1990s. It expanded its interests into other airlines, including HK Express and Hong Kong Airlines, and diversified into property, banks, an airport, aircraft lessor interests and hotels, resorts and related service industries. ■

Airlines urged to adapt and 'sell more stuff'

Distribution is critical to full-service and budget airline operations. In the technologically disruptive world of today selling air tickets or other services is more complicated than ever for airlines.

Tom Ballantyne reports in Hong Kong

Co-founder of Air Black Box (ABB), Timothy O'Neil-Dunn, told delegates at the annual UATP conference, held in Hong Kong in April, that his Manchester-headquartered company works on a simple premise: "sell more stuff".

O'Neil-Dunn, whose AAB forged the way for the establishment of the world's first low-cost carrier alliance, Value Alliance, said: "The demands of day-to-day operations make it easy for airlines to lose focus on the customer and innovations that would strengthen their business. On top of that, incumbent technology players are doing their utmost to prevent change through innovation."

The ABB leader delivered a keynote address at the Universal Air Travel Plan (UATP) Airline Distribution conference in Hong Kong. Before a gathering of the world's leading players in the distribution, including senior executives from airlines, travel agents, Global Distribution Systems (GDS) and IT providers, he said the travel industry risks "becoming another notch in the belt of Apple, Google, Facebook and Amazon if it fails to adapt to a changing market place".

The solution lies in intelligent technology that attaches to infrastructure already in place, with minimal changes and low cost. The technology must provide an ease and speed of implementation that was unheard of just years ago, he told his audience.

The two-day UATP conference covered the entire gamut of distribution, from the world of the travel agents, technology, payments, merchandising and ancillary revenue to meeting the challenges of the changing models at both budget and full service airlines.

UATP is recognized as the world's leading global payment solution, owned and operated by the world's airlines and accepted by thousands of merchants for air, rail and travel agency payments. It connects airlines to Alternative Forms of Payment that can expand reach and generate incremental sales globally. It offers easy-to-use data tools, DataStreaSM and DataMineSM,

It also provides comprehensive account details to Issuers and corporate subscribers for accurate travel management. Accepted worldwide as a form of payment for corporate business travel by airlines and travel agencies, its Asia-Pacific customers are Air New Zealand, Air Niugini, China Eastern Airlines, Japan Airlines, Malaysia Airlines, Qantas Airways and Shandong Airlines. Etihad Airways also is a client.

In recent years, it was common to hear predictions of the demise of Global Distribution Systems providers as airlines expanded offerings on their own websites. But it has not happened.

Airlines, whether full service or low-cost, want to utilize every form of distribution available to sell tickets and ancillary products. Vice president sales United Airlines, Jake Sefolia, said people today buy tickets differently, receive information differently and interact with their itineraries differently.

"Maybe this whole area was not as ripe for disruption as we all thought back in 2006 when the U.S. carriers started the whole opt-in thing," he said.

But GDSs have shown agility by adapting to the needs of all categories of carriers who merchandise and sell content in new ways. GDSs such as Amadeus, Sabre Travel Network, Travelfusion and Travelport have adjusted their products to a different marketplace.

Not everyone agrees with Sefolia. O'Neil-Dunn believed the travel industry, and airlines in particular, are victims of the very technology that fueled their early successes. "It is now clear that traditional GDSs simply do not have the flexibility to adapt to the modern marketplace, regardless of the time and effort invested in trying to do so," he said.

ABB has developed connectivity solutions that sit separately and apart from the technology "spaghetti." It provides airlines with the tools to adapt without losing the investment they have made in their existing infrastructure, be it traditional, new or unique.

"It frees airlines to form alliances with ease and speed. These airlines combine their routes and products and sell them as they wish, under the brand of their choice, and in a unified and integrated online shopping environment in any currency and in 13 languages."

Similarly, payments continue to evolve from traditional systems such as credit cards to direct payments from banks and the new generation of options. UATP president and chief executive, Ralph Kaiser, told delegates the company is seeing new developments every six months.

"It's not just the types of payment. There is everything from credit cards to alternative payments such as bitcoin and global payment systems like Apple Pay," he said.

Most conference delegates said the long-term winners in the new payment provider space are yet to be identified, but they all agreed on one vital tenet of the business: the winners will have given the airlines what they need at the best price. ■

No more lost luggage

Tom Ballantyne reports

New industry data has revealed the percentage of passenger bags lost or delayed by airlines is dropping fast. A recent report by aviation IT and communications group, SITA, said that in 2016 the rate of mishandled bags was the lowest on record.

SITA said 5.73 bags per thousand passengers were mishandled last year, a 12.5% improvement over 2015, despite an increase in passengers carried to 3.77 billion for the reported 12 months.

