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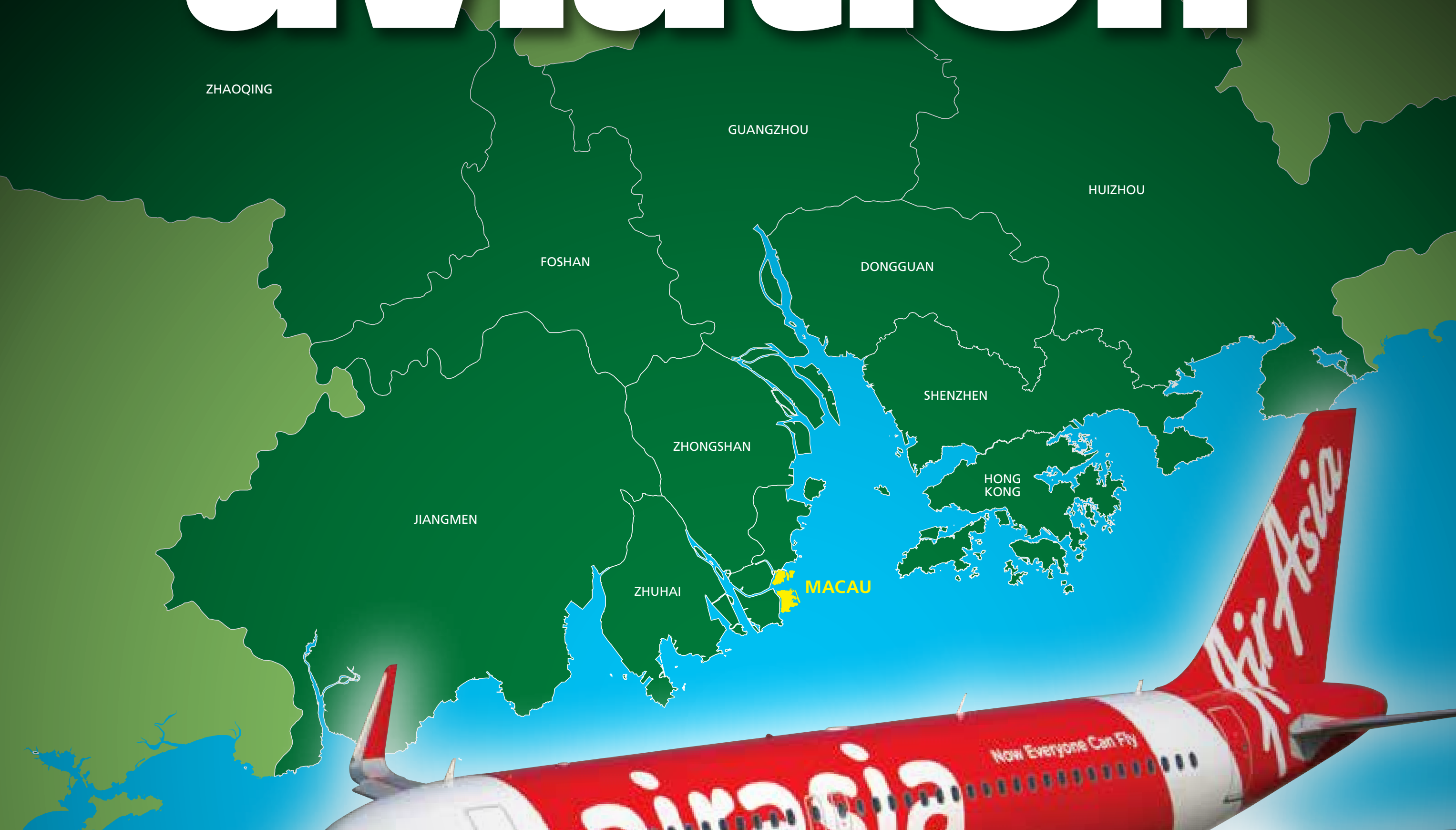

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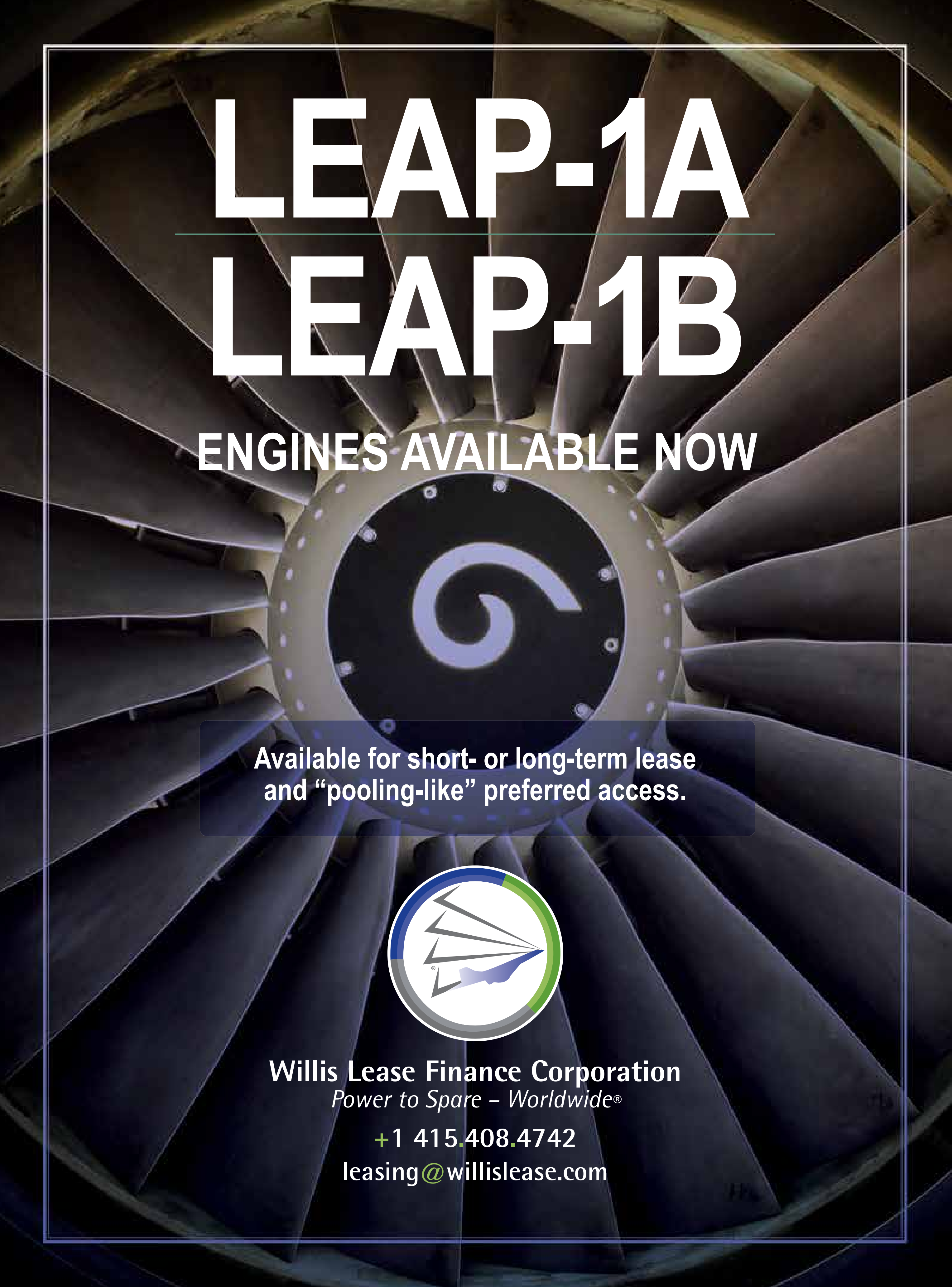
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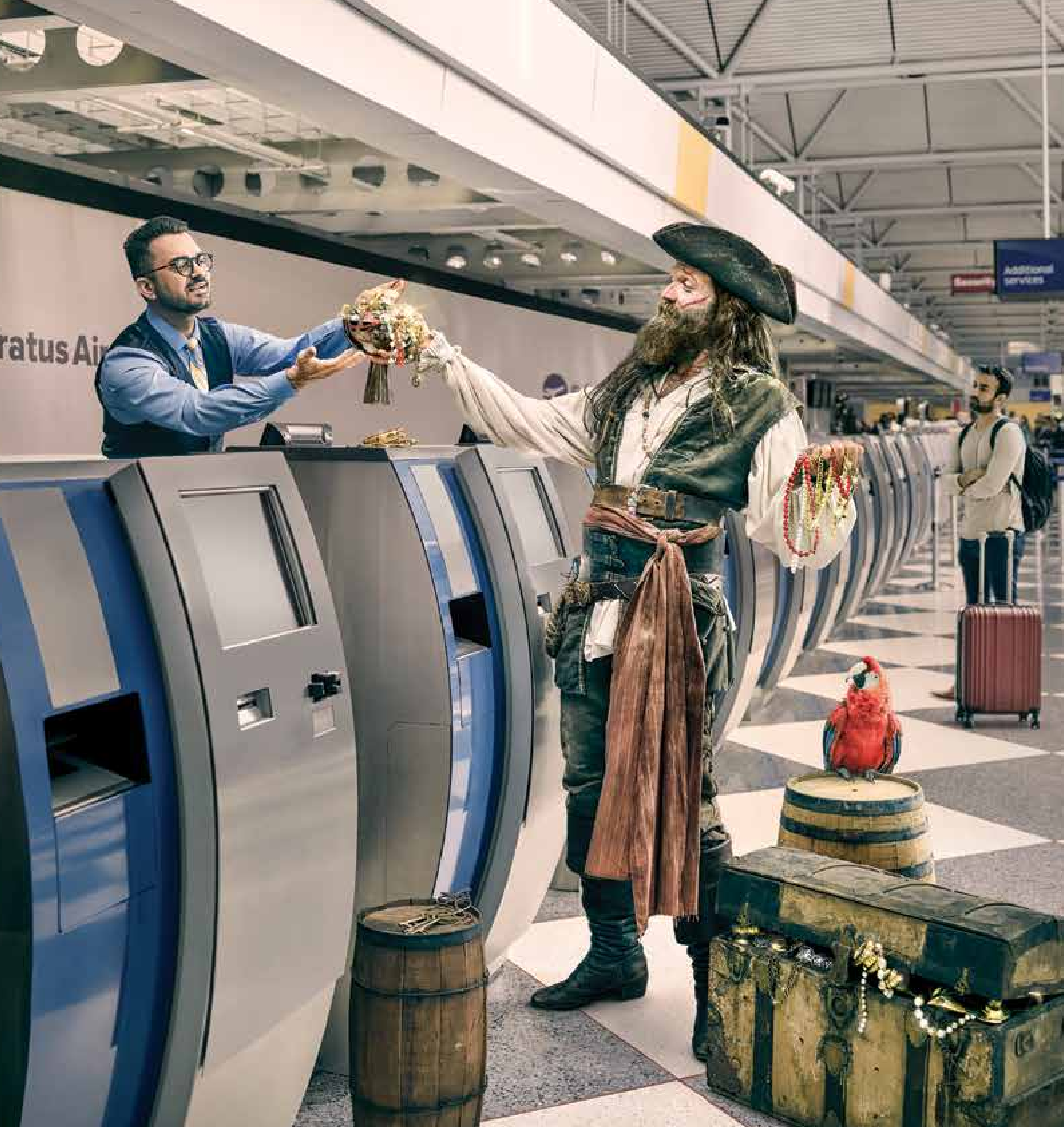
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Getting the message out

