

Awan

AVIATION WITHIN A NATION



CIVIL AVIATION AUTHORITY OF MALAYSIA
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**ABOUT AWAN**

AWAN was conceptualized by a team of industry experts with great experience and authority to deliver concise, comprehensive and timely articles with a wide scope of coverage on all sectors of Malaysia's aviation industry. Published quarterly, AWAN provides insider knowledge, industry insights, latest news, current trends, updates on regulations and interpretation on the key issues impacting aviation in Malaysia.

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THE BRIEF

Local



MAHB TO ROLL OUT FACIAL RECOGNITION FOR PASSENGER AUTHENTICATION, REPLACING BOARDING PASSES

Malaysia Airports Holdings Bhd (MAHB) is rolling out the first phase of the “Single Token Journey” under its Airports 4.0 initiatives. Facial recognition will replace physical travel documents such as airline tickets and boarding passes for faster and safer passenger authentication at the Kuala Lumpur International Airport (KLIA). The authentication process is expected to take about five seconds for each passenger at every touchpoint, shortening the airport journey considerably. The technology will also be integrated with the MYAirports app where passengers can enroll their facial authentication even before they arrive at the airport itself. Future implementation may also include other touchpoints such as retail purchases as well as access to airline lounges.

Source: The Edge Market

MAB PUSHES FOR MORE WOMEN IN AVIATION

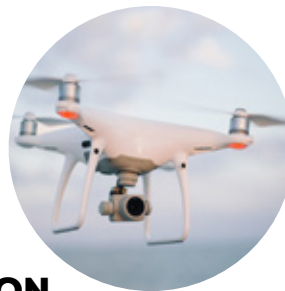
Malaysia Airlines has joined a global initiative to boost women’s representation in the aviation industry to at least 25% by 2025. The airline joined the “25by2025” initiative by the International Air Transport Association (IATA) that aims to create more career opportunities for women and champion gender balance in the aviation industry. The 25by2025 initiative, a platform to share best practices and to monitor the industry’s goals and push for a gender-balanced workplace, has 57 signatories globally to date. Through this initiative, more opportunities will be given to female employees when they apply for senior positions with the airline. Source: The Star



FIRST BATCH OF COVID-19 VACCINE TOUCHES DOWN AT KLIA

The first batch of Pfizer -BioNTech’s Covid-19 vaccine has arrived at the Kuala Lumpur International Airport (KLIA), transported via MAS flight MH604 operated by MABkargo Sdn Bhd (MASKargo). The aircraft touched down at 10.07am on Sunday, 21st February 2021. A total of 312,390 vaccine doses were flown on a Passenger-to-Cargo (P2C) flight using an Airbus 330-300 aircraft. The vaccines departed from Puurs, Belgium and transited at the Leipzig Halle Airport, before continuing its journey to Singapore for distribution to other Asia Pacific countries, including Malaysia.

Source: The Star



HUGE ADOPTION OF DRONE TECH SEEN IN AGRICULTURE SECTOR THIS YEAR – MDEC

The agriculture and plantation sector is expected to see a huge increase in adoption of drone technology this year due to the increase in demand and technology readiness thus, enabling a technology-driven transformation to ensure efficiency and sustainability. MDEC will continue to advocate the public about the rules and regulations to ensure the risk related to drone flying are mitigated, as more private and commercial drone users are using the equipment for various purposes.

Source: The Edge



Local

MALAYSIA AIRLINES TO INTRODUCE DIGITAL TRAVEL HEALTH PASS

National carrier Malaysia Airlines plans to introduce a Digital Travel Health Pass to enable safer air travel in a post-pandemic era. The health pass will integrate modules from the International Air Transport Association's (IATA) Travel Pass, enabling passengers to create a digital passport on the Malaysia Airlines mobile app. This digital identification will pave the way for Malaysia Airlines' passengers to eventually take advantage of contactless technology options throughout the travel processes. The health pass will also verify the carrier's COVID-19 test or vaccination requirements, and share an "OK to Travel" status of passengers with the relevant authorities.

Source: The Star

KLIA RANKED AMONG WORLD'S TOP 10 AIRPORTS IN 2020

Kuala Lumpur International Airport (KLIA) has been named as one of the world's top 10 airports in the global Airport Service Quality (ASQ) survey by Airports Council International (ACI) for the category of over 40 million passengers per annum in 2020. According to Malaysia Airports Holding Berhad (MAHB), the achievement was borne out by the airport's continuous efforts in carrying out improvement initiatives despite being severely affected by the COVID-19 pandemic. Passenger traffic remained low due to prolonged domestic and international travel restrictions, nevertheless, the airport still forged

AIRASIA PARTNERS WITH MAGIC TO EXPLORE URBAN DRONE DELIVERIES

AirAsia Group Bhd, via its logistics arm Teleport, partners with the Malaysian Global Innovation and Creativity Centre (MaGIC) – the lead secretariat of the National Technology and Innovation Sandbox (NTIS) – to launch the Urban Drone Delivery Sandbox and develop long-term viability of urban drone delivery services. The low-cost carrier said the pilot project for the delivery of goods from AirAsia's e-commerce platforms including airasia shop using automated drones is set to be carried out via a six-month phased approach at the third NTIS test site in Cyberjaya. The service, which is currently in the testing stage with two local drone operators, VStream Revolution Sdn Bhd and Meraque Services Sdn Bhd, will be deployed upon a successful trial phase and might be expanded beyond the sandbox environment.

Source: The Edge



FIREFLY INTRODUCES CARGO SERVICE TO MEET THE SURGE IN DEMAND

Firefly Airlines has introduced Firefly Air Cargo to meet the sudden surge in demand to transport parcels across Malaysia as they try to sustain the business. Parcels from customers will be collected by the receiver within 24 hours from arrival time as no storage facility is provided by the airline. The journey to send out parcels is simple, whereby customers drop off their parcel at Firefly airport counter, choose their destination and flight time and fill up the consignment form. The parcel will then proceed for security clearance and proceed for delivery.

Source: New Straits Times





Two years after a global grounding, airlines are quickly bringing 737 Max jets back into service

Two years after a 737 Max system failure led to fatal crashes, airlines are rapidly bringing the Boeing jet back into service. All 737 Max planes were grounded worldwide in March of 2019 after the crash of Ethiopian Airlines Flight 302 – the second fatal crash in five months involving the jet. Boeing insists that 20 months of investigation, improvements and review by the Federal Aviation Administration has made the plane as safe or safer than any other. There have so far been more than 9,000 passenger flights aboard the aircraft since the grounding was lifted, according to Boeing (BA). Brazilian carrier GOL and American Airlines (AAL) became the first carriers to fly passengers on a 737 Max in December. American has used the plane on more than 400 flights, more than any other airline, which tracks passenger jet usage. United (UAL) recently placed an order for 25 additional Max jets, and sped up its delivery schedule on prior orders. Alaska Air (ALK) recently took deliveries of its first Max jets.