Even better results will be achieved when the International Air Transport Association (IATA) regulation, IATA Resolution 753, takes effect in June 2018. From that date every bag must be tracked and recorded at four mandatory points: at check-in, at aircraft loading, at transfer between carriers and when the bag is delivered to a passenger.

Once the resolution is in place, airlines will be able to share the information with their passengers and code share partners about the journey of their luggage, just as air freight parcels are now tracked.

SITA president, Air Travel Solutions, Ilya Gutlin, said: "soon the days of not knowing where your bag is will be a thing of the past. We are on the brink of a new era in airline baggage management because the world's airlines have committed to tracking baggage journeys".

Tracking passenger baggage requires data capture and management and sharing of this information across airlines, airports and ground handlers, Since 2007, the rate of mishandled baggage has fallen 70% because of investment in technologies and process improvements by the world's airlines and airports, SITA said.

Critical points in the bag handling process are moving bags between airplanes or carriers, when bags have a higher risk of being mishandled, particularly if connections between flights are tight.

In 2016, 47% of bags were delayed when being transferred between flights or airlines. Mandatory tracking at this point in the process will provide real-time data that will avoid delays.

Mishandled baggage carries a significant cost for airlines. Despite a 12.25% drop in the bag mishandling rate, the global bill for recovering and reuniting passengers with their bags was $2.1 billion last year. ■

ICAO calls out ASEAN countries for infrastructure failures

Tom Ballantyne reports

International Civil Aviation Organization (ICAO) Asia-Pacific regional director, Arun Mishra, has joined the huge chorus of Asia-Pacific airlines calling for faster, smarter airport and air traffic infrastructure development in the region.

"Despite the Association of South East Asian Nations (ASEAN) destined to be the fastest growing tourism market in the world, the region's growth remains constrained by insufficient and uncoordinated development of airports to support an adequate tourism economy, including Thailand and Indonesia," he said.

Mishra told delegates at a Bangkok travel and tourism summit that all ASEAN countries need to comply with the ASEAN Open Sky policy or the ASEAN Single Aviation market to increase regional and domestic connectivity and allow the association's airlines to fly freely across the region.

Although several airport and air traffic developments are underway, progress is slow and can be mismatched to airlines' needs.

An example is the new Terminal 3 at Jakarta's Soekarno-Hatta International Airport, one of the most congested airports in the Asia-Pacific. Terminal 3 was opened to international services last month, but initially only six gates were operational and all of them were allocated to Garuda Indonesia.

The flag carrier intends to move all its flights from Terminal 2 to the new facility eventually, but that won't happen until Piers 1 and 2 are completed in July or August. The new terminal has 65 immigration counters, 30 auto-gates and 17 aircraft parking stands. It can accept the A380.

Terminal 3 will not solve airport congestion in Jakarta. Flight navigation Airnav Indonesia's operation director, Wisnu Darjono, told summit delegates he expected airport traffic to increase to only 80 movements per hour, up from the current 76 movements, when Terminal 3 is fully functioning.

At Kuala Lumpur International Airport, Terminal 2 (KLIA2), primarily a low cost terminal dominated by AirAsia flights, is reporting strong growth. Malaysia Airports Holdings Bhd (MAHB) said the terminal, opened in 2014 and designed to handle 45 million passengers annually, had 24 million passenger traffic movements in its first year. In 2016, the numbers grew to 27.6 million and there is no abatement in demand in 2017. At the summit, AirAsia Group CEO, Tony Fernandes, urged the region's governments to build more low-cost carrier dedicated airports to accommodate the sector's expansion. ■

Sydney's second airport finally receives go ahead

It has taken more than half a century of fierce political debate but finally construction of Sydney's second airport will commence next year, with the Australian government footing the bill.

Tom Ballantyne reports

Macquarie's Sydney Airport Group, operators of Australia's major gateway, Kingsford Smith International Airport, held the first option to build and operate the city's second airport at Badgerys Creek, but after three years of mulling the commitment, the answer turned out to be a definite "no thanks".

The reason, said the airport's CEO, Kerri Mather, was financial risk. The decision was expected, given the company has said Badgerys Creek would be a "challenging investment proposition".

Risky or not, the Australian government has decided another airport is a necessity for Sydney.

In the conservative Coalition government's annual budget last month, US$3.8 billion was set aside for the project. The first stage will involve a terminal capable of handling up to 10 million domestic and international passengers a year and a single 3,700 metre runway. The design allows for a second parallel runway and expansion of the terminals to cater for 37 million passengers annually by 2050 and 82 million a year in 2063. Badgerys Creek is 50 kilometres west of Sydney's city centre.