Aircraft and engine manufacturers have invested billions in research and development of new generation products. Airlines are spending tens of billions buying these aircraft because they fly more efficiently. As a result, there is a dramatic reduction in fuel and maintenance which in turn has brought about a massive drop in CO_2 emissions.

The industry takes its environmental responsibilities very seriously. Its acceptance and support for CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) is proof of that.

From the beginning of this year all airlines have been recording their emissions in preparation for the official introduction of CORSIA next year. Aviation is the only global industry to agree to a global market-based measure to counter climate change damage.

It is forecast CORSIA will mitigate around 2.5 billion tonnes of CO_2 between 2021 and 2035, an annual average of 164 million tonnes. Yet, despite years of effort, there is little recognition of this important progress.

In general, the public still seems to believe aviation is a polluter and that the industry is doing nothing to be otherwise. There have even been calls in Europe for governments to ban short haul flights and for people to opt for land transport.

At the Annual General Meeting of the International Air Transport Association in Seoul in June, director general and CEO, Alexandre de Juniac, pointed out public concern about environment issues had spiked worldwide. One example was Europe, where Sweden is the birthplace of "flight shaming" of those who travel by air.

"Unchallenged, this sentiment will grow and spread," he said, and added that along with reducing emissions, the industry must collectively tell its story more effectively. He is, of course, right. Airline chief executives at the AGM asked why the general public does not know more about the enlightened approach the industry has to mitigating climate change.

Airlines could start with their passengers, a captive audience. More than 4 billion passengers took an airplane journey last year and 4.9 billion passengers are forecast to take to the air in 2019. The industry could tell the good story of aviation's pro-active strategy for cutting CO_2 emissions via seat back literature or screened videos aboard commercial flights.

It is an idea that should be adopted immediately by airlines around the world. No one is pretending global warming is a myth. But carriers must get out their story that they are serious about reducing emissions to prevent irreparable damage to their businesses. ■

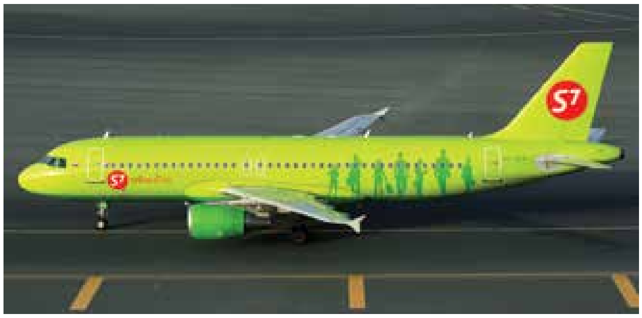
TOM BALLANTYNE
Associate editor and chief correspondent
Orient Aviation Media Group

Russians seek Asia's seafood and sun

Its a Russian invasion. Latest statistics from global travel analysis firm, ForwardKeys, reveal growth in Russian leisure travellers to the Asia-Pacific skyrocketed by 62.8% for the 12 months to May this year. Russian business travel to the region also rose, by 27.5%.

The huge spike in Russian visitors is the result of a doubling in direct flights from Russia to Asian tourist destinations, particularly Vietnam and Thailand, with overall seat capacity increasing by 38%.

Vietnam is experiencing the biggest rise in Russian airline seat capacity, at 153%, followed by Thailand and the Maldives, which saw growth of 125% and 58%, respectively. South Korea and India reported seat capacity expansion of more than 30% from Russian carriers.



Vietnam has emerged as a favorite destination for Russians and is expected to soon surpass Thailand, a nation long favored by Russian holidaymakers as their number one destination. Last year, Vietnam received a record high of 606,000 Russian tourists, which was 4% of foreign tourist arrivals in the country.

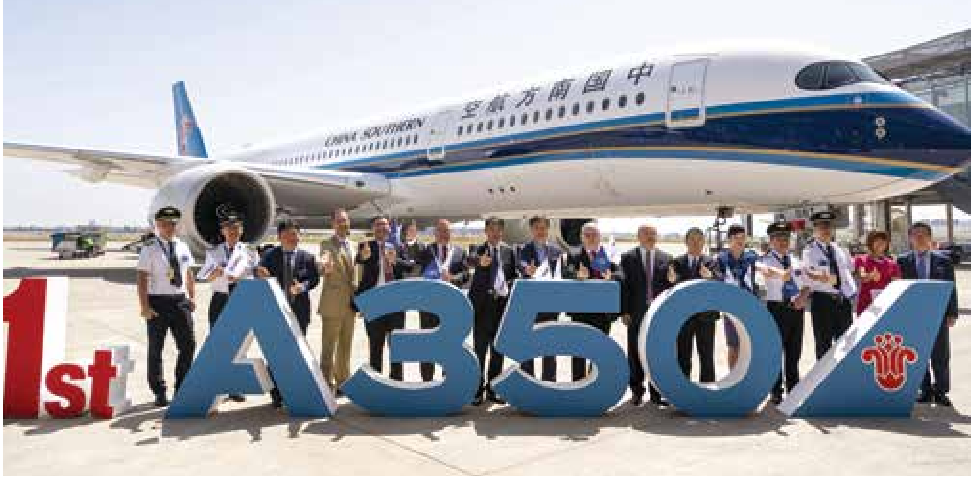
Russians spend an average of US$1,600 per stay in Vietnam compared with an overall average for foreign visitors of $900, the Vietnam National Administration of Tourism reports.

New direct air services from multiple secondary and tertiary cities in Russia to Vietnam's popular beach towns underpin the northern European tourism boom. In 2018, Russia's S7 Airlines launched direct flights connecting Irkutsk City with Cam Ranh, an hour south of its much busier sister, Nha Trang. Vladivostok Air has commenced daily flights from Vladivostok and Khabarovsk also to Cam Ranh.

Guangzhou-headquartered China Southern Airlines (CSA) has increased frequencies from Urumqi to Russian cities. To better serve demand during the peak travel season, CSA has resumed its Urumqi-Saint Petersburg direct route with a four times a week service and has increased direct flights, also to four a week, between Urumqi and Moscow.

