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SPICEJET'S GO-GETTER BOSS

Chairman and managing director, Ajay Singh, setting a scorching pace of expansion at the Indian budget carrier

Orient aviation 26 YEARS

Vietnam backers cancel Vinpearl venture citing increased competition

Feud festers between Korean Air sibling heirs

Air force leaders tighten grip on THAI board

Orient aviation 26 YEARS

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"Welcome thaw" for Asia-Pacific airlines

For airlines in the Asia-Pacific, the signing of a "Phase One" trade deal last month between the U. S. and China after two years of a tit-for-tat tariff war comes as welcome relief. The dispute caused airlines a great deal of harm, unsettled global economies, dented business confidence and, in particular, produced a serious decline in a critical sector of operations for the region's airlines, air freight.

Under the agreement, China has committed to purchase US$200 billion more in U.S. goods over the next two years than it did in 2017 – when the trade war erupted - including about $78 billion in manufactured goods such as aircraft.

If all goes to plan that should give the air cargo business some lift. It also commits China to a crackdown on intellectual property theft, which is regarded as a major problem for U.S. companies operating in China.

China will submit an "Action plan to strengthen intellectual property protection" within 30 days of the agreement taking effect. The proposal would include "measures that China will take to implement its obligations" and "the date by which each measure will go into effect".

Phase One keeps in place the bulk of the tariffs U.S. president, Donald Trump, has placed on $360 billion of Chinese goods and also maintains the threat of additional punishment if Beijing breaches the terms of the deal.

For the time being, the tone between the two countries is conciliatory. In a message conveyed to president Trump, China's leader, Xi Jinping, said the deal was "beneficial to China, the U.S. and the world".

It showed the two countries, "based on equality and mutual respect, through dialogue and consultations", can find proper and effective solutions to problems, China said.

The risk is unpredictable Trump. If he wins the U.S. presidential election in November, the emboldened leader could revert to a tougher stance on both trade and tariffs with China, especially if the U.S. suspected the Mainland was not living up to its part of the tariff deal. ■

TOM BALLANTYNE
Associate editor and chief correspondent
Orient Aviation Media Group

Sibling feud at Korean Air explodes into public view

It was not the happiest festive season for the Cho family, shareholders of the **Hanjin Group** conglomerate, and its flagship national carrier, **Korean Air (KAL)**. Once again, the siblings hit the headlines in local media after reports emerged of a family argument on Christmas Day at the home of Lee Myung Hee, the widow of the late KAL chairman, Cho Yang-Ho.

The late Cho's only son, Walter Cho Won-Tae, and his mother subsequently issued a formal apology for their conduct and said they were "deeply sorry for causing concerns to many people over an unsavory incident on Christmas Day," reported the Korean news agency Yonhap.

Walter Cho, the 43-year-old chairman of Hanjin Group and KAL president and chief executive, has been running the conglomerate since the death of his father 10 months ago. Apparently Walter's ascendancy has created a rift between Walter and his sister Cho Hyun-ah, or Heather Cho, the eldest daughter of the late patriarch.

Heather has publicly expressed her dissatisfaction with her brother's leadership of Hanjin Group, including KAL. Heather, 45, earned global notoriety in December 2014 when she ordered a KAL plane to return to the gate in New York after scolding a flight attendant for the way she was served macadamia nuts in first class. As a result of the incident, she was convicted of usurping a pilot's authority and spent five months in prison.

In an unprecedented public statement late last year she accused her brother of running the companies without adequately consulting the rest of the family, violating their father's wishes.

"There have not been sufficient discussions about appointing the head of Hanjin Group. I will listen to various views of shareholders," she said in an emailed statement issued by her lawyers. "Hanjin Group is being managed in a way that goes against the previous chairman's wishes," she added.

Her statement was the first time any member of the founding family had publicly voiced discontent about the management of the chaebol since the elder Cho died in a U.S. hospital last April. In November, the siblings inherited their father's holding in Hanjin KAL in accordance with the law. Walter Cho owns 6.52% of Hanjin KAL and Heather has 6.49%, it was stated in a November filing. Emily Cho, the youngest sibling in the family, has a 6.47% holding in the group and Cho's widow 5.31%.

Korean media reported the Christmas Day argument erupted when Walter blamed his mother for encouraging his older sister to question his leadership of Hanjin KAL and KAL.

The family dispute comes at a difficult time for KAL as it struggles to overcome challenging economic conditions, including a trade war between Korea and Japan that has dented traffic. The airline reported a net loss of US$71.8 million in its 2018 year and in August announced a net loss of $362.7 million for the first six months of 2019. ■

Thai government consolidates board control at flag carrier

As expected, air chief marshal Chaiyapruk Didyasarin, the acting chairman of Thai Airways International (THAI), was formally appointed chairman last month.

Didyasarin, 62, an aeronautical engineer and a graduate of the Royal Thai Air Force Academy has held numerous security and intelligence leadership roles in Thailand and abroad. They have included Director of Intelligence, Director of Operations and Commander-in-Chief of the Royal Thai Air Force.

Former THAI chairman, Ekniti Nitithanprapas, resigned without public explanation in November along with three other directors.

Other new appointments to the THAI board are vice chairman, air chief marshal Chanyoot Sirithumakul, and director Chakkrit Parapuntakul. ■

New blow to Hong Kong as Wuhan virus spreads beyond China

Just when it was thought things could not get any worse for Hong Kong's decimated travel industry, they did.

At press time, the Hong Kong Special Administrative Region (HKSAR) had closed its borders between Hong Kong and China except at Hong Kong International Airport, the Hong Kong-Macau- Zhuhai Bridge, the Shenzhen Bay-Hong Kong crossing and Kai Tak Cruise and Ocean terminals. Cargo clearance procedures are not affected.

Visitors to Hong Kong from the Mainland have dropped by 91% since January, the HKSAR government has reported.

Hong Kong has recorded its first death from the virus. Within the same 24 hours, medical experts warned the virus appeared to be spreading from "invisible sources" as two Hong Kong patients confirmed with the virus had not travelled to China.

Jitters have spread across the HKSAR and the Mainland as a result of the outbreak. Citizens fear a repeat of Severe Acute Respiratory Syndrome (SARS), when a Chinese tourist contracted the virus on the Mainland and introduced it unknowingly into Hong Kong.

Panic ensued, restaurants, hotels and airplanes almost emptied and the region's economy took a direct hit to its collective bottom line.

This time around lessons learned from SARS have been put into force quickly, including more isolation wards, one new hospital dedicated to treatment of victims of novel coronavirus and the setting up of quarantine camps in Hong Kong and on the Mainland for patients diagnosed with the disease along with their families.

Cathay Pacific Airways has announced it would gradually reduce its services between Hong Kong and China by 90% in its most recent profit announcement to the Hong Kong Stock Exchange. Cathay Pacific Airways regional airline, Cathay Dragon, has radically cut back its network into China.

The airline group said the cancellations would be implemented "in view of the novel coronavirus outbreak and the consequential significant drop in market demand for their flights". It described the reductions as temporary.

