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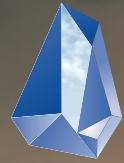
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A STRIKING LIVERY

Bell takes the front cover this month with their Autonomous Pod Transporter or APT. This 'drone' eVTOL has been described as a game changer. Read more about it on page 14. The checklist photo reveals the first-ever visit of a Condor Boeing 757-330 registered D-ABOI that flew into the Malta International Airport direct from Dusseldorf. Earlier in the year, the German leisure carrier revealed that the new identity was not only inspired by parasols but also by deckchairs. During the unveiling of the new identity in Toulouse, Condor remarked how the stripes were synonymous with vacation.

Photo credit to Mario Caruana / MAviO News.



WORLD AIRNEWS

- 03 Air Traffic Strike
- 04 Drones Enhancing Productivity
- 09 Dronamics Medical Drones
- 10 Drones GPS Jamming
- 14 eVTOL Game Changer
- 16 Rand Air Show
- 24 Flight Safety Group
- 26 Childrens FLight
- 27 African Aviation
- 29 Boeing Forecasts Demand
- 31 Nigeria Air Cargo Remain Stunted
- 34 Ethiopian Airlines Open Hotel
- 35 Air Safety Enhanced
- 36 Boeing Remarketing Max
- 38 Helicopters Savback Key Appointment
- 42 United & Emirates New Agreement
- 44 Sustainable Aviation
- 45 Vallair Acquires A321
- 46 Queen Elizabeth's last flight



16



08



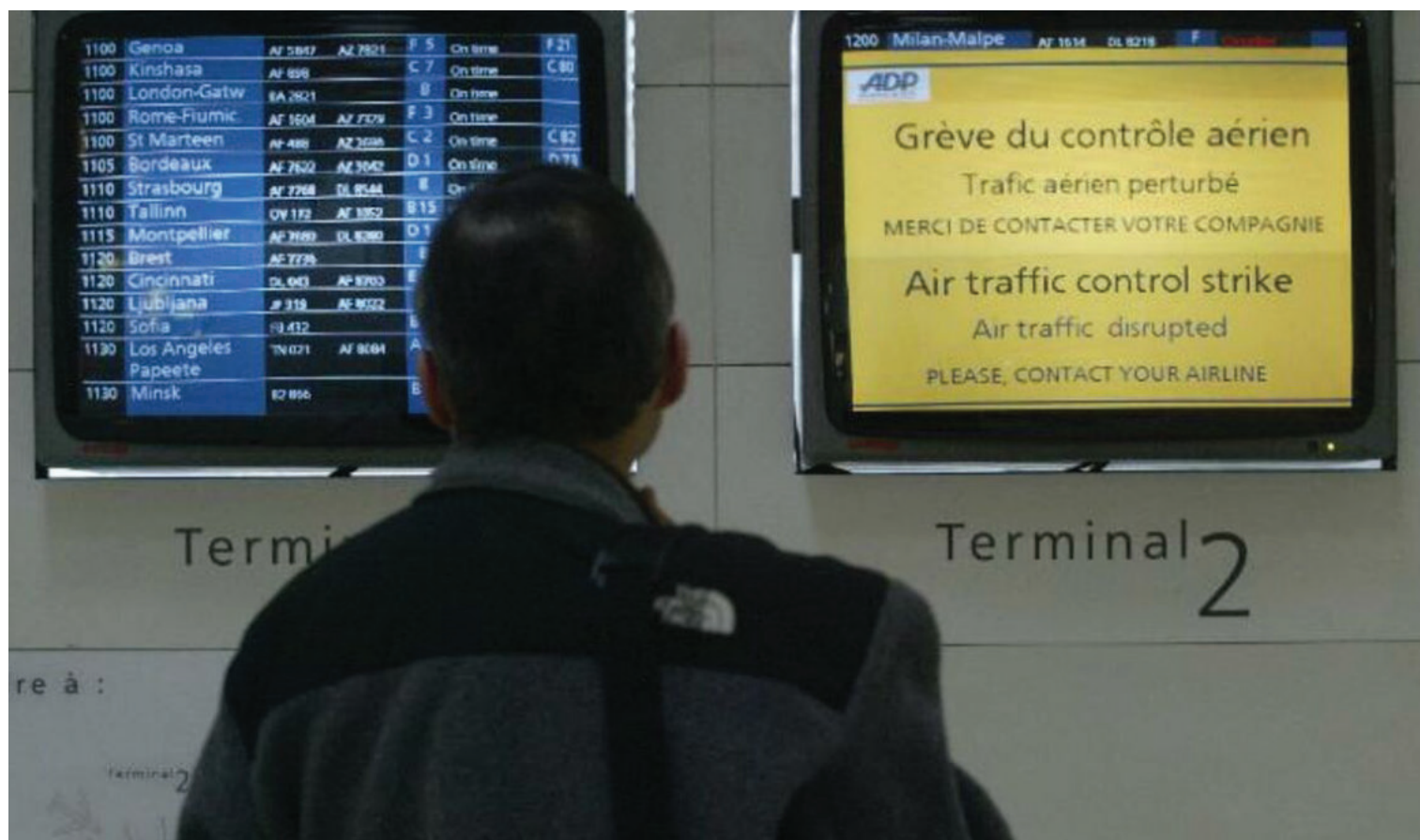
26



29

OFFICIAL JOURNAL OF:- Commercial Aviation Association of Southern Africa, The Airlines Association of South Africa, The Association of South African Aircraft Traders, Association of Training Organisations of South Africa, Aerodromes & Airports Association of South Africa, Association of Aviation Maintenance Organisations, South African Society of Aerospace & Environmental Medicine, Helicopter Association of Southern Africa, Aircraft Owners & Pilots' Associations of Southern Africa, Air side Operators, Association of South Africa, South African Aerial Applicators Association, East African Commercial Aviation Association, African Airline Association (AFRAA) Media Partner.

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AIR TRAFFIC CONTROLLERS STRIKE IN WEST AND CENTRAL AFRICA

A strike broke out late last month among French-speaking Air Traffic Controllers in West and Central Africa which could have had disastrous consequences if left unchecked.

When it started there were some 17 ASECNA African countries and about 716 air traffic controllers affected and it involved a non-political trade union or an association of air traffic controllers calling itself USYCAA.

The Agency for Aerial Navigation Safety in Africa and Madagascar or ASECNA is an air traffic control agency based in Dakar, Senegal that covers 18-member states organisation over a geographical area covering 16.1 million square kilometres of airspace.

Despite government bans in Togo, Chad, Central African Republic, Congo and Senegal the strike went ahead and there were reports of a heavy crack down by government. Some unconfirmed reports were received of arrests and furthermore the replacement of ATC with military and non-qualified staff.

“23 Sep Ops Alert: A very dangerous situation is developing today in the African ATC strike. Crews and operators should be aware that in a number of FIRs/ACCs/Towers, the normal controllers have been replaced earlier today with unqualified and unrated people. In simple terms, the voice on the radio is NOT an Air Traffic Controller.

“From local sources we understand that GOOO/Dakar Oceanic and domestic, DXXX/Lomé, and FKKD/Douala all have unlicensed staff that have taken over the facilities. In FCBB/Brazzaville and FMCX/FMCH/Comoros, controllers have been arrested. In Niger and Madagascar, controllers have been suspended,” according to <https://ops.group/blog/african-atc-strike-risk/>

According to a USYCAA statement while ceasing to guarantee air safety they would continue to operate in the case of humanitarian relief, medical evacuation, military and government flights as well as search and rescue.

The issues seem to stem from conditions of employment, qualifications, bonuses and the lack thereof and that their cries are falling on deaf ears. Assurances given by the president of Senegal and recently elected African Union chairperson Macky Sall have translated into a heavy-handed approach, including threats, arrests and in harsh and degraded working conditions.

Then before it appeared that all hell was about to break loose, the union suspended its actions and gave a 10-working day grace for discussion and negotiate. We hope that sanity and justice prevail and will be watching the story closely.

We understand ministers plan to meet in Dakar, Senegal on October 17 to address these grievances.

Meanwhile further afield, Israel took the adventurous step of banning aircraft with four engines. From March 31 2023 they will no longer be allowed to operate from the country's airports.

A potentially earth changing move that could herald a new swathe of other bans by individual countries that have felt that international agreements fail to meet environmental imperatives. Let's wait and see.

On a lighter note, World Airnews had a larger-than-life presence at the African Aerospace and Defence conference and exhibition at AB Waterkloof air force base. We thank 'the voice of southern African aviation' Brian Emmenis from Capital Sounds who provided visitors with constant reminders of our wonderful magazine over the airwaves.

For more on this event please turn to our inside pages.

DRONES – ENHANCING PRODUCTIVITY

World Airnews caught up with a South African company called **Precision Agricultural Systems or PacSys**, which has been at the forefront of research and technology aimed at refining the capabilities of drones to cope with the demands of crop spraying in a tough environment. We interviewed PacSys CEO Tim Wise.





PacSys CEO Tim Wise provides first-hand knowledge of the application of the DJI Agras T30 drone used for crop spraying

WAN: Can you tell your readers about the beginnings of PacSys? When and why did you start it? What were the challenges that brought you to where you are today?

TW: PACSys was established in 2016 by a group of neighbouring sugarcane farmers on the KwaZulu-Natal North Coast. Sugarcane, due to its density and the typically steep terrain in which it's grown (especially in KZN), is heavily reliant on the aerial application of pesticides. However, factors such as small, irregularly shaped fields, high coastal winds and the prevalence of powerlines and bush lines increase the risk of toxic pesticides drifting into neighbouring crops and even residential communities.

We started PACSys initially to improve the quality and safety of aerial spraying on our farms. We never anticipated the hugely positive response we'd get from the other crop sectors as well.

By far the greatest challenge in terms of market adoption was overcoming the regulatory hurdles. Aerial pesticide application in South Africa is strictly regulated by both the South African Civil Aviation Authority and the Department of Agriculture, Land Reform and Rural Development. And in 2017, when PACSys initiated the compliance process for drone spraying operations in South Africa, there was no precedent. It had never been done legally before. The process required extensive engagements with relevant authorities and stakeholders over a period of about two years before the approval of legal commercial drone crop spraying operations in September 2019.

WAN: What type of drone do you believe is the best suited for the different crops grown on the North Coast and elsewhere in the world? Can you elaborate on your relationship with DJI - going back to the beginning?

TW: After PACSys was established in 2016, I travelled to the USA, Australia and China to assess crop spraying drones/manufacturers that were emerging as front-runners in the space. One of my stops was DJI's headquarters in Shenzhen, China. Here, DJI demonstrated their first version of crop spraying drone, the Agras MG-1.

With limited payload and functionality, it wouldn't have been capable of effectively and economically competing with traditional aircraft on our farms. At the very least though, this initial meeting with DJI paved the way for an extremely productive R&D collaboration. Upon returning from my trip, I sent DJI a requirements document, detailing the functionality required to enable the drones to operate in our challenging KZN North Coast conditions. Not thinking I'd have any influence over a company of DJI's stature, I was surprised to

receive an invitation from them six months later to return and view their second version of the drone, the Agras MG-1S, which now incorporated much of the functionality I'd specified.

At the time of this invitation, PACSys had begun the process of developing our crop spraying drones. When I saw the extent of improvement between the MG-1 and MG-1S version drones, in a matter of only six months, it was very clear that we should instead negotiate a DJI Agriculture dealership. Fast forward five years and the latest DJI Agras T30 version drone is almost five times more efficient than the original MG series drones.