Total international arrivals in the Asia-Pacific rose 3.8%, from May 2018 to April this year. Russia's 54.5% increase meant Europe was the top growing origin continent, up 6.3%. ■

China Southern Airlines chooses Nansha leasing for its first A350-900



China Southern Airlines' (CSA) acceptance of its first A350-900 XWB had significance for China's lessor industry as Guangzhou Nansha Nanhang Tiandong Leasing Company, based in Guangzhou Nansha free-trade zone (FTZ), leased the aircraft to the airline.

Aircraft lessors and FTZs have grown rapidly in China as a result of favourable government regulation and investor appetite for stable returns. The largest FTZ is Tianjin Dongjiang, where more than 1,500 aircraft are on lease, NYU Shanghai adjunct professor and an aircraft appraiser, David Yu, told Orient Aviation.

Nansha received its 100th aircraft at the end of 2018. The zone covers all industry sectors. Official figures record it has more than 2,100 lessors, but only some are in aviation, including SkyCo and CSA's leasing arm. Air Lease Corp used Hong Kong and Nansha to deliver a 787-9 to CSA earlier this year in the industry's first Hong Kong-Guangdong dual special purpose vehicle. In 2017, Nansha concluded its first international lease with an A321 to Cambodia's Lanmei Airlines, which has Chinese ownership.

More aircraft destined for CSA are expected to go through Nansha as partners seek local cooperation. "While there is some competitiveness between the different FTZs each region wants to differentiate itself with its competitive edge," Yu said. Although small, Nansha is favourably placed as Guangzhou is home to CSA, Asia's largest airline, and is within the Greater Bay Area economic zone. ■

Leading industry CTOs commit to sustainable aviation goals

The chief technical officers (CTO) of seven of the world's leading aerospace companies committed last month to reach the emissions reduction goals of the aviation industry.

In a joint statement released during the Paris Air Show, the CTOs said: "There must be additional public and private commitment to establish a sound regulatory foundation to address the novel issues associated with emerging aviation technologies and to provide the necessary economic support for widespread Sustainable Aviation Fuels (SAF) commercialization.

"We envisage broader, deeper and ongoing co-ordination through the International Civil Aviation Organisation (ICAO) to facilitate unified regulation with established regulatory bodies to establish global standards. These include the Federal Aviation Administration, the European Aviation Safety Agency, the Civil Aviation Administration of China, Transport Canada, the ANAC of Brazil and others.

"As industry CTOs we are committed to driving the sustainability of aviation."

The CTOs said the strategy to cut emissions to 50% of the levels of 2005 involved three pillars:

* *Continuing to develop aircraft and engine designs and associated technology to improve fuel efficiency.*

* *Support the commercialization of sustainable aviation fuels.*

* *Develop new aircraft and propulsion technology that will eliminate drag, conceive of lighter materials and distribute propulsion in new ways.*

Signatories to the manifesto are: Grazia Vittadini (Airbus), Greg Hyslop (Boeing), Bruno Stoufflet (Dassault Aviation), Eric Ducharme (GE Aviation), Paul Stein (Rolls-Royce), Stephane Cueille (Safran) and Paul Eremenko (UTC). ■

Asia-Pacific LCCs third force at Paris Air Show

It is not often an air show introduces structural change. Yet Asia's low-cost carriers did just that in Paris last month, reports Will Horton.

By changing their cost base and growth outlook by up-gauging orders and setting industry records for seating density Asia's LCCs produced a third important result at the European show after the headlines of the A321XLR launch and Boeing's 737 MAX deal with the International Airlines Group (IAG).

At the show AirAsia revealed it had up-gauged 253 A320neos to the A321neo, leaving only 14 A320neo in its order backlog, a dramatic winding down of the A320 that has powered AirAsia's growth for more than a decade.

As well, Cebu Pacific, the most profitable carrier in the Philippines, chose 16 A330neo to replace and increase its leased fleet of eight A330ceo. The deal included 10 A321XLR and five all-economy 194 seat A320neo, an 8% increase on the 180-seat configuration of the type only a few years ago. Cebu's A330neo will have 460 seats. Airbus will modify exit doors to surpass the A330's certified maximum of 440 seats.

The A320 and 737-800 have been the backbone of the region's fleet, striking a balance between operators' preferences and lessor considerations and the wider aftermarket. It created an ongoing cycle with airlines favouring new A320s and 737-800s since residual values and aftermarket demand were high. Second-hand customers came to expect A320 and 737-800 availability.

Larger narrow bodies had been supplementary, ranging from Eastar Jet's two 737-900s to Jetstar Australia's eight A321s. "While there is a readily available supply of A320s and 737-800s, the up-gauges are less common," said NYU Shanghai Adjunct Professor of Finance and an aircraft appraiser, David Yu. "There is fluctuation in pricing on A321s and 737-900s because there are less of them. They come in waves."

The biggest exception to the pattern has been Lion Air, the launch customer for the 737-900ER. Lion received its first -900ER in 2007, but its first -800 did not arrive at the carrier until 2012. Lion Air still operates more -900ERs than -800s. It has more A320neo on order than A321neo. The composition of its 737 MAX backlog is undisclosed.

AirAsia's 2016 order for 100 A321neo aircraft cemented the willingness of LCCs to use larger narrow bodies. Some might argue AirAsia's deal was late as Spring Airlines had ordered the A321neo, VietJet had received its first A321ceo and HK Express was a few months away from accepting its first A321ceo. Way before all of them, Cebu Pacific ordered the A321neo in 2011.

Last year AirAsia flagged it was re-evaluating its group order book. Up-gauging was expected, but in moderate numbers. No one said the A321 would become its core asset, and the Centre for Aviation, in a September 2018 report, expected AirAsia to use A321s on trunk and slot-restricted routes.

"It was a bit of a surprise," said the founder of Endau Analytics, Shukor Yusof. Wider up-gauging appears justified. Despite various market challenges, AirAsia's Southeast Asian units reported improvement in the first quarter with 87%-91% load factors and Revenue Available Seat Kilometres (RASK) momentum.

Underlying demand strength has been evident, but so too have infrastructure constraints. Yu believes airlines put off confronting slot challenges. "They would not want to react until they had to," he said. "The constraint overhang has been around for a while but has not kicked in until recently."

The turning point for AirAsia

was partially due to external considerations, Yusof said. "AirAsia appears to be taking its cue from some of its lessor partners," he said.

There is an argument LCCs are up-gauging in tandem with full-service airlines. China Airlines will replace 737-800s with A321neo. Cathay Dragon is removing A320s and A321s for only A321neo. SilkAir's A319s and A320s will be replaced by 737-800s and MAX 8s. All Nippon Airways short-haul re-fleeting is tilted towards the A321neo.

Full-service airlines appear to be up-gauging due to regional congestion but also because their smaller variants did not always offer favourable economics for sizeable premium and economy cabins. So while full-service up-gauging leans more towards necessity, LCCs are up-gauging system-wide out of opportunity.

In the last decade, more airlines have become publicly listed. Investors tend to first look at market growth, so up-gauging provides an opportunity to quell concerns about outlook by arguing up-gauging is smart growth, with low Cost per Available Seat Kilometre (CASK) or even CASK-neutral growth.

Switching from old generation baseline models such as the A320 or the 737-800 in favour of a next generation neo or MAX provides a range of benefits that vary from the A320neo to the A321XLR.

Asia-Pacific airlines typically up-gauge for additional seats. Range is a secondary benefit. Jetstar's domestic network largely features flights of less than three hours while AirAsia typically only flies routes of no more than four hours - as part of an agreement with sister AirAsia X, which takes longer flights. Both of those airlines are linked to longer-range variants.

Jetstar is a customer for the A321LR, which can fly from Australia to Bali Denpasar. AirAsia X is considering adding the A321neo or A321LR to thinner markets or off-peak frequencies that do not require its 377-seat A330s. Seating 192-236, the A321neo would give 16% savings on variable costs and could operate 64% of AirAsia X's Malaysia network as of 2018. AirAsia X has said it would use A330s to "defend markets", subtly highlighting AirAsia X's shift from start-up to established carrier.

Jetstar parent, the Qantas Group, has announced 36 of the 243 commitments so far for the A321XLR. The type's launch and even key orders, such as from American Airlines, were well reported before the Paris Air Show.

More of a surprise was IAG's announcement for 200 737 MAXs. The significance was multi-fold as the MAX is still grounded and subject to intense regulatory and industry scrutiny. It was the first MAX deal since the fatal March crash of Ethiopian Airlines flight 302. IAG's European airlines do not operate the 737. IAG CEO, Willie Walsh, gave a sweeping endorsement of the MAX's technical capabilities.