Analyst Jefferies said "inevitably Hong Kong could face downside pressures to the economy after eight months of political protests have forced it into recession". The listed transport sector – airlines, airports and railways – would be the most impacted followed by the retail and hospitality sectors, Jefferies said.

China's Zhong Nanshan, a specialist in the treatment of SARS and a director of China's State Key Laboratory of Respiratory Disease, said in late January the key to controlling the spread of the disease was to prevent the emergence of super-spreaders, infected patients who quickly spread the virus, especially among medical workers.

Airports across the Asia-Pacific have strengthened their detection systems for travelers from China. All carriers with networks into Mainland cities have radically decreased frequencies and capacity.

Several major industry events in the region have been cancelled or cut back as experts forecast the virus has yet to hit its outbreak peak.

Before the Wuhan crisis began to unfold, Hong Kong International Airport (HKIA) reported its biggest passenger decline in a decade last year. It processed 71.53 million travelers, a decline of 3.2 million over the previous 12 months.

Travelers, particularly from China, had turned their backs on the HKSAR in the last months of 2019 as anti-government and anti-Mainland protests did not let up.

At the time, Cathay Pacific said it would "reluctantly" reduce its overall seat capacity in 2020 by 1.4% year-on-year "in light of the immediate commercial challenges we are facing". It had planned growth of 3.1% in 2020.

For HKIA, the 4.2% fall in passengers was the largest decline since the global financial crisis caused a 5% drop in 2009. Despite the present situation, HKIA remains the world's busiest air cargo hub. It handled 4.8 million tonnes of air freight in 2019, down 6.1% on 2018. "We went through a challenging year in 2019," HKIA executive director of airport operations, Vivien Cheung Kar-fay, said. ***By staff writers.*** ■

Vingroup tycoon scraps new carrier citing competitive pressures

The launch of airline Vinpearl Air was one of the most anticipated events of Vietnam's 2020 aviation calendar, but it is not to be.

Last month, Vingroup, owned by the country's richest man, Pham Nhat Vuong, announced the establishment of Vinpearl, Vietnam's sixth airline, had been cancelled. The conglomerate said it intended to focus on its investments in the electric vehicle and communications technology sectors.

A company statement announced the shock decision. It said it had informed the Ministry of Transport of its withdrawal from the process of launching the airline, which had been scheduled for July.

It had been widely reported Vingroup would invest US$200 million in a Hanoi-based Vinpearl, add 2,000 jobs to the national aviation head count and operate a fleet of 30 aircraft by 2024.

"Vietnam's aviation market has a lot of potential and is developing strongly, but it also has large companies already in operation. Vingroup's strong investment in aviation could lead to an oversupply," the group's deputy chairman and chief executive, Nguyen Viet Quang, said in the statement.

Instead the group outlined ambitious plans to concentrate on its US$3.5 billion VinFast car and scooter business and its recently established Vismart smartphone company.

Vingroup has built the world's third largest vehicle manufacturing plant, VinFast, on an island off Hai Phong and is positioning itself to take on Vietnam consumers preferred automobile marques, Toyota and Honda.

It launched an electric scooter, Klara, last November and will set up a network of charging and exchange centres across the nation where scooter batteries can be re-charged or replaced very cheaply. The first of the service centres are operating in Hanoi and Ho Chi Minh City. ■

Nimble budget carriers feed Vietnam's bull run

By associate editor and chief correspondent, Tom Ballantyne

Vietnam's airline sector continues to boom, with privately owned carriers seizing more market share from government controlled Vietnam Airlines (VNA), the latest Civil Aviation Authority of Vietnam (CAAV) statistics reveal.

The full-service flag carrier's market share has declined from 34.5% 12 months ago to 33.3% in December. Budget Jetstar Pacific, jointly owned by VNA and Qantas Airways, also lost market share with passenger traffic declining from 14.2% to 10.6% in 2019. Additionally, another VNA subsidiary, VASCO, experienced a drop in business, to 1.6% from 2% for the year to December 31.

Meanwhile, private sector carriers have continued their drive for dominance. Vietjet lifted its market share from 41.2% to 42.2% last year, the CAAV said. Start-up Bamboo Airlines, launched in January 2019, had secured 12.4% of the market by year-end. The hybrid carrier's target is 30% of domestic air traffic.

Vietnam's aviation industry recorded growth of 13% in 2019, the CAAV said. As a result, the industry is confronting the challenges other fast-growing aviation markets are experiencing, particularly airport congestion, lack of slots and ATM limitations.

Vietnam's government is fast tracking modernization and expansion of airports and aviation regulatory reform. Last November, a prime minister's decree raised the ownership limits of foreign investment in the Vietnamese air transport industry from 30% to 34%, with effect from January 1.

Vietnam National Administration of Tourism (VNAT) data has reported international visitors to Vietnam have increased from 4.25 million in 2008 to 15.5 million in 2018. Domestic tourists rose from 20 million in 2009 to 80 million in 2019. In the last ten years, total revenue from tourism has climbed more than ten times, from US$2.6 billion in 2008 to $27.1 billion in 2018. The sector accounts for 7.8% of Vietnam's Gross Domestic Product (GDP).

Business travel has taken off, which has been a catalyst for airline expansion. Within a decade, the aviation sector has expanded by an average of 17.4% a year, more than double the 7.9% average across Asia, reported the International Air Transport Association (IATA).

The CAAV said Vietnamese airlines transported 50 million passengers in 2018, five times more than in 2008. By December 2018, the country's aviation sector was being served by 68 foreign airlines from 25 countries and territories and five domestic airlines.

In the last ten years, aircraft operated by local carriers increased from 60 to 192. In its latest report, IATA ranks Vietnam as the fifth fastest growing aviation market in the world and the fastest in Southeast Asia. It is forecast to have a market of 150 million passengers a year by 2035.

Domestic carriers in the air right now are VNA, Jetstar Pacific, boisterous budget airline Vietjet, Bamboo Airways and Vietstar Airlines. The country's aviation authorities and industry analysts are confident there is room for plenty more.

Vietnam has a population close to 100 million. It only needs to look at Thailand to glimpse what is possible for its tourism industry. Despite having 72% of Vietnam's population, Thailand has four times more airlines and three times more international tourists than its neighbor.

The Thai kingdom has 13 scheduled airlines and 10 charter companies in operation. The number of airlines operating in Vietnam is much smaller than Singapore, Malaysia, The Philippines, Cambodia and Myanmar and five times less than Indonesia.

Kite Air, being developed by big local tourism firm, the Thiên Minh Group, has been approved and is expected to be flying next year, serving domestic routes and international flights through Indochina, Southeast Asia and North Asia.

While encouraging new operators Hanoi also has put safeguards in place to assure sustainable growth. A new carrier operating up to 10 aircraft will need minimum capital, including ownership capital and loans, of $13 million. Those with 11 to 30 aircraft will need $26 million. ■

U.S. approves deeper Vietnam Airlines-Delta Airlines relationship

The U.S. Department of Transport (DoT) has authorized an extended code-share agreement between SkyTeam alliance members, Vietnam Airlines and Delta Air Lines.

"This decision by DoT again affirms the track record of Vietnam Airlines for operational safety, technical excellence and service quality, further laying the path for flights to the U.S. in the future," a Vietnam Airlines (VNA) statement said on January 7.