The government is setting up the Western Sydney Airport Corporation (WSAC) to oversee the project. Competitive tenders will soon be launched for the design and construction, scheduled to begin in the second half of next year. The airport is planned to open in 2026.

Australian Prime Minister, Malcolm Turnbull, said it was a vitally important project for the country that will create 20,000 jobs by the early 2030s and 60,000 in the longer term.

A second airport for Sydney was first mooted some 70 years ago. Successive governments have either announced the project would go ahead or shelved it.

Kingsford Smith is becoming increasingly congested and its expansion is hampered by a night curfew and a cap of 80 movements an hour on flights. Badgerys Creek, which lies in the heart of Sydney's western suburbs; is a major engine of growth for the state.

Most full service carriers are expected to continue to use Kingsford Smith because of its convenience to the centre of Sydney.

Analysts believe Badgerys Creek will evolve primarily into a low-cost airline hub that will attract air cargo and private jet business. Qantas Airways chief executive, Alan Joyce, who has warned against building a "Taj Mahal", has hinted the new airport could be a base for the carrier's budget airline, Jetstar.

"Standsted [in London] is very clearly a low-cost airport. It's the biggest hub for Ryanair, which has the biggest operation across Europe," he said.

Australia's competition watchdog, the Australian Competition and Consumer Commission (ACCC), said in March an independent or government-owned airport at Badgerys Creek would be a win for airlines and the passengers they carry.

"This has raised the possibility of increased competition with Sydney Airport to the long-term benefit of consumers and the economy. A second international airport competing with Sydney Airport could yield significant benefits to consumers and airlines," it said.

Just how much competition Badgerys Creeks will present to Sydney's main airport remains to be seen. But one Australian businessman has said the government was spending too much on the project.

John Wagner, along with his brothers, built Brisbane Wellcamp Airport near Toowoomba, Queensland. He claimed he could build Badgerys Creek for much less than the government is spending. Wellcamp (Cathay Pacific Airways operates cargo flights out of the airport) has a 2.87 kilometre runway that can handle aircraft as big as a B747.

Wellcamp was built in 19 months and 10 days and cost A$200 million (US$145 million). As well as building Badgerys Creek for less money, Wagner said he could have it up and running in three years – five years ahead of the government's scheduled opening of the facility. ■

Malaysia Airlines extends agreement with AFI KLM E&M

Kuala Lumpur-headquartered **Malaysia Airlines** and **AFI KLM E&M** have expanded their agreement to cover component parts supply for all of the B737 800s in the MAB fleet.

An earlier component support contract that covered 35 of the aircraft type was enlarged in May to 54 B737 airliners and a larger range of part numbers. Component support for Malaysia's flag carrier is provided by the European MRO and Boeing.

"The support implemented by AFI KLM E&M for our fleet of B737-800s stands out for both its service quality and its responsiveness, so it was a logical decision to extend our cooperation," said **Malaysia Airlines technical director, Paul Kear.** ■

Asia's MRO business to double by 2027

Key findings in the **Oliver Wyman 2017-2027 Fleet and MRO study** forecasts the Asia-Pacific will record annual MRO growth of 4.4% for the next ten years, with MRO business to equal Europe and North America by the end of the next decade.

This growth will compel MROs to build new facilities and train the workforce necessary to keep up with rapidly rising MRO demand in the Asia-Pacific, Oliver Wyman said.

"Much of China's growth will come from new deliveries, which will reduce the average aircraft age significantly. But fleets will age as aircraft stay in service to meet increased passenger and cargo demand, leading to a greater emphasis and importance for aircraft MRO," the report said.

"Rising labour costs, coupled with temporary infrastructure and capacity restraints in the region are likely to force Chinese airlines to look to countries south and east to fulfill maintenance needs," the consultancy concluded. ■

Lufthansa Technik develops ground handling location software

Global MRO, **Lufthansa Technik**, has created a tracking software solution, **GSE 4.0**, which can locate all equipment required by airport ground support equipment teams. The digital location software "will make the time-consuming search for ladders, trailers, loaders, tugs, towbars, start-up devices and air conditioning units a thing of the past", said the MRO. Lufthansa begun a GSE 4.0 pilot program in April and is online at Hamburg and Frankfurt airports where more than 1,500 ground support equipment items are GSE 4.0 connected.

All trackers are equipped with onboard sensors that can be configured flexibly and be extended to include such management processes as fuel levels on ground support vehicles. ■

AerFin acquires Saudia Air's 15 Embraer 170-LRs

AerFin Ltd, which specializes in aircraft end of life solutions, has accepted Saudi Arabian Airlnes' fleet of 15 **Embraer 170-LR airplanes**, including all spares parts, engines, tooling and equipment necessary to support the fleet.