Walsh pointed out he had given an earlier interview that discussed a likely MAX order. He also drew on IAG's history, noting British Airways (BA) had been a 737 operator, including from London Gatwick until 2015. The MAXs will be operated by BA, but also at all-Airbus Vueling and Level, an IAG statement said.

Before the air show, Boeing arranged for Walsh to visit a 737 MAX simulator with the proposed software fix installed. Airbus indicated IAG had not asked Airbus for a formal request for proposal.

Perhaps what the IAG MAX

deal underscores is buying at the bottom of the cycle and balancing OEMs. When asked if his timing secured an especially good discount, Walsh said he thought the deal was good for IAG and Boeing.

Ryanair CEO, Michael O'Leary, has a history of buying 737s at the bottom of the market. While other airlines spoke about compensation for the MAX grounding, O'Leary told CNBC: "I don't need cash compensation. I'd like to see some movement from Boeing on the pricing of aircraft and on future orders."

Lufthansa Group CEO Carsten Spohr jokingly claimed credit for IAG's MAX deal, saying at the group's Capital Markets Day: "I only mention it once and Willie runs to buy 200."

Under Spohr, the group has changed its aircraft procurement approach. "It's way more effective to play the competition and to ride specific market cycles," said Lufthansa Group Chief Officer Airline Resources & Operations Standards, Dr. Detleft Kayser. "We want to strike a better balance when it comes to the OEM balance – Boeing versus Airbus."

Lufthansa Group CCO Network Airlines, Harry Hohmeister, said the group could have a few A321XLRs to take advantage of range. Asia's airlines would be interested in Hohmeister's justification for not having a larger fleet of A321XLRs: "This aircraft is not a cargo provider." ■

Flying into the sun

Qantas Airways' Project Sunrise, the barrier-breaking plan to link Sydney and Melbourne non-stop with London has grabbed attention worldwide, but its launch is not set in stone, reports associate editor and chief correspondent, Tom Ballantyne.

There is little doubt Qantas Airways group CEO, Alan Joyce, is enthusiastic about breaking through one of commercial aviation's final barriers: linking eastern seaboard Australia with the UK non-stop. But he is also pragmatic. The 21-hour flight won't be launched in 2023 if the figures don't add up.

"When you are doing a CEO job like this, which I have been doing for a long time, you have to know when to say 'no' as well," he said "And don't worry about it. If the business case does not work and we don't get the right commercial vehicle from Boeing or Airbus and we don't get the right deal from the pilots and we can't get over the commercial hurdles, we will be ruthless.

"It's our shareholders money and it's going to be billions of dollars. If I am not convinced and senior management is not convinced that this is going to work, we will have no problem in killing the project."

Joyce said good progress is being made, particularly since its non-stop Perth-London 787 flights, which have been operating for more than a year, have been successful.

"We have not made money on Sydney-London for ten years. Perth-London was profitable from day one," Joyce said.

"Because of the success of this, we think Project Sunrise has the potential, but we are still working on it. This is a game changer. The last frontier in aviation is to do Melbourne and Sydney to London non-stop which is, I think, the limits of what anyone wants in aviation. Both the manufacturers are calling this the moonshot. They are very keen and very eager to win."

Joyce has had "very good discussions" with both Airbus and Boeing.

"We are issuing a request for a final offer and the intention is by August to have the results of that back. Hopefully, this will get us to a stage with the manufacturers on the price of the aircraft, the guarantees on the aircraft, which is fuel burn and maintenance costs, and guarantees on performance and reliability because we are flying these aircraft on very long sectors. We need to get that right. It is very important."

Airbus and Boeing are protecting order slots for 2022 and 2023 and if the decision is to go ahead Qantas will place an order before year end with a view to beginning flights in 2023.

There are several key issues to be settled. Joyce described payload currently as "a moving feast" that was evolving as the manufacturers tested and defined the aircraft.

The payload shortage varies on different aircraft. There will be no freight on flights to London and there will be a loss of seats. The space will be used to provide a zone for Economy passengers to exercise, stretch and hydrate during the 21-hour journey. There will be enough room in the first and business cabins for passengers to do the same without the need to define a separate zone.

Another critical element to pressing the go button is achieving a deal with the carrier's pilots. At present, cockpit crew cannot be on duty for longer than 20 hours, which is less than the 23 hours, including time before and after the flight, required for Sydney-London flights.

Regulators will need to be convinced crewing rosters will not lead to pilot fatigue and therefore be a threat to safety. "We are saying the current arrangement [with pilots] does not work so we need an efficiency change," Joyce said.

"These aircraft will create a huge amount of promotions. A first officer typically is paid 55% of a captain's salary and the biggest thing a pilot can want is growth of an airline.

"Sunrise means massive growth for us and it would create a very fast promotional opportunity for a lot of pilots. They have to look at how they will miss that opportunity if they don't give the productivity needed on the aircraft.

"The best thing we can all do for the success of Qantas long term is to have a pilot agreement, the manufacturers to give the right price and do to this.

"It is a commercial risk. It is an exciting risk. I think it will work.

"We have said that when you look at where Sunrise works, London is a massive market.

"If you look at Europe, Paris is number two and Germany is number three. We think we can make Melbourne and Sydney to London and potentially a service from the east coast [of Australia] to Paris and potentially from the east coast to Frankfurt. The other markets for Sunrise obviously are New York non-stop and Chicago non-stop and maybe another point on the east coast of the U.S. It opens up Sydney or Melbourne to Brazil which we can't do today – Sao Paulo and Rio – and more flights directly into Africa." ■

Airlines "go beyond" to identify IT talent

By Will Horton

Airline technology is going back to the future. It was once a global innovator with solutions that resolved known problems and enabled unforeseen growth. Facilitating that development were platforms made in-house, externally or in collaboration. Airlines are returning to that entrepreneurial approach as they seek to end an industry cycle of under-investment and lagging innovation.

It is now common to hear about airlines sponsoring hackathons and start-up incubators. They are on the prowl, willing to buy new companies if the opportunity is right, as two airline leaders told the RISE start-up conference in Hong Kong this month. Acquisitions require cultural alignment, even at the AirAsia group headquarters where the office has a slide, bean bags and jeans are commonly worn.

"We bought some start-ups and we allowed them to continue being start-ups," AirAsia Group boss, Tony Fernandes, said at the RISE conference. "We let them be as they are. It's tough sometimes as a fellow entrepreneur because they're very free-spirited. I do get my two pennies' worth in."

Companies that airlines acquire or invest in need perseverance when confronting bureaucracy. They also may have a different understanding of the issues airlines face and where the pain points are, said Cathay Pacific Airways chief customer and commercial officer, Paul Loo. "In order to work with the corporations, I would suggest that in addition to product, you need to understand the frustrations or the legacy of corporations," he said.

Innovations from past decades were started or eventually taken up by multiple airlines. This could continue in the current innovation cycle. Cathay is open to other airlines using technology it finds. "We don't believe in keeping everything to ourselves. If it's good for the industry, we don't mind to share," Loo said. Widespread use of technology like disruption management would strengthen hubs, which is relevant for Cathay Pacific's typhoon-prone Hong Kong.

Airline initiatives and collaborative approaches are necessary to those who reckon a handful of technology heavyweights, especially Google, could control the travel industry and dictate terms. That is making venture capitalists and private equity weary of investing in companies that Google may try to supersede with its own product, the Australian Financial Review wrote earlier this month.

Google may be more interested in the consumer-facing side, like travel search and distribution. Loo said Cathay had good relations with Google and also Alibaba and Amazon Web Services. "They bring in new ideas and together we can focus on use cases," he said. "They can use us as a test case."

AirAsia has found some partners at start-up conferences. Options include outright purchases as well as acquisition of management teams that then receive company equity. "We want to continue to acquire or joint venture. I believe that's a much better way than trying to build everything yourselves," Fernandes said.