In 2010, VNA negotiated a one-way code-share agreement with Delta Air Lines on 10 international routes to and from the U.S. and ten routes within the U.S. It allowed Vietnam Airlines passengers to fly to eight U.S. states via the Atlanta-headquartered carrier's Frankfurt and Tokyo hubs.

The new agreement means passengers only have to book and fulfill flight formalities once, either with VNA or Delta, for their entire journeys between the two countries.

Long road back for Boeing as MAX grounding drifts into June

Immediately after new president and chief executive, 62-year-old David L. Calhoun, moved into the hot seat at Boeing last month, he outlined plans for rebuilding the company's flagging fortunes and damaged reputation.

In an email on January 13, Calhoun said: "This company has a tremendous legacy of aerospace achievement, which is thanks to your efforts and the contributions of generations before you. I honor that legacy and I appreciate your tireless commitment. I also recognize the learnings, many of them painful, from the experiences of the last 18 months that you are bringing to the way we do business.

"I see greatness in this company, but I also see opportunities to be better. Much better. It includes engaging one another and our stakeholders with greater transparency, holding ourselves accountable to the highest standards of safety and quality and incorporating an outside-in perspective on what we do and how we do it.

"In my first few days and weeks as president and CEO, I will be listening closely to you, our customers, our partners and our regulators to ensure we understand the expectations of our stakeholders and are on a path to meeting them. In doing so, we'll become stronger as a company and as an industry."

A Boeing director since 2009 and board chairman from October to December last year, Calhoun has held senior leadership roles at GE, the private equity Blackstone Group and most recently Nielsen Holdings. During his 26 years at GE, he led GE Transportation and GE Aircraft Engines.

Calhoun's email said putting the MAX back in the air must be the primary focus of the company. "This includes following the lead of our regulators and working with them to ensure they are satisfied completely with the airplane and our work so we can continue to meet our customer commitments. We will get it done and we will get it done right."

Calhoun continued: "We will keep taking steps to maintain our supply chain and workforce expertise so we're ready to restart production and increase rate safely, smartly and with the highest standards of quality.

"We'll continue to invest in our global workforce and processes and technologies to become safer and more efficient as we define the future of aerospace.

"This work includes preparing for the first CST-100 Starliner crewed mission, first flights of the 777X and 737 MAX 10, expansion of our Global Services business and finalization of our Embraer partnership. This is our path forward. I am excited to be part of it with you. My sleeves are rolled up. I know yours are too."

Ten days later, Boeing announced it was informing customers and suppliers it estimates the ungrounding of the MAX would not begin until mid-2020.

Some U.S. airlines already had said they would not be including the MAX in their flight schedules before June.

Boeing also has revealed it had notified the U.S. Federal Aviation Administration (FAA) about another MAX issue concerning software that verifies whether key tracking systems on board the aircraft type are operating properly.

"We are making necessary updates and working with the FAA on the submission of this change and keeping our customers and suppliers informed," Boeing said. ■

Boeing boss concedes company's relationships are damaged

New Boeing president and CEO, David Calhoun, admitted to staff in a January email many stakeholders were rightly disappointed and it was vital to repair these relationships.

"We'll do so through a recommitment to transparency and by meeting and exceeding their expectations. We will listen, seek feedback and respond appropriately, urgently and respectfully," he said.

Xiamen Airlines plans A321neo order in blow to Boeing

Xiamen Airlines, until recently an exclusive Boeing customer, has invited bids from leasing companies to supply it with 10 A321neo. Majority-owned by China Southern Airlines, Xiamen said it was planning for deliveries of the Airbus airplanes from the second half of 2021 to 2023. The Mainland airline has been in talks with Airbus as the Sino/U.S. trade war played out and the grounding of the MAX continued.

The Civil Aviation Administration of China (CAAC) said China's aviation industry reported revenue of US$154.27 billion in 2019, a 5.4% increase over 2018.

Commercial airlines operated 600 million passenger flights and transported 7.52 million tonnes of cargo for the 12 months to December 31, increases of 7.9% and 1.9%, respectively.

TARIFF TRUCE BOOSTS REGION'S FREIGHT PROSPECTS

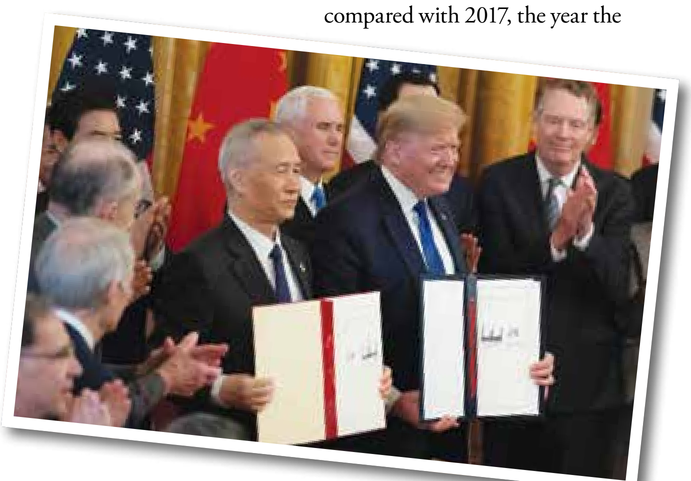
The U.S./Sino trade deal, signed in January, is easing global economic tensions and boosting business prospects for hard-hit Asia-Pacific air cargo operators. Associate editor and chief correspondent, Tom Ballantyne, reports.

New Boeing boss, David Calhoun, needed some good news when he took charge of the crisis hit aircraft manufacturer last month. He certainly got it when the U.S. and China reached a truce in their two-year trade war mid-month. More surprisingly, as he has been a critic of Boeing, U.S. president Trump gave Calhoun and Boeing a shoutout at the trade deal's signing ceremony.

Calling Boeing "a great company", he identified Calhoun among guests at the White House announcement of the Phase One deal. Calhoun was a board director of the company from 2009 and acting chairman of Boeing in the final months of 2019, but had only been CEO for a few days before the Washington D. C. reception.

Trump said: "He has a very easy company to run. He just took over Boeing. Where's David. Stand up David. Let me tell you it's not your fault. You just got here. You will straighten it out quickly please." "We will," said Calhoun.

Under the Phase One agreement, China must buy US$200 billion additional U.S. goods over two years compared with 2017, the year the trade war started. It also must include $78 billion in manufactured goods such as aircraft.



The International Air Transport Association (IATA) told Orient Aviation the agreement between the U.S. and China represented a "welcome thawing" in trade relations between the two countries and removes some of the uncertainty that has weighed upon businesses and financial markets globally.

"The Phase One agreement is consistent with that. However, we should not lose sight of the fact a significant level of trade restrictions remain in place between the two countries," IATA said.

The question is when and how the new deal will translate into an order boost not only for airlines but for Boeing. The U.S. manufacturer has significant businesses in China ranging from training and maintenance to manufacturing and aircraft completion.

Boeing has delivered nearly 1,600 planes to Chinese carriers and has scores of unfilled orders for aircraft, including B737 MAXs.