The E170s, which have commonality with the E175 and E190s, entered into service with the Middle East airline in 2005 with the last of the aircraft completing their final flight in December last year.

AerFin CEO, Bob James, said: "the Saudi 170 fleet is barely 10 years old, so while we expect some aircraft to be reduced to spares, eight aircraft have had D checks in the last 12 months and provide excellent lease candidates." ■

BRIEFLY...

Mobil Jet Oil approved for Pratt & Whitney engines

*Engine manufacturer, **Pratt & Whitney** has approved the use of high performance capability **Mobil Jet Oil 387** for its PW4000 engines. The PW4000, first introduced in 1984, has and does power the airlines that fly Airbus' -300s, -310s and -330s and Boeing's -747s, 767s and 777s. The multi-year approval evaluations were carried out on various PW4000 engines. All Mobil Jet branded oils, which include Mobil Jet 11 and Mobil Jet Oil 254 as well Mobil Jet Oil 387, have been approved for use in PW4000 engine models.* ■

Alsim sells simulator to Indonesia training school

*French simulator manufacturer, **Alsim**, has sold one of its AL250 simulators to Indonesia's **Banyuwangi pilot academy** in East Java, Indonesia. **Alsim's Audrey Jeffroy** said the European Safety Aviation Agency and the Federal Aviation Administration qualified simulator was launched last year and was the first of its type to be operated in Indonesia. "This will increase our presence in Southeast Asia and is the beginning of a great collaboration between our two companies," Jeffroy said.* ■

China controlled CDB wins Mainland single aisle aircraft leases

***CDB Leasing Aviation Lease Finance**, a wholly-owned Irish subsidiary of China Development Bank Financial Leasing Co. Ltd, has delivered a B737-800 to the Jinan-based **Shandong Airlines** and a new A320-200ceo to China's **Loong Air**. CDB has leased 16 airplanes to Loong Air, which has its headquarters in Hangzhou.* ■

Jeppesen and IBM's The Weather Company to cooperate

Jeppesen and IBM have agreed **The Weather Company** would become the primary weather source for all Jeppesen and Boeing aviation products. The IBM-owned forecaster will provide Boeing's operations centres and pilots with access to the same weather information, which will build confidence and collaboration when critical operational decisions must be made.

Jeppesen chief operating officer, Ken Sain, said: "The Weather Company is the clear leader in providing accurate, personalized and actionable weather services and insights for the global aviation industry. There is strong demand across our customer base to use The Weather Company as our core weather service." The Weather Company will replace all previous weather sources for Jeppesen flight deck and flight planning services.

"This agreement will eliminate potential variance between disparate data sources and establishes a unified weather experience across airline operations to increase operational efficiency and performance. All of this will have an impact on the bottom line," Sain said.

The Weather Company's real time forecast services and weather briefings will be available for all Jeppesen aviation market segments: airlines, business aviation operations, general aviation pilots and military operations. ■

SITA Lab experiments with Hololens

SITA Lab, the research arm of SITA, has released early results of research completed at **Helsinki Aiport** in association with **Microsoft Hololens**, a project developed to analyze management airport operations in a mixed reality environment.

Hololens is the world's first self-contained holographic computer. It allows users to engage in digital content and interact with holograms in the world around them. Running Microsoft's Windows 10, it blends the physical and digital worlds.

One element of the Helsinki project used the Hololens to reproduce the airport operational control centre (AOCC) in a mixed reality environment. Hololens opens the possibility of accessing the AOCC from any location on or off site which gives experts the option of input to situations remotely.

"Mixed reality, which combines augmented and virtual reality, is more than a new interface. It is a new way of looking at the world and allows things to be done in a new way," said SITA Lab.

"It enables digital and physical data to exist together. Our early research shows there are potential uses for airlines and airports for operations, maintenance and training.

"We need to learn how to interact in this environment. In the same way that we moved from computers to smartphones and voice recognition, now we go beyond the screen." ■

Thales forecasts the future of IFE

IFE systems of the future will interact with passengers, generate ancillary revenue and deliver customized content to each airline seat, **Thales InFlyt Experience CEO, Dominique Giannoni**, has forecast.

At Thales' new IFE final integration and test complex in Irvine, California, its system developers are working on IFE screens and communications that will engage with individual passengers. "We are going to go into a period where it's about engagement. An individual's ability to access the internet and catch up on social networks is changing the game," the company's **CFO, Fred Schreiner**, told media in May.