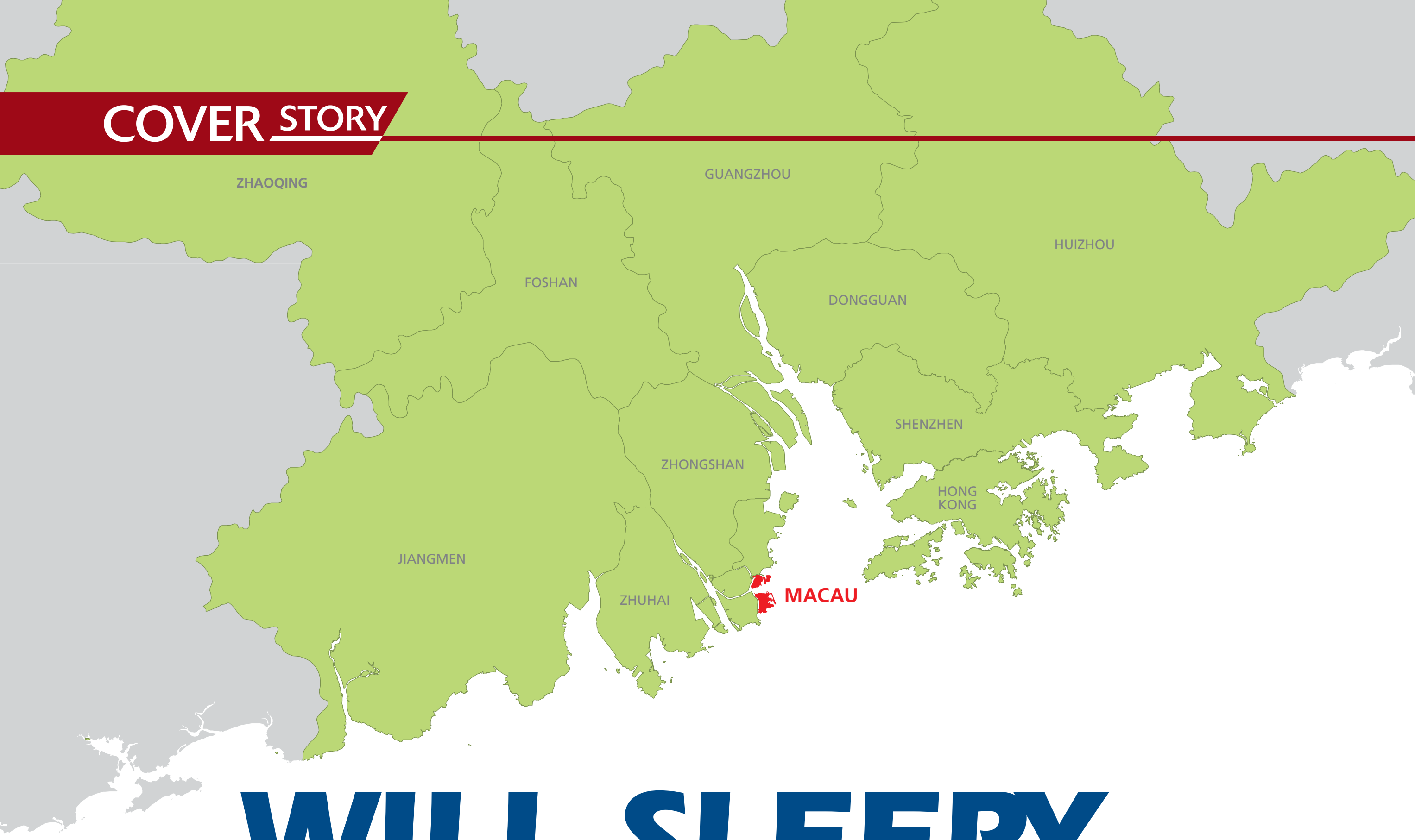
He has clear digital aspirations which he often reveals directly on Twitter. Fernandes likes to pitch the AirAsia group as a technology company with planes. Its website is its own company, which Fernandes said could have an IPO.

Airlines today are bigger in production capability, but often smaller in focus as subsidiaries have been spun off or divested. Investors look for airlines with discipline and a focus on their core flying business. An activist shareholder wants Korean Air to distance itself from related companies. At the extreme end, HNA's diversification is being unwound.

Airlines can be under external shareholder pressure to justify a wider portfolio with IT investments that break the established capital expenditure mould of buying aircraft. The irony is that even a major IT acquisition could be less than the cost of a narrow body aircraft and generate higher returns.

Resistance can occur internally. Even board directors may question investment in unfamiliar but innovative areas. In his role at Cathay Loo can push for innovation speaking from his experience in IT. "We were having a hard time even making a small change to the extent that the IT department became the laughing stock of the company," he said.

Loo restructured IT to make it accountable and focused on solving specific challenges. Potential acquisitions have to be good but also solve problems that have a wide impact or alleviate an exasperating problem. Loo said: "It's about supporting use cases. I have great support from my boss and my board to do all the right things for my customers and for our front line." ■



WILL SLEEPY MACAU AWAKE?

Macau is ending its aviation monopolies and is considering more airline entrants as China's Greater Bay strategy takes hold in the Pearl River Delta.

Will Horton reports from Macau

Repeat visitors to Macau make comparisons about the changed enclave: low-rise buildings to towering complexes, backwater to high end, marsh land to casino land. Yet aviation has changed little since the construction boom and the doubling of visitors Macau has experienced in the last decade.

Now the Special Administrative Region (SAR) is finally poised to grow and re-define the positioning of its under-utilised airport in expanding and congested southern China. And Macau's regulators are helping.

Recently, they declined to renew the historical concession agreements that made aviation in Macau a series of monopolies from one airline to one ground handler. Investors are considering a new airline for Macau. Foreign airlines are weighing growth out of the airport with expectations operating costs will be reduced.

In 2015 Macau surpassed its previous peak traffic achieved in 2007. The growth trajectory was halted when cross strait flights between Mainland China and Taiwan opened. Macau handled 8.3 million passengers in 2018.

AirAsia Group boss, Tony Fernandes, has said AirAsia would consider a local unit. AirAsia is Macau's largest foreign airline if all its subsidiaries are treated as one entity. But observers wonder what the benefits would be for AirAsia to take such a step. The group already can link Macau with many major countries via its existing airlines that are based in considerably cheaper markets than Macau.

A Macau base would not give access to the domestic Chinese market, which AirAsia sought with its lapsed AirAsia China joint venture. Strong desire for Macau-mainland China flying would come up against Air Macau, which has a shareholder influential in regulatory matters: Air China.

Utilising Macau as a transfer base between Northeast and Southeast Asia would not offer the scale of AirAsia's existing major connecting points in Kuala Lumpur and Bangkok.

What value does Fernandes see in setting up in Macau? And is he serious? "I'm not surprised he said that, but whether we can do it is another thing," said AirAsia Hong Kong and Macau CEO, Celia Lao. Lao has been with AirAsia since the group's first flight to Macau in 2004, a quieter period that saw Fernandes travel more within the group's network and take time to attend the Macau inaugural flight.

AirAsia has expanded its flying and non-flying businesses and Fernandes has taken up interests outside aviation. Lao said it was a homecoming for Fernandes when he returned to Macau two years ago and found that amongst the airport and authorities, "the faces are the same, he's talking to the same people".

That continuity of leaders and support encouraged Fernandes to unexpectedly propose big plans. "He's sending a message to the local government that AirAsia is open. The government is thinking which airline they want to introduce as the second airline," Lao said. "It's something we need to study further."

Macau has announced it will not renew Air Macau's concession agreement that will expire in November 2020. The SAR has not outlined its plans to expand air transport licenses or say if it would permit one or multiple new entrants.

Macau is more than itself. It also is a gateway to the region. On average, half of the passengers on AirAsia's Macau flights are from mainland China, stretching from Zhuhai, which shares a land border with Macau, to Guangzhou. Zhuhai has a local airport with few flights and is not targeted for high growth by Mainland planners.

Lao would like to see dedicated counters at immigration points for passengers transiting from China to Macau airport. The volume of land crossings means queues can be unpredictable and often long. Dedicated counters would speed journeys and provide consistency of planning. The Greater Bay Area economic strategy calls for improved cooperation around southern China and could be the impetus to introduce the dedicated counters Lao seeks.

The remaining 50% of AirAsia's Macau passengers are split between Southeast Asia at 40% and Macau (10%), a reflection of the small local population. The Southeast Asian share varies by market. AirAsia's Thailand flights can see upwards of 70% Chinese passengers visiting Thailand, while the majority of AirAsia's Malaysia flights are Malaysian leisure passengers.

Awareness of the region's attractions needs to be marketed, from waterparks to historical sites around Zhongshan. Promotions can be as simple as including translations from Chinese to the main languages of passengers, Lao said.

It also requires changing the perception of Macau as solely a gambling destination. AirAsia, like Macau tourism, intentionally excludes casinos from marketing material, but it is up against advertisements from the deep-pocketed gambling sector. "They have budget. They are creating this image to the outside market that Macau is about casinos," Lao said.

AirAsia does not subscribe to the view that Macau will develop into an alternative airport to congested Hong Kong. Hong Kong International Airport is mostly full with its third runway not scheduled for completion until 2024. Even after the third runway opens, demand will be higher than capacity.

"We can never build fast enough," Airport Authority Hong Kong CEO, Fred Lam, said at the annual Airports Council International world conference in April. "With all the expansion plans that we all have – Hong Kong, Shenzhen, Guangzhou – there will still be a shortage of capacity," he said.

The journey between Macau airport and Hong Kong is clunky. There is a ferry terminal near Macau airport but it is not integrated with border clearance processing. After immigration clearance into Macau passengers must pass through exit immigration thirty minutes later at the airport. As well, the spread between Hong Kong and Macau air fares is not sufficiently attractive to galvanise passengers into considering alternatives.