Source: CNN

THE BRIEF

International



Air Canada Sets New Net Zero Emissions Goals

Air Canada is committing to reducing 20 percent of greenhouse gas (GHG) emissions from flights and 30 percent of GHG emissions from ground operations by 2030 in order to get to net-zero GHG emissions by 2050, the international airline announced. To meet these goals Air Canada is targeting fleet and operations, innovation, sustainable aviation fuels (SAF) and clean energy, and carbon reductions and removals. Air Canada says operations with the Airbus A220 and Boeing 737 MAX narrow body fleets will reduce fuel consumption, CO2, and nitrogen oxides. These aircraft will help to cut fuel consumption per seat by 20 percent, CO2 by 20 percent, and nitrogen oxides by 50 percent. Source: Aviation Today



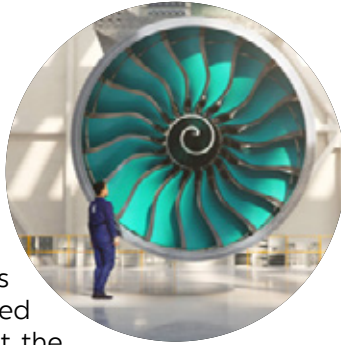
Aviation industry calls for collaboration on 'vaccine passports'

The aviation sector is calling for close collaboration in development of "vaccine passports", hoping such documents could promote re-opening of international travel following the yearlong coronavirus crisis. However, some industry participants insist such documents – which would prove a person has been immunised – should not be required to travel internationally. During an aviation forum, executives say governments, airlines and others must work jointly to make such documents effective and accepted globally, while still protecting holders' privacy. Vaccine passports have become a hot topic as more potential travellers are immunised against the coronavirus. The documents – also known as digital health passports – have been floated as a means by which governments can open international travel to more people. Airline alliance Oneworld president Rob Gurney says such documents will be "crucial" to a meaningful travel rebound, adding that "governments will set policy and airlines will comply". Source: FlightGlobal

International

Rolls-Royce starts building UltraFan, world's largest jet engine

Rolls-Royce, the British engineering giant, started building the UltraFan, the largest aero engine in the world. Rolls-Royce announced that the company started building the UltraFan demonstrator at its DemoWorks facility in Derby, the United Kingdom. The manufacturer expects that the first module of the world's biggest aero engine, which has a fan diameter of 140 inches, would be completed by the end of the year and would help redefine the future of sustainable air travel. Rolls-Royce indicated that the key engineering features of the UltraFan include a new Advance 3 core architecture, combined with its ALECSys lean-burn combustion system, which will allow delivering maximum fuel burn efficiency and low emissions. Besides, the manufacturer is focused on a geared design that should deliver efficient power for the high-thrust and high bypass ratio engines of the future. The carbon titanium fan blades and a composite casing were also something that Rolls-Royce has been looking at while developing the UltraFan. The fan blades, made out of carbon titanium and a composite casing allowed the manufacturer to reduce the weight of the engine by up to 680 kilograms (1,500 pounds). Meanwhile, advanced ceramic matrix composite (CMC) components are expected to operate more effectively in high-pressure turbine temperatures. *Source: Aerotime News*



Air travel down 60 per cent, as airline industry losses top \$370 billion: ICAO

The International Civil Aviation Organization (ICAO) said that as seating capacity fell by around 50 per cent last year, that left just 1.8 billion passengers taking flights through 2020, compared with around 4.5 billion in 2019. That adds up to a staggering financial loss to the industry of around \$370 billion, "with airports and air navigation services providers losing a further 115 billion and 13 billion, respectively", said ICAO. In the most optimistic scenario, said ICAO, by June of 2021 passenger numbers will be expected to recover globally to 71 per cent of their 2019 levels (or 53 per cent for international and 84 per cent for domestic flights). A more pessimistic scenario foresees only a 49 per cent recovery (26 per cent for international and 66 per cent for domestic). ICAO will continue to provide recommendations and support for the aviation sector to weather the crisis. Its new Guidance on Economic and Financial Measures summarizes a range of measures that can be explored by States and the industry to ease the crisis, and strengthen the industry to withstand future shocks better. *Source: United Nations News*



General Aviation Industry Helps Deliver COVID Vaccines

Italian aircraft manufacturer Tecnam has repurposed its P2012 to offer the P2012 Travelcare for COVID-19 vaccines distribution. The platform was created to help distributors around the world reach remote and difficult to access communities, including areas with an underdeveloped infrastructure. Tecnam partnered with a freezer manufacturer to equip the P2012 Travelcare aircraft with freezers designed to maintain ultra-



cold temperatures required by some of the vaccines. The P2012 equipped with the Desmon freezer, maintains product temperatures down to -186 degrees during transport and -149 degrees after the system is unplugged for further distribution. Tecnam's P2012 Travelcare aircraft can transport as many as 115,000 vaccines to areas with less than 1,850 feet of paved or unpaved runway. In Europe, 67% of airports have runways shorter than 5,000 feet, making them inaccessible to large aircraft. *Source: Aviation Week*

Chinese warplane firm lays out plans for new stealth fighter & next-gen aircraft



A top Chinese warplane-producing company recently announced plans to make technological breakthroughs to ensure the successful development of a new, fourth-generation stealth fighter jet, and conduct test production and research on its next-generation aircraft in 2021. China is widely expected to develop an aircraft carrier-ready stealth fighter jet, as the US is racing China in next-generation warplane development. Shenyang Aircraft Co. Ltd. aims to make breakthroughs in its fourth-generation fighter jet program by boosting related technologies, including additive manufacturing, control over surface electromagnetic defects, and automated fiber placement, so that the aircraft can be successfully developed. *Source: Global Times*

CAAM Highlights



Launch of New Unmanned Aircraft Systems (UAS) Directives for Agricultural UAS Operations, Special UAS Project and Remote Pilot Training Organisation

The Civil Aviation Authority of Malaysia has launched three new Civil Aviation Directives (CADs) in relation to Unmanned Aircraft Systems (UAS) operations effective 1st March 2021. The CADs are namely:

- 1) CAD 6011 Part (I) – Remote Pilot Training Organisation (RPTO)
- 2) CAD 6011 Part (II) – Agricultural Unmanned Aircraft System Operations (AGR)
- 3) CAD 6011 Part (V) – Special Unmanned Aircraft System Project (SUP)

The issuance of these new CADs are to accommodate the increasing operations of UAS involving various fields. In these efforts, CAAM has set forth the standards, requirements and procedures to individuals and operators in Malaysia for

agriculture, training organisation, research and development, Beyond Visual Line of Sight (BVLOS) operations, and any other operations that requires additional support from CAAM due to the additional risks it involves.

CAAM will soon unveil further directives including ‘open’ category and ‘toy’ drones which will be ready in Q3 of 2021. As technology continues to evolve and play a larger role in everyday lives, CAAM will continue to facilitate and support the dynamic growth of the drone industry without comprising on public safety and security.



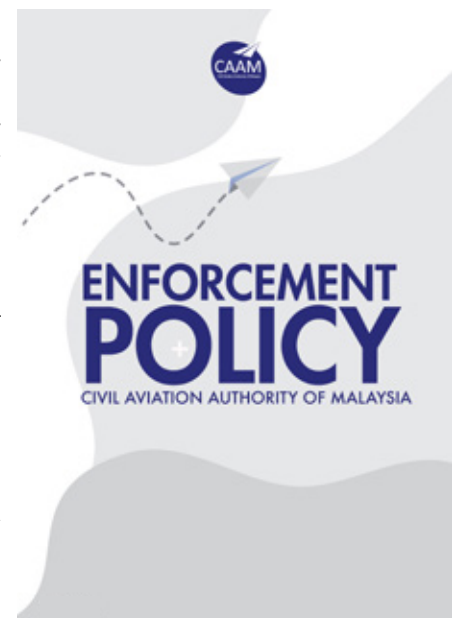
CAAM Enforcement Policy

As the sole technical aviation regulator in Malaysia, the main purpose of the Civil Aviation Authority of Malaysia (CAAM) is to protect the interests of the aviation community and the public and to ensure the growth and development of the industry. In carrying this out, CAAM has issued an Enforcement Policy that provides clear guidelines for the application of the regulatory enforcement powers, as prescribed in the Civil Aviation Act 1969 [Act 3].