The Phase One agreement preserves the bulk of the tariffs the U.S. president has placed on $360 billion of Chinese goods. It retains the option of additional punishment if Beijing does not live up to the deal.

China's leader, Xi Jinping, conveyed to Trump the deal was "beneficial to China, the U.S. and the world". Xi said it showed the two countries, "based on equality and mutual respect, through dialogue and consultations", could find proper and effective solutions to problems.

Trump declared at the White House: "Today we take a momentous step, one that has never been taken with China towards a future of fair and reciprocal trade with China. Together we are righting the wrongs of the past."

For Asian airlines the deal could improve consumer confidence and re-boot Asia-Pacific air cargo, which is responsible for carrying 35% of the world's air freight traffic. The latest IATA data, for November, revealed demand measured in freight tonne kilometers (FTKs) decreased by 1.1% for the month compared with the same period in 2018.

The figures marked the thirteenth consecutive month of year-on-year declines in air freight volumes. For Asia-Pacific airlines the news was worse. Air cargo custom contracted 3.7% for the month over November 2018, the sharpest drop in freight business of any region in the world for the month.

The U.S./Sino trade war cut demand between the large Asia-North America market by 6.5% year-on-year in October, the latest available data shows.

It was a "big disappointment" considering the fourth quarter typically is the peak of the air cargo cycle, said IATA director general, Alexandre de Juniac, when the figures were released. Looking forward, signs of a thawing in U.S.-China trade tensions were good news, he added, but cautioned trading conditions remained "very challenging".

While the Phase One deal is a breakthrough, it is by no means the end of the matter. It halves tariff rates on $120 billion worth of goods, but most of the higher duties remain in place.

Economists have calculated the trade dispute has cost American companies and consumers more than $40 billion, a figure that does not attempt to measure lost business from retaliatory action. U.S. manufacturers exposed to tariffs have been hurt, with the dispute shaving 0.3% off U.S. economic growth and reducing household income by an average of $580 a year since 2018.

The U.S. Federal Reserve estimated China's economy has taken a 0.25% hit, as U.S. demand for its goods fell about a third. Analysts said it was unlikely the new deal would produce gains sufficient to outweigh the losses suffered by both sides.

But some countries have benefited from the fight, which is estimated to have diverted an estimated $165 billion in trade from China. Nomura analysts identified Vietnam as the country most likely to benefit from the trade war. The United Nations said U.S. orders for goods from Mexico, Taiwan and Vietnam increased last year.

> **"The Sino-U.S. agreement is good news for air transport, especially air cargo operators. It is particularly good news for airlines in the Asia-Pacific, one of the world's leading manufacturing and distribution hubs and where air cargo generally accounts for a larger share of airline operations than elsewhere"**
>
> International Air Transport Association

Boeing has reported a decline in commercial airplane orders in 2019 and much lower deliveries going forward as the protracted MAX crisis weighed heavily on operations. It reported a net drop of 87 orders for the year after cancellations and a few new orders for the MAX. Besides cancellations, some of the fall-off was the result of conversions by customers from the MAX to a smaller number of the 787 family.

Boeing delivered 380 aircraft in 2019, less than half the number of the previous year. It has halted production of the MAX but still has to maintain an estimated 400 MAXs that cannot be delivered to customers because of the grounding.

It has been widely reported Boeing is in discussions with several banks for loans of $10 billion amid rising costs at the manufacturer. CNBC said Boeing has secured $6 million in new loans and was seeking more funds.

Ballpark figures from analysts calculate Boeing has lost $1 billion a month since the MAX was grounded last March. ■

Boeing boss promises to open MAX production line "slowly, steadily" before the aircraft is cleared to fly

Boeing CEO, David Calhoun, told reporters in the third week of January the manufacturer would resume production of the MAX well before the type's expected clearance to fly in June.

BCA halted MAX output last December. Calhoun gave no date for the re-opening of the MAX production line.

"I am all in on it and the company is all in on it," Calhoun said in a Reuters report of the January media briefing. He added Boeing believed the plane would continue to fly for a generation.

He said BCA would "slowly, steadily bring our production rate up a few months before that date in the middle of the year" and conceded the manufacturer should not have repeatedly revised the plane's forecast return. "It was hard for anybody to trust us," he said.

Earlier in the same week, Boeing said it did not expect the U.S. Federal Aviation Administration (FAA) to approve the ungrounding of the MAX until mid-year, 15 months after the type was banned from flying worldwide following two fatal crashes.

"The updated estimate is informed by our experience to date with the certification process," Boeing said.

"It is subject to our ongoing attempts to address known schedule risks and further developments that may arise in the certification process.

"It also accounts for the rigorous scrutiny regulatory authorities are rightly applying at every step of their review of the 737 MAX's flight control system and the Joint Operations Evaluation Board process which determines pilot training requirements."

A critical factor in setting a new date to begin returning MAXs to the skies is BCA's recent agreement that pilots must undergo simulator training on the upgraded MAX, a reversal of company policy.

Qatar Airways adds Malaysia Airlines to its partnership list

Malaysia Airlines (MAS), reported to be discussing a 49% sale to Air France KLM, began operating an expanded code-share with Qatar Airways last month.

Since 2001, MAS and Qatar Airways have operated a code-share on 10 routes. The new agreement adds 20 routes for MAS passengers to Europe, America and Africa, via Qatar's home hub in Doha. Both airlines are oneworld alliance members.

Four new destinations in Southeast Asia will be available to Qatar under the expanded agreement: Sibu and Alor Setary in Malaysia, and Indonesia's Medan and Surabaya.

Qatar flies three times a day to Kuala Lumpur and five a week flights to Penang, with services onward to Langkawi.

Code-share destinations for MAS passengers via Doha include all major European cities. MAS serves 59 destinations from its hub, Kuala Lumpur.

Earlier in January, Qatar announced it would move to Beijing's Daxing airport from Beijing Capital airport and would continue to expand its network in China.

Announcing an additional 500,000 yuan donation to the Qatar Airways Hope School in Sichuan province, the airline's Asia-Pacific senior vice president, Marwan Koleilat, said the carrier would vacate Beijing's downtown airport for Daxing in the northern summer.

He said the carrier is actively expanding flights into China because of strong travel demand. As well as Hong Kong, Qatar flies to six Mainland cities: Beijing, Chengdu, Chongqing, Guangzhou, Hangzhou and Shanghai.

More than 90% of passengers who fly to Doha are transit customers, the airline said, and added transfer traffic from China was growing fast.

Fourteen months ago, Qatar acquired 5% of China Southern Airlines (CSA), Asia's largest carrier by fleet numbers, and said at the time of the purchase announcement it hoped to develop a deeper relationship with the Guangzhou headquartered group.

It is expected the partnership will develop as CSA moves more of its flights to Daxing. ■

Malaysia's Mahathir at odds with wealth fund over MAS sale

Malaysia's prime minister, Mahathir Mohamad, who also is chairman of Malaysia Airlines owner, Khazanah Nasional Bhd, is "not completely happy" with the way the sovereign wealth fund managers have been evaluating investment proposals for the carrier.