DJI is currently on an 18-month development cycle, releasing drones every 18 months that are approximately 30%-50% more efficient than its predecessor. This means operating costs are plummeting, especially when compared to the cost of traditional aerial applications, heavily exposed to the fuel price. Rapidly declining operating costs are now already in many cases making drone applications compared with the cost and efficacy of even high-volume tractor-boom applications.

WAN: How far has your test gone with regard to the performance of the drone crop spraying on macadamia trees? And do you have any other recent information on similar tests on different crops – what is this research telling farmers?

TW: Macadamia orchards require high volume pesticide applications to ensure optimal pesticide coverage and therefore efficacy, making the drones (applying at lower aerial application rates) a tough sell in this sector for now.

The emergence of exciting tech in the precision agriculture space however - where the health of crops and orchards are assessed using various agronomic inputs such as drone NDVI imagery, soil/leaf sampling, trap counts, etc - bodes very well for especially the high-value orchard sector. The ability to accurately identify, isolate and treat only problem areas within orchards will unlock increased drone spot-spraying applications in orchards, ultimately resulting in reduced pesticide costs, environmental impact and water consumption.

One of the most prevalent pests in macadamia orchards is the stink bug, which roosts towards the top third of the tree at night. It's justified therefore, as the drones are capable of night operations, to reduce the application volumes in this instance as the target is only the top portion of the tree. The drones come in over the tops of orchards and the downdraft created by the propellers ensures extremely good penetration of the pesticide throughout the tree profile. Another benefit of night pesticide application is the reduced impact on critical bee populations (as they're active during the day). Although difficult to quantify the exact financial benefit, lower volume stink bug applications done at night with drones in macadamia orchards for example are seemingly proving to be more beneficial than higher volume day operations.



Used primarily for sugarcane farming, and as technology continues to evolve drone applications are becoming commercially viable in a variety of other crops grown throughout southern Africa such as maize, wheat, soyabeans, potatoes, cotton, citrus, macadamia and timber.



WAN: What about the rest of Africa? How far has this type of drone technology reached the continent?

TW: For the reasons explained above, sugarcane was the first and most receptive crop as far as drone spraying in southern Africa is concerned. Sugarcane is grown extensively in the likes of Eswatini, Mozambique, Zimbabwe, Malawi, Zambia and Tanzania thus PACSys has sold several drones into these markets. As the technology continues to evolve so rapidly, they're becoming commercially viable in a variety of other crops grown throughout Southern Africa (i.e. maize, wheat, soyabeans, potatoes, cotton, citrus, macadamia, timber, etc) and thus our sales are increasing into multiple crop sectors in multiple regions and countries.

WAN: What about the small subsistence or small to medium-sized farms where income and support are not readily available? How could these categories of farmers access this type of technology? Can they at all? If so could you suggest where and to whom they go?

TW: This is one of the most exciting aspects of drone spraying technology. It's very well suited to enhancing productivity and (ultimately income) in the communities that need it the most. A large proportion of sugarcane in South Africa for example is produced by small-scale growers, who are largely neglected by the commercial aerial pesticide applicators due to the typical remoteness and smaller size of their farms. The opportunity cost of not enhancing production in the small-scale grower communities in South Africa is massive, from both the growers' and the millers' perspectives. PACSys has recently presented a proposal to relevant sugar industry stakeholders whereby transformation budgets available within the sector are used to establish commercial drone spraying operations within small-scale communities, to service their spraying requirements. All pilot training and compliance support would be provided by PACSys.

This initiative would benefit the communities on two fronts: firstly, job creation (pilots and assistants would be employed from within the communities) and secondly, the additional revenue injection resulting from enhanced productivity.

WAN: What is the payload for the type of drone recommended? How many hectares can this cover and at what time? Why is better to use a drone?

TW: The latest DJI Agras T30 has a 30 litre / 40kg payload, and when spraying at the typical aerial application rates in South Africa (i.e. 30 litres per hectare) the drone is capable of spraying approximately 8 hectares per hour, including tank refills and battery changes, day and night.

When compared with traditional manned aircraft, the primary benefits of the drone are that it's more precise (GPS controlled), with far less risk of drift, and it achieves superior plant canopy penetration due to the drone flying slower than traditional aircraft and the nozzles being positioned directly below the propellers (i.e. creating a "mist-blower" effect over the top of the plant). When comparing spray drones to tractor-mounted booms, the primary benefit is that drones do not cause soil compaction/crop damage (especially in wet conditions). Soil compaction caused by tractor-mounted boom sprayers can reduce productivity by as much as 6%.

WAN: What about the licensing process? The last I can remember it could take up to two years for a person to be trained and certified by the SACAA. Why does it take so long? And of course – does the drone need to be approved for operation?

TW: SACAA drone licensing timeframes have improved significantly since we first initiated the drone spraying approval process in 2017. Simply speaking, three levels of licenses / approvals are required for legal drone spraying operations i.e. company, pilot and drone. The company-level license is known as a ROC and the process

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typically takes 12-18 months. All crop spraying pilots in South Africa must be registered Pest Control Operators, a process that takes approximately 6 months and includes obtaining the RPL (the drone pilots' license) and serving out an internship. The drone-level license is known as an RLA, a process that can take 2-3 months, and is required for all individual drones in the fleet.

WAN: Now let's cast our mind out across the world. From your perspective – what do you see in the future for these unmanned aerial vehicles and the part that they can play in the farming sector?

TW: At the rate at which the technology is evolving, I believe it will become the industry's preferred method of pesticide application within the next five years. Certainly, in the case of South African sugarcane, drones right now can apply pesticides more effectively and cheaply than traditional manned aircraft, in all regions. I see this trend expanding into other crop sectors and more rapidly from now.

WAN: Can you explain some of the challenges faced from a development, economic and regulatory context?

TW: By far the greatest factor preventing mass adoption of the technology are the regulations. As previously mentioned, in addition to a significant initial capital outlay (drones & equipment), it can take up to 18 months to become a fully compliant commercial drone operator, including a 6-month internship for the pilot. PACSys fully supports compliant operations by skilled pilots to ensure high-quality spraying and therefore, to facilitate responsible integration/adoption of the technology, PACSys has established a high-performance centre in Ballito, KZN where pilots can complete their required internships under the tutelage and guidance of our industry-leading instructors and in some of the most challenging aerial spraying conditions possible.

WAN: In Vietnam, farmers are turning to the XAG agricultural drones as the vehicle of choice to spray rice crops. Do you know anything about this

drone and can you offer an opinion on why it may be a better option than the DJI?

TW: XAG has often offered PACSys exclusive distribution in Southern Africa, which we've always turned down. The XAG drones are most efficient when set to spray at lower volumes of around 10-15 litres per hectare. In South Africa, most aerially registered pesticides are required to be applied at no less than 30 litres per hectare. At these registered rates, the DJI Agras T30 is more efficient than the XAG in terms of the number of hectares it can spray per hour. And the higher volume application results in better plant coverage and therefore superior efficacy. To operate, the XAG also requires good 4G or 5G data coverage, which isn't available on many Southern African farms. The DJI drones operate off satellite connections and the coverage is excellent.

Lastly, the quality of the products and the availability of parts and the quality of support are critical when crop spraying. Spray drones operate low to the ground and in amongst powerlines, trees, steep hillsides and various other potentially hazardous obstacles. Even the most skilled pilots sometimes will have an incident. And "downtime" caused by repairs to an aircraft in a commercial spraying environment, considering how time-sensitive pesticide applications are, is a financial killer for both the operator and the farmer. In our experience, DJI (which has a 75% market share in China) cannot be beaten in terms of the quality and availability of its parts and support.

WAN: Any last words of advice for farmers out there?

TW: Our advice to farmers and budding commercial spraying contractors, considering the number of dealers now flocking into the drone spraying market, is to ensure they purchase from reputable suppliers who have a proven track record, throughout the product lifecycle – from the initial needs assessment to training and most importantly the after-sales support/service.

These products are far more technical than your average photography and videography drones, and they operate in complex agricultural environments. Only professional suppliers will ensure farmers and contractors achieve an optimal return on their investment.
Thank you



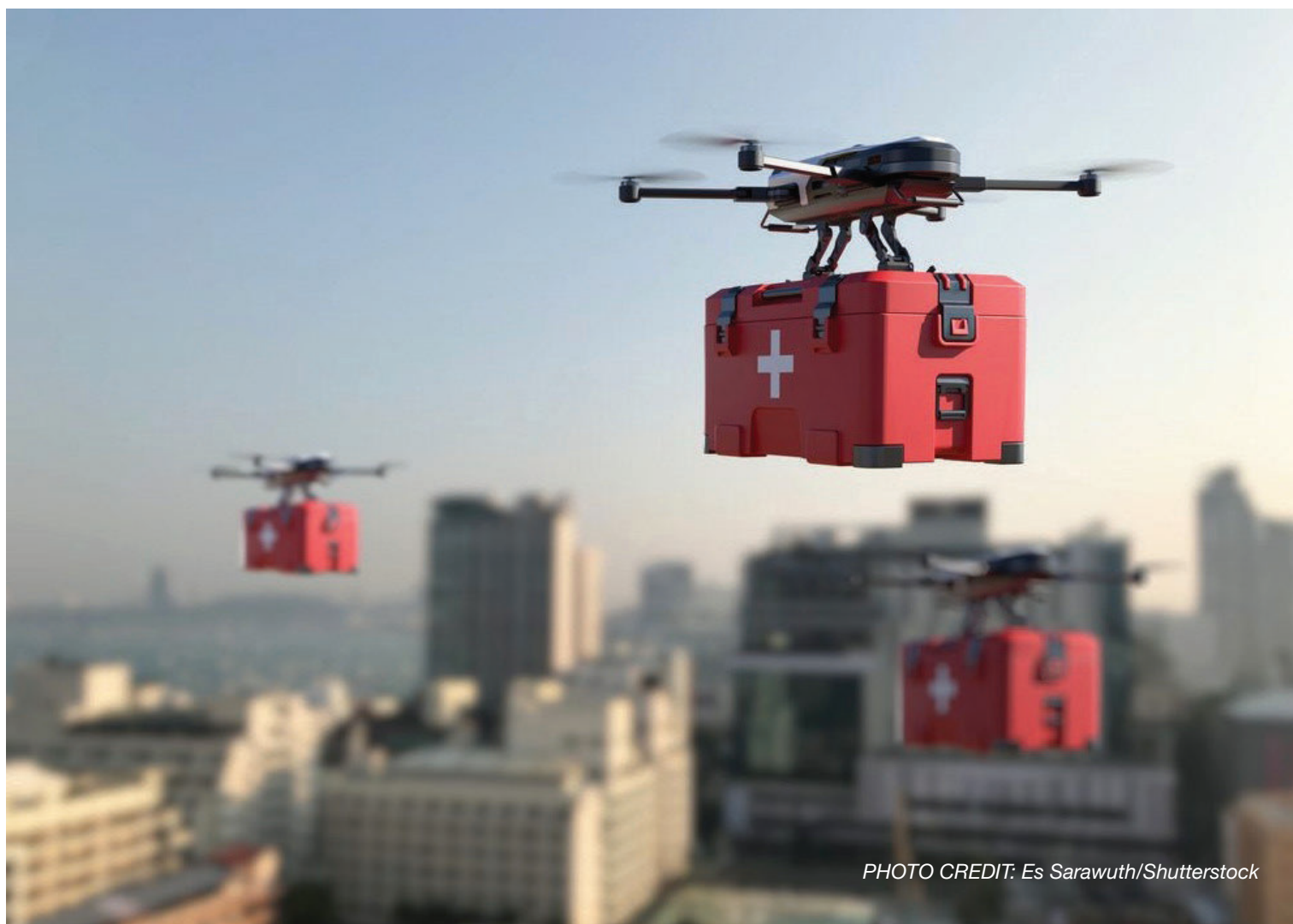


PHOTO CREDIT: Es Sarawuth/Shutterstock

DRONAMICS JOINS UK'S FIRST MEDICAL DRONE DISTRIBUTION NETWORK

A United Kingdom cargo drone developer and operator will take part in the CAELUS project - a consortium of partners set to revolutionise the way in which healthcare services are delivered in Scotland.

