

BREACH OF PROMISE

China Airlines growth truncated
by late aircraft deliveries
chair Kao Shing-Hwang
tells Orient Aviation

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32
YEARS

Japan Airlines
exception to supply
chain disruption

Aircraft tear down market
worth US\$14.7 billion
by 2033

Airport expansion
outpacing air traffic
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No instant answers in air crash investigations

Commercial airlines operate the safest form of transport known to man. Declining accident rates indisputably illustrate this trend.

Yet 100% airline safety is impossible to achieve. The complex nature of the business, the intricate technical and mechanical systems involved in today's modern jets and the potential for pilot and maintenance hangar errors mean accidents, however rare, are inevitable.

The worst aviation accident in more than a decade, the crash of Air India flight AI171 on June 12, is a shocking reminder of these threats to safe travel.

The frenzy of speculation that has followed the accident also is to be expected, especially as investigators are now attempting to understand why the fuel switches of the aircraft were turned off at the start of its take off.

Media, aviation professionals and the flying public cannot help but ask if the mental health of the captain was a factor in the disengagement of the switches.

Yet those who clamour for and demand answers about why the tragedy occurred should remember air crash investigations do not produce conclusions overnight.

The task of crash investigators must be a deliberative search for the truth. They must look at every conceivable angle, from clues in the wreckage to the two "Black Boxes".

They must talk to potential witnesses and air traffic controllers, view videos available and examine maintenance records and the backgrounds of the cockpit crew.

None of this happens quickly with some investigations taking months to complete.

There is another complicating factor that may or may not relate to AI171. Within days of the accident, the Directorate General of Civil Aviation (DGCA) ordered Air India to remove three executives from its scheduling department for repeated flight and duty time rule violations.

It then issued a stern warning to Air India for repeated violations of pilot flight duty time regulations, highlighting significant lapses in crew scheduling and oversight.

In a sweeping surveillance exercise conducted less than two weeks after the crash, the DGCA uncovered serious safety and compliance violations across India's aviation ecosystem.

It revealed multiple operational, technical and safety related shortcomings at airlines, airports, MRO shops and ground handlers.

All in all, it raises serious concerns about India's aviation safety systems that must be addressed because the country's aviation industry has been dealt a serious blow to its reputation. ■

TOM BALLANTYNE

Associate editor and chief correspondent
Orient Aviation Media Group

A trusted source of Asia-Pacific commercial aviation news and analysis

ORIENT AVIATION



Fatal crash opens Pandora's Box of problems for India aviation

In only little more than a month since the crash of an Air India B787 Dreamliner seconds after take-off from Ahmedabad, there are more questions than answers about the cause of the deadliest aviation disaster worldwide in more than a decade. Associate editor and chief correspondent, Tom Ballantyne, reports.

There has been no lack of speculation from aviation professionals and amateurs alike about the cause of the tragic crash of Air India Flight 171 shortly after it took off from Runway 23 at Ahmedabad's Sardar Vallabhbhai Patel International Airport on June 12.

Videos of its brief flight clearly show the jet had trouble continuing its climb out and was struggling to find the lift required. Its undercarriage, which should have been retracted immediately after take-off, was still deployed.

Following the retrieval, ongoing analyses of the flight data recorder and the cockpit voice recorder is now focusing on the actions of the cockpit crew in efforts to determine why the fuel switches were turned off when the aircraft was taking off.

Air India has said one of the GE GenX engines was brand new and installed in March this year. The second engine was last serviced in 2023 and was not scheduled for another check until December.

All of this is what it is, pure speculation.

Whatever happened, the first hull loss of a B787 has resulted in the deaths of 229 of 230 passengers, all 12 crew and multiply fatalities on the ground.

The aircraft involved was



built in 2010 and delivered to Air India in 2014. It had accumulated 39,450 flight hours, was close to 7,400 cycles and had been in regular scheduled service in the months before the accident.

India's Air Accident Investigation Board (AAIB) launched its investigation immediately after the accident aided by technical advisors from the U.S. National Transport Safety Board (NTSB) and the UK's Air Accidents Investigation Branch. Boeing and GE Aerospace teams were on site within days.

While air crash investigations are complex and often take months to reach a conclusion, International Civil Aviation Organization (ICAO) guidance does call for an interim report within 30 days of a major accident. Until the July 12 report was published, there had been limited information available from the AAIB, a concern among

global aviation safety experts.

Air India CEO, Campbell Wilson, has released videos expressing condolences for those who perished and stressed the airline is fully co-operating with the investigation. This commitment was repeated after the release of the preliminary report.

Even these public statements came under scrutiny with India's media alleging Wilson's speech was "plagiarized" from the condolence speech made by American Airlines CEO, Robert Isom, following the January 30 mid-air collision of a commercial jet and a military helicopter in Washington DC that killed 67 people.

Neither Wilson nor the government should be criticized for failing to hold open press conferences when they do not have solid information about what happened.

They should not be expected

to comment on speculation without having the facts to hand.

But other developments following the accident have cast a shadow not only over Air India but the country's wider aviation landscape.

Within days of the accident, the Directorate General of Civil Aviation (DGCA) ordered Air India to remove three executives from its scheduling department, a punishment for voluntary disclosure of repeated flight and duty time rule violations.

It also increased surveillance across India's aviation system and detailed violations ranging from improper maintenance to a simulator with out-of-date software.

The DGCA said its actions were based on "the review of repetitive snags" reported on the Air India fleet in the 15 days before the accident, although it did not make any direct links to AI171.

Then, on June 20, it issued a stern warning to Air India for repeated violations of pilot flight duty time regulations, highlighting significant lapses in crew scheduling and oversight.

That followed an investigation into flights from Bengaluru to London on May 16 and May 17 that exceeded the mandated 10-hour flight time limit for pilots.

The breaches prompted the

DGCA to order the airline to remove three senior executives from crew scheduling roles, including a divisional vice president, a chief manager of crew scheduling and a planning executive, citing "systemic failures in scheduling protocol and oversights".

In a sweeping surveillance exercise conducted less than two weeks after the crash, the DGCA uncovered a range of serious safety and compliance violations across India's aviation ecosystem.

The regulator's inspection, carried out by two teams led by the Joint Director General overnight and in the early morning hours at major airports, including Delhi and Mumbai, revealed multiple operational, technical and safety-related shortcomings involving airlines, airports, aircraft maintenance



and ground handling operations. DGCA's surveillance covered the critical areas of flight operations, airworthiness, ramp safety, Air Traffic Control (ATC), Communication, Navigation and Surveillance (CNS) systems and pre-flight medical evaluations.

In aircraft inspections, DGCA observed recurring defects, indicating ineffective

maintenance and inadequate rectification.

Some aircraft had issues such as unserviceable thrust reversers and flap slat levers that were not locked. Aircraft Maintenance Engineers (AMEs) were found to have skipped safety precautions, failed to attend to snag rectification and neglected to log technical defects.

On June 25, it was reported India had declined an offer from ICAO to include a UN investigator, currently in India, as an observer of the crash investigation, a situation that is expected to be revised.

ICAO has sent investigators to major international incidents, including the downing of MH17 in 2014 over Ukraine, although that intervention followed a formal invitation.

By the end of June, Air India

had completed DGCA mandated 'Enhanced Safety Inspections' on 26 of its 33 B787-8 and -9s. They have been cleared for service.

As a matter of added precaution, Air India will undertake enhanced safety checks on its B777 fleet. "Going forward, we will continue to cooperate with the authorities, viz AAIB, DGCA and the Ministry of Civil Aviation to ensure the safety of our passengers, our crew and our aircraft, which remains our highest priority," an airline statement said.

While the aviation world and other B787 operators wait for a definitive answer about the cause of the AI171 accident, the industry can be sure Campbell Wilson is not the first airline CEO to deal with a horrific air accident and he will almost certainly not be the last. ■

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STRAINED RELATIONS

When airline leaders gathered in Delhi for the International Air Transport Association Annual General Meeting and World Air Transport Summit in June they were meeting in one of the world's fastest growing aviation markets, but there was no mistaking their concerns about the industry challenges they face. Associate editor and chief correspondent, Tom Ballantyne, reports.

Amid the uncertainty facing the airline industry it may be that Air New Zealand CEO, Greg Foran, who will step down from his role at the airline later this year summed it up.

"One of the things I have learnt in the six years I have been in the airline business is always to be ready for the next side swipe," he said.