"How do we move from an in-seat system, where an airline is looking at cost line, to an in-seat solution coupled with connectivity that moves to a revenue line? We believe it is an untapped area and an opportunity for revenue. We are talking about a new relationship with the seat back." Schreiner said families will be able to plan their holidays from the seatback: booking restaurants and exploring street level views of a city's sights. ■

AJW wins deal with new Cambodian airline

Global specialist in the supply of aircraft and engine components, **AJW**, has won a power-

by-the-hour component support contract with the A320 fleet of start-up Cambodian carrier, **JC (Cambondia) International Airlines**.

"Winning this highly competitive contract is a testament to AJW's capabilities from one of the region's growing airlines," **director of sales at AJW China, Nick Ward** said.

The **airline's engineering and maintenance department director** said: "We are pleased to have selected AJW as our partner. It has the technical expertise and customer service track record we are seeking for the component support requirements of our new fleet."

The Cambodian carrier is named after its Chinese owner, the **Yunnan Jingcheng group**, which also operates China's **Ruili Airlines**. Based in Phnom Penh, it received its Air Operator's Certificate in March and launched services with a return flight to Macau on March 17. ■

No place to hide from impact of Big Data

Big Data applications are transforming aviation. Chief correspondent, *Tom Ballantyne,* outlines its importance in creating pathways to bigger profits at the region' airlines.

Big Data and its impact on aviation has gripped the industry. At every major conference, from airline and airport operations to MRO, customer service and marketing, safety and security, it is central to industry discussions.

It's mind boggling ability to scope out information that is critical to selling more airplane seats, delivering more accurate MRO and making giant leaps forward in airliner production is losing jobs in the industry and making flying more efficient and cheaper for airlines, manufacturers and passengers.

Asia-Pacific airline Big Data adoption driven by a richer emerging middle class "millenials" travel expectations and low-cost carrier competition

In Dubai last month, Chinese global information and communications technology giant, Huawei held a summit, Leading New ICT, The Road to Digital Aviation, to explore innovative ICT solutions for aviation.

Leading ICT technologies are bringing digital collaboration, cloud computing platforms and Big Data analytics to the aviation industry. Digitalization can dramatically optimize passengers' travel experience, increase airports' operational efficiency and ensure public safety and operational security at airports," said the president of the Transportation Sector in Huawei's Enterprise Business Group, Xilin Yuan.

"Huawei is cooperating with its partners to provide innovative, differentiated, and advanced ICT hardware and software infrastructure for aviation customers, which will enable them to embrace the benefits of digital technologies, remain competitive and thrive in the digital era."

By the end of 2016, Huawei had provided ICT products, solutions and services for more than 40 airports, airlines, and air traffic control authorities worldwide. Customers included more than 15 airports with more than 30 million passengers annually, including the 10 busiest airports in China by passenger traffic.

At the Aero-Engines Americas Conference in San Antonio, Texas, earlier this year one speaker said the B787 and the A350 are even more connected than the passengers they carry. According to Airbus, even its A380 superjumbo, which first flew a decade ago, collects information on more than 200,000 aspects of every flight.

In a paper published in April, DLA Piper, a global law firm with offices in more than 40 countries including the Asia-Pacific, said an effective digital strategy is critical for the long-term success of any airline.

"The role of digital technology has changed from a source of marginal efficiency gains to the foundation for transformation. Increasingly, airlines recognize the need to innovate to stay ahead of legacy competitors and to pre-empt the disruption of established business models by ambitious and nimble digital natives – the low-cost carriers," DLA Piper said.

However, as the volume and variety of data increases, so too do the challenges associated with the use of Big Data. For many organizations, navigating the complex landscape of data protection, privacy and cyber security laws will be critical to unlocking the full power of Big Data, advanced analytics and machine learning," the global law firm forecast.

In a recent interview, vice president and general manager of Thales Avionics Worldwide Services for Americas, Ken Coleman, said aircraft connectivity "is a critical first step but it is what we do with this that will really be transformative for both the front- and back-ends of the airline.

"For example, adding to critical safety services, improving operational performance, providing a seamless ground/air experience for passengers and increasing revenue for airlines.

Predictive maintenance, which uses Big Data to deliver parts to airline customers when they need them, is an industry game changer. Before Big Data entered the sector, MRO managers were left to beg, borrow or steal to ensure the right parts were available at the right time.

The goal was always to keep planes in the air and not in the repair cycle. Without a predictive understanding of when parts were needed, the goal was not always achievable. Companies seeking a competitive advantage tap suppliers who use Big Data to give them an edge over rivals.

Rolls-Royce, the world's second-biggest aero engine manufacturer, was one of the first OEMs in the industry to use data generated by its engines for innovation. The UK-headquartered company offered its customers an MRO package based on the number of hours its engines kept an aircraft flying. It is now a standard industry practice.