This Enforcement Policy shall serve as a guide and provide details to those in the aviation industry and the relevant individuals, parties and entities in respect of compliance to the existing

legislation and regulations. The main objective of this Enforcement Policy is to guide the aviation community in Malaysia in achieving an internationally recognized standard of aviation safety and recommended practices for the safety of air travel.

CAAM has the responsibility to regulate the civil aviation industry and be clear about when, why and how action has to be taken to ensure that the industry maintains a strict compliance to all regulations that protects public safety. Establishing a transparent and consistent approach to enforcement reinforces a fair organization which is what CAAM strive to be.





New Civil Aviation Directives

Listed below are the published CADs:

- CAD 1: Personnel Licensing (PEL)
- CAD 6 Part 1: Commercial Air Transport – Aeroplane (CAT)
- CAD 6 Part 2: General Aviation – Aeroplane (GA)
- CAD 6 Part 3: Helicopter Operations (HELI)
- CAD 7: Aircraft Nationality and Registration Marks
- CAD 8: Airworthiness of Aircraft
- CAD 19: Safety Management (SM)
- CAD 1002: Flying Clubs providing Instructional Flying (FC)
- CAD 1003: Flight Simulation Training Device (FSTD)
- CAD 1004: Medical Requirements (MED)
- CAD 1007: English Language Proficiency Testing (ELPT)
- CAD 1011: Approved Training Organisation (ATO)
- CAD 1901: Flight Time Limitations (FTL)
- CAD 6004: Issuance and Renewal Requirements for Air Operator Certificate (AOC)
- CAD 6009: Cabin Crew (CC)
- CAD 6010: Ground Handling (GH)
- CAD 6014: Aircraft Leasing (LEASE)
- CAD 7101: Aircraft Registration
- CAD 7301: Aircraft Mortgage

CAAM is responsible for developing and promulgating appropriate, clear and concise aviation safety standards in line with the Malaysian Civil Aviation Regulations 2016 (MCAIR 2016). Safety regulations are an important tool used by CAAM to control safety risks. CAAM has published the first batch of Civil Aviation Directives (CAD), effective 1st April 2021, as a provision of adequate regulations to address the national requirements emanating from the primary aviation legislation and providing for standardised operational procedures, equipment and infrastructures including safety management and training systems, in conformance with the Standards and Recommended Practices (SRPs) contained in the ICAO Annexes to the Convention on International Civil Aviation.

Online Application Through Business Licensing Electronic Support System (BLESS) for CAAM Dangerous Goods Permit

The Civil Aviation Authority of Malaysia (CAAM) prioritise the importance of providing a positive experience to all valued stakeholders. CAAM is continuously seeking to enhance its services and is committed to deliver reliable and consistently high quality service. Starting 2021, as part of CAAM's road to digital transformation, all applications for Dangerous Goods Permit can be done via online through Business Licensing Electronic Support System (BLESS) by visiting www.bless.gov.my. The application includes approvals to carry dangerous goods through air transport for Class 1- explosives, Class 7- radioactivity and weapons and firearm spare parts.

BLESS is a one stop online service center for information

gathering and online applications for business-related licenses, approvals and permits in Malaysia. It is a platform used by Government Ministries and Agencies to process and approve any applications and allows merchants and investors to track the status of their applications. Apart from that, BLESS establishes information repositories for the purpose of analysis, monitoring, planning and improvement of licensing services.





By **Captain Chester Voo**

**MALAYSIA'S
CIVIL AVIATION INDUSTRY**

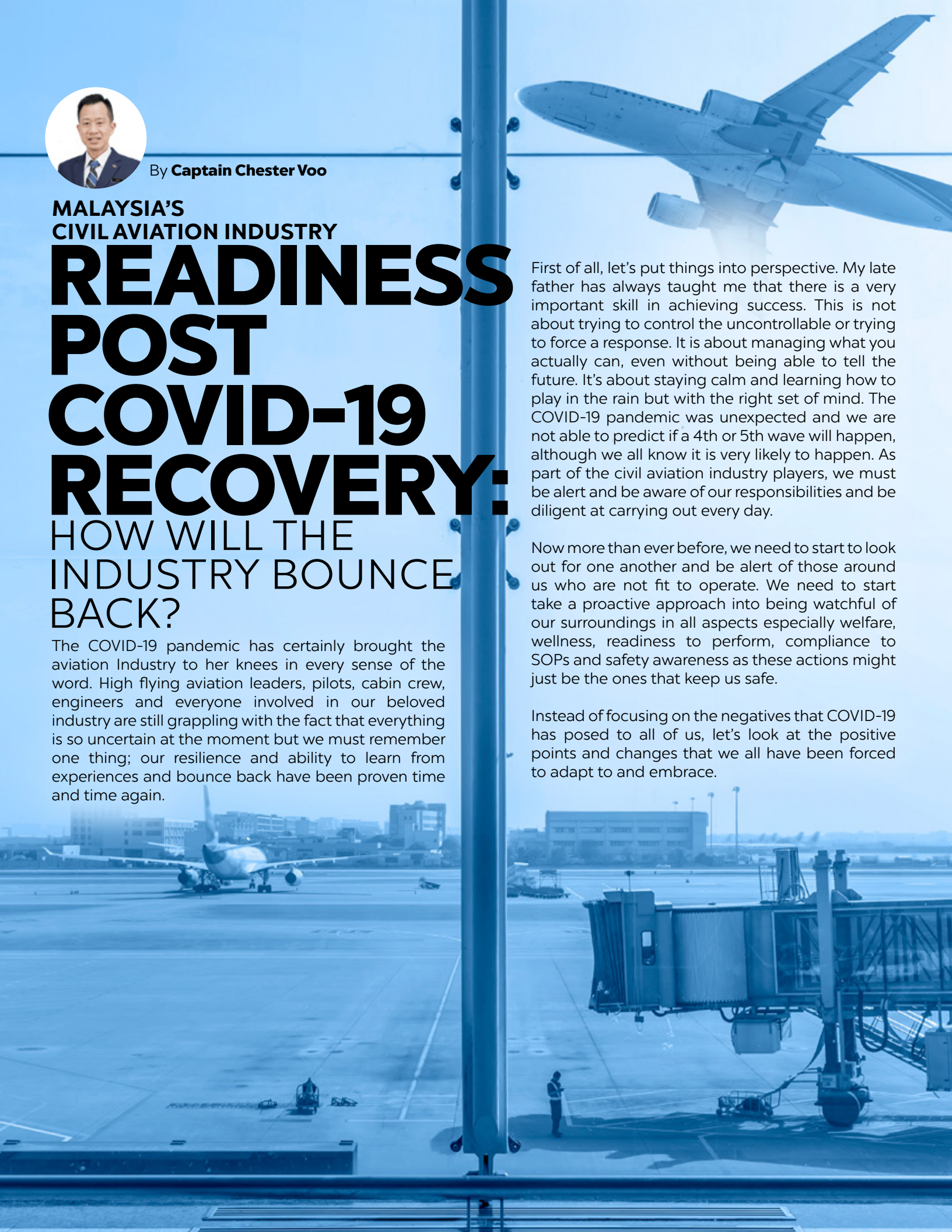
READINESS POST COVID-19 RECOVERY: HOW WILL THE INDUSTRY BOUNCE BACK?

The COVID-19 pandemic has certainly brought the aviation industry to her knees in every sense of the word. High flying aviation leaders, pilots, cabin crew, engineers and everyone involved in our beloved industry are still grappling with the fact that everything is so uncertain at the moment but we must remember one thing; our resilience and ability to learn from experiences and bounce back have been proven time and time again.