Led by AGS Airports Limited, the second largest airport group in the UK, the project aims to develop and trial the UK's first national distribution network using drones to transport essential medicines, blood, organs, and other medical supplies.

The CAELUS project or Care & Equity - Healthcare Logistics UAS Scotland acquired over £10 million or (US) \$12 million in funding from the Future Flight Challenge at UK Research and Innovation (UKRI).

It consists of 16 partners, including AGS Airports (Glasgow and Aberdeen Airports), NHS Scotland, the University of Strathclyde, the National Air Traffic Services (NATS) and others.

Announced at this year's Farnborough airshow, DRONAMICS will collaborate with the consortium to power time-critical medical deliveries over the middle-mile range using their "Black Swan" cargo drone, capable of carrying up to 350kg at a range of up to 2,500km.

The flight trials are scheduled to be completed by 2024. AGS Airports group head of Aerodrome strategy and CAELUS project director Fiona Smith said, "The CAELUS project is set to

revolutionize the way in which healthcare services are delivered in Scotland. A drone network can ensure critical medical supplies can be delivered more efficiently, it can reduce waiting times for test results and, more importantly, it can provide equity of care between urban and remote rural communities."

CEO and co-founder of DRONAMICS Svilen Rangelov said, "This is an excellent opportunity for us to kick-off operations in the UK by leveraging our authorisation experience in the EU with EASA. The flight trials for NHS Scotland would also validate our ongoing product development towards delivering medical goods.

We have seen that our solution could be vital for remote communities in Scotland, drastically decreasing the transit time for medical supplies."

The project is funded under the Future Flight Challenge, the UK Research and Innovation-led investment programme that has committed £125 million or (US) \$149 million into the next wave of aviation tech or the third revolution in aviation.

For more information go to www.dronamics.com



GPS JAMMING IS AFFECTING PEOPLE ALL OVER ISRAEL

By Oded Yaron

Israeli farmers and professional drone operators complain of GPS disruptions to critical systems as jamming increases across the Middle East

While Israel is at the global centre of GPS blocking and disruption, the issue rarely makes headlines - even though it dramatically affects thousands of Israelis.

For many professionals, such as farmers and drone operators, the disruptions to the Global Positioning System satellite navigation system could very well cost them days of work, damage equipment or even put human lives at risk.

"The GPS supplies three types of services - time, navigation and location - and the disruptions affect every one of them," said Kobi Menashe.

Menashe, the head of market guidance in the National Cyber Directorate, has worked directly in handling cyber threats in the electromagnetic sphere.

"Most consumers need time services - such as IT systems that use GPS to synchronise their computers with their server. Waze and similar apps are used for navigation and other apps, such as ticketing service on the train or parking payment apps, use location services."

As a technology, GPS has transformed over a few decades from something bordering on science fiction to a critical and easy-to-use necessity that has become almost invisible to us on a daily basis - until something goes wrong.



We are accustomed to the term "GPS" even though it only applies to the US satellite system, which is just one of a number of global navigation satellite systems.

Others in operation include the Russian GLONASS system, China's BeiDou and the European Union's Galileo system, the latter of which is now under construction.

"There are about 100 satellites, more or less, circling the Earth all the time," said Omer Sharar, the CEO and founder of infiniDome, which develops technology to protect GPS systems from jamming.

A recent Haaretz report has revealed that the skies over the Middle East, including those above Israel, are a global hot spot for GPS jamming - and although it was thought that Russian military systems in Syria were the cause of these disruptions, it is possible that Israeli systems contribute as well.

According to the Eurocontrol air traffic authority, it is likely that the disruptions are the result of a system to thwart drone attacks.

In response to a query as to whether Israel jams GPS systems to prevent attacks from Iranian drones, the military said it “acts in a number of dimensions... on all fronts” and that “there are many other groups in the region that act... to defend themselves, along with Israel.”

All to easy

The disruptions can be roughly divided into two types. The simpler one, the equivalent of a denial-of-service attack on the internet, prevents the GPS receiver from functioning at all. The more sophisticated attack is called spoofing, in which the attackers feed the GPS receiver with false data and cause it to do whatever they want.

Conversations with experts in the field show how easy it is to disrupt GPS reception. “You need to understand that the strength of the satellite signal is very, very weak,” said Sharar. “It’s like turning on a 20-watt light bulb in Berlin that’s received in Israel.”

If someone broadcasts a stronger signal on the right frequency, every GPS-based device in the area of the transmitter will be jammed.

Such devices are sold online at prices ranging between tens and hundreds of dollars. Some are the size of a standard thumb drive. “I was shocked how easily I bought this tool, which I had delivered to a kiosk near my house,” said Sharar.

When it’s easy, the jamming does not have to come only from Syria or military tests.

“The disturbances happen all the time because of both military and civilian operations. A taxi driver who wants to trick a taxi app so they don’t know where he is, or a truck driver who wants to deviate from his planned route to run personal errands, can activate a GPS jammer, and if they pass by a port or agricultural area with this jammer - it will do great damage there.”

Matanya Taussig, a photographer and owner of an aerial photography company, recently experienced this for himself.

“When jamming is happening, there is almost no way to know where it comes from and why,” he said. “Two weeks ago, I was photographing near the marina in Herzliya, and during the flight the drone lost reception from the satellites twice. I lost contact with the drone for a moment. I have no idea what caused that and I don’t really have a way to check. In such cases, everything depends on the experience of the operator, their composure and the level of prior planning. As always, you also need a lot of luck.”

“Almost everyone who flies drones professionally has experienced this,” Amir Terkel, from the aerial photography company SkyVideo said.

“You have an indication that the drone is connected and communicating with 20 or more satellites, and it goes down to zero in a second. The drone doesn’t know how to keep its place in the sky and it starts to be blown in the wind. You have to fly it back manually to the point of take-off. It can take a few minutes, or a long time.”

Drones are outfitted with advanced safety systems based on cameras and other sensors. But these systems also depend on satellite navigation, and when control is lost, the costly equipment is not the only thing at risk - so are the environment and people, because incidents like this can end in a crash, Terkel explained.

No solutions on the horizon

Farmers in Israel are being hit particularly hard by the problem.

“During the last decade, agriculture has become more precise in order to save work and manpower,” the National Cyber Directorate Menashe said.

“For example, field crops, whose cultivation requires location services to the precision of a few centimetres. The moment the GPS is disrupted, work stops, so it hurts them in particular.”

Menashe is referring to GPS-based automatic tractors and irrigation systems, as well as crop dusters, Sharar, InfiniDome’s CEO, said.

“The planes date from about World War II, but their crop-dusting systems are state of the art. When we catch interference from Gaza or Syria, and lots of times from Israel, the first places to shout that they’re hurt are precision agriculture. It really kills their apps.”

Article courtesy: <https://www.haaretz.com/>



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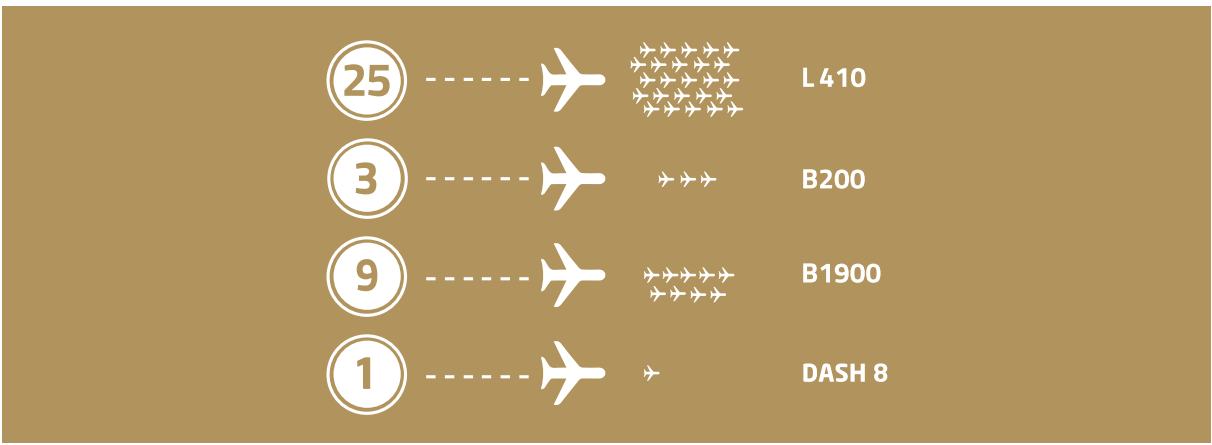
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AUTONOMOUS POD TRANSPORT EVOTL - A GAME CHANGER

During a recent US army expeditionary warrior experiment held at Fort Benning, Georgia, Bell's electric vehicle moved 70 lbs or 31 kilogrammes worth of goods - two separate bags weighing in at around 35 lbs or 16 kilogrammes each - over 11 miles or 17 kilometres before efficiently dropping both bags simultaneously.

The APT also offers the capability to drop one payload at a time. This quick cargo movement and release is made possible by the aircraft's architecture - autonomous systems that calculate the release point to hit its target while factoring in ground speed, above ground level, and distance.

But it's not just for the military forces, the Bell APT expands possibilities for business operations and cargo movement.

Innovative capabilities

This isn't just a drone. Endurance is improved by autonomous vertical take-off, which transitions to wing-borne flight, providing multi-copter payload capability with fixed wing speed.



Bell's all-electric, autonomous test vehicle the APT platform is a real game changer.

Correspondingly this increases the range, and reduces noise in comparison to traditional quadcopter designs.

APT can carry 70lbs. of payload upwards of 35 miles, with a maximum payload capability of 100lbs. and so far, has completed more than 420 flights on-site at military bases or over US desert terrain in testing.

Military support

The vehicle offers overhead support in a near-peer fight with its small size, terrain flight, and landing freedom to deliver an advantage to teams in battle. Where other aircraft require manpower and fuel to quickly drop resources to war fighters, APT does not. Instead, the vehicle moves quietly and quickly to move critical resources when they're needed the most - without risking manpower and reaching areas otherwise inaccessible by land vehicles.

Increasing capabilities

Bell is continuing to develop capabilities around the APT system - earlier in the year, it successfully demonstrated a ground-based Detect and Avoid (DAA) flight, fulfilling an extension for its NASA Systems Integration and Operationalisation (SIO) project. The APT DAA demonstration showcased the aircraft's ground radar system integration and its capabilities when navigating airspace traffic and requirements, a critical component needed for future Advanced Air Mobility (AAM) vehicles.

The objective of the SIO demonstration was to execute a Beyond Visual Line of Sight mission in complex airspace utilising DAA technology to monitor the airspace for 'natural intruders'.

Radar monitoring, whether airborne or ground-based, may become an important part of drone delivery, air taxi services and other aspects of the ever-expanding AAM ecosystem.