"What that side swipe is, I am not too sure. There are lots of things occurring all around the globe at the moment. Uncertainty is a word that comes to mind across so many



things, whether it is demand, whether it is tariffs, whether it is the supply chain.

"A word that also sits at the front of my vocabulary at the moment is trust. And that is something I think is the currency that ultimately wins."

Potential for side swipes and challenges to trust were outlined at the gathering by IATA director general, Willie Walsh, in his keynote address.

They are:

Conflict: The resolution of conflicts such as the Russia-Ukraine war will benefit airlines in



SAF production doubling this year

More Sustainable Aviation Fuel (SAF) is being produced in 2025 than last year, the International Air Transport Association (IATA) head of net zero research, Dr Preeti Jain, reported at the association's June AGM. But the quantities are still less than 1% of total conventional jet fuel demand.

"We need an exponential increase in SAF production," Jain said. The outlook takes into account that new commercial scale SAF refineries have begun production in 2025 with more expected to come by year-end. The IATA analysis said the 2025 SAF production estimate is achievable.

In fact, in the near term, supply appears sufficient to meet demand. Price is a critical factor. Asia has the biomass feedstock and the technology necessary for SAF production with India, China and Indonesia critical sources for bio-resources. The Asia-Pacific has 28 SAF projects planned for production by 2030.

North Asia, by which IATA refers mostly to China and its market, has 13 projects being constructed. "China's production capacity can be a great swing factor in the global SAF supply. Importantly, the country is progressing SAF with projects. If successfully deployed at scale, they can be an SAF game changer and a renewable success story," Jain said.

IATA senior vice president sustainability & chief economist, Marie Owens Thomsen, said all governments must maximize renewable energy and renewable fuel production for all industries, not only for the airline industry.

"With the world relying on fossil fuels for over 80% of its energy consumption, it should be understood this is a whole-economy issue, and that no single industry can achieve this on its own.

"The top priority for all the stakeholders is to increase renewable energy and fuel production. In doing so, governments must be mindful of unintended consequences that often afflict new and immature markets, and take action to eliminate oligopolistic pricing behavior," she warned.

"Looking at oil company profits, it is wholly unjustified to support their bottom lines with tax credits and handouts and it is inexplicable why such support is not provided to renewable energy companies."

"If redirected, the US\$ 1 trillion annually of favors to big oil could fund the energy transition in air transportation in less than five years."

By Tomasz Sniedziewski

reconnecting de-linked economies and reopening airspace.

Trade tensions: Tariffs and prolonged trade wars dampen demand for air cargo and potentially travel. Additionally, uncertainty about the Trump Administration's trade policies will hold back critical business decisions that drive economic activity and with it air cargo and business travel demand.

Fragmentation: Global standards have been critical for aviation. Fragmentation of global standards or weakening of multilateral institutions and agreements could result in additional costs to airlines from a more complicated or unstable regulatory environment.

This includes the evolution of policies on climate, trade, facilitation and a myriad of other matters impacting airline strategic decision-making and operations.

Walsh also had harsh words for aviation industry suppliers. The aircraft backlog exceeds 17,000, sharply up from 10,000-11,000 pre-pandemic, with an implied wait time of 14 years.

Manufacturers continue to let their airline customers down. Every airline is frustrated that these problems have persisted for so long. And indications it could take until the end of the decade to fix them are off-the-chart unacceptable!

"Should states exit from a multilateral agreement exempting aircraft from tariffs, supply chain constraints and production limitations could be further aggravated," Walsh said.

"Supply chain issues have had significant negative impacts on airlines, driving up leasing costs, increasing the average fleet age to 15 years from 13 years in 2015, cutting the fleet replacement rate to half the 5%-6% of 2020 and reducing the efficiency of fleet utilization by using larger aircraft than needed on some routes."

"In 2025 1,692 aircraft are scheduled for delivery to customers," Walsh said. "Although this will mark the highest level since 2018, it is almost 26% lower than year ago estimates.

"Further downward revisions are likely, given supply chain issues are expected to persist in 2025 and possibly to the end of the decade. Engine problems and a shortage of spare parts exacerbate the situation and have caused record high groundings of certain aircraft types.

"Aircraft in storage younger than 10 years is more than 1,100, constituting 3.8% of the global fleet compared with 1.3% between 2015 and 2018. Nearly 70% of these grounded aircraft are equipped with PW1000G engines."

Sustainable Aviation Fuel (SAF) supply is another sore point for Walsh. IATA estimates the average price of SAF in



2024 was 3.1 times that of jet fuel, an additional cost of \$1.6 billion. In 2025, SAF is forecast to cost 4.2 times that of jet fuel.

“This extra cost is largely the result of SAF compliance fees levied by European fuel suppliers to hedge their potential rates to include 2% SAF in the jet fuel supply.”

If there is good news for airlines it is IATA is forecasting improved profitability this year compared with 2024 and witnessing resilience despite global economic and political shifts. Its 2025 global financial performance is forecast to be US\$36 billion compared with \$32.4 billion in 2024.

Record revenue is predicted to be \$979 billion, delivering a net profit margin of 3.7% against a 3.4% last year.

Asia-Pacific airlines are on track to report a net profit increase from \$4 billion in 2024 to \$4.9 billion this year, representing a \$2.30 profit per passenger.

The region is the largest market for revenue passenger kilometres with China accounting for more than 40% of its traffic. IATA forecasts passenger demand to be strong and sustained in the region given relaxed visa rules particularly for entry to China, Vietnam, Malaysia and Thailand.

“However, the economic landscape poses some challenges with the GDP forecast for the region, particularly China,

“The behaviour of fuel suppliers in fulfilling Sustainable Aviation Fuel (SAF) mandates is an outrage. The cost of achieving net zero carbon emissions by 2050 is estimated to be an enormous \$4.7 trillion. Fuel suppliers must stop profiteering from limited SAF supplies and ramp up production to meet the legitimate needs of their customers”

revised down,” Walsh said.

“Although flights between China and the U.S. remain limited to 100 a week and are significantly below pre-COVID levels, over-capacity is showing signs of improvement as a result of better domestic and international network scheduling.”

Recent IATA polling reveals air passengers are happy with their experiences. In an April 2025 public opinion poll commissioned by IATA that covered 14 countries and logged 6,500 interviews almost all respondents had taken at least one flight in the last 12 months: 97% of them expressed satisfaction with their travel and 58% indicated they were highly satisfied. Around 89% agreed air travel improves their lives, 81% appreciated the availability of choice in travel planning and 78% said air travel is good value for money.

As for how important a role they see aviation playing the below trends emerged:

- * **90% of respondents surveyed said air travel is a necessity for modern life**
- * **90% agreed air connectivity is critical to the economy**
- * **89% said air travel had a positive impact on societies**
- * **82% said the global air transport network is a key contributor to the U.N. Sustainable Development Goals**
- * **84% care about the success of the aviation industry**
- * **88% care about their ability to fly in the future. ■**

Aircraft tear down market worth US\$14.7 billion by 2033

With aircraft delivery delays persisting in 2025 and compounding problems, including more MRO for certain engine types, one solution is aircraft tear downs now an important source of aircraft and engine parts, IATA senior vice president, operations, safety and security, Nick Careen, said. The commercial aircraft disassembly, dismantling and recycling market is projected to increase from US\$8.07 billion in

2023 to \$14.72 billion in 2033. IATA is engaged in the development of this sector by providing its IATA MRO SmartHub platform. To date, it has hosted more than 270 tear down projects, offering up more than 250,000 spare parts.

One example supported by IATA was the tear down of a 777-200. IATA connected the airline to 45 potential buyers and sourced 1,969 bids across 586 parts. All of the parts received bids—from APUs and landing gear to cabin interiors and aircraft skin for up-cycling.

Auction revenue exceeded tear down costs, proving the value of sustainable asset recovery, Careen said, labelling the exercise as “Korean Air’s tear down win”.

By Tomasz Sniedziewski



Japan Airlines an exception to the supply chain shortage

By Tomasz Sniedzwiewski in Geneva

At a time when global supply chain disruptions have delayed deliveries of new aircraft and components worldwide, Japan Airlines (JAL) has been the exception to the rule.