Reported interested parties are Air France KLM, which is offering to buy 49% of the carrier as well as build an MRO hub in Malaysia, Japan Airlines via its joint venture partnership with MAS, Lion Air via Malindo Air and a three-way merger between AirAsia, Malaysia Airlines and AirAsia X.

"Unfortunately, Khazanah has its own agenda so I have to check them," Mahathir said. No date has been set for a decision on new investors in the flag carrier and oneworld member.

All Nippon Airways expands "down under" with Virgin Australia partnership

All Nippon Airways (ANA) and Virgin Australia (VA) have established a code-share for flights within Japan and Australia and agreed to share frequent flyer benefits for travelers on both carriers.

The new code-share is planned to take full advantage of several global sporting events taking place in Japan, particularly the 2020 Summer Olympics and ParaOlympics.

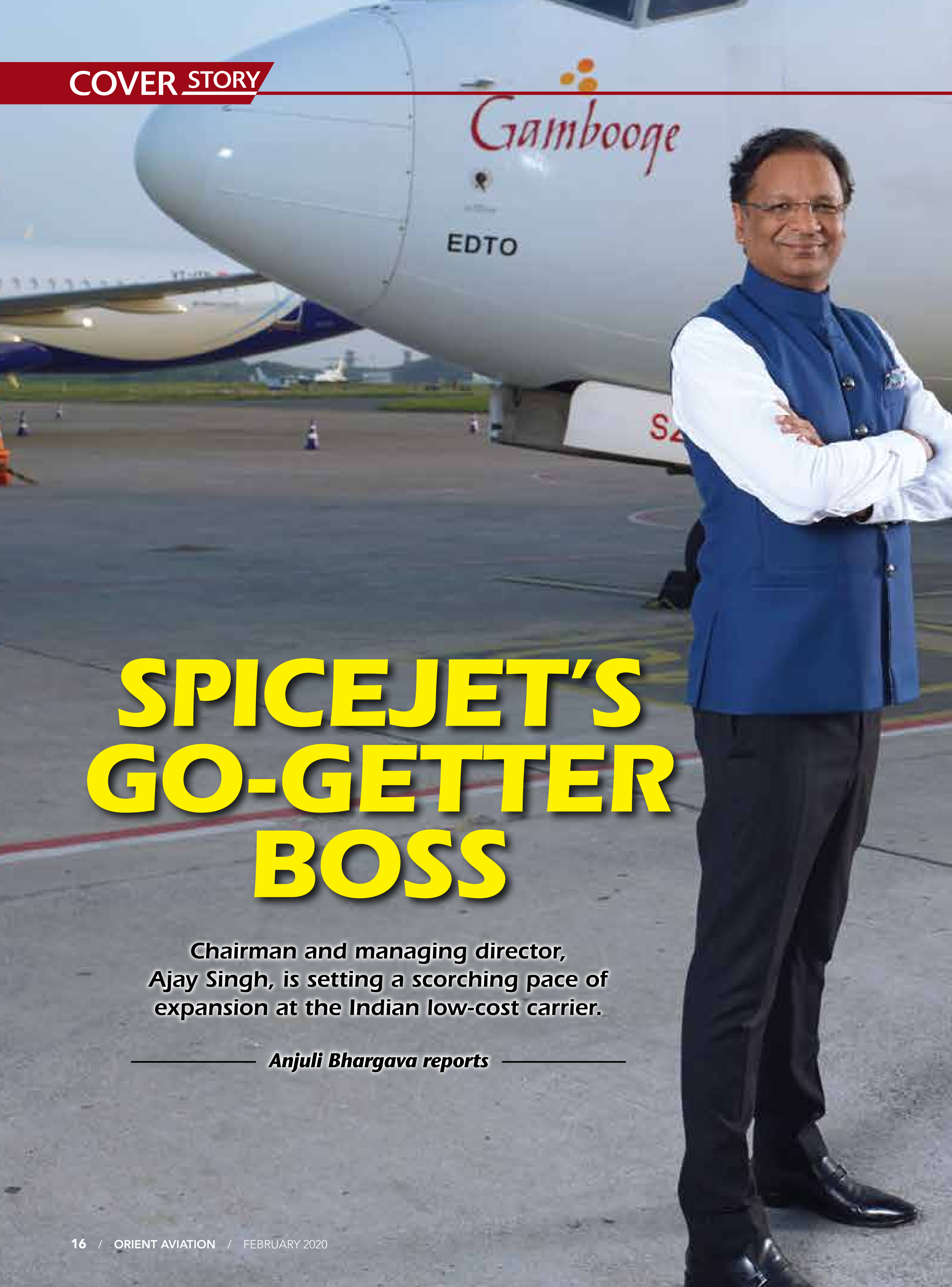
ANA launched Narita-Perth last September and intends to commence flying Haneda-Sydney from the 2020 northern hemisphere summer. VA is now marketing its Brisbane-Haneda service. Additional ANA-VA code-share routes will be announced by April.

Australian routes available to ANA passengers from January 30 are: Sydney-Adelaide, Sydney-Brisbane, Sydney-Melbourne, Sydney-Cairns, Sydney-Canberra and Sydney-Gold Coast.

"This collaborative effort will allow us to meet growing passenger demand in the region by providing greater choice and flexibility through shared resources and furthering ANA's commitment to expanding the Japan-Australia network," ANA executive vice president, Shuichi Fujimura, said.

Star alliance member ANA also has joint venture partnerships with Austrian Airlines, Lufthansa Airlines, Swiss International and United Airlines.

VA has alliance relationships with Delta Air Lines, Etihad Airways and Singapore Airlines. The latter two carriers are large investors in VA. ■



SPICEJET'S GO-GETTER BOSS

Chairman and managing director, Ajay Singh, is setting a scorching pace of expansion at the Indian low-cost carrier.

Anjuli Bhargava reports

In March 2019, a month before the collapse of Jet Airways and in the midst of the frenzy of the country's general election, a high level meeting of government ministers and officials was held in New Delhi. It was evident to those in charge that little could be done to keep full-service Jet flying. The meeting was to examine ways to minimize the damage caused by the failing carrier and ensure fares did not shoot up in the middle of the election season.

Pressure from the industry also was building on the government to take a call on Jet's slots. Several were at the massively constrained Mumbai airport and were not being utilized as Jet's problems had steadily mounted from August 2017.

It was decided the slots would be offered to other airlines and preference would be given to carriers that could bring in additional capacity the quickest.

All the airlines jumped in as slots at Mumbai were invaluable and were not available for love or money. At least two airlines, LCC SpiceJet and full-service Vistara, decided to deviate from business as usual and take a big gamble, turning a blind eye to the possible downside of their decision.

SpiceJet, which flies an all-Boeing fleet, was best positioned to take full advantage of the situation. It took 33 of Jet's aircraft, which were fitted with a two-class configuration. It also received many new slots out of Mumbai. Before Jet's grounding, SpiceJet had 32 departures a day from Mumbai. This increased to more than 80.

In some ways, the timing for taking on Jet's aircraft was ideal for SpiceJet as it had suffered a blow from the grounding in March last year of the 13 MAXs it had in operation.

It also meant there would be a delay in replacing its older planes and reduced new capacity planned for last year and in 2020. The double whammy could hit the airline's revenues through no fault of its own.