First of all, let's put things into perspective. My late father has always taught me that there is a very important skill in achieving success. This is not about trying to control the uncontrollable or trying to force a response. It is about managing what you actually can, even without being able to tell the future. It's about staying calm and learning how to play in the rain but with the right set of mind. The COVID-19 pandemic was unexpected and we are not able to predict if a 4th or 5th wave will happen, although we all know it is very likely to happen. As part of the civil aviation industry players, we must be alert and be aware of our responsibilities and be diligent at carrying out every day.

Now more than ever before, we need to start to look out for one another and be alert of those around us who are not fit to operate. We need to start take a proactive approach into being watchful of our surroundings in all aspects especially welfare, wellness, readiness to perform, compliance to SOPs and safety awareness as these actions might just be the ones that keep us safe.

Instead of focusing on the negatives that COVID-19 has posed to all of us, let's look at the positive points and changes that we all have been forced to adapt to and embrace.



SANITISATION: The airports, aircrafts and our surroundings are definitely cleaner. Look at how meticulously airports and aircraft are cleaned now. Operators and airlines have spared no effort in the cleaning process to ensure that not only COVID-19 is defeated but other viruses and bacteria as well - this is definitely a plus point. Also, just take note at the amount of times that all of us sanitise or wash our hands nowadays, all for a clear community.

AWARENESS: Our sense of awareness has definitely increased. We instantly react to the slightest cough or sneeze around us with a cautious quick physical distancing from each other. Yes, this has changed all of us but we all agree that this has heightened awareness as we are now keeping ourselves and our loved ones safer than ever.

CONTACT TRACING: Apart from easing the health authorities' contact tracing process in the event of an outbreak, we all have adapted very nicely by being in the know of where our loved ones are. We now inform our loved ones on our whereabouts more often. This is definitely a plus point as well as after all, loving is about being aware of our loved ones' location if anything untoward might happen.

TEMPERATURE SCREENING: Have you noticed how many times we actually check our temperature daily? This is simply amazing as we have become so aware of our temperature not only when we feel unwell. We have our temperature checked so often that we are almost tuned to be early detectors of any possible sign of fever and this is definitely positive in our bid to be a loving and caring community.

With all being said, the questions posted to me was, how ready are we and how will we bounce back as an industry. It is like this, there will always be infections and some viruses around us - that's a fact of life. But how we deal with this problem with

clear logical sense and resilience will make all the difference. Our airports, airlines and hotels have won more stars than ever in COVID-19 readiness and adherence to SOPs, among the best in the world, in



fact. Our health authorities have done an amazing job by providing care and guidance to nurture us to a healthier and cleaner culture. Our Government has spared no efforts in providing and caring for the nation, every step of the way. As for our beloved heroes and frontliners, we salute you and we are grateful for you. Our endless prayers are dedicated for your continuous safety, wellbeing, comfort and health.

Now back to the question.

Are we ready to restart?

Definitely YES.

How will the industry bounce back?

In the biggest possible way ever but this time with lots of safety awareness, consciousness and most importantly with true love and care for each other.

What's the most important thing here?

For everything that has been said, always remember this, DO NOT UNDERESTIMATE the dangers of the COVID-19 pandemic and infection. Do not let your guard down and always play an active role in keeping our loved ones, the people around us and ourselves, safe from the virus. Be a responsible citizen.



By **Staff Writers**
(**Captain Ahmad Hisham Tajuddin**)

SAFETY, HUMAN FACTORS AND HELICOPTER

Generally, helicopters are different from airplanes. An airplane by its nature wants to fly and, if not interfered too strongly by unusual events or by a deliberately incompetent pilot, it will fly. A helicopter does not want to fly. It is maintained in the air by a variety of forces and controls working in opposition to each other, and if there is any disturbance in the delicate balance, the helicopter stops flying, immediately and disastrously. There is no such thing as a gliding helicopter.

This is what distinct a helicopter pilot from an airplane pilot and why in general, airplane pilots are open, clear-eyed, buoyant extroverts, and helicopter pilots are brooders, introspective anticipators of trouble. They know if anything bad has not happened, it is about to.

Leaving aside the pedantic question of whether autorotation is a glide or a controlled fall, the real question is, are there really unique helicopter human factors? And if so, what are they?

Human factors is a broad term that can mean anything from aeromedicine to how people inside and even outside of the cockpit interact. ICAO uses the SHEL (software, hardware, environment

and liveware) model to represent the various components of the human factors' pantheon. This can be expanded to SCHELL - software, culture, hardware, environment, liveware: individual human, and liveware: between humans.

Software is the rules, procedures, checklists, written documents, operating manuals and standard operating procedures (SOPs) that support flying operations. Some of this is regulated whilst some is a preferred or best way of achieving the flying. Helicopter operations are regulated by the Civil Aviation Authority of Malaysia (CAAM) and helicopter companies are required to have operating manuals etc. Are there any real fundamental differences between helicopter and fixed wing software issues? There shouldn't be.

Culture includes norms, customs, practices, conventions and habits that occur beyond SOPs and regulation. A working definition is 'the way we do things around here'. It is often what occurs to get the job done when under perceived pressure. Culture may be specific to the actual flying but could also be what you experience in the crew room. A poor culture seen in the crew

“Hardware is the physical elements of the system such as the helicopter itself, the tactile interfaces, displays, or cockpit layout.”

room or socially could indicate a poor flying culture. Poor culture will often develop with substandard leadership and supervision, and can lead to deviation from software including violations. A culture not conducive to safe flying operations may be imported from other groups that the pilot operates with. The helicopter mustering industry has seen poor culture in the past. In this case, the issues may also be structural: pilots are often away from supervision for long periods of time working with people who have a different culture. Similar cultural interaction may be found in fixed wing firebombing operations or remote fixed wing charter operations. The young mustering helicopter pilot may have to be more aware of the influence of culture than their peer fixed wing charter pilot. This is difficult because culture, by definition, is something that surrounds you 24/7. Its continuous presence can make it hard to notice.

Hardware is the physical elements of the system such as the helicopter itself, the tactile interfaces, displays, or cockpit layout. The hardware may be a simple helicopter such as an R22 with direct mechanical controls or it could be a large helicopter with hydraulic boosted controls, a stability system and an autopilot. Large helicopter flight control system complexity can exceed that found on airliners. The displays could be simple conventional round dials or large flat panel displays. In external load helicopters the critical engine instruments may be replicated below the side window to allow the pilot to monitor the load without having to look away to check engine performance. Night vision devices (NVD) and forward-looking infrared (FLIR) are widely used by helicopters in rescue and emergency services. NVDs in the civilian aircraft industry are much more prevalent in helicopters than fixed wing aircraft.



Environment consists of the internal cockpit with temperature, humidity, noise and vibration as well as the external cockpit with things like weather, sun, moon, terrain and landing areas. Helicopters operate at lower altitudes and not all cockpits are air-conditioned, so heat may be an issue. Helicopters can operate with the doors off for better visibility and this can mean that wind chill can become a factor. Helicopters are often noisy and experience more vibrations than a fixed wing aircraft. The advantage of a helicopter is its ability to hover and land vertically and this means that they operate close to terrain and often in unsurveyed landing areas. The low-level environment and unprepared vertical landing areas are unique to helicopter flight compared to fixed wing aircraft. These unprepared landing areas are often not surveyed, may contain obstacles and can, without warning, have reduced visibility from a brown out of blown dust—or a white-out of snow.