"We have the same suppliers so we had the same issues, but we do not have any aircraft on the ground. We had a buffer supply of spare parts; particularly we maintained that in Japan, so we have not had that time lag between ordering and receiving. No aircraft on the ground," Japan Airlines senior vice president route marketing, Ross Leggett, told Orient Aviation in June at the International Air Transport Association (IATA) 81st AGM and World Air Transport Summit in Delhi.

"We were in a lucky time with Japan in general. We planned well with aircraft orders. We planned well in advance so we had a long delivery period, which tends to be more reliable than shorter term deliveries," he said.

"Our maintenance guys do a fantastic job. They have predictive maintenance as well. I think we are quite advanced in that.

"They look at the maintenance logs and they know what will come up and replace parts in advance."

Its proactive approach to planning is highlighted by JAL's recent decision to postpone the retirement of some of its 777-300ERs.

"It is more like an insurance



policy that we have. We know A350-1000 deliveries. We think they are on track. Maybe one month, two months late, but on track," Leggett said.

"The domestic orders are basically on track as well. We have concerns about the 787-9s. We have not yet been told they will be delayed, but everyone in the world is having delivery delays. In case that does happen, we want to be sure of capacity, so we extended the 777s."

In the post-COVID pandemic reality, JAL has recovered, but that does not mean returning to the 2019 status quo, Leggett said.

"Well it is a mixed story. We have just announced our financial

results (on May 2), and we were able to increase revenue and profits. We exceeded our targets on profits, which was great, and we have actually increased dividends to our shareholders," he said.

"The constitution of profit is quite different, though. There was more profit coming from international routes, less from domestic. Cargo increased. LCCs increased."

He said the new profit structure might be permanent.

"The changes we are seeing internationally, the inbound market to Japan, so no-Japan point of sale, has increased incredibly. Japan's point of sales recovered versus the previous

year, but it is still not near where we were in 2019," he said.

"The Japan market is gradually increasing but I don't think it will back to 2019 levels until the yen stabilizes a lot more. It peaked at 160. It is about 142 at the moment. It needs to get down to mid-130s just to stimulate traffic, so it's a change, a paradigm change."

Can the new paradigm be an opportunity? "Yes, definitely," Leggett said. "As we made a record profit, we are very happy with where we are. It means our approach to sales and our approach to business makes a change.

"So the international focus and the non-Japan point of sale focus are increasing. Japan is and still will be our biggest market, so we continue to focus on both.

"The biggest market at the moment is America. Trans-Pacific routes continue to be huge for us. Our mid-term plan is to increase traffic from North America and Asia to Japan and

Affluent people with money are increasing, but I do not think it will be a huge increase. The really growing market in Japan and non-Japan point of sale is LCCs

also North America through traffic."

May this translate into new destinations? "I would like to expand. We just launched an additional flight to Chicago. I think midterm, so two to three years, we will keep expanding in North America," Leggett said.

"We will expand throughout Asia if we can. India is a very important market for us; a big and growing market as well."

One post-pandemic trend for airlines worldwide and pinpointed in the IATA Global Passenger Survey (GPS) 2024 Report, is the emergence of the new demographic group of young travelers.

"From my main lines I do not see that a lot," Leggett said. "Japanese travelers still have not come back to 2019 levels."

"We do see big increases in young families and younger travelers on LCC airlines. For ZIPAir, we see an increase and it is very successful in capturing non-Japanese point of sale, young and price-conscious travelers. Similarly for Jetstar Japan," he said.

"Jetstar Japan can capture the young tourist group. Spring Japan also can from China, particularly for Mainland origin traffic and young people."

Leggett said JAL's LCC subsidiaries - ZIPAir, Jetstar Japan and Spring Japan - are "very important" for JAL Group's development.

As an industry, and probably mid to long term, we will probably have to do things more efficiently and be less reliant on people doing things but never change the service levels

"We see a lot of capacity growth in the LCC market. The full-service carrier division we have is very successful, but the demographic of Japan is not increasing," he said.

ZIPAir is operating a refurbished fleet of 787s formerly part of JAL's mainline fleet.

"We have eight aircraft at the moment. We are receiving two more in the next year. Long-term plans are to expand to 20 aircraft," said Leggett.

Utilizing the 787s allows the LCC to plan long-haul operations. "ZIP flies to Houston and the U.S. west coast. Houston is a two aircraft operation," he said.

"Trans-Pacific would be where the LCC's market will continue to expand."

For mainline JAL operations, the big milestone has been the introduction of the A350-1000 as the airline's new flagship aircraft.

"It is incredibly popular with passengers. It is really state of the art. We are very happy with it," Leggett said, and added the wide-body is good for JAL's operations.

"We are enjoying higher load factors than other aircraft

because it is very popular. It also is a very efficient aircraft. We have not had any operational problems."

The road to JAL's post-pandemic recovery has not been without challenges. One of them is the Russia-Ukraine war and the resulting closure of Russian airspace.

"European operations, especially to Finland before the closure of Siberia, used to be JAL's closest European gateway," he said.

"We have reduced capacity to Helsinki. If we could fly over Russia, we would resume the full service. It is an additional three hours of flying time now. It is not just a fuel issue. It is the cabin and cockpit crew. Monthly flying time increases so much," Leggett said.

Domestically, JAL has to deal with the ground handling labor shortage. "In general, after COVID, young people found airport work not as attractive as it used to be. Long hours and difficult times and also many people retired. So recruiting new staff was difficult," he said.

"We have been successful in the last year or so and we

also have recruited an overseas workforce. We have staff from Nepal, Vietnam and Indonesia."

Cabin crew recruitment is on track. "The pilot situation is as difficult as it is for everyone. We have sufficient pilots to operate our airplanes, but if we needed to change plans, or if something like Ukraine happens again when we have to add three hours of flying to Europe again, that would put us under strain with resources. At the moment, we are on track," Leggett said.

He believes airlines will need to look to technology in some operations to be less reliant on a workforce.

"Aviation is about people traveling and traveling will always be part of our dreams. Attracting people to the industry is going to be challenging. Doing things more efficiently, having more technology involved in our booking processes and transactions. It is one of our ways through."

So far, JAL has not been impacted by U.S. president Donald Trump's planned tariffs. "If I look at my current booking trends and the further booking curve, I don't see any changes compared with previous years other than increases," he said.

"So there is nothing I can identify as negative from the tariffs. They have not started yet so we have to monitor the situation closely. Potentially of course they could have impact," Leggett said.

"At this point, there is little airlines can do to prepare for the potential impact of tariffs. I don't think we can. With cargo we all saw an uptick in exports to the U.S."

"Preparing for something we can't see and we don't know is difficult. We are a little bit more fortunate in that the inbound market to Japan is great, so with the weaker yen, travel from the U.S. to Japan is still increasing." ■



BREACH OF PROMISE

Delayed deliveries leave China Airlines without “the sharp weapon” of new aircraft necessary to become a leading global airline, Kao Shing-Hwang, tells Tomasz Sniedziewski.



China Airlines (CAL) chair, Kao Shing-Hwang, went straight to the point. He is not very happy with one or two aerospace manufacturers. Their delays in delivering aircraft CAL has ordered is holding back the carrier's goal of becoming a global leader in the industry.

He told Orient Aviation he "needed a sharp weapon" to complete his dreams of transforming Taiwan's flag carrier into a cutting edge and sustainable airline. And that sharp weapon is promised new aircraft yet to arrive in Taipei.

Despite this critical and pressing problem, Kao, who is known for his easy manner and openness, found time to talk to Orient Aviation and explain that his 39-year plus career with CAL had honed his management philosophy and influenced his vision for the carrier.

"When I joined China Airlines, my first job was as a flight attendant. It gave me a lot of chances to meet people, to deal with real people and not just the flight instruments as pilots do," he said.

"Actually I have really enjoyed both flying jobs," Kao said. "Each time, when we welcome new cadets, they talk about their dreams of being a pilot. In some sense, it is a dream with challenges.

"When you sit in the pilot's seat, there is a lot of pressure on you. You cannot avoid it. You cannot escape it. Every minute in a cockpit is really hard work as you constantly need to keep alert.

"The job is not about the idea you can travel all over the world, visit nice places and enjoy all the food. That is a side dish. The main job is strictly in the cockpit and you need to take it very seriously.

"So when I was in the cockpit I never relaxed. It is similar to my job in the office," he said.

"When I jumped into the managerial chair, I knew what my people in the front line were doing so I was able to give my biggest support to my staff."