Medical missions

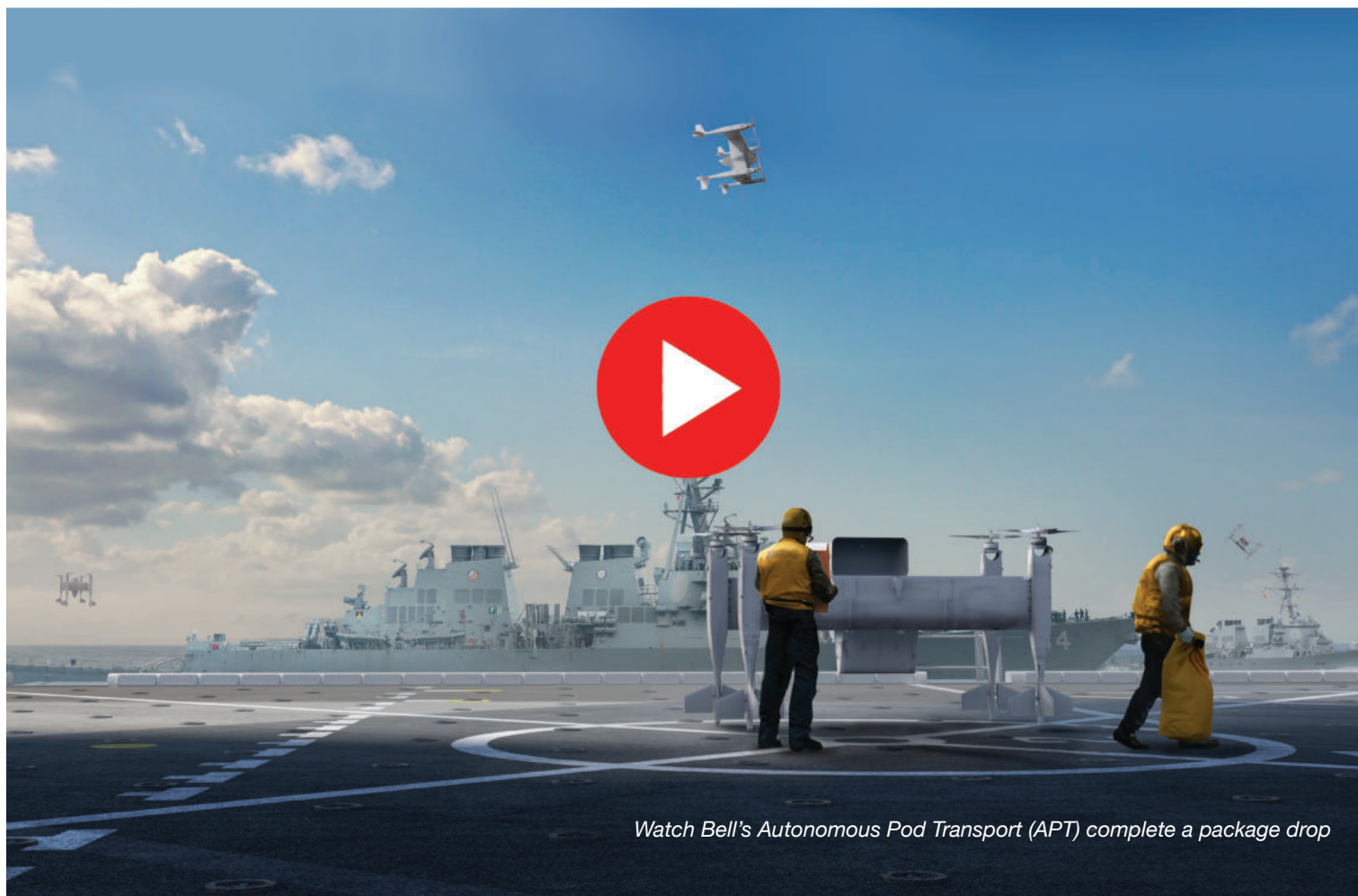
With the potential to move medical supplies, tests samples, blood and more, APT opens a new world of possibilities for medical transportation too. The small but powerful eVTOL vehicle can efficiently move goods from one hospital to another while saving valuable time and ultimately, lives.

Logistics operations

APT can be integrated seamlessly into operations, keeping business on schedule and facilities connected, moving products and information quickly and efficiently.

Performance

- Range (70lb payload) 35 mi | 56 km
- Range (100lb payload) 22 mi | 35 km
- Max Speed 100 mph / 86 kts
- Cruise Speed 70 mph / 60 kts
- Battery Swap <5 minutes
- Battery Recharge <1 hour
- From Case to Flight 15 minutes
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- Operational Temps 20° to 125°F
- Rain 1/4" per hour
- Specifications are estimates



Watch Bell's Autonomous Pod Transport (APT) complete a package drop

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ALL THE ACTION – THE RAND AIRSHOW IS BACK



The Aero L-39 waiting for the airshow to begin

Story and Photos By Pieter Cronje

After an absence of a number of years the Rand Airshow took place last month on a warm and sunny spring day. The weather could not be better.

Opened by the skydiving team consisting of Graham Field, Bailey Edmunds, Paul Marcellin, Johan Greyling, Japie Keet and Barend Pretorius, they used Menno Parsons' Tiger Bell "Huey" UH-1 as the jump plane.

This was followed by the Classic Flying Collection Tigermoths display flown by Grant Timms and Steve Brown. Then it was the chance of the well known and loved Puma Energy Flying Lions who began their display with a "missing man" formation in honour of the victims of the SAPS Pilatus PC6 Porter accident that occurred recently.

Some of the highlights included Patrick Davidson with a stunning display in his GameBird GB-1, Elton Bondi and Barry Eales in the Extra 330s, the Henley Bell 222 display with no less than six Bell 222s participating, the RV Raptors consisting of Pierre Gouws, Ryan Beaton, Dion Raath and Trevor Warner joined by Nigel Hopkins and Johan von Solms and Team Iveco of Nigel Hopkins and Jason Beamish flying Extra 330s.

Some of the more classic displays were the Hired Gun Team of Arnie Meneghelli, Scully and Ellis Levin and soloist Sean Thackwray, the Good Year Eagles Team of Nigel Hopkins, Johan von Solms, Jason Beamish and Trevor Warner, Jason Beamish flying a de Havilland Chipmunk, Pierre Gouws with the colourful and graceful Aero L-39 Albatros and a three-ship de Havilland Chipmunk display by Gavin Brown, Steve Brown and Grant Timms, Andre van Zyl with the Magni Gyro and a solo RV display by Trevor Warden.

Some firsts were Ivan and Juandre van der Schaar with a full-scale and a radio-controlled aircraft simultaneous display, Ivan flying his Boeing Stearman and his Juandre flying a large-scale Extra 330. A second first was two of the Puma Energy Flying Lions Harvards that were joined by two Extra 300, also in the Puma colours.

The crowds were also treated to a hover competition by Nigel Hopkins in his Extra 330SC joined by two Bell 407 helicopters flown by Alister Brown and Menno Parsons.

Menno Parsons needs a special mention, not just being one of the main sponsors, but also being a crowd favourite with his P 51D Mustang aptly called Mustang Sally, his helicopter Bell 407 display and the race he had with an A1 class racing car.

One of the last displays of the day was the Airlink Embraer ERJ-190. A colourful and graceful display that the crowds loved.

The day ended with the Puma Flying Lions doing a flat display.



Menno Parsons with Mustang Sally. Always a very high energy display



WIZZING OFF FROM MALTA

Story Chris Cauchi and photos Transport Malta

The European Union Aviation Safety Agency (EASA) has presented the Air Operator's Certificate or AOC to Wizz Air Malta.

Wizz Air Group consists of Hungarian ultra low cost carrier, Wizz Air. The group previously operated with three carriers, including Wizz Air Bulgaria and Wizz Air Ukraine. The two LCCs ceased service operations in 2011 and 2015 respectively. The group registered Wizz Air UK on 26-Sep-2017 as a measure to hedge its UK and Europe operations post Brexit.

This is the fourth airline in the Wizz Air Group. The company was also presented with an Operating Licence or OL by the Malta Civil Aviation Directorate.

The AOC was presented during a press conference held at Malta International Airport EASA's Head of Air Operations Eduard Ciofu.

MaviO News is reliably informed that the company intends to register up to 75 aircraft on the Maltese AOC as the company ramps up its Malta-headquartered operation. More importantly, plans are in hand for Wizz Air Malta to set up a local base that would see the Indigo Partners controlled carrier initially place two Airbus aircraft at Malta International Airport.



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SHOWCASING AFRICA'S AIR, LAND AND SEA

The Rooivalk dramatically finished its display with some lovely "angel wings"

By Heidi Gibson. Photos by Pieter Cronje.

After an absence of more than three years, the long-awaited African Aerospace and Defence exhibition and conference event got off the ground at the AB Waterkloof air force base in Pretoria giving the continent and global partners a chance to meet and get down to business.

After an absence of more than three years, the long-awaited African Aerospace and Defence exhibition and conference event got off the ground at the AB Waterkloof air force base in Pretoria giving the continent and global partners a chance to meet and get down to business.

Opening the three-day trade and conference event South Africa's minister of defence and military Veterans Thandi Modise said the

event - the biggest of its kind in Africa - was an important platform for the country's defence sector - an "indispensable asset".

"The South African defence industry has great potential to be a formidable competitor on the global stage," she said.

"The 2020 NCACC [National Conventional Arms Control Committee] Annual Report showed that between 1 January and 31 December 2020, South African defence companies received orders for either equipment, services or other expertise from 106 foreign countries. This could have been more but for our adherence to the guidelines and the convention on arms sales.

"Our armoured combat vehicles are a major export commodity to African countries. I strongly believe that many of the buyers of these vehicles saw them at previous AAD exhibitions. So, let us never underestimate the critical importance of this event. It is more than a show. It is more than an exhibition. It is an investment. It brings together peoples from across the globe."

The resuscitation of the South African defence industry also has to involve the transformation of the companies involved, in terms of race, gender and equality, she said, while developing SMEs run by individuals who would previously have been excluded from the industry.



The US HH-60 Pave Hawk helicopter coming in to land at the Waterkloof Airbase

AAID 2022 was the first time that there was a South African pavilion established by the Department of Trade, Industry and Competition (DTIC) at the expo dedicated to showcasing SMEs. Meanwhile from an aircraft point of view the US Air Force dominated the static displayed showing off the giant C-17 Globemaster III, a Lockheed Martin C-130J-30 Super Hercules, two aerial refueller aircraft, and a Sikorsky HH60 Pave Hawk helicopter that took to the skies.

For the first time ever AAD had a flying display of unmanned aerial vehicles (UAVs), popularly known as drones.

It is impossible to record all of the announcements and launches that took place at the different stands or the airshow display. Here are some of the highlights:

Gripen back in the air

After a year's grounding, the country's Gripen combat jets took to the skies once again. This was after original equipment manufacturer Saab was awarded a service and maintenance support contract for

the fleet. The contract is worth R532 million over three years and runs from 2022 until 2025.

It covers service, repairs and maintenance as well as minor updates of the support and training systems of the South African Air Force's Gripen system.

South Africa has been operating the Gripen C/D since 2008 and is Saab's first export customer for the type. "I am very happy and satisfied that we have now reached an agreement for a new support contract so that we in the very best way can support our customers with their operational needs," said Åsa Schöllin, head of Saab's business unit

The South African Air Force was forced to ground the Gripen last year due to budget constraints that saw a delay in finalising a new maintenance support contract with Saab and GKN as the original airframe and engine manufacturers respectively.

Members from 2 Squadron at Air Force Base Makhado as well as Saab representatives assisted in getting the aircraft airworthy ahead of AAD 2022. Due to the SAAF's tight budget, the new support contract covers 13 aircraft over three years - the SAAF had



The Flying Lions breaking during the sunset display

26 Gripen C/Ds, but one was written off following a ground incident. The remaining 12 will remain in storage.

In February, only 25% of SAAF aircraft were serviceable with Armscor at the time evaluating bids for aircraft support contracts.