If the grounding of the MAX was not enough to manage for Boeing customers, another factor had gripped the Indian aviation sector even as it dealt with the exit of Jet Airways.

Traffic growth had been in double digits since the beginning of the decade but it had hit an unexpected speed breaker. As the overall slowdown of the economy revealed itself, air traffic - like car sales - virtually stopped expanding.

Until November 2019, domestic passengers grew by 3.86 per cent, with the first half of the year recording hardly any rise. Demand is improving for the second half of the financial year, from April 2019 to March 2020, but it is forecast traffic growth for the year will remain in single digits for the first time in a decade.

It is yet to be revealed whether the gambit taken by SpiceJet's chairman and managing director, Ajay Singh, 54, post Jet's demise was a calculated or a reckless risk.

In its first quarter, SpiceJet had performed well. The LCC, like almost all the other airlines in India had reported a profit. In the second quarter, capacity rose by 51 per cent over the same month a year ago. Revenue was up, aircraft were full and yields and even fares went up.

But two unanticipated developments ensured the airline reported a deeper than expected loss that led to a sharp fall in the value of the carrier. The Jet aircraft SpiceJet had acquired were in far worse shape than expected.

Sources at SpiceJet said in some cases substandard parts had been used on the aircraft and many records of maintenance and checks were missing or not accessible to SpiceJet.

The Jet airplanes were ageing and fuel burn was correspondingly high. As a result, costs, including maintenance, shot up. The airline's CASK (Cost per Available Seat Kilometre) in US cents went up to 5.96 against rival, IndiGo's 5.12, CAPA data reported.

In addition, the eight Jet planes taken on by SpiceJet, over and above the 33 B737NGs, were MAXs, Four of them were grounded and four were stuck after deliveries from

Boeing were put on hold.

SpiceJet also hired close to 1900 Jet workers, a decision that proved to be a mixed bag. Although Jet staff were better trained and more professional than most airline employees in India, cultural differences surfaced on occasion and it took some time for people to adjust to their new working environment.

Close to 150 of the new hires either resigned or were asked to leave SpiceJet because they did not fit with the culture of their new owner.

Perhaps the biggest issue for Singh and his LCC to navigate was that Jet's aircraft were fitted with business class.

As an LCC, SpiceJet operated an all-economy class fleet. Although fares rose slightly during the period of integration of the two fleets, yields did not rise commensurately, reflecting a failure on SpiceJet's part to charge a premium for its business class offering.

In the next six months, the LCC plans to phase out its Jet aircraft as MAX planes begin arriving at the airline now expected after June.

An MBA from Cornell University in the U.S. Singh has maintained he would do it all again "if the same opportunity was to represent itself, I'd grab it", when asked about adding Jet planes to his fleet.

A second concern for SpiceJet has been safety. In 2019, the airline had many small incidents and one "accident", spooking passengers. The airline said it had beefed up its safety oversight and removed underperforming employees.

But in a country where commercial considerations often outweigh safety concerns, SpiceJet's assurances have not convinced everyone. Many passengers only fly SpiceJet if they have no alternative.

The airline's customers also complain the LCC's airplanes have a tired feel. SpiceJet said it was aware of the issue and blamed it partly on the age of its fleet. It hoped to improve its product image after re-fleeting commenced, the airline has said.

A FINGER IN MANY PIES

Even as he steers his rocky ship through choppy waters, Singh has his fingers in many other pies. Last year, he was elected president of the Founding Board for Better Boxing, set up by the AIBA, a world body for boxing. He also has been president of the Indian Boxing Federation since 2016.

In January 2019, he became the first Indian to chair the Aviation, Travel and Tourism (ATT) Governor's Meeting at the World Economic Forum in Davos. At home, he chairs the CII National Committee on Civil Aviation and is chairman of the World Travel & Tourism Council, India Initiative (WTTCII). In June, he was voted onto the board of governors of the International Air Transport Association.

More recently, Singh announced plans to launch an international hub operation out of Ras Al Khaima, 40 minutes from Dubai, where he sees "great potential". His critics argue the project is "unrealistic".

There are bilateral flying rights available and Ras Al Khaima can be a proxy for Dubai. The plan is to explore the option of introducing some flights to Eastern Europe and the Middle East from Ras Al Khaima. A demand analysis is being done company sources said.

From a SpiceJet perspective, there was no reason to reject investigating the establishment of an offshore base that was close to its Gurugram (formerly Gurgaon) home.

But aviation analyst and former IndiGo chief of operations, Shakti Lumba, said "it may be a good idea, but it does not appear to be thought through as of now".

Setting up a base for an Indian carrier in foreign territory runs into many regulatory issues and unless they can be managed the project may remain more of a pipedream than a reality, Lumba said.

When the announcement was made, it was claimed four to five aircraft would be operating six to seven hour medium-haul routes by last December, but this is yet to happen.

Singh seems to be homing in on the Middle East. Since November, the airline has committed to an interline agreement and code-share with Emirates Airlines. A Memorandum of Understanding with Gulf Air has been signed.

Industry observers argued Singh should be cautious about starting new businesses because he runs the risk of spreading himself too thinly across seveal enterprises.

A B2B cargo delivery service was launched in 2016 and is running for select corporate clients. In 2017, Singh surprised observers and industry watchers by opening SpiceStyle stores, including one in Gurugram's Galleria market, one of the more expensive retail centres [in India], to sell designer and other lifestyle products. The Galleria store has closed, but two stores in Hyderabad and Delhi, respectively, are still trading.

In 2018, the airline launched SpiceStar, a training academy for youngsters interested in a career in aviation. Established in partnership with Amity University in Noida, it is a homegrown hiring ground for the airline.

SpiceJet, which earns 17% of its income from ancillary

revenue, is aiming to increase that number to 25% and is exploring all avenues to this end. A broadband and Internet-on-board service is planned for the airline's fleet as soon as deliveries of its ordered airplanes commence.

GOING IT ALONE IN THE COCKPIT

What spooks some observers is the new ventures and strategies are being concluded or explored largely by Singh alone because he operates one of the leanest senior management structures in the industry.

The lack of a second line of command makes them jittery. Less charitable rivals said Singh is "a control freak", a charge he dismisses with a laugh.

While the airline has tripled in size since 2014, it has hardly added heft at the top. Singh, who holds equity of 59.13% in the airline group, is its highest paid employee, averaging an annual pay package worth 304 times that of a median employee's remuneration. The only other highly paid SpiceJet executives are the CFO and the company secretary.

No one denies Singh has executed a remarkable turnaround at the LCC after he returned to the carrier he co-founded in 2005 a decade later. Although his critics are reluctant to give him full credit for the achievement. They said he has had government support and a bit of luck, but grudgingly respect his success.

In December 2014, the airline had 32 aircraft and its 5,400 employees were staring at closure of the carrier. Five years later, even if the LLC's future may not appear to be hunky dory, the airline has 119 aircraft and 15,300 employees with secure jobs.

Present and past staff praise Singh for his temperament and his ability to face crises without losing his composure. As a boss, he's considered amiable and generally unruffled, characteristics not shared by many others in similar leadership roles in India.