Kao added: "Another benefit of being a pilot is the training. It can be applied to management roles. It requires the quick response, always the quick response, and it has to

be the correct response. If you are going in the wrong direction with the quick response, then you will have a disaster.

"When I am in a cockpit, my responsibility is about 300 passengers on board. That is the life or death factor, so I am very careful to take the right decisions. Now, when I am working at my desk, I am dealing with decisions involving more than 10,000 CAL staff. That is the level of responsibility I am facing.

"I am always asking myself to do the best to keep the company running, providing a living for my employees and making the business more sustainable.

"This company is not run by me. I need teamwork and I have a wonderful team. During COVID this team came up with a lot of ideas that helped the company make it through the pandemic, especially ideas produced by the cargo department. This is why we not only survived the pandemic, but why we made a profit."

The profits have kept coming. In 2024, China Airlines delivered its best financial performance in its 65-year history.

"During the pandemic we took important decisions to improve the structure of the company," Kao said. "If you are not strong enough, the virus will more likely attack you. If you are strong, a virus will probably not get close to you. But even if the virus attacks you, the symptoms will be milder when you are strong." Kao knew CAL had to be stronger.

"During the pandemic, we restructured finances and we restructured operations. We tried to make the company healthier. We did not just focus on cargo," he said.

"The pandemic is over. Every market we look at, we can notice the ongoing recovery. We finalized the contract for the 787-9s in 2022. The deliveries were supposed to start this year, but so far we have received nothing. The situation is the contract was finalized three years ago, but the aircraft are not here yet.

"Boeing representatives say the 787 deliveries are still on





track, but I think they will be further delayed because the supply chain shortage issue is not resolved.

“This is a problem. We survived the pandemic, but we are still in the critical moment for the operations and business. Why? Because I am short of the weapon. I am short of the airplanes. That makes our business a little bit critical.”

CAL is systematically accepting A321neo with 11 more of the type to arrive at the airline by year-end 2027. This year, CAL was due to accept its first 787-900, from an order of 18 of the variant, and six 787-10s. In 2029, it expects to welcome the first of 10 A350-1000s into its fleet and a year later to accept its first 777-9 and also two 777-8F freighters.

But with some exceptions, deliveries are being pushed out from the promised dates.

“The volume of passenger and cargo did not go to pre-pandemic traffic, but revenue is already much, much higher than pre-pandemic,” Kao said.

“I am thinking if I have enough airplanes I can book much more revenue,” he said, and added the situation is impacting CAL’s position in the Taiwan market compared with EVA Airways and STARLUX Airlines. “The problem is the airline next door. They created more revenue because they have enough airplanes, which we don’t,” he said.

“In this situation, when access to new aircraft in building the competitive position in the market is not an option, one thing an airline can do is use current capacity to its full potential.”

At the recent International Air Transport Association 81st AGM in Delhi, CAL and Southwest Airlines announced a joint trans-Pacific network. Travelers will be able to fly non-stop from Taiwan to the U.S. and then transit to more than 30 cities at four major gateways on the U.S. west coast: Los Angeles, Ontario, San Francisco and Seattle. More domestic destinations are on the partnership’s drawing board.



It will allow CAL to offer its passengers access to destinations in the U.S. without using its own capacity.

To preserve capacity, CAL has extended eight A330-300s leases originally planned to be superseded by A321neos and 787-900s. Because of the delayed deliveries, the A330s will fill the gap for longer, even though, as Kao conceded, some CAL passengers are disgruntled with the A330s as they are outdated compared with CAL's 777-300ERs, A350-900s and A321neo.

"When the A350-1000 is coming in and I have a lot of choice to continue our pattern, which is non-stop, I might have the opportunity to open non-stop to Washington D.C., maybe Dallas or maybe Houston," Kao said.

"If you make one stop or two stops before you reach your destination there are two kinds of risks. One is you might miss a schedule, miss your plane. Secondly, you might miss your luggage. One stop, these risks are mitigated. Flying nonstop guarantees our service level."

To maintain that service level CAL will start refurbishing the cabins of its A350-900s, first flown in 2016.

"Each time we order a new airplane, we order the newest IFE systems. 'The current generation of IFE is being phased out very quickly. As a result, after maybe eight or 10 years, we cannot find the spare parts for that particular generation of IFE so we keep updating the whole system.'"

Post pandemic, Kao said the airline is experiencing strong demand for premium travel confirming the findings of this year's International Air Transport Association Global Passenger Survey. Affluent YOLOs (You Only Live Once) are travelling more often and in the premium cabin.

"I can see this from the Taiwanese perspective. Real estate prices are very high, so the young generation has no hope of purchasing their own real estate," Kao said.

"What do they do? They spend all their extra money. They increase their travel frequency and fly business class because they are trying to enjoy their lives.

"Houses or apartments are far away from them in financial means so they give up on real estate. They have some extra money to pay us to travel in business class."

CAL is exploring several strategies to cater for its younger generation of customers including co-operating with Michelin Star restaurants to create menus to make their flights "unforgettable experiences".

"Not only



inflight

menus but amenities.

We have introduced brands favored by young people, such as Roots amenity kits in premium economy, because we have found the average age of our passengers is dropping lower and lower. We need to entertain our young passengers so we have a lot of changes to our flight service," Kao said.

The changing passenger demographic is being taken into account in the cabins of CAL's incoming 787s, Kao said, revealing a snippet of information about the anticipated 787 hard product.

"When you enter the cabin, you will recognize it is a CAL product. We will take the existing brand spirit and remodify it a bit. It will not be big adjustments, rather small ones. But as I told you, the average age of our passengers is getting lower, so we will add some more color in the traditional business class."

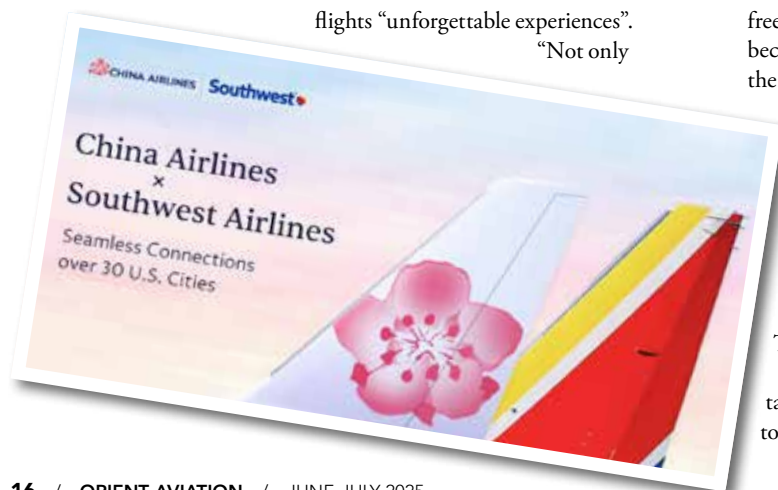
Focusing on the preferences of younger passengers is not the only change in the way CAL operates compared with pre-pandemic times.

The airline is more focused on serving transfer passengers through its Taipei hub. "We have reached a new record percentage of transfer passengers in overall air passenger volumes. At the moment, we are targeting fifth and sixth freedom rights. We concentrate on transfer passengers, because the population in Taiwan who want to travel [all over the world] is not so large. So yes, we have really changed our direction," Kao said.

Pre-pandemic CAL often focused on transporting Taiwanese passengers to overseas destinations with its overseas media campaigns highlighting the beauty of Taiwan as a tourist destination.

Post pandemic, "we will spread around the whole world not merely in Taiwan. Our commitment is we can transport you everywhere you want to go not only Taiwan", Kao said.

CAL's latest social media advertising campaigns are targeting travelers seeking connecting flights from Europe to Australia or North America to Southeast Asia.





“Probably we need to encourage people to travel more. After some geopolitical conflicts are over, people may have more urge to go outside their everyday zone,” Kao said.

“They want to look around and see the world. That is our chance. If people stay in the house for too long they will seek traveling and there will be demand created.

“I believe the aviation industry will steadily grow, just as IATA forecasts. So we have a good opportunity to increase flight frequency to some destinations to create more supply of passengers.

“Again, to reach this goal, we need more airplanes to create the network.”

Another result of the pandemic is the popularity of e-commerce that is boosting CAL's bottom line.