In August, Armscor revealed that all SAAF aircraft maintenance contracts were resolved, with 40-odd contracts in place, including for the Gripen and Pilatus fleets as well as the VIP aircraft fleet.

Saab also supports the SANDF by providing electronic warfare systems on the Navy's submarines and self-protection systems on Air Force helicopters.

The company has a presence across Africa and explained that, "We are currently providing a wide range of our products and services in several African countries. These include the EW self-protection systems, ground-based air defence systems, ground combat weapons, radar systems, combat management systems, anti-ship missile systems, underwater systems (ROVs), air traffic management, maritime traffic management and training and simulation solutions."

Apart from the Gripen support, Saab also focused on the Sea Giraffe 1X radar, training and simulation (TES) solutions, CarlGustaf and AT4 multi-role weapons, IDAS and LEDS self-protection systems, and DeployNet 5G/LTE network solution, which enables high-capacity bandwidth in geographically remote areas.

Saab's laser and missile approach warning systems form part of its integrated defensive aids suite (IDAS) for helicopters, transport aircraft and combat aircraft. IDAS warns against radar, laser and infrared-guided threats and automatically deploys appropriate countermeasures such as chaff and flares. IDAS is operational on 30+ aircraft types in more than 15 countries.

Hensoldt launches electro optical system and laser range finders

Meanwhile, Hensoldt South Africa took the opportunity of AAD 2022 to launch both its new Argos-8 lightweight airborne surveillance and targeting system and its new laser range finders that can be used on small unmanned aerial vehicle platforms.

First, the new lightweight electro-optical system or Argos 8 that weighs less than 6 kg and offers day and night capabilities for intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) missions.

Developed with an Estonian company Threed Systems, Hensoldt and Threed now have a development and co-production agreement for the Argos-8.

Meanwhile the new laser range finder the MP10-1 laser range finder can fit into the palm of a hand and can be mounted on lightweight UAVs or used with multi-sensor land-based imaging systems. It can be used for targets up to 15 kilometres away, with an accuracy better than one metre. It is a self-contained unit consisting of the laser transmitter, a laser receiver and the power and control electronics needed to operate the laser range finder.

Hensoldt plans to begin production in South Africa in the first quarter of next year.

For shorter ranging requirements and for mounting in a smaller space, Hensoldt also unveiled the NP1 laser range finder. It can reach a vehicle-size target over three kilometres away (max range is up to 6 km).

Production of the NP1 for international customers began in South Africa a few months ago.

"ARGOS-8 is not only offered as a stand-alone EOS but is also integrated onto the ASTUS unmanned aerial system, with production deliveries scheduled for 2023," said Hensoldt optronics' chief executive, Deon Olivier.

All of the above can be integrated into the Astus unmanned aerial vehicle system that has an endurance of eight hours and is certified to fly up to 16 000 feet. The UAV is designed to meet the requirements of many African and other countries that lack the budgets to buy high-end solutions.

The ASTUS UAV is the result of the capability Hensoldt obtained from its purchase of local defence company, Tellumat.

Hensoldt South Africa is the German defence company's largest industrial footprint outside its home country and through this location, its local products are not subject to US and European export regulations.



Hensoldt South Africa took the opportunity of AAD 2022 to launch both its new Argos-8 lightweight airborne surveillance and targeting system and the MP10-1 and NP1 laser range finders.



Paramount's multi-mission mwari aircraft

In a major boost to Africa's indigenous aerospace industry, Paramount Aerospace Industries, the subsidiary of the global aerospace and technology company, Paramount Group, announced that it had secured customers and orders from multiple Air Forces for its revolutionary 'Mwari', the advanced reconnaissance, surveillance, and precision strike aircraft.

The orders for nine new Mwari's represent an important milestone in its commercial success and have resulted in full levels of production at Paramount Group's state-of-the-art aircraft factory in South Africa.

CEO of Paramount Aerospace Industries, Mike Levy said, "This is a proud moment for Paramount and our continent's aerospace industry. The development and deployment of Mwari underscore the strategic importance of a world-class, indigenous African aerospace industry, one that can quickly and collaboratively address the increasing security threats, conflicts and insurgencies which Africa presently faces".

Mwari addresses a key global security requirement from air forces around the world, of any size, for advanced ISR and precision strike capabilities, in doing so, performing missions that previously required several different aircraft. It integrates design concepts from helicopters, surveillance platforms and reconnaissance aircraft with the ability to carry multiple systems, such as surveillance radar and electro-optic sensor systems.

Ivor Ichikowitz, Paramount Group Founder stated: "Mwari is a game changer for Air Forces. It's purposefully designed for the kind of asymmetrical warfare that modern military forces across the world are today being asked to conduct. The aircraft has a critical role to play in the connected battlefield, providing forces on the ground and in the air with a force multiplier competitive advantage."

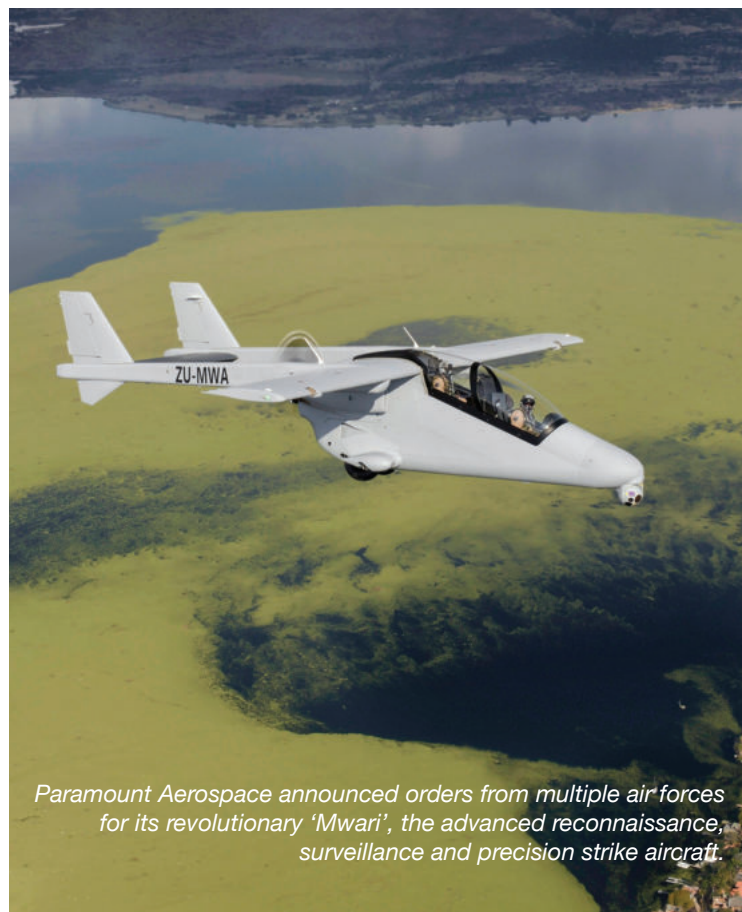
Unique to the Mwari is its Interchangeable Mission Systems Bay (IMSB), located in the belly of the aircraft, providing near-endless sensor and payload options which can be integrated and swapped out in less than two hours to take advantage of its innovative 'plug-and-play' mission system.

The modular pod allows this single platform to perform a multitude of roles without any aerodynamic or ordinance penalties. Mwari offers advanced onboard sensors, weapons and real-time data analysis that can undertake a wide range of missions, in austere and remote environments with very little logistical support.

The aircraft is further purpose-built to be infinitely reconfigurable, allowing the application of Mwari in multiple roles and missions in response to diverse customer requirements around the world.

Mwari has a service ceiling of up to 31,000 ft, and offers a maximum cruise speed of 250 knots, a mission range of up to 550 nautical miles with the ordinance and overall endurance of up to 6.5 hours. The aircraft also offers 'Short Take-off and Landing (STOL)' capability, with rugged retractable landing gear ensuring the aircraft is optimised for both semi and unprepared airstrips or sites.

Drawing on both Paramount Group's commitment to innovation and its extensive research and development (R&D) and manufacturing experience, the Mwari has been designed with portable production in mind. The aircraft could, depending on customer requirements, be exported in kit format for final assembly in customer countries and can easily integrate into supply chains around the world, enabling scalable mass production.



Paramount Aerospace announced orders from multiple air forces for its revolutionary 'Mwari', the advanced reconnaissance, surveillance and precision strike aircraft.



The SaFair 'Go Bokke' Boeing 737-800 was joined by the Safair Lockheed C130

Safomar exciting announcements

After 35 years of being in business, the Safomar Holdings Group announced some key additions as business partners and principles, a new division - Safomar Technologies - and the re-opening of the Enstrom Helicopter Corporation. The Safomar Holdings Group, encompasses eight business divisions, all unique in their delivery of turnkey solutions to the Aerospace and Defense Industry in South Africa, the African Continent and the Indian Ocean as a whole.

Headed up by Walter Bold, the new division was established in response to the huge demand for technology solutions for the intelligence, security and defence industry.

Safomar Technologies specialises in the innovative technology solutions such as intelligence, surveillance and reconnaissance, reconnaissance UAVs, delivery and patrol UAVs, counter drones, platform role enhancements and modernisation, land mobility, tactical communication and digital intelligence - with the objective to bring tailored innovative solutions specific to the unique African demands.

“Industry experts and OEMs such as Bluvec Technologies, Narma Inc, FlightCell Technologies and TATA Advanced Systems will be

represented regionally in sub-Saharan Africa. Other strategic partners also include Trakka Systems, Collins Aerospace, Istar UAV, OOSTA, Ansur and Satcom Direct.

The company also announced the distributorship for Safran Engines, for Southern Africa up to and including Kenya and has been appointed to manage the overhaul and repair programmes including the stocking of engine-related parts to support the distributorship. And finally, the re-opening of the Enstrom Helicopter Corporation that will once again allow support to the fleet in Africa and the world in real time

Enstrom is actively engaged in the current production of 25 platforms in the coming year including enhancement upgrades, from glass cockpits across all models, a governor upgrade for the piston fleet and more in the coming months. Safomar Aviation is the exclusive sales agent for these helicopters.

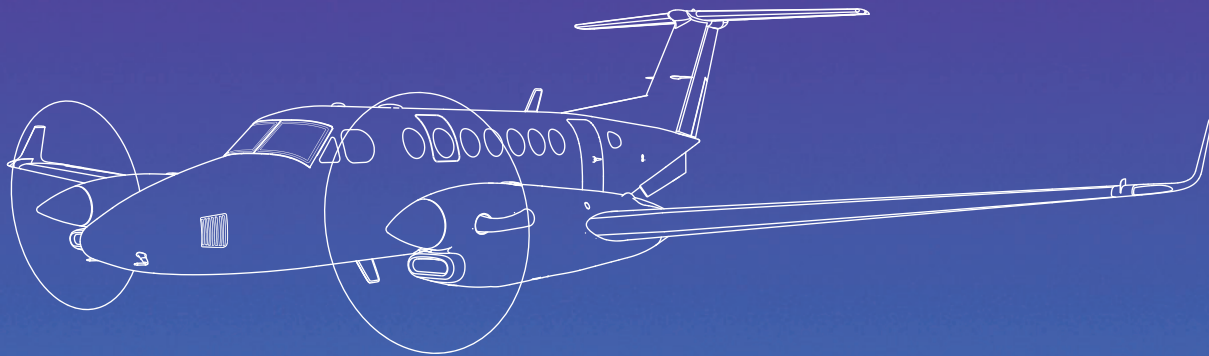


Grant Timms with the beautifully restored L-29.