Nonetheless, investors and market analysts remain nervous about Singh's single man army approach. SpiceJet is a medium-sized airline with almost as many aircraft as Jet had when it collapsed, even if the comparison is not strictly fair.

Jet had a fleet of 116 aircraft when it began to falter. It paid two to three times the rate rivals did for the same job. In many positions, Jet had three people doing work that could have been be tackled by one staffer.

Its senior management was overpaid by industry standards with more than 20 of the airline's executives drawing very high salaries.

Singh believes "too many cooks spoil the broth" and the fact his senior team and employees maintain a low profile in the industry did not mean they were not contributing or were absent on the job.

"We have grown by 50% in Available Seat Kilometres (ASK) and the airline has added to its employee count in keeping with this growth," he said.

Management bandwidth will be augmented as and when the need arises. Singh has no intention of adding layers of management for the sake of it. He said many airlines in India have had too many people working on the same task, which has led to executives spending all their time "protecting their turfs".

SpiceJet's turnaround king

Ajay Singh is the principal shareholder of SpiceJet, India's second largest airline, which he helped start in 2005. He took a break from the carrier in 2010, but returned to lead the carrier as it veered towards closure in 2015.

From imminent collapse, the low-cost carrier has become the second biggest airline in India, after another budget carrier, IndiGo.

Singh is a first generation entrepreneur who is frequently described as the father of India's aviation industry. After the LCC recovered from near bankruptcy, Singh ordered 205 aircraft, one of the largest orders for new airplanes in Boeing's history. Singh followed up his Boeing commitment with the purchase of Bombardier Q400 planes, the single largest order for the Q400 in Bombardier's history.

Singh is a political animal who played an important role in the rise to power of the Modi-led Bharatiya Janata Party. He is credited with conceiving the popular campaign slogan 'Abki Baar Modi Sarkar - now is the time for a Modi Government' - in Modi's first election win in 2014.

Before SpiceJet, Singh helped turn around the loss-making Delhi Transport Corporation (DTC) and the national Television Broadcast network, Doordarshan. In the two and a half years Singh spent at the DTC, the corporation experienced a spectacular revival and a run of profits.

He also has been an advisor to the Ministry of Telecommunications and Information Technology where he was a leader in drafting the National Telecom Policy and the Information Technology Policy and was influential in modernizing India's telecom and IT industries.

Singh graduated in engineering from the prestigious Indian Institute of Technology, Delhi, holds an MBA from Cornell University in the U.S. and received his law degree from the University of Delhi.

The appointment of a new SpiceJet chief commercial officer is on the cards, but at a macro level Singh sees no reason to add "fat cats" and mess with a structure that has worked until now just because others may be uncomfortable with it.

His view is disputed in some industry quarters because the SpiceJet board is largely of his choosing and senior executives are perceived as his "yes men" by critics.

Jet Airways went under with a similar "captive" board that failed to act when the airline was in trouble because of the influence wielded by its co-founder and chairman, Naresh Goyal.

"Unless he fixes this, SpiceJet runs the risks Jet did and a similar fate to Jet cannot be ruled out. This is no longer a mom and pop store," Lumba said.

THE FUTURE REMAINS UP IN THE AIR

Running a low-fare airline almost anywhere in the world can be a bit of a mug's game. There are many variables to constantly juggle to keep an LCC above water, be it volatile fuel prices, agitating pilots, unhappy passengers, yo-yoing ancillary revenue, currency fluctuations and rivals undercutting you with unsustainable fares.

Despite every efficiency being exploited, there is almost no guarantee an LCC can make money in any given year because so many operating factors are beyond its control.

In India, the situation is worse than in most countries. As well as the usual variables, the costs of operation in India are higher by almost 25% because of higher aviation turbine fuel prices and airport charges.

Additionally, LCCs in India do not operate on a level playing field compared with their non-Indian headquartered rivals. The Indian regulator sets its own parameters for carriers.

For instance, airlines cannot earn ancillary revenue, as is the practice with the unbundling of services globally, from baggage carried. India's Directorate General Civil Aviation mandates all tickets must include a free 15 kilogram baggage allowance, a regulation low-fare airlines resent.

Looking ahead, SpiceJet is anticipating a hefty compensation payout from Boeing for the MAX grounding and its delayed deliveries of the type. SpiceJet was expecting to receive 28 new aircraft from 2019 to this year at its home hub.

In his negotiations with the U.S. manufacturer, Singh is pushing for a US$500 million settlement. It is speculated the final payout will range from $300 million and Singh's $500 million target. Recently, Boeing concluded MAX compensation agreements with Turkish Airlines and Southwest Airlines.

The MAX grounding could be converted into a future opportunity for SpiceJet if it sticks with the MAX by pushing for lower acquisition costs for future expansion of its fleet.

Whether the airline will remain with Boeing is a question yet to be answered. Airbus has been aggressively pursuing SpiceJet, which is the only Boeing dominated carrier in India, The LCC also flies Q-400s.

The European manufacturer wants to add another feather in its sales cap by persuading SpiceJet to replace its Boeing fleet with A330s and A321neos. If Airbus succeeds, it will enjoy a monopoly in a country with a population of 1.3 billion.

In the meantime, SpiceJet hopes to control costs that went haywire in the second quarter of the year after the new MAXs were incorporated into its fleet.

A substantial sector of its expansion is based on having the MAXs delivering better performance, fuel efficiency and cabin comfort. In other words, the airline's future is closely linked to the future of Boeing, its aircraft supplier. ■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BOEING

Singapore aerospace skills outpace rivals across the region

Southeast Asia's aviation market is one of the fastest growing in the world and will soon become the largest in the world. Singapore has cemented its position as the "Aerospace City of the Future", but it has rivals elsewhere in the region who want to get in on the act. Associate editor and chief correspondent, Tom Ballantyne, reports.

Despite turbulence in global and regional economic markets, Singapore's aerospace business continues to boom, with its Maintenance, Repair and Overhaul (MRO) sector alone growing at a healthy 8.6% annually. It accounts for more than 25% of Asia's MRO revenues and up to 10% of global output.

With the staging of the Singapore Airshow this month, that position is expected to strengthen. On hand will be more than 54,000 trade attendees from 147 countries and regions, a 12.3% increase over the last show in 2018. More than 1,000 exhibitors from 91 countries have invested in being present at the show along with 287 delegations from 91 countries and regions.

Fuelled by rapid economic growth and the popularity of low-cost carriers, almost 40% of new aircraft (42,000 planes) will have been delivered to Asia-Pacific airlines from 2018 to 2037.

B2G Consulting managing partner and co-founder, Frederic Gomer, said in the lead up to Singapore "the consequent need for maintenance as well as the technological upgrades of the region's existing fleet will boost the role of MRO services in assuring aircraft safety and airworthiness".

Singapore is not only about MRO. The world's leading aerospace companies have set up shop in the city. Rolls-Royce carries out engine assembly and testing, training and R&D at its Seletar complex as well as manufacturing titanium wide-chord fan blades.