“The pandemic changed cargo demand. Pre-pandemic, people might have gone to shop. Now they are used to shopping at home, used to home deliveries and ordering items online so we do have a lot of e-commerce in cargo,” Kao said.

Although this trend is negatively affected by the introduction of U.S. tariffs Kao believes strong consumer demand will prevail over the restrictions.

Kao said: “There was a little drop after the tariffs were

introduced, but I believe it will revert to the previous [growth] trend very quickly.

“Why do I believe so? The original production place may be changed, but the consumer demand is still there. In our cargo routing we just need to redistribute our cargo net to successfully fulfill the demand from people all over the world.

“The pandemic changed shopping style and it will help us create more transportation volume.”

Air cargo is acknowledged as the main factor in the company's success in navigating the pandemic. CAL carried air freight is generating 30% of the airline's revenue. It delivers more revenue than passenger income because of its lower costs. “You do not need to feed cargo,” laughed Kao.

CAL is an industry leader in pursuing the net-zero by 2050 emissions target and is engaged in multiple initiatives to reduce its carbon footprint.

In 2023, Orient Aviation participated in the SkyTeam Sustainable Flight Challenge Demonstration Flight from Taipei to Singapore where the carrier outlined how it hoped to bring CAL closer to reaching its emissions reduction goal.

Achieving the zero target is an important factor in deciding the future fleet, Kao said. “We are talking about sustainability. What is important for aviation? Emissions. The fact an airplane can reduce fuel burn reduces emissions. If you want to keep the promise to Mother Earth to reduce

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emissions and meet the net zero target by 2050, the quickest way is to switch the airplane.

“So we have placed an order for the 777-X. Although its range is not as long as the A350-1000, the capacity is greater, so we can carry more passengers, even more than the 777-300ERs we are using today. It translates into lower emission per seat,” Kao said.

Even with the latest fleet, the net-zero by 2050 target is “very difficult for us to reach, or at least we need to work very hard in order to try to pursue that target”, Kao said.

Earlier this year, Taiwan introduced Sustainable Aviation Fuel (SAF) for local carriers. But SAF output and supply is limited so the original goal of using 2% of SAF in all outbound flights has been impossible to achieve, Kao said.

Importantly for CAL, there is no shortage of applicants wanting to pursue careers at the airline, an important trend as in the last several years there has been a period of high-tech dominance on the island, exemplified by the Taiwan Semiconductor Manufacturing Company (TSMC). Working for TSMC was viewed by many young Taiwanese as an ultimate career path. In his Taipei Times column, Julien Oeuillet, reported that an 18-year-old said “if you do not work in semiconductors, you are nothing in this country”.

“I can only say the semiconductor industry offers a very good income, but it is not an easy job,” Kao said. “It comes with a lot of pressure and tension. In aviation, there are effective regulations in place that protect pilots or flight attendants from stress and fatigue.”

It is the environment that wins the hearts of people

working for CAL. “We do not pay the highest salary, but we offer a chance of a happy life working for us,” he said.

“In our line of job, we can enjoy a lot of engagement with people that makes our job more interesting,” Kao said, and added a large percentage of the CAL workforce chooses long-term employment with the airline group.

Working for the airline comes with several perks of which the most attractive is free airline tickets on standby for employees and their families. The company also operates a bus service with more than two dozen routes to transport staff to and from work.

In 2024, CAL was named HR Asia Best Company to Work for the second consecutive year, beating more than 368 other enterprises. Its reputation as an employee friendly work place is spreading. For every crew vacancy posted, there are 10 applicants, CAL said.

Since Kao was promoted CAL has a new catch phrase: “Leading Asia-Pacific, flying worldwide”.

“That is a goal. It means we have not reached it. It is a target we are pursuing. Why do I say that? Because right now we are short of airplanes,” Kao said.

“Given we have enough capacity, we are trying to lead the market in Asia. In the future, two, three years from now, we can go all around the world.” ■

Born to lead

Kao Shing-Hwang joined China Airlines in 1986 as a flight attendant straight out of university. In 1988 he won a place in the flag carrier's first class of cadet pilots and then progressed through the ranks to captain, check captain and flight instructor. Kao told Orient Aviation this experience allowed him to see the airline's operations from inside out and not only from the windows of the company headquarters adjacent to Taipei Taoyuan International airport.

He joined the management team in 2003 where he was assistant and then chief pilot, assistant vice president and vice president of flight operations and senior vice president. In March 2021, at the peak of the pandemic, he was promoted to president. On Kao's watch, CAL was one of the few airlines in the world to declare a profit during the pandemic. In 2024, the airline recorded its best financial results in its 65-year history. In March, Kao was appointed CAL's chair.

航空

AIRLINES



Hong Kong/China air cargo declines in U.S. tariff limbo

Air cargo markets continue to gain ground, but there are signs trade routes are undergoing a historical shift in the face of global economic and geopolitical issues. Amid the uncertainty of U.S. tariff threats Asian exporters appear to be looking for new markets for their goods. Associate editor and chief correspondent, Tom Ballantyne, reports.

Association of Asia Pacific Airlines (AAPA) cargo statistics for May show air cargo markets posted more gains compared with the previous month but growth had moderated, an outcome of weaker export activity.

There are clouds on the region's air freight horizon. Recent figures from Amsterdam-based WorldACD Market Data reveal that after rebounding in the second half of May, air cargo tonnages from China and Hong Kong to the U.S. declined 10% week-on-week in the opening week of June, 19% below the equivalent week in 2024.

Additionally, spot rates for cargo declined 5% week-by-week and 17% year-on-year. "This significant decrease in tonnages and rates [between China/Hong Kong and the U.S.] followed a short recovery in the previous three weeks after the latest U.S. import tariffs on Chinese manufactured goods were paused.

With the pause in place for now, the current slump in the China/Hong Kong to U.S. market suggests the May rebound was a temporary rather than a structural recovery and is linked to delayed volumes "catching up" after the



suspension of the punishingly high tariffs imposed in April," WorldACD wrote.

One of the biggest shifts in the sector's pricing was a 12% fall in spot rates from Hong Kong to the U.S. This market has been heavily reliant on e-commerce traffic in recent years and has been particularly affected by the recent changes to U.S. 'de minimis' rules; the removal of tax-free exemptions for low value shipments from China and Hong Kong. As a result, much higher import charges and processing costs have been applied to this sector of e-commerce cargo since the beginning of May.

Analysts report the China to U.S. volume slump is not the end of the story. Although the U.S. tariff pause is continuing, uncertainty and the potential

for reimposition of the tariffs inevitably influences air freight flows.

To address the shortfall, exporters across the region, from Taiwan and Japan to Vietnam and South Korea are seeking new, non-U.S. markets for their goods.

The International Air Transport Association (IATA) predicts a global slowdown in cargo growth in 2025, primarily based on lower GDP growth from trade dampening protectionist measures that include tariffs.

"Air cargo growth is expected to slow to 0.7% in 2025 from 11.3% in 2024. Cargo yield also is expected to reduce by 5.2%, reflecting a combination of slower demand growth and lower oil prices. But although significant uncertainty remains about how trade tensions will evolve over the

year, as of April cargo demand was holding up well with a 5.8% year-on-year increase," IATA said.

AAPA director general, Subhas Menon, said international freight demand registered 4.5% growth in May, supported by front-loading of shipments and rerouting of goods to other gateways amidst mounting economic headwinds.

Improved air connectivity is predicted to cater for passenger travel demand, he said but "nevertheless, Asia-Pacific carriers face an increasingly challenging operating environment, shaped by rising trade and geopolitical tensions, persistent supply chain constraints and more frequent overflight diversions due to airspace closures in conflict zones.

"In addition, fuel prices may remain volatile if the Middle

East conflict prolongs. At the same time, air cargo markets are expected to come under pressure from weakening export orders, although shifts in trade routes could help mitigate some of the impact."

The operating environment for air freight, complicated by geopolitical tensions and economic uncertainty are not the only issues that impact air cargo business.

Another factor WorldACD points out is a 3% drop in worldwide air cargo tonnages because of the recent number of major holidays worldwide, dragging down overall volumes by 1%.

There was a 6% WoW fall in ex-Southeast Asia, largely driven



"Air cargo demand globally grew 2.2% in May. That is encouraging news but a 10.7% drop in traffic on the Asia-to North America trade lane illustrated the dampening effect of shifting U.S. trade policies.