Drones were flown for the first time during the AAD 2022 airshow

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- Helicopter Landing Site Officer (HLSO)
- Helicopter Landing Officer (HLO) & Recurrency Training (on-board or onshore)
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- Offshore Meteorological Weather Interpretation Training (OMWIT)
- Offshore Heli Refuelling System Training (HRS)

These courses are offered via three platforms both in Australia and South Africa:

- Classroom training
- Training at the clients' venue
- Online training

The companies have accumulated a plethora of intellectual property and have a strong online and social media presence. The Flight Safety Group is poised to continue its business operations for many years and can provide consistent revenue and further investment opportunities in both private and public aviation sectors.



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MAKING MEMORIES

THE CHILDREN'S FLIGHT 2022

The Huey arriving against the rising sun.



Excitement in the Air

Story and Photos By Pieter Cronje

**“Some memories are unforgettable,
remaining ever vivid and heart-
warming!”**
– Joseph B. Wirthlin

The above words bring back my memories of last year's Children Flight. It was the first time that I had attended the event. And during the past year I often looked back with fondness at the photos I had taken then – creating such rich and lasting memories.

So, then the Children's Flight of 2022 took place on 2 September 2022 at Orient Airfield close to Magaliesburg. Last year's event was described as a “limited edition” as the number of participants had to be contained. Limited was not a word that could be used to describe this year's event. Over 500 participants were expected.

It was a very well organised affair with safety for all involved of utmost importance.

The day started early with the organising team arriving before sunrise. This was followed by the arrival of the other teams and the guests of honour - the children. After all, this day was about them.

The official programme started with a Flag Drop from the Antonov 2. All the children lined up and attentively listened to the South African national anthem. Then the Raptors Aerobatic Team performed a fly-past and display.

Excitement is the word to describe the next act that followed. The children were taken up in a variety of aircraft. For most of them, this was their first visit to an airfield, their first time in an aircraft and their first flight. The excitement prior to the flight was however nothing compared to the exuberance following the flight. Their faces were beaming, they could not contain their emotions.

The afternoon started with an airshow featuring the Flying Lions, the Good Year Eagles, Andre van Zyl with the Gyrocopter, the Stearman and radio-controlled formation by Ivan and Jeandre van

der Schaar, the IVECO Extras flown by Nigel Hopkins and Jason Beamish and lastly the Huey display by Menno Parsons.

The last act of the day was the event theme song ‘Paper Plane’ performed live at the Orient airfield for first time since the music video was recorded there in 2015 by Michael Ferguson. A day like this would not be possible without the excellent organising team and the generous sponsors of the event. Congratulations to Felix Goshier and his team.

**“My memories are inside me -
they're not things or a place -
I can take them anywhere.”**
– Olivia Newton-John



Some of the children being welcomed back after their flight.



NIGERIA'S AERO CONTRACTORS GEARS UP

Aero Contractors (N2, Lagos) plans to resume commercial services by latest this month.

This after its audit by the Nigerian Civil Aviation Authority (NCAA) due to have been complete by September, according to local news reports.

Aero Contractors has operated under the receivership of the Asset Management Corporation of Nigeria (AMCON) since February 2016. It **suspended** its scheduled passenger flight operations in July, citing a harsh operating environment and lack of available equipment.

Meanwhile, the carrier has signed a partnership agreement with Nigeria's Umza Aviation Services, which is to invest (US) \$50 million for the purchase of five **DHC-8-Q400s** that will be operated by them. **As reported**, Umza Aviation is linked to Mohammed Abubakar, owner of Umza Farms, and is part of a new partnership between virtual carrier UmzaXpress and Aero Contractors.

Speaking to reports at **Abuja**, after taking delivery of the second Dash-8-Q400 last week, Aero Contractors head of security Adah Daniel (representing managing director Abdullahi Mahmoud) said:

"We are looking at the end of the month because we wrote to the NCAA that we want to start operation and we have to finish with the ongoing audit."

"So, once we are through with the NCAA audit process and we are cleared, we will commence immediately. It could be earlier, and it could be this month, but it depends on the audit; however, we are confident because we have already started. So, they will be coming in to do the final paperwork, and once that is done, we are good to go".

According to the **ch-aviation fleets** advanced, Aero Contractors' entire fleet is currently stored at **Lagos**.

This includes:

- one **B737-400** leased from **SKY Leasing**;
- three **B737-500s** leased from **Oceanic Capital**;
- one **DHC-8-Q200** owned by Nigeria's Cross River state government; and
- one **DHC-8-Q300** leased from **CHC Helicopters International (RBD, Vancouver Int'l)**.

Article courtesy <https://www.ch-aviation.com/portal/news/119530-nigerias-aero-contractors-gears-up-to-resume-services>

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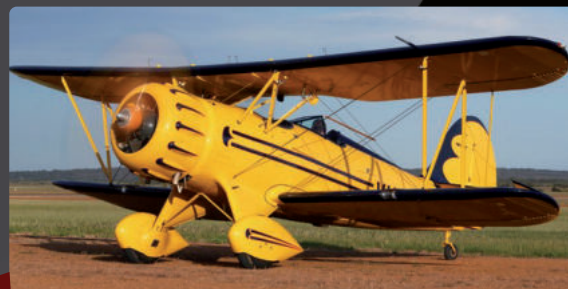
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Fuel-efficient models such as the 777X will replace older models

BOEING FORECASTS DEMAND

Boeing has estimated that intra-regional and domestic networks across the African continent will grow with a robust 6.1% compound annual growth rate or CAGR, driving 20-year demand for 1,010 new airplanes by 2040 valued at (US) \$176 billion.

With Europe remaining the most prominent origin/destination for African carriers, overall African air traffic growth is forecasted at 5.2%, the third highest among global regions.

Boeing provided the data as part of its 2022 Commercial Market Outlook (CMO), the company's long-term assessment of global demand for commercial airplanes and services.

African aviation traffic has recovered at a strong pace in 2022 with pent-up demand and economic growth driven by higher global commodity prices allowing African airlines to recover their flight operations to 80% of pre-pandemic levels.

Africa's above-world average annual economic growth of 3.1%, combined with increasing rates of urbanisation and a growing middle-class population will continue to be the drivers of Africa's long-term traffic demand, according to Boeing.

Initiatives such as the African Continental Free Trade Area and Single African Air Transport Market are expected to further stimulate trade and intra-regional connectivity.

"African carriers are well-positioned to support inter-regional traffic growth and capture market share by offering services that efficiently connect passengers and enable commerce within

the continent," said Randy Heisey, Boeing managing director commercial marketing for the Middle East and Africa.

"We forecast an increase in the average aircraft size and seats per aircraft for the African fleet, as mid-size, single aisles, like the Boeing 737 MAX, will be the most in demand for the continent."

The 2022 Africa CMO also includes these projections through 2041:

- Airlines in Africa will grow their fleets by 3.5% per year to accommodate passenger traffic growth of 5.2% annually, above the global average growth of 3.8%.
- Single-aisle jets are expected to account for more than 70% of commercial deliveries, with 740 new planes supporting domestic and inter-regional demand. African carriers are estimated to need 250 new widebodies, including passenger and cargo models.
- More than 80% of African jet deliveries are expected to serve fleet growth with more sustainable, fuel-efficient models such as the 737, 777X and 787 Dreamliner, with nearly one in five deliveries replacing older airplanes.
- Estimated demand for aviation personnel will rise to 67,000 new professionals, including 20,000 pilots, 21,000 technicians and 26,000 cabin crew members.
- Commercial services opportunities such as supply chain, manufacturing, repair and overhaul are valued at (US) \$80 billion.



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NIGERIA AIR CARGO EXPORTS REMAIN STUNTED



Story by Roy Ezze

Air cargo and insurance experts in Nigeria have expressed deep concern over the poor state of Nigeria's exportation and air cargo industry.

The stakeholders who gathered at a recent aviation cargo event, Chinet Aviation Cargo, in Lagos, Nigeria, specifically called for urgent action to transform the quality and volume of exports in Nigeria to enable the country to participate favourably in the African and global cargo markets, especially the African Continental Free Trade Area (AfCFTA) which took effect early 2021.

With a population of more than 200 million, Nigeria generates around 4000mw of electricity, while ground transportation and infrastructure are generally poorly developed. This makes the local production and manufacturing of primary production and the transportation of goods very expensive and unsustainable.

This typifies the wanton neglect of Nigeria's production sector which, over several decades, has driven many businesses in Nigeria into massive importation.

Moreover, Nigeria's fast-expanding e-commerce base driven by Nigeria's predominantly young population feeds more on imported goods, amid the absence of any local alternatives.

Untapped air cargo potential

Managing director of the Federal Airports Authority of Nigeria (FAAN) Rabiu Yadudu said, "We have untapped prospects in cargo business as we have been unable to reduce the deficit in exporting of goods via air cargo."

The greater bulk of Nigeria's domestic passengers and goods move by road, which results in accidents and loss of goods due to damaged and bad road networks. Air transport, therefore, becomes a faster and safer alternative especially for high-value and perishable cargo.

But this form of air transport remains an expensive option for the movement of cargo due to a myriad of related taxes and the high cost of aviation fuel. Agriculture and other export products in Nigeria also face challenges regarding quality, packaging, taxes and bottle-

necks imposed by multiple layers of government agencies that control exports.

In addition, the lack of accountability or ability to effectively track export goods, insecurity and poor synergy in the export products value-chain keep Nigeria's production and exports perennially stunted.

According to statistics from FAAN, Nigeria's goods and mail air cargo rose by 52% to 291,824,571 in 2021 after it dipped by 15% in 2020 from the 2017 level of 207,726,469, which observers see as dismal given Nigeria's huge cargo potential.

Managing director of SAHCO Plc, Basil Agboarumi said despite this exports have marginally increased.

Skyway Aviation Handling Company Plc's investment in ground handling facilities remains largely under utilised because of the low export activities. Besides Nigeria's main airports of Lagos, Kano, Abuja, Port Harcourt and Enugu, other airports in the country have little or no facilities to receive and process cargo.

Yadudu proposed that Nigeria should adopt a strategic plan to increase domestic air cargo progressively by 30% to reach 33,028,797 kg, and exported goods by 25% to reach 9,647,623,538 kg by 2027 from 2021 levels.

Insurance support

Nigeria's Commissioner National Insurance Commission (NAICOM), OS Thomas said that the regulation of aviation insurance in Nigeria required an A-rated insurance service provider to ensure claims are paid.

This is as aviation and cargo service providers lament the high insurance premiums required in the country.

Adetola Adegbayi, executive director of Leadway Assurance Plc, however, explained that paying insurance premiums is much cheaper for aviation businesses to manage risks given the huge claims required when accidents do occur.

Afcfta far-fetched?

Nigeria's favourable participation in AfCFTA hinges on the country's ability to enhance ease of exportation, and of doing business that will drive local competitive production and distribution. Achieving this will though will need some kind of intervention not only in Nigeria but in most of Africa's 55 countries.



VULCAN BOMBER CELEBRATES 60 YEARS

Words and photos by Simon Murdoch

One of three remaining Avro Vulcan B2 jet-powered, strategic bombers that are in still in good working condition – celebrated its 60th birthday in true style at the Essex county town of Southend in the United Kingdom.

Crowds gathered to watch the Avro Vulcan registration XL 426 perform a high-speed taxi run down the main runway at London Southend airport on August 27th, 2022 using its brake parachute to do what it is best for – to assist in bringing this tailless, delta wing to a stop.