"Today, the average life cycle of an airplane engine is up to 50 years," said vice president sales in the Americas for MTU Maintenance, Christoph Heck. Lufthansa Technik (LHT) is blending digital analytics with its engineering expertise to make MRO work more predictive for its clients. All of the engine-makers, from Pratt & Whitney to General Electric and CFM are improving their offerings to carriers by employing Big Data information.

Boeing and Microsoft signed an agreement last year to build a cloud-based platform for the U.S. plane maker's portfolio of commercial aviation analytics tools. They are working towards transferring many of Boeing's commercial aviation applications to the Microsoft Azure cloud.

"Boeing's expertise and extensive aviation data resources coupled with Microsoft's cloud technology will accelerate innovation in areas such as predictive maintenance and flight optimization, allowing airlines to drive down costs and improve operational efficiency," said Boeing vice president Digital Aviation Kevin Crowley.

Airbus has established a corporate venture capital fund, Airbus Group Ventures, and A3, a technology and business innovation centre in Silicon Valley, aimed to define the future of flight.

IT leaders such Amadeus, Honeywell, Sabre, SITA and Thales are heavily involved in constant research and development of systems to better utilize Big Data information.

DLA Piper said the major challenge for the aviation sector

was achievement of a "true" digital transformation of back-end systems, internal processes and end-to-end customer interaction models.

"This means much more than creating a 'digital wrapper' for their existing business models. Many aviation businesses are very large, complicated organizations that support hundreds of different business processes in multiple regions and countries. To adapt to the digital world, many are seeking to consolidate and simplify these processes across their entire business, centralize their technology landscape and update their platforms in order to make efficiency gains and better support strategic aims, such as the transformation of the customer experience."

Industry experts said passenger demand expansion is driven an expanding middle class in emerging markets, lifestyle expectations of millennials and cheaper airfares. To capture these market opportunities, digital technology must be applied.

"The rise of 'the digital consumer' is prominent in the aviation sector, where a significantly greater proportion of customers have an online presence compared with other industries," DLA Piper pointed out.

"With the use of digital technology projected to rise dramatically, with estimates ranging from 13 billion to 50 billion connected devices by 2020, companies are engaging with customers by online purchasing journeys, social listening, feedback apps and links with other players in the aviation, travel and tourism industries.

Airlines are customer apps to check in online and acquire virtual boarding passes, but to announce real time flight delays and boarding times. Luggage tracking to help people make tight transit connections will soon be widespread.

Now onboard WiFi is becoming a reality, some airlines are considering cabins with sensors built in to seats to monitor passengers' tiredness, temperature or hydration levels that will automatically adapt the airline environment or prompt crew to take a particular action.

So, the bottom line is: the application of Big Data is a critical element for the success of any airline from the cabin to the MRO hangar and from the airport gate to safe landing at the destination of every airliner. ■

Getting to the heart of the engine

By Tom Ballantyne

Engine manufacturer and MRO, Pratt & Whitney, has developed a software tool, EngineWise, that uses Big Data collection to forecast and improve maintenance across all its commercial aviation product family.

EngineWise , said Pratt & Whitney's executive director, Asia Pacific, Kevin Kirkpatrick, provides constant monitoring of engines produced by the Pratt & Whitney parent as well as Pratt & Whitney Canada and International Aero Engines.

It is about real time intelligence that will predict and prevent engine disruptions before they occur, said Kirkpatrick.

"If we can harness that, and we have shown that we can, it drives down costs and allows us to better predict maintenance and allows airline to plan downtime. It helps allocate shop visit space more efficient and improve planning at our facilities," he said.

"In the past, there would be snapshots, but these snapshots would only be of a handful of parameters. Now, we capture the full flight cycle. Now we are going to be looking at constant monitoring of literally hundreds of parameters.

Kirkpatrick will be offering EngineWise to Asia-Pacific carriers in a region where the Connecticut-headquartered OEM has invested millions in its service hub in Singapore and separate facilities in China, Taiwan and New Zealand.

Large numbers of new A320s and A321neo aircraft, equipped with Pratt & Whitney geared turbofan (GTF) engines, have been ordered by the region's airlines.

"The aftermarket business in Asia is very healthy. We are going to add a V2500 facility in Shanghai. We need to make sure we keep up and support our customers. We are going to be in airlines where traditionally Pratt has not been because the GTF is doing well," he said.

"We have been hiring and expanding the network that we provide customers. We are going to be everywhere as it relates to support for customers. "You will see more investments announced this year and subsequent years to support that GTF engine. I can't give details but yes, you will see that in the near future."