Even if these policies evolve, already we can see the air cargo sector's well tested resilience helping shippers to accommodate supply chain needs to flexibly hold back, re-route or accelerate deliveries."

IATA director general, Willie Walsh

by Eid Al-Adha holidays (June 5-8), especially Malaysia (-14%) and Indonesia (-10%). Volumes ex-South Korea were lower by 6% because of the nation's Memorial Day on June 6.

Following increases in May, Mainland origin tonnages to Europe decreased 5% WoW. Hong Kong-Europe tonnages were better by 2% WoW.

But volumes to Europe were significantly down at 16% WoW from South Korea (linked to the June 6 Memorial Day) and Malaysia (26%) and Indonesia (24%), respectively, during Eid.

Other factors in the general worldwide tonnage decline in the month included falling outbound tonnages from Europe (-4%) and the Middle East and

South Asia (-8%). Europe traffic was impacted by the 'Pentecost' holiday (June 8-June 9) and once again Eid was a major factor in the 26% fall in MESA volumes.

These tonnage declines were only partly offset by an 8% WoW rebound in ex-North America traffic from the depleted levels of the U.S. Memorial Day holiday on May 26. ■

Spoofing skyrockets post pandemic

Interference of global positioning system (GPS) signals for commercial aircraft has skyrocketed in the last few years, the International Air Transport Association (IATA) reports.

"GPS signal loss events increased by 220% between 2021 and 2024 and with continued geopolitical tensions, it is difficult to see this trend reversing in the near term," IATA senior vice president, operations, safety and security, Nick Careen, said.

Recently, IATA and the European Union Aviation Safety Agency (EASA) have published a comprehensive plan to mitigate

the risks stemming from global navigation satellite system (GNSS) interference as a linchpin for a joint workshop on GNSS interference.

IATA and EASA want to reinforce redundancies built into the system to keep flying safe. The International Civil Aviation Organisation (ICAO) must take the next step forward to global alignment of standards, guidance and reporting at the ICAO Assembly later this year.

"To stay ahead of the threat, aviation must act together and without delay," Careen said.

Given the increase in interference with GNSS signals, a May industry workshop concluded a broader and more coordinated approach is needed.

It must focus on four key areas: improved information gathering, stronger prevention and mitigation measures, more effective use of infrastructure and airspace management and enhanced coordination and preparedness among relevant agencies.

Reported incidents of interference with GNSS signals, or jamming and spoofing, have been increasing across Eastern Europe and the Middle East.

Similar incidents have been reported in other locations globally and the initial industry response focused on containing those GNSS interference incidents.

"GNSS disruptions are evolving in frequency and complexity. We are no longer just containing GNSS interference, we must build resilience. The evolving nature of the threat demands a dynamic and ambitious action plan," EASA Flight Standards Director, Jesper Rasmussen, said. "Through collaboration with partners in the European Union and IATA and by supporting ICAO, we are committed to keeping aviation safe, secure and navigable."

The workshop recommends several work streams to defeat spoofing.

They are:

*** Enhanced Reporting**

and Monitoring, including agreement on standard radio calls for reporting GNSS interference and standardized notice to airmen (NOTAM) coding, defining and implementing monitoring and warning procedures and ensuring that dissemination of information is without delays to relevant parties for formal reporting.

*** Prevention and Mitigation**, especially tightened controls on export and licensing restrictions of jamming devices, improved situational interference with portable spoofing detectors and rapid and reliable GPS equipment recovery after signal loss or interference.

*** Infrastructure and Airspace Management** and the maintenance of backup for GNSS with a minimum operational network of traditional navigation aids. Also better utilization of military air traffic management capabilities; notably tactical air navigation networks and real time airspace GNSS incident monitoring. ■



Region investing heavily in airport renewal and construction

By associate editor and chief correspondent, Tom Ballantyne

Airport development in the Asia-Pacific continues to lead the sector's growth as countries across the region invest billions of dollars to cater for forecast air traffic expansion.

In a recent Airports Council International (ACI) report, the industry's lobby group said US\$240 billion will be spent on upgrading existing facilities (brown field projects) and building new airports (greenfield projects) in the Asia-Pacific in the next decade, almost 50% of a \$488 billion investment in airport projects worldwide.

And there is little doubt more investment will be needed. In 2053, when it is forecast the Asia-Pacific and the Middle East will be serving nearly 11 billion passengers compared with 3.9 billion passengers in 2024.

A notable recent development in the region was the official Terminal 5 (T5) ground breaking ceremony at Singapore's Changi Airport. T5 is designed to handle about 50 million passengers a year, eventually increasing the airport's annual capacity to approximately 140 million passengers. The existing four Changi terminals can process 90 million passengers annually. T5 was put on hold for two years during the pandemic but its construction is being accelerated with the goal of opening its doors in the 2030s.

Also under construction is Tokyo Narita's third runway C and the extension of Runway B by 1,000 meters. The upgrades



are planned for operations from March 2029. The project, dubbed "the second opening" of Narita since its inauguration in 1978 will increase the airport's annual landing and take-off capability from 300,000 flights a year at present to a maximum of 500,000 a year.

The ACI Asia-Pacific & Middle East study has drawn up a road map for existing airports and new airport infrastructure.

Brownfield Development, the modernisation of existing airports, will require \$136 billion to upgrade existing airports that will add capacity of 680 million passengers and 14 million tonnes of cargo a year to the facilities. Greenfield Development is forecast to have \$104 billion available for new airport construction that will provide passenger capacity of 562 million and 57 million tonnes of cargo.

The investment will create additional capacity for 1.24 billion passengers - the equivalent of more than 13 airports the size of Dubai International Airport, the world's busiest airport for international passengers, and 71 million tonnes of cargo capacity. Cargo capacity alone will be near

14 times the cargo throughput of Hong Kong International Airport, the top ranked airport for cargo in the world. This significant increase will ensure airports in the Asia-Pacific and the Middle East will handle growth.

"The \$240 billion investment is not just about concrete and runways, it is about socio-economic development in the region," ACI Asia-Pacific & Middle East president, SGK Kishore, said. "Enhanced passenger experiences will stimulate tourism and business travel and bolstered cargo capacity will streamline supply chains and drive regional trade and development."

ACI Asia-Pacific & Middle East director general, Stefano Baronci, said "infrastructure development alone cannot support growth to its full potential. In today's increasingly complex economic landscape, we need the continuous support of governments to liberalise air transportation and streamline visa policies. "In contrast, protectionist measures hinder progress and opportunity."

GlobalData's research agrees with the ACI that the

Asia-Pacific is the fastest airport market growth in the world and will continue to do so for the next decade as China, India and several Southeast Asian nations are investing heavily in airport construction and the modernization of existing facilities.

In a separate report recently released in Shanghai, ACI's Air Connectivity Ranking 2024 shows a significant 14% increase in connectivity for airports in the Asia-Pacific and the Middle East, driven by strong international demand, robust network recovery and the return of major travel corridors.

The Air Connectivity Ranking assesses performance based network scale and frequency, the economic weight of destinations and connection quality and efficiency. It reports the Asia-Pacific has recorded a remarkable 13% jump in overall connectivity compared with two years ago and the Middle East has achieved an impressive 28% increase, surpassing all post-COVID recovery forecasts.

In Asia-Pacific, intra-regional connections are close to pre-pandemic levels, trailing

2019 by 0.2%. At the same time, intercontinental connectivity is on the rise, showing a solid 4% increase. The Middle East, is setting a new pace. Intra-regional and inter-continent connectivity have exceeded pre-pandemic levels by 18% and 16%, respectively.

Key findings of the rankings are:

- * Airports in the Asia-Pacific and the Middle East experienced across-the-board connectivity growth in 2024, driven by China's reopening and route expansion.

- * 80% of the top 300 airports in the world have fully recovered with larger hubs at the top of the table because of the resurgence in international travel.

- * Domestic city pairs decreased by an average of 1% compared with 2023, suggesting a post-COVID emphasis on international expansion.

- * International city pairs across all airport categories rose by an average of 17%, highlighting the strong return to cross-border travel.

- * While intra-APAC passenger

travel in 2024 was close to 2019 levels, travel to Europe, the Middle East and Africa has surpassed it, driven by Gulf hubs. Passenger traffic from the Asia-Pacific to the Americas still trails 2019 levels.