The Vulcan B2 formed the backbone of the United Kingdom's airborne nuclear deterrent during much of the Cold War and when relations between countries nearly resulted in World War 111. Designed to accept the blue steel missile, it was also used in conventional bombing missions, such as Operation Black Buck during the Falklands War between the United Kingdom and Argentina in 1982.

Southend's Vulcan is owned and cared for by the Vulcan Restoration Trust at the airport. It made its first flight on August 23rd, 1962. After several test flights at Woodford where it was made, it was delivered to the RAF at Scampton with the No.83 squadron. Later it was withdrawn from front-line service and used by the RAF Vulcan Display Flight. It remained in service until 1986 when it was bought

by Roy Jacobson and flown to Southend airport on December 19th, 1986 then registered as G-VJET.

The Vulcan Restoration Trust was formed in 1993 at Southend to look after the aircraft and their engineers have kept it in a ground running taxiable condition. It does several high-speed engine runs down the main runway using its parachute a couple of times a year. The other remaining Vulcans which have been restored to taxiable ground running condition bear the registration XH558 named The

Spirit of Great Britain and XM655. The Vulcan B.2 XH558 flew for the last time in October 2015 but is still in taxiable condition.

This is out of the 134 that were built. There are a few other Vulcans preserved in museums around the world but the rest have been scrapped and no others are maintained in ground-working condition.



The Southend Vulcan bomber celebrated its 60th birthday in style

ETHIOPIAN AIRLINES OPENS HOTEL



The first phase of the construction of Ethiopian Airlines in-terminal hotel has been completed - opening up availability to passengers, guests and crew. It is connected to the Addis Ababa Bole International departure terminal 02 a short walk from the departure gate.

The first phase provides 41 rooms and once complete there will be a total of 97 modern, spacious, and luxurious rooms, as well as a restaurant and other facilities. The rooms incorporate various categories such as an executive suite, a premium room for the differently abled, 12 interconnected rooms, 30 twin rooms and 53 double rooms.

The Ethiopian Skylight in-terminal hotel will also cater to passengers and crew who do not wish to leave the airport thus providing a convenient travel experience and seamless connection.

Ethiopian Airlines group CEO Mesfin Tasew said, "The extensive Ethiopian network brings millions of passengers through Addis Ababa each year. As a customer-focused airline, we want our passengers to enjoy every minute they spend with us, even their transit hours at the airport.

"The construction of an in-terminal hotel takes transit at Addis Ababa to the next level. It addresses the industry's demand and leads us to plan and create efficient and seamless connectivity to enhance the comfort of passengers. We want passengers to depart from their origin city without a single worry about their transit time at Addis Ababa Airport should they choose to stay there as we are waiting for them with a comfortable space where they can freshen up before boarding their next flight."

The second phase of construction, providing the remaining 56 rooms, restaurant and other facilities, is due for completion this month.





AIR SAFETY ENHANCED

A framework of co-operation and collaboration around the issues of air safety between the African Airlines Association (AFRAA) and Flight Safety Foundation (FSF) has been formalised in a signed memorandum of understanding (MoU).

AFRAA and FSF have agreed to co-operate closely and consult each other on matters and/or activities of mutual interest aimed at the improvement of safety of the air transport industry in Africa such as joint regional technical workshops, development of information and resource material for the membership of each organisation and the industry at large, promotion of effective safety information sharing among other initiatives.

Abderahmane Berthé, AFRAA secretary general and Dr. Shahidi, president and CEO of FSF signed the agreement at the side-lines of the Aviation Africa conference in Kigali, Rwanda.

“Safety is among AFRAA’s top priorities and the driving force behind our championing regional safety co-ordination for Better Skies in Africa. For African aviation to yield better safety performance, the continued co-ordinated efforts by aviation stakeholders are essential in line with the five pillars: co-operative approach to safety improvement in Africa under the framework of the Abuja Safety Targets, operational compliance of African carriers with international standards, data-driven safety management, infrastructure safety and fleet modernisation,” said Berthé.

“We are excited to establish a framework of collaboration with Flight Safety Foundation that will enhance actions under the five pillars and positively impact air transport contribution to Africa’s economic development,” he said.



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BOEING REMARKETING STORED 737S

By Scott Hamilton

The indefinite delay in China authorising Boeing to deliver the 737 MAXes has led the manufacturer to remarket more than that are 100 stored.

CEO David Calhoun said recently that Boeing can no longer wait for China's OK with the large inventory of aircraft that went into storage when the MAX was grounded in March 2019.

Boeing continued building the MAX on the assumption that the grounding would be short. At the end of 2019, there was no end in sight for recertification and production was halted. There were 450 MAXes built and placed in storage.

About 140 of these were destined for Chinese airlines and lessors. Lessors have been allowed to accept some deliveries as long as the airplanes were delivered to customers outside China, it has been previously reported.

Remarketing chinese-ordered aircraft

Speaking at a recent conference organised by the US Chamber of Commerce, Calhoun said "We are not delivering airplanes to China.

We certainly wish we could. We are remarketing a small portion of them. We will continue to defer production of any Chinese airplanes.

We don't really carry any risk. Then depending on what we read, we will just keep remarketing more."

Calhoun said he is not worried about the market for MAXes, outside of China.

"I know we can move them, especially with the supply chain issues that both manufacturers are having."

Calhoun said he has to be pessimistic about a breakthrough in trade relations between China and the US. "I've predicted more progress than I've succeeded in getting," he said.

"It is what it is. The geopolitical situation is rough. It is tough. The good news for me is that there was a moment when there was a giant risk for the company. I don't feel that anymore. We've got to back them if we want to be world leaders."

Trade relations

Earlier this week a global consulting firm consultant who leads the company's trade relations section said he had a downcast view of any near-term change in the current US-China trade relations. Calhoun had said that improvement may be a year or two away.

The dour outlook contrasts with Robert Martin, CEO of BOC Aviation, who earlier said he saw improved relations occurring by year end.

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The Africa Air Force Forum hosted by the Senegal Air Force, will feature bespoke networking exercises and interactive platforms for the region's Air Force leadership and global solution providers to enhance collaborative approaches to combat regional security challenges.

Why Senegal?

Senegal's Air Force is currently enhancing their fleet capabilities to support regional counterinsurgency and counterterrorism operations. In addition to the transnational conflicts, Senegal will begin oil exploration in 2023 and will require extensive air support to safeguard the new offshore oil and gas assets. Due to this, AAF will reveal the Air Forces commitment to regional security through shortlisting of suppliers and providing an essential platform for Africa's aerospace community to convene to progress coordination.



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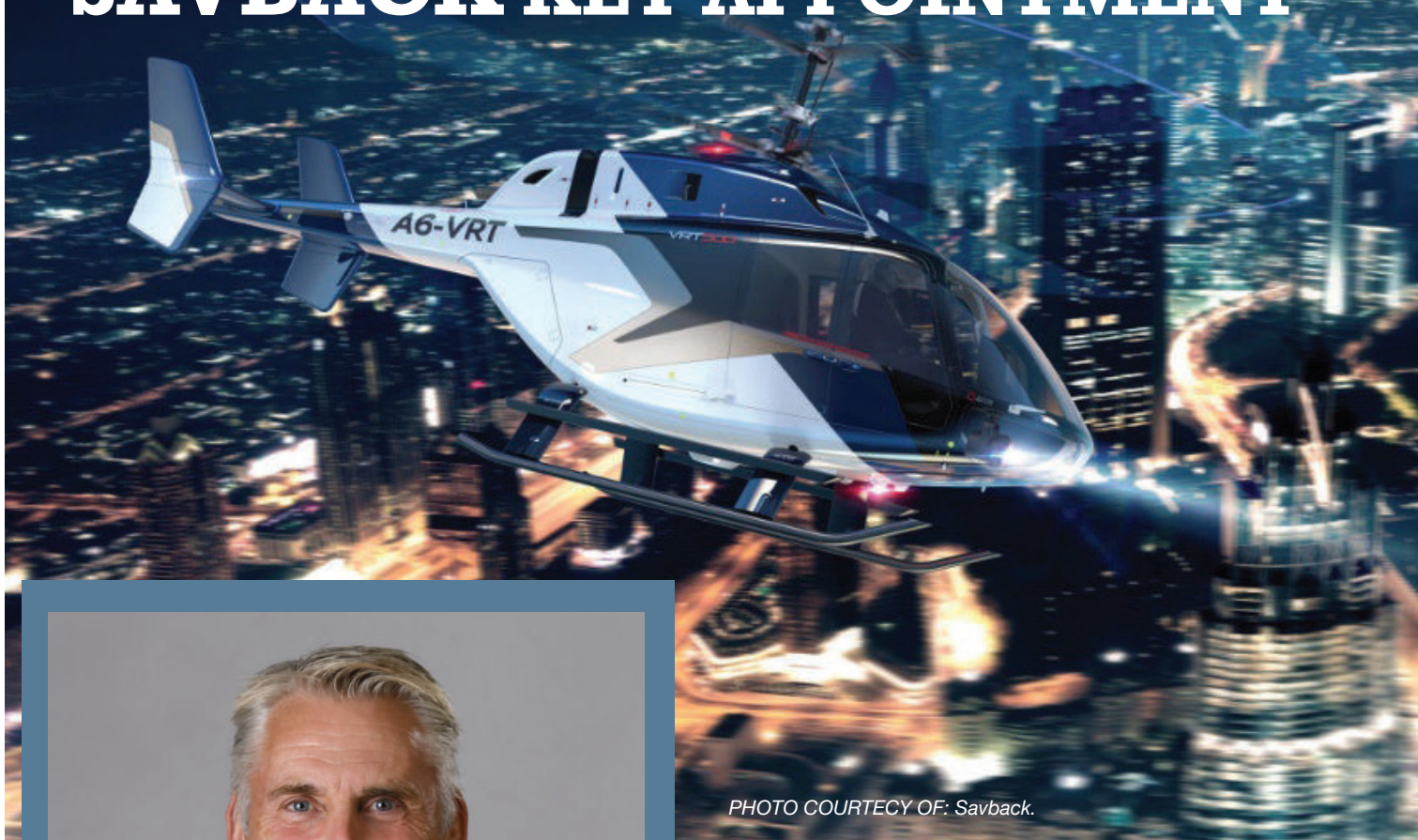


PHOTO COURTECY OF: Savback.



Fredrik Bergman has been appointed commercial director Savback Helicopters

Savback Helicopters has announced the appointment of Fredrik Bergman as commercial director, effective immediately.

Fredrik will lead public sector customer liaison and sales in the Nordics for the company's expanded portfolio of aircraft, including drones and VTOLs. He will also provide support to the Savback team on wider commercial sales opportunities. Fredrik, a newly retired brigadier general, has served as an advisor to the company since 2021.

A distinguished aerospace personality with 35 years' service in the Swedish air force, Fredrik Bergman is a trained fighter pilot

with over 2,000 hours of fighter jet experience. He undertook his pilot training at the air force flying training school in Ljungbyhed, followed by the air force war academy in Uppsala, graduating from the Swedish defence college advanced command course in 2003, gaining a master's degree in military operational art and science from the Air University in the USA.

He served as squadron commander for two different fighter squadrons and as head of air force staff training and development at the Swedish armed forces headquarters. In 2011, he was appointed commanding officer for the Swedish unit FL 02 during the international military operation 'Unified Protector' over Libya. Returning to Sweden he became commanding officer of the Norrbotten Wing, F 21 in Luleå. In January 2015, Fredrik led the Swedish armed forces' long-term change and development work.

Fredrik has also served as chief of staff and deputy head of the Swedish armed forces communications department. His final assignment was as head of test and evaluation at Swedish defence material administration, FMV, before he retired from military service this month.