The GTF engines are collecting data from day one of entry into service and Pratt is collecting and astounding 5,000 parameters from each engine. It predicts 11 total petabytes (PB) of data will be generated across the fleet by the time it reaches maturity in 2030 and, at maturity, the GTF engine fleet will generate more than 2 petabytes of data annually, equivalent to a new American Library of Congress every year.

Among the investments already made in Asia is the introduction of new coating technology at the OEM's Component Solutions facility in Singapore. Known as 279/284 coating, it allows for the application of two protective coatings on engine parts at the same time which adds assurance to the engine's optimal performance.

It is the first of the OEM's units outside the U.S. to offer the technology which reduces logistics and shipping costs for the region's airlines and turns around the process to six days.

Pratt can now digitize its engines and allow the airline customer to see inside an engine. "But I'm going to take it one step beyond that," said Kirkpatrick.

"Once you start to digitize the workings of an engine, you can take digital images of other engines and look for non-conformances. Computer power allows analysis of the good versus a bad part in that digitalization.

"It provides enhanced inspection techniques where the computer is helping you do that inspection. It is a little far into the future but we are experimenting with things like that today," he said. ■

> If you went back twenty years and looked at the data you could not do anything with it. The computing power was not there. The storage was not there. But now it is. This is a tremendous opportunity, not only for airline cost management, but passenger satisfaction. We are pulling that data today and it's allowing us to predict engine behavior to the benefit of every customer

Kevin Kirkpatrick
Pratt & Whitney's executive director, Asia Pacific

Frantic pressure of keeping up with customer expectations

By Dominic Lalk in Las Vegas

Big data and data analytics now offer airlines greater opportunities to determine travel trends than at any time in history. Asia-Pacific airlines must apply the insights obtained from data mining to stay ahead as the digital means of attracting customers to airlines becomes ever more varied.

In May, travel technology provider, Sabre, held its Airline Technology Exchange (ATX) in Las Vegas. It was attended by more than 400 airline representatives. Delegates included 80 experts from the Asia-Pacific, including representatives from all 17 HNA Group carriers.

Information shared at the Sabre gathering included results from a Forbes Insights and Sabre project that asked 100 operations, marketing, IT and finance executives from the world's largest airlines to identify their primary strategies for the next three to five years.

Customer experience was their top brand promise, at 61%, as well as the number one measure of success in disruption management (72%).

"Data quality is absolutely the greatest challenge for the overall IT strategy," said Air China's deputy general-manager of system organisation control (SOC), Wan Qingchao. "With incomplete or inaccurate data, it is impossible to deliver high quality products, no matter how excellent the algorithm is and how intelligent the system. Our company has


Dasha Kuksenko


Cyril Tetaz

realized this during the process of working on the decision support system of flight operations."

When implementing new technology, airlines often face the challenge of upgrading their software and hardware while the carrier continues its 24/7 operating cycle.

The relationship between enhanced technology, improved service and more revenue has become clearer for Garuda Indonesia. "We want to grow the IT at Garuda to improve our customer experience and enhance revenue," said Iwan Joeniarto, director of operations for Garuda. The Indonesian full service carrier has shifted much of its customer-facing and internal systems to cloud-based solutions to simplify operations, reduce IT infrastructure demands and allow for easier updating.

Asia-Pacific Sabre Airlines Solutions vice president and general manager, Dasha Kuksenko, joined Sabre 12 years ago. One of her first assignments was the technology transformation at Virgin Australia. She had to facilitate the airline's shift from a hybrid low-cost carrier to a full service competitor to Qantas. Vietnam Airlines and Philippine Airlines also have benefitted from her expertise.

Since those early days in building the business in the region, Sabre now has Air China, China Eastern Airlines, China Southern Airlines and the HNA Group as clients. The latter has contracted Sabre to roll out products to support and improve the HNA carriers' IT solutions and passenger experience.

Sabre is now working on extending its solutions from parent Air China to the carrier's Shenzhen Airlines subsidiary, Kuksenko said, and added the four groups represented 80% of the China market so Sabre is "very comfortable" with its Mainland footprint.

But white spots remain. "We're not having a relationship with Spring Airlines today and that's a major player that we need to work on," she said.

"Chinese airlines are expanding their presence globally. These carriers understand that to fill airplanes, they cannot rely on targeting Chinese travellers alone," said Cyril Tetaz, Asia-Pacific head of commercial for airlines at Amadeus, told Orient Aviation.

Amadeus has one up on its larger, Texas-headquartered rival. "As a distribution partner, we are helping Chinese airlines such as Spring to reach more travellers around the world through our global travel agency network. Most of the Chinese carriers have come to us to power their international websites, and we are working with them to not only power their online bookings, but also help them understand the preferences and behaviours of travellers outside of China and tailor their websites and online experiences to the unique needs of each market," Tetaz said.