Pratt & Whitney is investing US$42 million to manufacture hybrid metallic fan blades for the Geared Turbofan (GTF) family of engines. GE Aviation has invested a similar amount in a new facility at Seletar Aerospace Park, the 790 acre aviation zone that is home to a dedicated cluster of aerospace activities and manufacturing.

The GE plant manufactures high pressure compressor vanes for the GE9X engine, which will power Boeing's new 777X aircraft.

Airbus has a long-term and significant footprint in Singapore. Its Asia Training Centre in Singapore is its regional headquarters for pilot simulator training and the largest facility of its kind in the world.

Local heavyweight SIAEC and ST Engineering, the world's largest MRO provider, are continuing to add to their offerings in their home city. ST Engineering has moved into the passenger-to-freighter conversion business, developing systems for several aircraft platforms, with an agreement with Airbus to convert its A320s and A330 carriers and another agreement with Boeing for the B757s and B767s.

ST Engineering also owns

Aeria Luxury Interiors and DRB Aviation, which specialize in luxury interiors and engineering and certification projects for these interiors. With more than 130 aerospace companies operating in Singapore, its aerospace ecosystem caters for engine and avionics developments, component manufacturing and supply and comprehensive aircraft nose-to-tail services.

The rich prospective pickings in the Singapore aerospace sector are prompting competition from neighbours in Indonesia, the Philippines and Thailand. Thai Airways International, for example, has teamed up with Airbus to set up an "MRO of the Future" complex at U-Tapao, south of Bangkok.

In Indonesia, Garuda Indonesia's MRO subsidiary, GMF AeroAsia, has joined forces with Lion Air's Batam Aero Technic to attract multi-national aerospace investment away from Singapore to its shores, particularly for MROs.

Nevertheless, analysts believe Singapore will be more than able to handle the threat of emerging competition in the region. "The overall MRO cost in Singapore is very competitive due to factors such as efficient customs and excellent connectivity and infrastructure," said Gomer.

"The high concentration of aerospace industry players means the domestic market is extensively layered with key support sectors to absorb subcontracting works. Moreover, the Singaporean MRO industry is based on a solid foundation of forward-looking policy support, cutting edge research and innovation, and a home-grown talent pool. They are competencies clearly lacking in other countries."

Ever vigilant to competition, last August Singapore reached an agreement with China that covers mutual recognition and oversight of MRO providers in both countries. It is the first such bilateral contract struck by the Civil Aviation Administration of China (CAAC). The Civil Aviation Authority of Singapore (CAAS) has similar agreements with the U.S., Canada, Australia and Hong Kong.

Under the Technical Arrangement on Aviation Maintenance (TA-AM), MRO providers in Singapore and China need only to be audited by their local authority in order to perform maintenance on an aircraft registered in the other country.

Any easing of access to China's huge airline MRO market would be welcomed by Singaporean MRO companies. One of the biggest is SIA Engineering, which also is committed to partnership projects as it seeks to sustain its market share.

In July, it announced a line maintenance partnership with Thai carrier, NokScoot, for a repair station at Bangkok's Don Mueang Airport. It is servicing NokScoot's fleet. The nascent business relationship may lead to the Singapore company setting up a Chinese joint venture.

Whatever happens, there seems little doubt Singapore will remain the region's primary and dominant centre for all types of aerospace business. ■

AIRLINES

All Nippon Airways plans third A380 Narita-Honolulu service

Award winning global carrier, **All Nippon Airways (ANA)**, will commence its third A380 FLYING HONU service between Narita and Honolulu on July 1, enabling it to offer a double daily A380 service on the route.

ANA said last month it would begin the simultaneously operation of its three A380s to increase its flights to Hawaii to 14 a week on the type from the commencement of the Northern summer peak travel season. At present the airline flies double daily to the U.S. state with A380s (10 flights a week) and 777s (four times a week).

Starting from January 9, passengers who purchased tickets on the route on a 777-300ER departing on or after July 1 are being notified of the change in aircraft.

The first customized ANA A380 FLYING HONU entered service between Narita and Honolulu last May. ■

GLOBAL DISTRIBUTION SYSTEMS

Amadeus identifies top traveler trends

At the turn of the year, an **Amadeus** survey forecast its traveler trends for 2020 with communications with customers via Artificial Intelligence (AI) and Machine Learning topping the list.

The GDS said AI allows organizations to respond to customers in times that would have been impossible manually.

Other trends the Amadeus survey identified include:

- Approximately 40% of travelers under 33 said Instagram was a significant factor in making their travel choices. If it's not online it did not happen, is the porception
- Sustainability is a deciding factor when people make travel and accommodation decisions
- There is a rise in solo travel, particularly female solo travel.
- Super apps, a single app that combines multiple apps for travel, shopping, social media, accommodation and taxi bookings as well as food orders and entertainment options, will drive travel sales in 2020. ■

AEROSPACE

Boeing suppliers agree to US$6.4 billion merger

Composites technology company, **Hexcel**, and aircraft and industrial parts manufacturer, **Woodward Inc.**, have merged into a 55/45 integrated systems provider for the aerospace and industrial sectors to be named **Woodward Hexcel**.

Existing Woodward shareholders would own 55% of the merged entity and Hexcel shareholders 45%.

Reuters reported in January that Boeing was Hexcel's second biggest customer and accounted for 25% of its annual sales they included the manufacture of composite materials used on MAX airframes and also the engine suppliers for the type.

Boeing provides 15% of Woodward's business and is the manufacturer's biggest customer. Its product portfolio includes the thrust reverser actuation system for the MAX.

After the merger is sealed, the Fort Collins, Colorado company forecasts free cash flow of US$1 billion a year. ■

Collins Aerospace wins pilot training order from U.S. regulator

The U.S. **Federal Aviation Administration (FAA)** is purchasing a **Collins Aerospace** Heads Up Display (HUD) Virtual Reality training device to support the regulator's research into the pilot-HUD interface, pilot performance and crew workload.

Collins Aerospace vice president and general manager simulation and training

solutions, Nick Gibbs, said: "the HUD VR system provides increased access to training, helping pilots to have as much time as they need using a HUD on approaches and landings in difficult conditions.

"Our trainer can significantly reduce the length of time it takes for a pilot to become familiar with this technology, making them more productive when they enter the full-flight simulator or live flight."

The design of the VR device provides FAA scientists with a great deal of flexibility, efficiency and effectiveness in conducting research on advanced vision systems on HUDs, a company statement said. ■

LEASING

CALC orders A321neo for its portfolio

Hong Kong listed lessor, CALC, has ordered 40 A321neo, taking its order book with Airbus to 252 aircraft and lifting the Chinese funded group to seventh place on the Airbus list of customers.

CALC CEO, Mike Poon, said: "We see an enormous market appetite for single aisle aircraft with lower operational cost. The order is in line with our portfolio strategy of investing in the most in-demand modern technology aircraft with unbeatable fuel efficiency." ■

Magnetic MRO and Crestline Investments set up leasing joint venture

New aviation asset management and leasing joint venture, **Magnetic Leasing**, which is focused on mid-life A320s and 737 CL/NG aircraft and engine and landing gear, is aiming to build a US$100 million portfolio by year end. The company's goal is to manage 30 narrow-bodies and 20 engines by 2025. ■