Awareness also is an issue and Lao said that rests with her. "How to change habits? An airline needs to lead," she said. AirAsia is not grouping Macau and Hong Kong together on its website the way it would with co-terminal airports, such as Tokyo Haneda and Tokyo Narita. It is a regulatory issue that can also apply to secondary European airports a considerable distance from the main city or to U.S. airports that function as cheaper gateways for Canada. "We need to be very careful to stay on our marketing message," Lao said.

Another potential option for AirAsia is application of fifth freedom rights. Lao praised authorities in Macau for pursuing liberalisation. The AirAsia group has a limited fifth freedom history and Lao hinted Macau may be too small for fifth freedoms now. "We need to balance demand from both ends," she said.

JC Cambodia International has started fifth freedom flights, with its Phnom Penh-Macau flight tagged with Mandalay in both directions. This seems more an opportunity to be a local airline in the Macau-Myanmar market. Phnom Penh to Mandalay non-stop is shorter than Macau-Mandalay.

Qatar Airways has received rights for a fifth freedom cargo service from Macau to North America. Turkish Airlines was reported in the local Macau press to be interested in a passenger service to Macau.

Some wonder if this liberalisation, coupled with permitting a second ground handler to open at the airport, could see Macau rely on foreign airlines. This could produce growth for Macau while lowering political and economic risk from allowing another local airline to enter the market.

Ground handling is solely provided by Menzies Macau, a joint venture between global handler Menzies, Air Macau and other parties. Industry observers said ground handling in Macau is one of the most expensive and inflexible [in the region] because it is a monopoly operation. Lao would only acknowledge AirAsia's ground costs are high.

Managing partner of consultancy Skylight Aviation, Steven Dickson, said airlines should expect to pay more in Macau relative to charges elsewhere in Asia. This has saddled Macau airport with having to especially incentivise new services to overcome ground handling costs. "I think they've always been shown as cooperative," he said of the airport and civil aviation authorities. "The evidence is in the number of routes and airlines."

Macau is yet to announce the outcome of a public tender for a second ground handler, ending the Menzies monopoly. "I want to see a more competitive marketplace to support growth from the customer and to create real competition in ground handling to better support the airline community," Dickson said.

But could a second ground handler radically lower costs – or gain scale? A new ground handler may have to wait to convert customers who have signed long-term deals with Menzies to switch.

Airlines are expanding their ground companies, commonly MRO but also in handling. There is intrigue but worry if Macau's ground handling tender selects Ground Team Red (GTR), a SATS-AirAsia joint venture with wide eyes. An intra-group ground handler could help AirAsia in Macau, but potentially not deliver a step change in charges for other airlines – or new entrants.

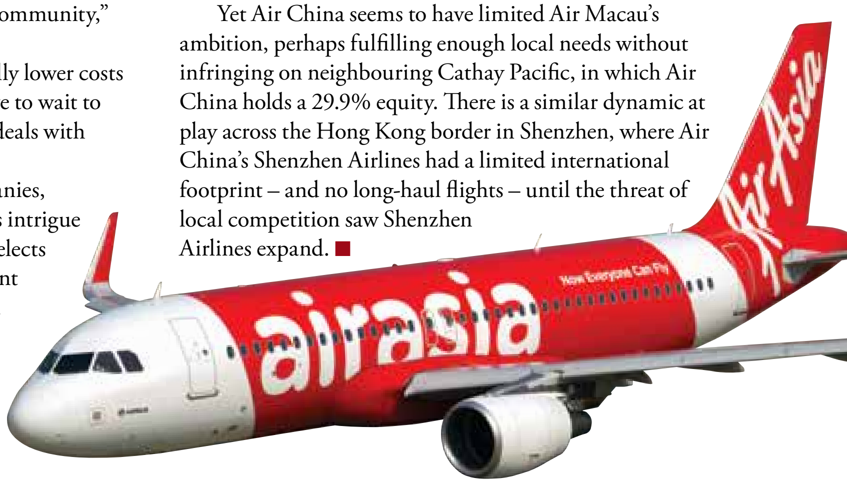
One disclosed start-up is 888 Macau Airlines, founded by former Viva Macau executive Joseph Said, who is seeking investors for the proposed short and long-haul airline.

Viva Macau's collapse was complex. It operated under a sub-concession agreement with Air Macau. Air Macau vetoed various parts of Viva's business plan, including destinations Air Macau did not serve nor planned to do so.

There have been developments in low-cost strategies since Viva's failure, so a new entrant would be advised not to avoid a Viva revival. But Viva's extraordinary situation also means Viva's history should not necessarily be a deterrent.

A new entrant would be in a different landscape because it would have greater freedom in a larger market. Also changed is Air Macau, which has significantly improved from a decade ago. Under Air China ownership, Air Macau has stabilised and grown to be a local airline. It previously operated as a hub for mainland China-Taiwan flights before cross strait flights opened. Air Macau is re-fleeting. It received its first A320neo in April.

Yet Air China seems to have limited Air Macau's ambition, perhaps fulfilling enough local needs without infringing on neighbouring Cathay Pacific, in which Air China holds a 29.9% equity. There is a similar dynamic at play across the Hong Kong border in Shenzhen, where Air China's Shenzhen Airlines had a limited international footprint – and no long-haul flights – until the threat of local competition saw Shenzhen Airlines expand. ■



Macau opens for lessor business

Macau will garner lessor interest as Air Macau refreshes its brand and start-ups consider leased aircraft. Lessors should be aware of Macau's nuances, cautions Hugo Maia Bandeira, a partner at Manuela António, a Macau law firm with a focus on aviation. Macau is not a signatory to the Cape Town Convention, so securities and power of attorneys have to be thorough and in line with Macau formalities.

"From our experience most of the lessors are used to dealing with Cape Town signatories," Maia Bandeira said. "When they come to Macau they want to bring their Cape Town security." He has found that the security aspect is usually more challenging than the commercial negotiations.

Lessors were able to quickly recover Viva Macau aircraft since the appropriate securities were in place, Maia Bandeira said. But Viva's collapse is a reminder of the rights of retention, from local fuel or maintenance costs. One lessor had to pay a local supplier before taking a Viva aircraft. "It was better to calculate the costs and get the aircraft out of Macau than risk having it remaining in Macau and fighting in court," he said.

Legal cases can be long in Macau and the extended time allows creditor claims for the aircraft or for investors to require the aircraft remain in the event the airline re-launches. The legal tussle over a Jet Airways 777 seized at Amsterdam Schiphol is a reminder of leases going astray in complexities.

Macau is exploring being a leasing hub. Regulations changed in April loosening previously strict laws and also switched lessors from being treated as creditors to classification as financial institutions. An undisclosed portfolio of aircraft was moved from Dublin to Macau in late 2018, before the law ended, Maia Bandeira said. It is a possible test case of Macau's potential, but he cautions home leasing developments will need to come with a big local financial or political push.

Neighbours Hong Kong and Nansha are developing favourable aircraft leasing environments. ■

United Airlines re-aligns trans-Pacific network to benefit from U.S. domestic connections

By Will Horton

United Airlines (UA) is moving past its merger to leverage combined assets. In June, the carrier removed "Continental" from its holding company name. It also is re-assigning its Hong Kong slots by ending a former Continental Micronesia route to Guam in favour of a second daily San Francisco flight.

While the industry talks of declining yields and a possible downturn, UA's managing director Greater China and Korea, Walter Dias, sees UA out-performing the market average. The carrier's Asia network, the largest of North America airlines, is benefitting from improved or new connections as it adds domestic capacity at a faster rate than its peers.

This was a long time coming for Dias, who joined UA from Continental, a carrier that had a better reputation than UA but was much smaller in Asia. In his Continental days, Dias envied the permutations UA had between Asia and North America and also felt there were plenty of options UA had overlooked.

Dias told Orient Aviation that when he heard UA's new management would strategically grow domestic U.S. flights, "I was sitting here in Hong Kong saying yes, finally, we're going to do what we should have been doing 10 years ago", he said. "We were having trouble selling to our customers in the interior of the U.S."

Better connections are helping UA expand faster than the market average. After a 5% increase in U.S.- China passengers in the first five months of the year, forward bookings are projecting 10% industry growth in the next four months, the peak summer season.

"For the first five months we were well above the industry average. With all nine months together we're slightly above the industry," Dias said. "We're cautiously optimistic."

UA's plan for a second daily Newark-Shanghai flight is looking promising after American Airlines (AA) returned it to route authorities at the end of June.

In Hong Kong, UA has up-gauged Newark to a 777-300ER. From October, it will replace a daily 777-300ER service with double daily 777-200ERs. Chicago will remain a 777-200ER route. The additional San Francisco flight uses slots from the Guam flight that will be cancelled as a result of a downturn in greater China tourism to the U.S. island territory.