Liveware: individual human considers the limitations of the individual such as fatigue, ability or stressors. Many of the aeromedical disorientation and illusions experienced in fixed wing are applicable to helicopters. One that is specific to helicopters is flicker vertigo where light coming through the rotor blades creates a strobe effect. This strobe effect can cause disorientation, vertigo and nausea and in the 1950s was investigated in several helicopter accidents. In extreme cases flicker vertigo can induce seizures in susceptible people. Looking away from the light source or repositioning the helicopter so the sun isn't shining through the blades and into the cockpit may be required. The use of National Vulnerability Database (NVD) hardware introduces another set of aeromedical limitations including increased fatigue, unique optical illusions and degraded visual environments.

Liveware: between humans considers the interaction between people and is often covered by Crew Resource Management (CRM). It also includes humans external to the aircraft including Air Traffic Controller or support staff. At first consideration this does not sound overly different from fixed wing aircraft. However, not many fixed wing aircraft rely on non-pilot crew to provide clearance from obstacles in an unprepared landing zone. Mustering helicopters interact with musters on the ground and firebombing helicopters may be coordinated from other aircraft or firefighters on the ground. In the low-level helicopter environment, there may be a unique set of liveware interaction required between individuals to complete the task safely.

“Liveware: individual human considers the limitations of the individual such as fatigue, ability or stressors. Many of the aeromedical disorientation and illusions experienced in fixed wing are applicable to helicopters.”



REGISTERING YOUR AIRCRAFT IN MALAYSIA

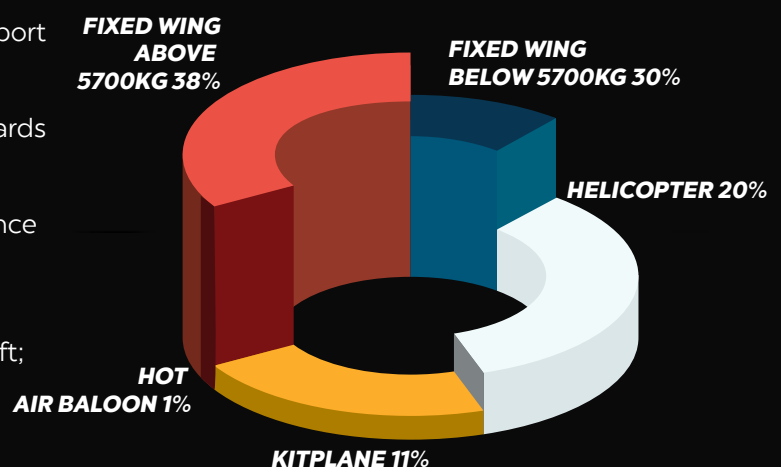
By **Adzlim Sam**

Effective 1st of April 2021, the new Aircraft Registration Requirement is stated in the Malaysian Civil Aviation Directive (CAD) 7101 with the main purpose to regulate the registration of aircraft in Malaysia.

Some of the main advantages of registering aircraft in the Malaysian jurisdiction are:

- Local availability of a wide range of airline services (aircraft and engine maintenance, repair and overhaul, aircraft management, aircraft maintenance training and other ancillary support services);
- Robust legislative framework and high standards of safety oversight;
- Encouragement of the development of finance and operating leases of aircraft;
- The registration of aircraft mortgages and transparency of rights and interests in aircraft; and

- Implement the provisions of the Cape Town Convention on International Interests in Mobile Equipment and its Aircraft Protocol thereby granting secured lenders a higher degree of protection.



The Current Aircraft Registry Breakdown as of March 2021



MAINTENANCE ORGANISATION

By **Adzlim Sam**

Regulatory oversight is one of the core activities under the Airworthiness Division in Civil Aviation Authority of Malaysia (CAAM). Airworthiness Inspectors are required to perform audit and surveillance onto aircraft and organisation approved by CAAM. One of the organisations required to be oversight is Approved Maintenance Organisation (AMO). The oversight is performed to ensure AMO complies to the requirement of CAAM under the Airworthiness Notice 6501 – Maintenance Organisation Approval (CAAM Part 145).

Recently, CAAM Part 145 was amended in line with the development of technology. The requirement allows the local AMO to maintain an aircraft which is not type accepted by CAAM for as long as the AMO complies with the requirement. This provides some relieve to our local AMO and encourage them to be more competitive in championing the activity in this region.

CERTIFICATION OF AERODROMES IN MALAYSIA

By **Dr Zainul Fuad Md Wahid**



The responsibility for ensuring safety, regularity and efficiency of aircraft operations at aerodromes rests with contracting states to the Convention on International Civil Aviation. Contracting states are obliged to observe Articles 28 and 37 of the Convention and shall ensure aerodromes and aerodrome facilities, infrastructures and services provided are consistent with standards and recommended practices developed by ICAO. Certification of aerodromes is recognized as the most effective and transparent means of ensuring compliance with applicable safety specifications on aerodromes.

A program for certifying aerodromes was launched in 2003. The first certified aerodrome is K.L. International Airport on 11 May 2004. Since then, other international airports at Penang, Kota Kinabalu, Kuching, Langkawi and Senai, and domestic airports that accommodate international civil aviation operations have been certified. The certification requirements are also extended to aerodromes open for public use including Stolports.

The Aerodrome Standards Directive 103 prescribes the rules governing the certification of aerodromes, and provides guidance to aerodrome inspectors and aerodrome operators on the processes to be assumed in the certification of an aerodrome, subsequent compliance monitoring and enforcement of obligations. The certification

processes ensure that certificate of aerodrome is issued in a consistent manner.

An aerodrome certificate is granted when aerodrome satisfactorily conforms with standards and recommended practices contained in ICAO Annex 14 and Aerodrome Standards Directives, and that the aerodrome will offer a safe environment for the operation of the aircrafts that it is intended for and that the aerodrome operator has the necessary competence and experience to operate and maintain the aerodrome.

The grant of an aerodrome certificate obliges the aerodrome operator to ensure the safety, regularity and efficiency of operations at the aerodrome. Adequate number of qualified and skilled personnel are essential to perform critical activities for aerodrome operations and maintenance. A safety management system for the aerodrome is compulsory, describing the structure of the organization and the duties, powers and the responsibilities of the personnel in the organizational structure, with a view to ensuring that operations are carried out in a demonstrably controlled way and are improved where necessary.

Civil Aviation Authority of Malaysia conducts regular audits, including unannounced and non-scheduled, for the purpose of continuous safety oversight and to ensure that certified aerodromes continuously comply and conform to safety standards.

SNEAK PEEK INTO THE FUTURE OF CAAM E-LICENSING

By **Captain Johan Md Rosnan**



To improve licensing standards, the Civil Aviation Authority of Malaysia (CAAM) is now in the midst of embarking into a new e-licensing system by modernising the license application process with the use of automated workflows to control each stage of the approval process. This system, among other modules, will include Flight Crew Licensing, Aircraft Maintenance Personnel, Air Navigation Services Personnel and Medical Examination processes into an integrated system.

With the E-licensing system, CAAM aims to achieve the following benefits:

- Improve applicants experience by making it easier to determine if they are ready to apply for their licence.
 - Enhance security by allowing all information to be stored electronically and tracking all access to the information.
 - Improve the stakeholders' services and user benefits in terms of licensing and examinations.
 - Improve the quality and integrity of licence information thereby enabling CAAM to promote national pilot and aircraft maintenance licensing standards.
 - Provide enhanced oversight control of licensing applications, especially through high quality reporting function.
 - Revise business processes that can increase efficiency by placing the responsibility on the applicant to provide the correct licensing information before the application can be submitted for CAAM's approval.
- Structured automated workflows for all licence types that ensure CAAM application processes are controlled and complied with.
 - Auditing capability to ensure licence applications fully comply with the regulatory requirements.
 - Performance monitoring of the application process with visual progress results presented on a licensing dashboard.
 - Secure electronic storage of all licensing records to allow access to information by CAAM staff.
 - Complete traceability of all electronic records and their access by CAAM staff.
 - Cost reduction from the efficient licence processing and the removal of hard copy storage.
 - Implement a high quality, cost effective, sustainable and affordable licensing solution.