The European travel technology provider has entered commercial agreements on the Mainland with Air China, China Southern Airlines, Hainan Airlines, Xiamen Airlines, Sichuan Airlines and Beijing Capital Airlines.

The world's big three GDS and airline solutions providers – Amadeus, Sabre and Travelport – have come a long way to fight obsolescence and carve out new revenue streams through innovative technology.

Sabre Corp. CEO and former airline top executive, Sean Menke, told Orient Aviation at the Sabre conference in Las Vegas. "With shopping, we are seeing a massive amount of data processing. It's not going to slow down because of the technological complexity airlines require to sell their products and services. My job is to make sure we are the enabler." ■

MRO transformed by Big Data

By Tom Ballantyne

Two of Asia's major airlines are the first carriers in the world to sign up for a maintenance service program that utilizes connectivity and data analytics to improve maintenance quality and reduce airline downtime.

Last year, Cathay Pacific Airways became concerned its aircraft cabins were too hot during the Hong Kong summer so it approached major avionics and software giant, Honeywell, to solve the problem.

Scientists from the U.S. company and other industry experts got to work and developed a software solution to the problem which they tested on Cathay Pacific's 61 A330s. The results were little short of astounding.

Using existing data links on the aircraft, successful analysis of trial data returned a 35% reduction in operational disruptions, with a false positive rate of less than 1%. The new system saved the airline several hundred thousand dollars in the operation and cost of maintenance of a single aircraft system, the auxiliary power unit (APU), a unit produced by Honeywell and also its aerospace competitors.

After the successful test program concluded, Cathay Pacific signed on the dotted line for Honeywell's new GoDirect Maintenance Service for its A330 fleet and is considering an extension of the software diagnosis system to its B777s.

The Hong Kong carrier's fleet will be outfitted with Honeywell's Connected Auxiliary Power Unit (APU) predictive maintenance service that will identify potential mechanical issues or failures before they happen. China's Hainan Airlines' fleet of more 50 A330s will be similarly equipped. The aerospace company also will install the system on Hainan's on order 40 A330s.

Honeywell vice president airlines Asia Pacific, Brian Davis, said the deals were monumental and not only for Cathay Pacific and Hainan Airlines "but for the aerospace industry as it undergoes a digital transformation that is changing the industry as we know it".

The Connected APU service works by using an existing data connection on the plane to download APU maintenance and fault data to predict impending hardware failures. Those failures are routinely the highest cause of APU interruptions. That data is then shared with Honeywell and analyzed and then presented to an airline's maintenance team in an easy-to-understand, visual manner. The data identifies faults in the APU, avoiding an unscheduled maintenance event.

How did Honeywell achieve the results? "We asked why the APU was shutting down. We found that the predictive trend monitoring that existed in the industry, not only for Honeywell but for our competition, looked at the core engine," said Davis.

"That's important for cost, but typically the core engine was not the cause of a line maintenance interruption in the operational day. It's almost always the line replaceable units, the LRUs, the components that are on the APU.

"We took months and months of data and interpreted it. We accomplished all of this without adding any sensors or a single ounce of weight to the aircraft. It was just looking at the data. A lot of smart people put their heads together and came up with an algorithm that predicts [an APU problem] with a less than 1% false failure rate."

"Honeywell's GoDirect Maintenance Services offering helps us maintain this commitment by reducing the number of auxiliary power unit downtime events and improving our first-time fix rate. We plan to explore how to expand the offering to additional aircraft systems," said a Cathay Pacific spokesman.

Hainan's Airline's chairman, Xie Haoming, said the Honeywell system "reduces downtime, keeping our planes in the air more often to transport our passengers to their destinations safely and on time".

Davis said the data analytics could be extended to an aircraft's brake system. "We can the way airlines use their brakes and recommend the best combination of brake energy and brake wear for the alternate cost savings," he said.

The aircraft's environmental control system (ECS) could be part of the system. "In areas where you have air contamination, for example in some parts of China, airlines can carry out preventive maintenance before an ECS system becomes clogged. It could avoid a significant delay and probably a cancellation," he said.

Davis said we are just starting "to press the edge of "Big Data". "Honeywell has a huge amount of content on both the A350 and B787. We are taking off about 844 terabytes of data in a 12-hour flight. That's about 27,000 32 gigabyte iPhone 7s fully working at the same time. That is potential of information we can pull off these aircraft."

"With some of this Big Data, if I can know real-time winds and temperatures then ultimately an airline could save 2%-4% on its fuel bill. All of a sudden, the light goes on at airlines about the meaning and value of Big Data," he said. ■