The second San Francisco flight will introduce new times for UA customers with evening departures in both directions. The new schedule will eliminate one of UA's three overnight aircraft parkings in Hong Kong, where light maintenance was provided by HAECO. Improved aircraft utilisation is part of UA's aim for low Cost per Available Seat Kilometre (CASK) growth. It also will roll out a dedicated premium economy product.

So far, Hong Kong has a higher booked load factor than other destinations, Dias said. More medium to long-term, Dias expected UA to finally open non-stop flights to Guangzhou and later develop a joint venture with Air China. UA announced a Guangzhou-San Francisco flight last decade but cancelled it before launch at the onset of the Global Financial Crisis. The Guangzhou flight would still likely connect with San Francisco, UA's hub for Asia, but no announcement is expected soon – not even in 2020.

"The power of that San Francisco gateway will eventually tell us we need to have a non-stop service to somewhere else in the Greater Bay Area," Dias said. "Guangzhou continues to grow and transform itself from what it was even five years ago." UA has a sales office and a call centre in Guangzhou and roaming sales agents in Shenzhen.

It is working with the U.S. government to integrate its Hong Kong flights with ferry terminals around the Greater Bay Area. "We were the catalyst for bringing in the Department of Homeland Security and Transportation to look at the ferry terminals and make security appropriate for people to check-in for a U.S. flight at the ferry terminal," Dias said. "A lot of other places would like to have facilities like that."

Security still has to be completed at Hong Kong airport, but passengers can check their bags and receive their boarding passes upstream and then board a ferry. UA is partnering with Mainland booking engine, Ctrip, to build packages that include a free ferry ride to Hong Kong International Airport.

The carrier has backtracked on starting secondary China services. It has ended Xi'an and Hangzhou flights and scaled down frequencies on its only remaining secondary destination, Chengdu. "What's happened in the secondary cities right now does not necessarily reflect opportunities in those secondary cities," Dias said.

A surge of growth to first tier cities saw airlines offer discounted connections to secondary cities to fill trans-Pacific flights, Dias found, which undermined the viability of non-stop flights to secondary cities. "There was too much overall capacity in the country. The tier one cities have kind of gone beyond the demand curve," he said. ■

Biometrics to eliminate document duplication at congested airports?

Airlines believe biometrics will be a step change in improving passenger processing at the region's airports.

Associate editor, Tom Ballantyne, reports

If ever there was evidence airport and air traffic capacity is lagging far behind the demands of airlines for slots and airspace it was in Europe last year. The continent's air traffic management shortcomings were revealed by International Air Transport Association (IATA) director general and CEO, Alexandre de Juniac, at an industry conference last month.

"In 2018, aircraft flying in Europe experienced 19.1 million minutes of en-route delays. That's 36 years of wasted time that unnecessarily added 5.6% to our European carbon footprint. The prime causes are inadequate capacity and staff rostering," he said.

"These are fixable and that makes poor performance all the more disappointing. Unfortunately, this is not an isolated example. There are air traffic bottlenecks in China, the U.S., the Gulf and elsewhere."

Europe's problems, and there are forecasts it will be as bad this year, don't only impact local airlines. They hit the hundreds of airlines flying to and from Europe from across the globe, including the Asia-Pacific. The delays cost carriers millions of dollars a year in fuel costs. Delays in the Asia-Pacific are just as frequent, IATA said.

Billions of dollars are being spent on infrastructure to improve air traffic flow, but in the meantime, airlines are turning to other solutions to unclog airways and airports. Measures include improved slot allocation and biometrics to quicken a passenger's journey through an airport.

At the annual IATA AGM this year, delegates passed a motion to implement IATA's One ID biometric identity initiative. One ID is a single biometic ID, taken from a fingerprint, an iris or by using facial recognition technology, that reduces the number of identity checks at airports.

"The reason for One ID is we are talking about two times growth [in air passenger demand] by 2035. We're not going to be able to do what we do today in the same way," explained IATA's senior vice president airport, passenger and cargo capacity, Nick Careen. One ID is "crucial to growth", he said.

IATA is taking a three pillar approach to the biometrics issue, based on "harmonization, standardization and interoperability". As well as benefits for passengers, Careen pointed out there are bonuses for safety and security. Biometric checks represented a "step change" in taking a more risk-based approach to security. It would free up about 40% of terminal space because some airport zones would no longer be required to be quarantined.

IATA has received the backing of the World Travel & Tourism Council (WTTC). Its president, Gloria Guevera said "biometric technology is the future of travel. It's very simple. The faster we act, the faster we reap the benefits of the growth that accompanies the adoption of biometrics – namely increased security, efficiencies and a better traveller journey".

"We have missed the opportunity to have a single solution so it is crucial we move faster to define global standards for the use of technology in the traveller journey," she said.

IATA's Careen estimated it would take five to ten years before biometric IDs are fully adopted at all airports across the globe. "You're going to see pockets of implementation," he said. "There is not one airport on the planet handling 10 million passengers annually that does not have a plan to introduce some sort of biometrics into the passenger journey."

Guevera said with passenger numbers doubling by 2035 it was clear there would not be a corresponding increase in infrastructure. "Companies that adopt biometrics early will have a competitive advantage in the market," she said.

"It was recently reported that 71% of airlines and 77% of airports are researching or implementing biometric programs. We are calling for the aviation industry to overcome fragmentation."

IATA's de Juniac said a single biometric token required "careful planning, broad consultation with users, examination of funding options and a keen focus on affordability." ■

In the palm of your hand

Mobile technology has eaten voraciously into the business of travel bookings. For decades, the margins of Global Distribution Systems (GDSs) were fat, often averaging US$10-$12 per transaction. Now travel consumers are bypassing travel agencies, which is the major source of revenue for GDSs, to book directly with airlines or hotels after they have done their comparison shopping online.

The airline industry is being driven by shifts in consumer behavior, the quick evolution of technology and continued pressure to optimize revenue across all streams of operations.

"Sabre has observed three trends the airline travel booking space is facing in the Asia-Pacific and the world, the company's Travel Solutions Airline Sales vice president and general manager South Asia and Pacific, Rakesh Narayanan, told Orient Aviation.

"A growing emphasis on personalization means airlines have had to adapt their content creation (retailing) distribution and fulfillment," he said.

In the Asia-Pacific, airlines are looking at comprehensive distribution models for New Distribution Capability (NDC) content, which means that the content available on their websites also will be accessible on the GDS providing a fair, non-discriminatory distribution model for travelers and travel agents.

Optimised loyalty management capabilities, with NDC's evolution, mean personalized retailing will become the norm. Airlines want the ability to know all about their customers, regardless of the platform on which they make their bookings.

Having the technology to create comprehensive marketing programs that deliver unique experiences and that engage customers in new ways – from acquisition to loyalty – is becoming necessary for airlines.

Unlike traditional loyalty programs, the next generation of them will allow airlines to better market to consumers in the digital space regardless of the program on which they book, strengthening their ability to retain and attract customers while spurring new revenue by having richer portraits of those who travel with them, Narayanan said.

Historically, GDSs would create offers by combining schedules, fares and inventory based on demand. Now GDSs will aggregate and distribute both NDC and non-NDC-enabled content seamlessly for travel agents to provide the best options for travelers.

Travelport vice president Asia-Pacific Air commerce, Chris Ramm said: "The biggest driver of change in recent

years has been smartphones. Nowadays, smartphones are the most common medium used to make reservations for travelers. Travelport's Global Digital Traveler Research 2018 found about half of travelers in the entire Asia-Pacific make flight and hotel reservations on mobile devices."

Sixty one per cent of tourists download travel apps on their smartphones before their trips and 88% of tourists access information digitally while traveling, the study revealed.

With only the size of a palm for display, the priority for airlines and travel agents is to exhibit the necessary information in the most effective way, using AI technologies," Ramm said.

Everything has changed from design layouts to data processing methods, which should continue to transform customers' booking behaviors and preferences.

Mobile remains crucial, but travelers also want a consolidated experience across multiple platforms. On average, travelers use 10-12 apps for the

research, booking and traveling for their trips. Not being able to access all information across all devices and platforms is regarded as a pain point by the majority.

The Travelport study also revealed more than half of global travelers have used voice to search for information during booking or traveling.

But the region remains a segmented market for voice search. Sixty eight per cent of travelers in Indonesia have used voice search to research travel, but in Japan and Singapore the figures drop to less than 45%, which is below the global average.

The trend of increasingly using smartphones is more prevalent among millennials but the adequacy and availability of digital trip management can be a major point of frustration for them.

Compared with previous generations, millennials place greater emphasis on unique travel experiences than Generation X or other generations who are more concerned with tangible benefits. As a whole, close to 70% of tourists today share their travel experiences on social media and one out of five has said they are influenced by these travel postings.