Above all, think about the amount of trees that we could possibly save by going paperless. According to data from the Global Forest Resource Assessment roughly 80,000 to 160,000 trees are cut down each day around the world with a significant percentage being used in the paper industry. It's time to go green with CAAM e-licensing. Stay informed on AWAN for more awesome updates on the CAAM e-licensing project and more!



THE NEW KUALA LUMPUR AIR TRAFFIC CONTROL CENTRE

THE NATION'S PRIDE

Designed after a local traditional kite or wau and infused with a modern twist, the new Kuala Lumpur Air Traffic Control Centre (KLATCC) is set to be another important milestone in the country's civil aviation industry. Located near Kuala Lumpur International Airport (KLIA), Sepang, this new state of the art facility is set to replace the current 25-year-old KLATCC located in Subang, Selangor and will commence operation in June 2021.

The implementation of the new KLATCC project includes the construction of a three-storey KL ATCC complex with modern technology and will house the newly improved air traffic control operations for the Kuala Lumpur Flight Information Region (KL FIR). The ultramodern facility houses the En-Route and Approach Units together with the Aeronautical Search and Rescue (SAR) Coordination Centre and is expected to be able to accommodate operations for the next 20 to 25 years.

IMPLEMENTATION OF THE NEW KLATCC PROJECT

The new KLATCC will provide more efficient and seamless Air Traffic Management (ATM). Based on International Civil Aviation Organization (ICAO)

Global Air Navigation Plan (GANP), the new KLATCC is set to achieve the following objectives:

- Increase the level of flight safety through the reduction of radio congestion and reduce workload for the air traffic controllers;
- Increase flight efficiency and reduction in flight delays;
- Increase the capacity of airspace and aircraft movement at KLIA;
- Achieve the targets of ICAO GANP 2016-2030.



I. Introduction of satellite-based surveillance system namely Augmented Dependent Surveillance-Broadcast (ADS-B) which is capable of replacing the Secondary Radar system;

II. Introduction of satellite-based navigation system, Ground-Base Augmentation System (GBAS); and

III. The latest ATM systems that are able to interact and integrate digitally with ATM systems of neighboring countries which further reduce verbal interaction.

5. Improvement of Search and Rescue (SAR) operating facilities in the country through:

I. Transfer of Rescue Coordination Center (RCC) from KLATCC Subang to the new KLATCC Complex at KLIA, complete with COSPAS-SARSAT satellite based system.

II. Introduction of several new rescue sub centre in Kuala Terengganu, Miri and Tawau;

III. Improvement of facilities in RCC Kota Kinabalu and RSC Kuching.

6. Placement of Airways Clearance Delivery (ACD) operations at the KLIA Air Traffic Control Tower;

7. Going paperless with the introduction of a digital operation of air traffic control centers.

i) Provision of support for ATM system (business continuity) that can accommodate the capacity of the main system.

With state of the art technology, the new KLATCC can handle more aircraft movements per hour using three runways at KLIA simultaneously. This will provide lucrative returns to the country through the expansion of the aviation industry. The new KLATCC Complex will definitely enhance Malaysia's competitiveness in the aviation industry by raising the availability and connectivity of the country's air transport industry.

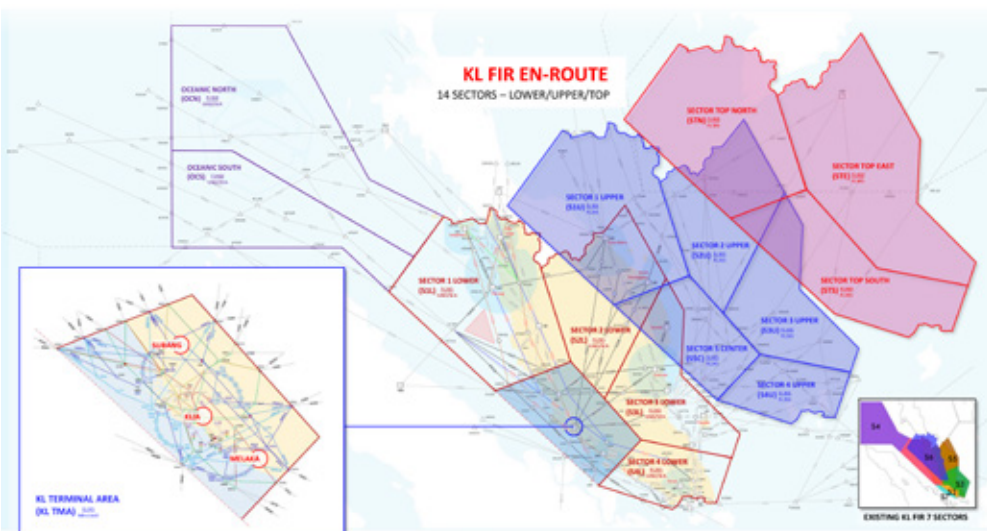
These objectives are expected to be achieved through the new KLATCC project outputs which have been set as follows:

1. Restructuring of Area Control (En-route) of air traffic services sector from the existing 7 sectors to 14 Sectors.

2. Introduction to the airspace operation of Performance Base Navigation (PBN) which is guided by satellite-based airway direction.

3. Introduction of new KL Terminal Area (KL TMA) airspace to enable the operation of Triple Simultaneous Independent Departures/Approaches at KLIA. This concept can increase the capacity of the KLIA runway from 78 to 108 movements per hour;

4. Achievement of Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) system development in Aviation System Block Upgrade (ASBU) which is in line with ICAO's plan in GANP.

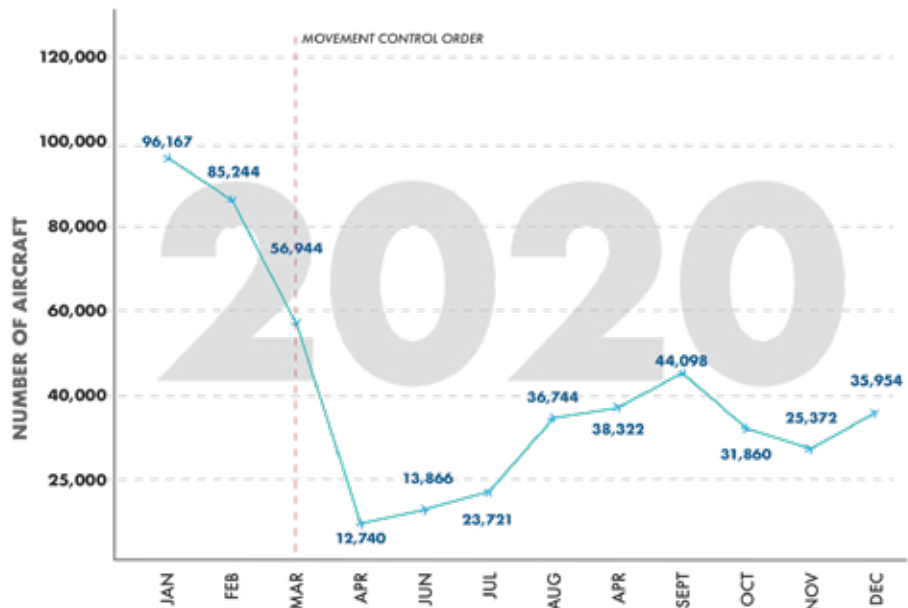
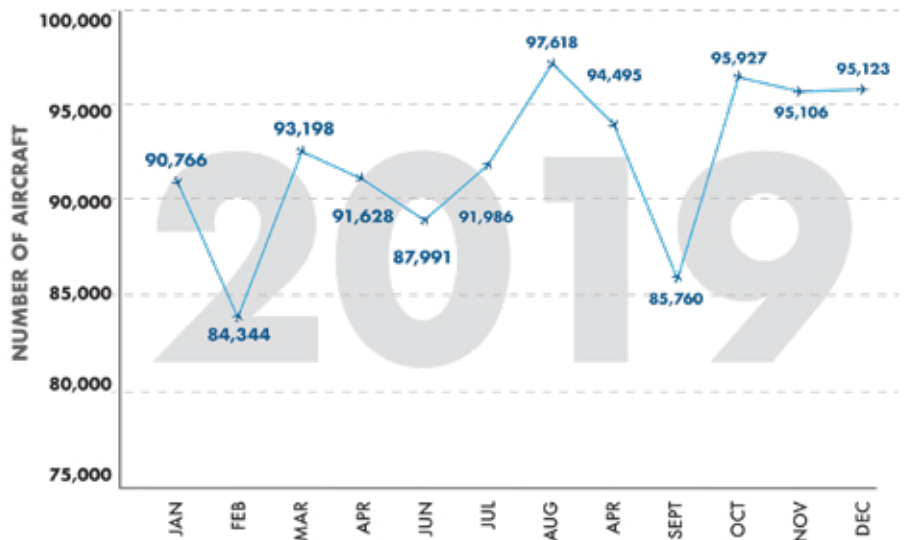