Despite increased competition, Dubai maintained its position as the leading airport in APAC and the Middle East. Seoul Incheon, Singapore Changi, Shanghai Pudong and Beijing Capital saw improved rankings and indices, reflecting strong outbound tourism and

network adjustments.

Baronci said air connectivity is not only relevant for passengers seeking more travel options and convenience; it is equally crucial for supporting global trade and economic resilience, particularly through belly hold cargo capacity.

"In the face of growing geopolitical and trade tensions, we urge governments to prioritise air service liberalisation, streamlined visa policies and transparent slot allocation frameworks," he said. ■

Digitalization reducing baggage woes

The good news for Asia-Pacific air travellers compared to elsewhere in the world is that their check in baggage is far less likely to go astray. SITA's Baggage IT Insights 2025 reports that in 2024 the region achieved the world's lowest mishandling rate at 3.1 bags per 1,000 passengers, a level the Asia-Pacific has consistently maintained in recent years. The overall global mishandling rate is 6.3 bags per 1,000 passengers.

The Asia-Pacific's steady performance highlights the strength of regional investment in automation, tracking and baggage management, even as system complexity and passenger numbers continue to soar.

Nevertheless, the global picture also tells a story of progress. Despite an 8.2% increase in worldwide traffic in 2024, the overall mishandling rate declined in 2023 and is 67% lower than in 2007.

Of the 36.2 million mishandled bags, around 61% (22.2 million) were resolved within 48 hours. Specifically, 16% were resolved within 12 hours, 38% within 24 hours and 46% within 48 hours.

The results are a clear improvement, but baggage mishandling still cost the industry an estimated \$5 billion in 2024 and passengers want a better performance from the industry. The costs from courier returns and customer service to claims handling and lost productivity, highlight the urgency of continued investment in real-time, automated, and data-driven baggage systems.

"In air transport, transformation is not a phase, it is the norm. The industry is constantly evolving, driven by technology, passenger expectations, and global change." SITA CEO, David Lavorel, said.

"We have seen a radical shift with automation and real-time tracking. Passengers expect their baggage experience to be as easy and transparent as using a ride share or delivery app. It's no longer just about moving bags. It is about delivering a smooth, connected journey.

"Airlines are ready to tap into technology that improves the passenger experience but keeps costs down and is simple to implement.

"Airports and airlines are handling greater baggage

volumes with more precision. Real-time tracking, AI-powered analytics and self-service solutions are no longer experimental. They are becoming standard and they are having an effect. This shows the real impact of investing in smart, data-driven baggage systems."

In 2024, 42% of passengers had access to real-time baggage updates, up from 38% the year earlier. Nearly half of all travellers say mobile tracking would boost their confidence in checking in a bag and 38% of the survey's respondents value digital ID tags.

Sixty six per cent of airlines offer automated bag drop with another 16% planning to do so by 2027. Additionally, 65% of airports intend to be operating

biometric self-service bag drop in the same year.

Last year, delayed bags remained the most common issue, accounting for 74% of mishandled luggage, down from 80% in the previous year. Eight per cent of bags were lost or stolen and 18% of them were damaged or pilfered, an increase from 15% in 2023.

Transfer mishandling was the biggest contributor at 41%, an improvement from 46% the previous year. Tagging or ticketing errors, security issues and similar factors rose slightly to 17% (up 3%) and loading failures remained steady at 16%. Operational issues such as customs delays, weather or capacity constraints increased to 10%, up from 8%.

"We are making progress, but baggage still causes stress," SITA director baggage, Nicole Hogg, "Passengers want reassurance. The future of baggage is rapidly evolving with automation, computer vision and mobile tools. We are making the experience much more reliable." "This is not just about reducing errors. It is about creating trust in the journey and the technology is clearly making it possible." ■



Gloomy or realistic?

By associate editor and chief correspondent, Tom Ballantyne

Following global air travel demand's recovery post COVID, the aviation industry faces volatility from trade tensions, shifting traveller behavior and supply constraints, analysis by U.S. consultancy Bain & Company reports. It forecasts the industry faces the key challenges of uncertain travel demand in reaction to perceived travel barriers, economic uncertainty and aircraft and engine component shortages.

"The outlook for the next five years is mixed," Bain global Airlines, Logistics and Transportation head, Geoffrey Weston, wrote. "In the near term, significant uncertainty surrounding trade flows, macroeconomic conditions and traveller sentiment will temper demand.

"Over the long run, the fundamentals for air travel remain strong. More efficient aircraft, falling real ticket prices and rising demand in developing markets will keep air travel on a growth

trajectory assuming the industry can overcome challenging capacity constraints."

MRO has become a bottleneck for commercial aviation and the capacity constraints are likely to worsen. Bain predicts. Aircraft production and maintenance continue to lag demand. As new aircraft deliveries fall short of targets airline fleets are operating several years past their intended retirement. Adding to this squeeze, record aircraft are grounded awaiting overdue maintenance.

In 2024, Boeing and Airbus increased their fleets by 4.7%, well short of the estimated 6.8% growth needed to meet demand and enable normal retirement rates. In addition, average wing-to-wing turnaround time for Geared Turbo Fan engines has risen 78% from 140 days pre-Covid to more than 250 days in the last seven quarters.

The industry continues to be contained by critical raw materials in short supply, less plentiful Used



Serviceable Materials given fewer aircraft retirements and acute skilled labor shortages.

"Tariff uncertainty is creating near-term volatility in airline demand and is exacerbating supply chain issues. This combination of challenges could alter demand, constrain capacity, and change the underlying nature of airline fleets. The shortfall of new aircraft deliveries means airlines and lessors must extend the life of mid and late-stage aircraft to meet demand. That drives a need for more investment in older fleets," Bain & Company's global Aerospace & Defence sector head, Jim Harris, said.

However in the longer term, global economic growth, expanding middle classes in developing countries, more efficient aircraft and LCCs offering affordable travel are forecast to support industry growth. Global revenue passenger miles are estimated to grow at 4.7% to 2030 if



economic growth stabilizes and supply keeps pace with that growth, Bain reports.

Aircraft lessors with mid-life fleets could benefit from increased demand as airlines delay new purchases and extend the life of their older planes. In contrast, U.S.-centric OEMs and carriers operating wide-body fleets face heightened risks, the consultancy predicts.

Trade barriers will disproportionately impact U.S. suppliers serving the global market. Economic uncertainty will lead to U.S. passengers reducing travel expenditure. Airlines will respond with lower frequencies on some routes and higher ticket prices to deal with the inevitable notch-up in operating costs and strained fleet flexibility.

Bain recommends a multi-pronged strategy to weather these challenges:

Assess Exposure: Airlines and suppliers must map their vulnerability to supply disruptions and tariffs at a granular level.

Plan for Multiple Scenarios: Fleet and production plans should be stress-tested against various economic and trade environments.

Invest in Resilience: Building stronger supply chains, digital monitoring tools and skilled labor pipelines are essential.

Engage in Policy: A proactive stance on trade and regulatory developments can yield strategic advantages. ■



Asia-Pacific airlines biggest spenders at Paris Air Show

It was far from the aviation spectacle that had been two years in the planning. The biennial Paris Air show went ahead in mid-June but in the shadow of the fatal Air India 787 crash only a few days earlier casting a shadow over the world's most important air show.

By associate editor and chief correspondent, Tom Ballantyne

Unsurprisingly, following the fatal crash of an Air India Dreamliner on June 12, Boeing was absent from Paris as was GE Aerospace, the manufacturer of engines that power 787 fleets worldwide.

In a message to staff, Boeing CEO Kelly Ortberg said he and Boeing Commercial Airplanes CEO, Stephanie Pope, were staying [in Seattle] "so we can be with our team and focus on our customer and the investigation".

At GE Aerospace, an investor day scheduled for June 17 was cancelled as it would have coincided with the air show. GE said it was putting a team together to go India to analyse data from the crashed aircraft. "GE Aerospace's senior leadership is focused on supporting our customers and the investigation," a company statement said.

The Paris Air Show, held every two years in June, is the industry's largest trade show and a prestigious gathering where many airline orders are announced.

The show did go on, but there were fewer high profile press conferences and in person announcements than in the past.



Boeing did not announce any orders, a recent first for the U.S., so Airbus orders had the trade days all to themselves.

The European OEM signed US\$21 billion in aircraft commitments at the show, reinforcing its leading position in global commercial aviation.