In recent years, full-service carriers and low-cost carriers have been diversifying their distribution channels because airlines need to identify their customers. Operating in a highly regulated and competitive environment, airlines must embrace the mindset of retailers to cater to the changing behaviors of travelers.

Home to many LCCs and online travel agencies (OTAs), the Asia-Pacific is an interesting region to observe. In future, dynamic pricing will proceed by NDC and will enable full-service airlines to distribute additional fare price points, providing better opportunities to compete with LCCs and ultimately better serve their customers.

Today's travelers are hungry for information compared with the past. With airlines offering more complicated fares and offers, customers are eager to understand what they are paying and why.

By mastering insights derived from Big Data, airlines and agents can enhance travelers' experiences, encourage repeat trips and attract new customers with personalized offers and demand-led marketing, Travelport said.

Big Data allows companies to identify increases or decreases in advanced bookings to certain destinations as change is taking effect and provides opportunities to adjust their offers accordingly. ■

Hahn Air heralds NDC

Hahn Air's head of corporate strategy, industry and government affairs, Jorg Troester said: "What was unthinkable 30 years ago is standard procedure today with airlines selling unbundled services and generating a large amount of their revenue from sales of ancillary products. This trend is bound to continue."

Travel agents have access to the full suite of the offerings of airlines, way beyond the traditional GDS content and travelers have the freedom to shop directly for the most attractive, best priced deals.

The NDC and the ONE order initiative will accelerate these trends by making airline content easily available to travel agents, meta search engines and new providers such as Blockchain-based channels.

It is important for airlines to take heed of looming developments, Troester said.

Rush to fill route gap after Jet Airways grounding

By associate editor and chief correspondent, Tom Ballantyne

The collapse of Jet Airways is a dramatic pause in the remarkable rise of India's commercial aviation market.

But that won't last for long said consultancy, CAPA. Fellow analysts with an eye on India collectively agree. Growth is forecast to resume by the end of September with the country's three leading LCCs predicted to report record profits.

India has long been one of the world's fastest growing aviation markets, consistently reporting annual air traffic expansion in excess of 20%. "After a sustained period of very strong growth, Revenue Passenger Kilometres (RPKs) in the domestic India market are 0.5% lower in April than their year ago levels, down from a 15% year-on-year pace as recently as December," the International Air Transport Association (IATA) said in its latest global passenger forecast. The market has since improved.

"This is the first negative growth rate in more than five years and is largely due to the demise of Jet Airways," IATA said.

"This sizeable supply side interruption has not yet been offset by other carriers, resulting in Available Seat Kilometres (ASK) growth slowing sharply to 0.5% year-on-year compared with an averaged pace of 15% in the past two years. More broadly, rising airfares in recent months likely have weighed upon passenger demand."

Nevertheless, CAPA said the three leading Indian LCCs - IndiGo, SpiceJet and GoAir - will be in the money and could be reporting record profits in their 2019-2020 fiscal years. "IndiGo alone could be on track to report a profit of US$400-$500 million. Meanwhile, the combined fleet size of Indian LCCs is expected to cross 500 aircraft this year," the consultancy said.

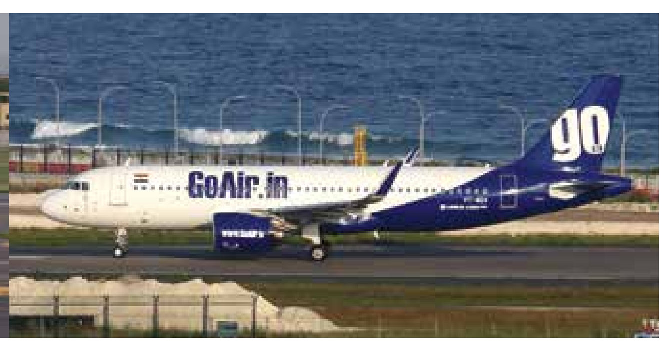
Overall, domestic air traffic growth will be "muted", with a full-year increase expected to be below 5% percent year-on-year. After the Jet Airways crisis "recovery in the international sector may take one to two years", with international traffic to remain "flat at best" with a possible decline of up to 5%, CAPA said.

Jet Airways has been grounded since April 17 and although it says the shutdown is "temporary" there are doubts it will return to the air. Lessors have taken back their planes from the airline and the Indian government has distributed the carrier's domestic and international rights, temporarily, to rival airlines.

A large number of Jet's aircraft, which lessors have claimed due to lapsed payments have been leased to SpiceJet.

"SpiceJet is strengthening and emerging as the clear No.2 airline in the market. Within 12 months, its domestic share could approach 25% of the market, a size that accords it strategic importance in the sector. This is a tremendous achievement for an airline that was within hours of closure less than five years ago," CAPA said.

The Jet Airways crisis has left a significant gap in the international market, which will encourage airlines such as IndiGo, SpiceJet and GoAir to increase their focus on international opportunities. Indian LCCs are expected to add 40 narrow bodies to their international operations in 2019 to 2020. ■



Honeywell Forge aims for efficient fleet management

Honeywell Forge for Airlines is a new analytics based software platform that will forecast savings for airlines based on data driven decisions.

"Airlines need an easy solution to analyse and manage their costs in one place and Honeywell is providing it by unlocking their data to create what is essentially their own profit calculator," said **Honeywell Connected Enterprise Aerospace vice president and general manager, John Peterson**.

The platform offers:

* *the most productive flight plan based on real-time conditions*

* *forecasts to guide more fuel efficient flights*

* *predictive maintenance alerts to minimize airline down time*

* *information that will reduce departure to arrival times including alerts for turbulence and flying in poor weather*

* *an integrated platform allows carriers customisation from airline specific algorithms.* ■

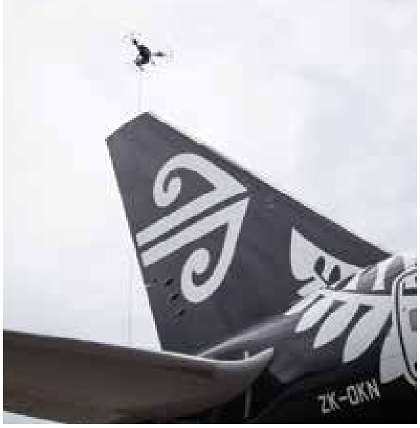
Lanza to supply All Nippon Airways with sustainable aviation fuel

All Nippon Airways (ANA), a leader in the region in striving for reduced CO_2 emissions from flying, has signed an offtake agreement with joint venture, **LanzaTech Inc.**, to purchase its sustainable aviation fuel product (SAF) for delivery from 2021.

Lanza and **Pacific Northwest National Labs**, have developed gas fermentation technology and associated processes that produce ethanol and ultimately the commercial processes that manufacture SAF.

In 2018, ANA signed a partnership with **Mitsui & Co. Ltd**, an investor in LanzaTech's catalytic technology. Later this year, ANA will test LanzaTech SAF made from industrial waste emissions on an ANA delivery flight. The SAF will be blended with 50% conventional jet fuel to ease the transition to full sustainability, the airline said. ■

MRO



Air New Zealand trials ST Engineering drones to inspect its aircraft

Industry leader, **Air New Zealand** and **ST Engineering** are testing drones for aircraft MRO inspections at the aerospace company's facility adjacent to Changi Singapore Airport.

The global MRO has produced a drone, **DroScan**, that travels around the surface of the aircraft taking images. Algorithms process the images to detect and classify defects that are passed to engineers for repairs.

Air New Zealand chief ground operations officer, Carrie Hurihanganui, said using the drone to inspect aircraft takes two hours instead of up to six, making for more cost efficient airline operations.

"We have trialled Droscan on a number of our aircraft undergoing maintenance in Singapore and believe drones will improve inspection quality. There may be opportunities to use it in New Zealand, for example ad hoc inspections after lightning strikes."

ST Engineering Aerospace sector deputy president, Jeffrey Lam, said: "incorporating innovative technologies into aviation MRO holds great potential to enhance aircraft servicing. We are happy to be working with Air New Zealand because it shares the same belief in exploring technologies that improve MRO."

The Auckland-headquartered carrier and ST Engineering also are collaborating on the manufacture of 3D printed replacement aircraft interior parts and in predictive data analysis to optimize MRO efficiencies. ■

AFI KLM E&M and Airbus explore virtual engine MRO

Airbus and global MRO, **AFI KLM E&M**, are establishing a technical and commercial partnership to develop and manage a virtual engine run-up, PC-based training solution for A320 maintenance.

The new platform is intended to replace simulator training sessions and will be available in the training centres of the two companies and also at outstations and customer bases.

The software solution allows the monitoring of three PC stations: one for the instructor to observe the progress of trainees and one each for the trainee – the captain and the officer.

All trainees will be equipped with 3D goggles to fully utilize the system's high definition immersive 3D simulation, based on real time operation procedures and in-service MRO requirements. ■