Aircraft Movements

AT ALL MALAYSIA AIRPORTS

At the height of the aviation industry in 2019, Malaysia reported a total of 1,103,942 aircraft movements from 6 international airports and 22 domestic airports in Malaysia. The aviation market is expected to grow significantly in the coming years, however, following the outbreak of COVID-19 pandemic and the Movement Control Order (MCO) imposed by the Government of Malaysia in March 2020, the aviation industry suffered a massive 55% decline in aircraft movements which brought a total of only 501,072 for the year 2020. The lowest aircraft movement registered was in April 2020 at only 12,740, which brought an 86% decrease as compared to the movements in April 2019. The decrease continued until end of the year due to the resurgence of COVID-19 cases and interstate travel ban and international border closure.

With the arrival of vaccine and the National Immunisation Program in 2021, the number of aircraft movement are expected to increase in 2022. To promote the sustainability of the aviation industry, various Government policies have been in place to assist and support the local industry players. The success of this effort relies on the compliance to SOPs and the support towards the national vaccination drive from all Malaysians. With this in place, the country's aviation industry is hoped to recover and return to its glory days.



A bird strike - sometimes called bird ingestion (for an engine) or bird hit is defined as a collision between a bird and an aircraft which is in light or on a take-off or landing roll. A number of factors had been identified as contributory to this rise such as: our area of operations, aquaculture and horticulture activities in the vicinity of the airport, diurnal and migratory behaviour of birds, as well as daily and seasonal variations. Kuala Lumpur International Airport (KLIA) for instance, has seen a considerable increase in the number of reported bird strike incidents between 2009 and 2013 involving some 57 species of birds. A study conducted by University Putra Malaysia (UPM) shows that bird activities in the vicinity of the airport were highest at 0930am and 1730pm, while seasonally, more birds were observed between March and April.

Various efforts were undertaken by both international and local agencies to monitor and reduce the number of this potentially catastrophic occurrence. These include, seeking technical expertise from ornithologist and wildlife department to disperse or remove birds that pose risks to aviation safety; engagement with local municipalities and airport operators in the habitat management within and outside the airport boundaries (e.g. vegetation and fruit tree plantations,

location of ponds, landfills or any other source that might attract birds); and other bird strike prevention methods.

An effective bird strike control program requires accurate and reliable reporting. Flight crew are therefore tasked with the responsibility of reporting every confirmed bird strike incident, including suspected strikes or sighting of potential bird strike hazards along the flight path immediately to the Air Traffic Controller. Technical Log entry (Aircraft Journey Log, AJL) and Air Safety Report (ASIR) must also be carried out appropriately. Information such as location of strike, altitude, time, approximate size and number of birds should be elaborated in the report to facilitate a more effective analysis. During external checks, it is essential that any evidence of birds strike on the aircraft surface should be reported accordingly. Recording and reporting of bird strike events are required as per ICAO Annex 14 wildlife strike hazard reduction recommendations. As part of bird strike mitigation plan in KLIA, airlines and other operators including CAAM has formed KLIA Wildlife Hazard Management Committee that is in line with the Runway Safety Team (RST) effort. Some on going wildlife preventive activities are as follows:

By **Captain Johan Md Rosnan**

BIRD STRIKES AGAIN!



“Whether on land or in the air, safety should be practiced everywhere”

- Wildlife Monitoring Unit by Airside Services Department as required by ICAO as per IBSC.

- Management of Waste Disposal – usage of covered waste bin by all committee members

- Risk Based Analysis – Obtaining Risk Level by comparing the mean weight of bird struck against the safety rate as required by ASM, Wildlife Control & Reduction 4th Edition 2012

- Installation of recycle CDs at perimeter fencing – to distract bird from perching

- DNA Analysis by Wildlife Department – assist by sending bird parts/pieces for species identification

- Desilting of balancing ponds and drainage around KLIA

- Installation of windmill spinner at Perimeter Road 2

- Simultaneous Trees Pruning trees in KLIA at targeted area

Other efforts in discussion are:

- To send out a Notice to Airmen (NOTAM) – pilot to switch on weather radar on landing and departure.

- Shooting of birds by Wildlife Department if the condition is critical.

- Installation of Stripe Curtain at rubbish chute at klia2.

- Engage the Department of Wildlife and National Parks Peninsular Malaysia (PERHILITAN) to conduct bird study and come out with ways to mitigate local and migratory birds at KLIA.

References: -Boeing Aeromagazine, Strategies for Prevention of Bird Strike - The Telegraph UK, How Common Are Bird Strikes - MAHB KLIA, Wildlife Strike Prevention & Mitigation Plan – ICAO ANNEX 14, Standards and Aerodrome Certification.



AT A GLANCE

At what altitude are aircraft safe from birds?

The vast majority of bird strike incidents take place during take-off and landing phases – so fairly near the ground, although birds have been occasionally hit at higher altitudes.

What happens when a bird flies into a plane engine?

The energy within the engine generally disintegrates the bird. There can, in serious incident be extensive damage to the engine. After a bird strike, or possible bird strike the engine will be checked for evidence of bird debris, and if debris found a series of further checks will be carried out.

Can it be dangerous?

A single bird is rarely dangerous, but multiple bird strikes – or hitting large birds such as Canada Geese - can and has caused serious accidents.

Are certain aircraft more likely to get hit than others?

Any aircraft that flies low and fast is at risk of a bird strike.

How often do bird strikes cause accidents?

Not very often. According to the Federal Aviation Administration (FAA), between 1990 and 2013, there were 25 human fatalities attributed to wildlife strikes with US civil aircraft. In the same period there were 279 recorded injuries.