At the close of the industry days, it had booked 148 firm orders valued at \$14.2 billion and 102 provisional commitments estimated at \$6.7 billion, Cirium Ascend estimated.

It is not known if Boeing had order announcements planned for Paris. But it was reported

aircraft purchase commitments were delayed to later in the year as a mark of respect for the victims of the Air India crash.

Another first for the show this year was the decision by French authorities to erect black partition walls around Israeli company exhibits displaying offensive weapons systems only hours before the event opened, which Israel condemned as "outrageous".

Asia-Pacific and the Middle East airlines dominated the announcement schedule. Vietnam's largest private airline, Vietjet, signed a Memorandum of

Understanding for 100 A321neo with the option to acquire another 50 of the type.

It followed the LCC's order for 20 more A330neo, increasing its commitment to 40 of the wide-bodies. Vietjet operates more than 100 Airbus aircraft.

All Nippon Airways (ANA) finalised an agreement with Airbus to buy 24 A321neo and three A321XLR: 14 A321neo for ANA and 10 A321neo and three A321XLR for its subsidiary, Peach Aviation.

Peach Aviation will be the first Japanese airline to operate the A321XLR, which has the longest range of any single aisle aircraft.

Taiwan's STARLUX Airlines signed a firm order for ten more A350-1000s, increasing its planned acquisition of the twin aisle to 18. It operates an all-Airbus fleet of 28 A350-900s, A330neo and A321neo aircraft. The Taiwanese airline also has previously ordered a mix of 30 A350F freighters and A350-1000s.

"Expanding our international fleet with additional A350-1000s is a significant step. It reinforces our global presence and enhances connectivity across key markets," CEO, Glenn Chai, said.

It was speculated AirAsia would announce a major order in Paris, but the LCC group said restructuring remains its priority. Talks involving up to 170 aircraft, including A321XLRs, A220s and Embraer E2 jets, may resume, it said.

Orders from Gulf clients were six A350-900s from EGYTAIR and Riyadh Air's firm order for 25 A350-1000s. The carrier is Saudi Arabia's new premium international airline. Its contract includes options for 50 jets.

A note of cheer at the show was the news Airbus had recorded a 40% reduction in component delays starting from early this year. ■

Asia-Pacific needs thousands more aerospace technicians

The daunting task of finding tens of thousands of new pilots in the next two decades is not the only challenge airlines face. Boeing's latest Pilot and Technician Outlook, covering the period to 2043, estimates that apart from the 674,000 new pilots global airlines will require in the next 18-20 years, they also will have to find 716,000 new maintenance technicians and 980,000 new cabin crew.

More than a third of these employees, Boeing forecasts, will be required by airlines in the Asia-Pacific, including China. It forecasts a requirement for 296,000 maintenance technicians and 370,000 cabin crew across all airlines in the region.

"As commercial air travel returns to its dominance post-pandemic, the demand for training and related services has accordingly shown signs of faster recovery, although the industry still faces lingering challenges in meeting this demand," Boeing wrote.

"Among them are insufficient training capacity to



support significant personnel shortages and the lag time necessary to bring personnel online while continuing to prioritize safety.

"To support the rapid recovery and growth driven by expansion of global fleets, the aviation industry will need a long-term strategy that addresses upcoming labour challenges.

"Investments in early career development programs and outreach efforts that spark excitement among future aviators will be essential to a healthy

aviation market for years to come."

Saxon Aerospace, a U.S.-based aviation recruitment firm, said demand for Aircraft Maintenance Technicians (AMTs) is soaring. "Several factors are contributing to this increasing need for skilled professionals, making it one of the most pressing issues in the sector," it predicts.

"Firstly, global passenger numbers are rebounding and surpassing pre-pandemic numbers, driven by increased connectivity, tourism growth and economic recovery.

"More flights mean more aircraft requiring regular maintenance to ensure safety and compliance, placing additional pressure on the existing workforce.

"Secondly, an ageing workforce is leaving a gap that is hard to fill. Many seasoned AMTs are nearing retirement, taking decades of expertise with them.

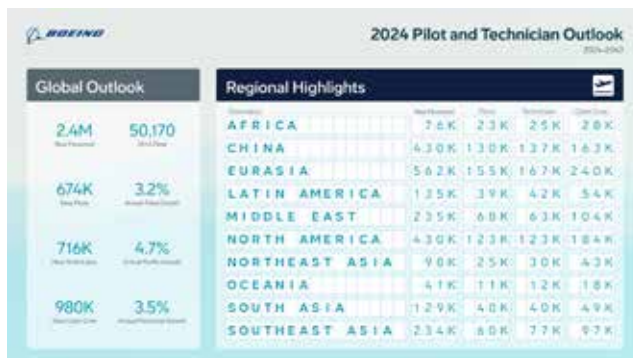
"The pipeline of new talent entering the field is insufficient to replace these retiring technicians, leaving a significant shortfall in skilled labour.

"Thirdly, advances in technology and the introduction of next generation aircraft are adding new layers of complexity to maintenance tasks.

"Modern aircraft incorporate advanced systems and materials that require specialized knowledge and training, increasing demand for highly skilled technicians.

Finally, Saxon said, the global aviation trends of fleet expansion and sustainability are amplifying the need for maintenance expertise.

"Airlines are investing in more fuel-efficient and eco-friendly aircraft, which have unique maintenance requirements. This evolution in the industry makes the role of AMTs even more critical for ensuring smooth operations."



Huge demand for air traffic controllers in coming decade

Global training and simulation company, CAE, estimates 1.5 million civil aviation professionals will be needed worldwide by 2034. In its 2025 biennial Aviation Talent Forecast, CAE said there will be great demand for pilots, aircraft maintenance technicians, cabin crew and, for the first time, air traffic controllers. It is predicted the global industry will need 71,000 air traffic controllers in the next 10 years.

CAE predicts aviation will require 1,292,000 commercial aviation professionals: 267,000 pilots, 347,000 aviation



maintenance technicians and 678,000 cabin crew. The largest percentage of this workforce will be necessary to accommodate accelerating Asia-Pacific demand. In addition, 102,000 business

aviation professionals must be recruited to the sector in the next decade: 33,000 pilots and 69,000 aircraft maintenance technicians.

"The need for 1.5 million new aviation professionals by 2034

is driven by record demand for air travel and a significant wave of retirements that is expected across all categories," CAE vice president strategy, performance, air traffic services & marketing, Marie-Christine Cloutier, said.

"With commercial and business aviation fleets expected to see double digit increases in the next decades, the industry must take action to attract, train and retain personnel.

"Highly skilled aviation professionals are not just a necessity for the safety of the air transport system; they are the foundation for the successful expansion and resilience of the global aviation sector.

"The industry needs to be proactive and creative. Adaptability and optimised training will be critical to supplying the demand." ■

SATS raises age for retirement and re-employment

Industry leading ground handling and airline catering group, SATS Ltd, has taken the lead in implementing a Singapore Government policy, to be legislated in 2026, to increase the retirement age of employees to 64 and the re-employment age to 69.

The new labor law also addresses the demand for skilled aviation workers across the group in the industry.

The new policy, in place since July 1 and available to staff based in SATS headquarters in Singapore, will benefit up to 700 employees that will reach retirement and re-employment age this year. On average, these employees have served SATS for

30 years, SATS said.

"The progressive move, undertaken in collaboration with our union partners, reflects our dedication to building an inclusive, future ready organization and supporting our mature employees who wish to contribute their skills and experience," SATS chief human capital officer, Tan Chee Wei, said.

"We believe taking early action enables us to better recognize and retain the valuable contributions of our experienced workforce.

"This initiative reinforces the SATS commitment to supporting a multi-generational workforce and fostering a culture of inclusivity, respect for experience

and strong labor-management relationships.

"We believe in supporting our employees in building fulfilling and meaningful careers where they feel appreciated.

Mature employees are provided with the same training and development opportunities as younger colleagues in alignment with their job roles," Tan said.

SATS has an employee development program which is open to all staff regardless of age. It has a particular emphasis

on a growth mindset and offers specific training modules to ensure SATS operations can perform effectively in a tech-enabled environment, it said.

SATS Gateway Services provide air freight, passenger services, ramp and baggage, aviation security, aircraft cleaning and aviation laundry services. SATS Food Solutions serves airlines and institutions, operates central kitchens with large scale food production and distribution of range of cuisines. ■