By **Khairana Rahman**

A DAY IN THE LIFE OF AN **AIR TRAFFIC CONTROLLER**

Ever wondered who are Air Traffic Controllers (ATC) and what they do? Many times we are mistaken to be the fine folks on the tarmac in neon yellow vest jackets waving bats or signal wands around to guide aircraft into their parking gates who are actually called the aircraft marshalls. Some ATCs are a little like Rapunzel, in which, we are based in control towers. But instead of staring out the window pining for a prince, we stare outside the tower's glass windows for visual contact with aircrafts. Whilst some ATCs are pretty much like Belle in Beauty and the Beast where she's locked up in a big castle serving the beast, but for some others, we scan for planes on our radar screen and provide instructions and informations for a safe flight to pilots and

I have been an ATC for 13 years and one of my fondest memories throughout my career was when I was 11-months into the job, while still being a trainee ATC, I observed a 7600 transponder code pop-up on the radar screen



point of departure, intended altitude, destination, registration number, type, color, and physical attributes of the aircraft, equipments on board the aircraft and other related information for Search & Rescue purposes.

Upon boarding and as soon as the aircraft door had been secured, the pilot will request for ATC clearance from the Airways Clearance Delivery (ACD). ATC clearance is vital as it is an authorisation that allows the aircraft to proceed to her destination in accordance to the submitted flight plan. Upon receiving the ATC clearance, only then the pilot can request for a start up clearance from ground controller. Pilots are not authorised to move an inch until the ground controller gives the green light. After start up, upon the request from the pilot, they would be given taxiing instructions. Taxi is an aviation term which means moving from one point to another point on ground within an airport. In this context, it is the movement of an aircraft from the terminal building to the holding point of a runway.

Once the aircraft reaches the holding point, the ground controller shall request the pilot to contact the Tower Controller or Aerodrome Controller who will then instruct the pilot to enter the runway and issue a take-off clearance for her departure. Once airborne, the tower controller will transfer the aircraft to a Departure Controller for further ascension in altitude. Departure Controllers are stationed at the Kuala Lumpur Air Traffic Control Centre (KL ATCC). Departure Controllers will manage the aircraft until they achieve a certain altitude and the aircraft will be subsequently handed over to an En-Route Controller which is also stationed at KL ATCC. The En-Route Controller will manage the flight until she achieves her cruising altitude to when the aircraft is ready to descend. Should the flight be proceeding to a destination outside Malaysia, the En-Route Controller shall then transfer the control of the aircraft to our counterpart in the adjacent country.

most importantly, we provide clearance to aircrafts for landing, take-off or during the transitions into Malaysian airspace.

"How do you ensure that the airspace remains safe and uneventful at all times?" some might ask. Allow me to illustrate with an example of an aircraft flying from KLIA to Senai International Airport, Johor Bharu

As soon as you board a plane, the airline or operator are required to submit a flight plan prior to the flight. What is a flight plan? It is a written statement providing details of an intended flight which includes the

The next transfer would be to the Approach Arrival Controller or known as Approach Controllers who manage the aircraft through their descend until they are established on final approach to land. The aircraft would then be then transferred to the Tower Controller for the issuance of a landing clearance and once landed, the Tower Controller would finally transfer the aircraft to the Ground Controller who will once again provide the taxiing instructions on ground until the aircraft reaches her parking gate at the terminal building.

Who am I?

I started my career as an ATC back in 2008 after completing a 12 weeks primary course, followed by Aerodrome and Approach Non-Radar course at the Malaysia Aviation Academy (MAVA). Upon graduating, I was assigned to Subang Airport Tower where I had to undergo on-the-job (OJT) training for three months in order to obtain my tower rating. After passing the OJT training, only then was I issued with an ATC license and was allowed to perform solo duties as a Tower Controller. Not long after that, I was transferred to KLATCC in 2014 where I was assigned as a Flight Data Processor (FDP), ACD and Flight Information Services (FIS). I was also assigned to be an instructor to teach the newcomers. Currently, I am attached to Search and Rescue (SAR) Unit at the Air Traffic Management Division, CAAM Headquarters in Putrajaya where I am responsible to assist in the implementation of CAAM's SAR policy and operational activities as well as manage CAAM's distress beacon registration.

I have been an ATC for 13 years and one of my fondest memories throughout my career was when I was 11-months into the job, while still being a trainee ATC, I observed a 7600 transponder code pop-up on the radar screen and that's when I realised my arrival aircraft on downwind was experiencing a radio communication failure. Being an ATC, it is critical to be able to think on your feet. So, I cleared all my circuit and arriving traffic and requested the Approach Controller to hold the arriving aircraft on final approach to allow the aircraft to

land. Fortunately, the aircraft landed safely without any untoward problems. Days later, during my check, the pilot-in-command came up to the tower to thank me. My check officers, on hearing how I had managed an emergency situation in a calm manner days earlier, took that into consideration in their evaluation and agreed to endorse my Aerodrome Control rating. This gesture by the pilot and it's subsequent consequences remain a fond memory that I deeply treasure.

What does it take to be an Air Traffic Controller?

Among the most important qualities that an Air Traffic Controller needs to have are:

Concentration: As an ATC you'll need to be able to remain focused for a long period of time in a highly demanding environment.

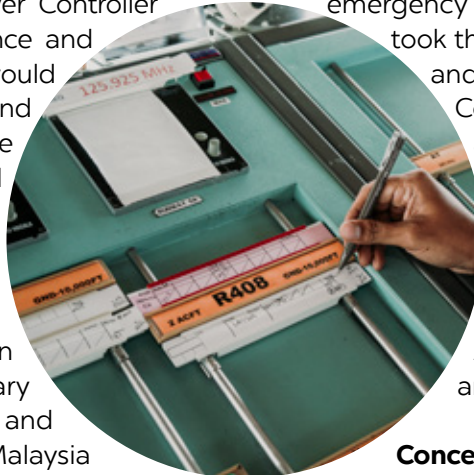
Decision making skills: There are times when I wish I was Dr. Strange and could go forward in time to view alternate options and foresee possible outcomes, alas, I am not. Life as an ATC can be extremely challenging as we deal with many different variables daily and it is our duty to resolve any issues and conflicts in a fraction of time.

Mathematical skills: ATC should be able to calculate distance, speed and time with ease and zero errors.

Last but not least, communication skills: As an ATC, you must be able to give clear and concise instructions. A good ATC should also be equipped with good listening skills.

If you have the qualities mentioned, then you are one step closer to being an ATC. As you are now aware, ATC is a very challenging job, but at the end of the day, what matters most is, you must have the passion for the aviation industry and most importantly, do you have the heart to care for thousands of people travelling within an airspace controlled by you?

Well... I do! I am Khairana Rahman and I am a proud aviator who serves the nation as an Air Traffic Controller.





THE ESTABLISHMENT OF CAAM

2006

In March 2006, the International Civil Aviation Organisation’s Director General of Civil Aviation Conference, held in Montreal, Canada, had called upon Contracting States to establish an autonomous civil aviation authority.

2007

On 4th October 2007, the Malaysian Aerospace Council Meeting chaired by the Prime Minister then, Tun Haji Abdullah bin Haji Ahmad Badawi, agreed that DCA is to be reorganized and upgraded to an autonomous civil aviation authority.

On 7th January 2007 – the Ministry of Transport Malaysia and DCA started work on the establishment of CAAM.

2016

On 26th August 2016, the Malaysian Cabinet agreed on the establishment of CAAM vide an Act of Parliament. the Parliament then passed the Civil Aviation Authority of Malaysia Act 2016, an Act to establish CAAM of which the primary function is to regulate the safety and security of civil aviation (presented before Dewan Rakyat on 23rd November 2016 and Dewan Negara on 21st December 2016).

2017

On 17th February 2017, royal assent by Kebawah Duli Yang Maha Mulia Seri Paduka Baginda Yang di-Pertuan Agong XV Sultan Muhammad V was obtained.

2018

On 19th February 2018, the establishment of CAAM came into force under the Civil Aviation Authority of Malaysia Act 2017 [Act 788]

NEW WEBSITE SAME MISSION



W W W . C A A M . G O V . M Y