"I am very pleased to join the Savback team and hope that my extensive experience in the public sector will be beneficial to the company's continued development. As a commercial director with a focus on sales into the public sector I look forward to making a positive contribution and using my operational knowledge to help grow and strengthen the business," said Fredrik Bergman.

Savback chief executive officer Reja Savbäck said "We are honoured to have Fredrik on board as we shape our future success and believe he will be a key component of our company growth, integrating his experience with our mission. His wide military credentials and experience in the public sector make him a great complement to our established commercial team."

"Fredrik's extensive experience and skills in leadership and organisational transformations play an important role in our continued development and expansion. He will be a key member of our team as we grow our aviation portfolio," founder Savback Helicopters Michael Savbäck said.



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Etihad Airways official sponsor of Air Expo 2022

ETIHAD AIRWAYS OFFICIAL SPONSOR

Etihad Airways has been named the official airline sponsor of the Abu Dhabi Air Expo 2022 which will take place next month at the Al Bateen executive airport.

The national carrier for Abu Dhabi will be the exclusive sponsor of the anticipated 18,000 attendee event and will support a panel discussion on the topic 'Making Aviation Green: Sustainability in the Aviation Ecosystem'.

The Abu Dhabi Air Expo supports the development of Abu Dhabi as an aviation hub for general, business and commercial aviation and aims to bring together insight and knowledge from local and international stakeholders to deliver engaging content, inspire new thinking and encourage aerospace development by attracting new players to the region.

"As the 'Environmental Airline of the Year, we are proud to add our voice to the sustainability panel and this critical discussion around the decarbonisation of the aviation industry. We hope to influence others – from industry to individuals - to encourage

everyone to play their part in protecting our planet," said Tony Douglas, group chief executive officer, Etihad aviation group.

"This has been an excellent year for Etihad with record-breaking results for the first half of the year. With this positive outlook, we're looking forward to welcoming the aviation industry to Abu Dhabi for the Abu Dhabi Air Expo this November," said Douglas.

Air Expo 2022 is a unique platform that will bring aviation and aerospace industry leaders, seasoned professionals, enthusiasts, customers and students to network, exchange ideas and showcase the latest thinking, technology and equipment in general aviation.

The 80,000 m² exhibition is expected to attract 20,000 visitors and host more than 300 manufacturers and suppliers and will feature the latest innovations in private jet aircraft, helicopters, executive charter services, airport equipment and services, avionics systems, insurance and financing.

Over 80 aircraft from ultra-light to heavy jets will be on display for delegates seeking out a variety of aircraft and aviation-related services.

This year's event will include a new format that divides the exhibition into three main areas: aircraft hangar, chalets and outdoor static display. It will also feature a conference programme providing industry thought leaders a forum to share the latest thinking on general aviation and aerospace developments.

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UNITED & EMIRATES NEW AGREEMENT



United and Emirates Airlines have announced a historic commercial agreement that is of mutual benefit to their network and customers.

United will launch a new direct flight between Newark/New York and Dubai starting in March 2023 – from there, customers can travel on Emirates or its sister airline flydubai to more than 100 different cities.

Starting next month, Emirates customers flying into three of the US's biggest business hubs - Chicago, San Francisco and Houston - will have access to nearly 200 US cities in the United network - most of which only require a one-stop connection. At eight other US airports served by Emirates - Boston, Dallas, LA, Miami, JFK, Orlando, Seattle and Washington DC - both airlines will have an interline arrangement in place.

United and Emirates announced the agreement at a ceremonial event at Dulles International Airport, hosted by United CEO Scott Kirby and Emirates President Sir Tim Clark, featuring United and Emirates Boeing 777-300ER aircraft and flight crews from each carrier.

"This agreement unites two iconic, flag carrier airlines who share a common commitment to creating the best customer experience in the skies," said United CEO Scott Kirby.

"United's new flight to Dubai and our complementary networks will make global travel easier for millions of our customers, helping boost local economies and strengthen cultural ties. This is a proud moment for both United and Emirates employees, and I look forward to our journey together."

"Two of the biggest, and best-known airlines in the world are joining hands to fly people better to more places, at a time when travel demand is rebounding with a vengeance. It's a significant partnership that will unlock tremendous consumer benefit and bring the United Arab Emirates and the United States even closer," said Sir Tim Clark, president Emirates Airlines.

"We welcome United's return to Dubai next year, where our hub Dubai essentially becomes a gateway for United to reach Asia, Africa and the Middle East via the combined network of Emirates and flydubai. We look forward to developing our partnership with United for the long term."

ARCOSJET JOINS EBAA

ArcosJet, a Dubai-based global aircraft brokerage firm, has become a member of the European Business Aviation Association (EBAA).

An active player in the European market, ArcosJet shares the Association's key values and views on the future of the industry in the region.

ArcosJet provides highly professional support in the purchase and sale of executive aircraft to customers all over the world, including Europe, the Middle East, North Africa, Central Asia, and other regions. Adhering to the latest and best business standards and practices, the company is committed to growing a global network of professional ties.

"Professionalism, transparency, ethics, high business standards, and sustainable development have always been ArcosJet's priorities in its operations and relations with clients and partners. Our EBAA membership will allow us to join forces with hundreds of our colleagues in the professional community in developing business aviation as a safe, reliable, and environmentally friendly business tool", said Mikhail Alenkin, ArcosJet CEO and founder.

Traditionally committed to fostering a transparent and friendly business environment in the industry, ArcosJet surveys the market regularly, sharing the findings with the business community. The company's specialists appear at EBAA exhibitions and conferences along with other industry events across the world to build professional ties and discuss current topics at ArcosJet's own events such as Epic Night.

NBAA- BACE KEYNOTE SPEAKER ANNOUNCED

Widely acclaimed astrophysicist, author and science commentator Neil deGrasse Tyson - whose compelling visuals and one-of-a-kind perspectives about America's reach for distant horizons have captivated sold-out audiences this year - will be a keynote speaker on the opening day of the 2022 NBAA Business Aviation Convention & Exhibition (NBAA-BACE).

The event is due to take place this month October 18-20 at the Orange County Convention Centre and the nearby Orlando Executive Airport.

The convention will feature a media day on October 17, where companies will introduce new products and services, avionics systems, engines, in-flight connectivity technologies and more.

This year's convention promises to set a new standard in highlighting the inspiring people, bold ideas, new markets and emerging technologies transforming business aviation. The show will bring together thought leaders in safety, security, sustainability, innovation, workforce development and more.

The NBAA-BACE aircraft display and show floor have been sold out.

Offering more exhibits, more aircraft and more opportunities for education and networking than any other event dedicated to the business aviation industry, NBAA-BACE consistently ranks among the largest trade shows in the United States.

It is estimated to bring together approximately 25,000 industry professionals from around the globe.

Register now for [NBAA-BACE](#)

CYPRUS AIRWAYS REGISTERS SOLID PERFORMANCE



Cyprus Airways has announced traffic results for August and confirmed steady operational progress. During that month, the airline operated 321 flights and carried a total of 47,514 passengers (39,237 on scheduled routes and 8,277 on charter business).

Average seat load factors for the same month stood at a healthy 94%, whilst on-time performance or OTP figures show that 89% of flights operated on time.

"These results continue to build on the constant progress registered this year," Andreas Georgiou, chief operating officer and accountable manager of Cyprus Airways.

"We have invested over Eur50 million to be in a position to add two new Airbus A320 aircraft to our fleet and employ additional crew sets to increase capacity. Notwithstanding the substantially

increased capacity, we are happy to note that our seat load factors are above 90% and our OTP figures over July '22 improved from 76% to 89% - well above the current European average."

Paul Sies, chief executive of the airline said, "After announcing a strong (and net profitable) July 2022 performance, we announce an even better result for August. We have continued to improve our already high seat load factors and registered new business opportunities including extra (sports-related) charter flights. Over the last two months, we operated 750 flights and carried over 100,000 passengers. On top of this, we have also secured an ACMI lease operation of one of our aircraft in Latvia which secured another 126 more flights that we operated on behalf of the charterer.

"This summer, our most popular routes of Athens, Beirut, Tel-Aviv and Yerevan have improved our revenues and we are looking forward to announcing soon a strong route network for this winter.

"As we continue to grow the connectivity between Cyprus and key destinations, we remain committed to assisting the island to boost tourism and the economy. We are proud to be the only airline in Cyprus serving the Cypriot market and working for the benefit of the country," said Sies.

AN ENVIRONMENTAL LONG-TERM GOAL

by Juliana Scavuzzi

ACI World senior director, sustainability, environmental protection and legal Affairs Juliana Scavuzzi explained why more government support is needed for the planning and implementation of airports' decarbonization strategies and action plans.

Every three years, the International Civil Aviation Organization (ICAO) holds its Assembly, which establishes the worldwide policy of the Organization for the upcoming triennium.

This event attracts more than 2,000 delegates, including ministers, directors general of civil aviation, and senior policy and decision makers.

ACI has been working diligently to prepare its advocacy positions and engagement strategy to represent its members' needs at this crucial junction in time under the theme: #All4one Aviation Ecosystem.

THE LOOMING ISSUE

Climate change is a global challenge requiring solutions which can enable initiatives across the globe, promoting a just and inclusive transition to Net Zero Carbon by 2050.

The IPCC's Special Report (2018) calls for urgent action to avoid the most catastrophic impacts of climate change. Aviation is a hard



ACI World senior director, sustainability, environmental protection and legal affairs Juliana Scavuzzi

to abate sector, requiring a harmonised combination of appropriate policies, access to finance, capacity building and collaboration.

ACI member airports at a global level **committed to reach net-zero carbon emissions** by 2050, and have urged governments to provide the necessary support in this endeavor.

Made in June 2021, it is the first net-zero aviation-sector commitment at the global level and is based on a comprehensive long-term goal feasibility assessment. ACI is also part of the Air Transport Action Group (ATAG) Net Zero by 2050 commitment made by the aviation industry in 2021.

More than 130 airports have anticipated reaching their target by 2030, or even earlier, while others by 2040. However, support is needed from governments and many other stakeholders for the planning and implementation of their decarbonization strategies and action plans.

WHAT'S IN IT FOR AIRPORTS, THE AVIATION INDUSTRY, AND BEYOND

The greatest source of carbon emissions for airport operators is the energy used to power terminals and equipment. Therefore, the decarbonization of electricity grids, which in most cases airports have a limited ability to change, will be an essential component in the success of airports in reaching net-zero carbon emissions by 2050.

Renewable energy is a strategic issue for States (governments) and the global economy. The grid decarbonisation will happen unevenly across the globe and green energy could remain a scarce resource for many.

States should co-operate and consider the development of policies and mechanisms that could accelerate the deployment of renewables globally, such as power purchase agreements (PPA) and book and claim systems which could be used among stakeholders from different States.

Effective action to achieve net zero by 2050 and sustainable development will depend on the ability of airports and other stakeholders to incorporate sustainability at the core of their corporate governances, strategies, risk managements, and goals.

Multi-sector collaboration will play a critical role in ensuring a resilient aviation ecosystem capable of achieving global sustainability goals. Decarbonisation is a necessity and the right thing to do.

There is ever-increasing pressure on airports and other aviation stakeholders to deliver on sustainability and those are attached to requirements to attract and grant finance. Sharing climate-related risks is becoming a condition for investment. This requires

efforts which align mitigation and adaptation initiatives to ensure a sustainable and resilient aviation ecosystem.

NET-ZERO ENABLERS

Technology, innovation, capacity building, and collaboration Airports are also embracing technology and innovation, including accommodating new emerging technologies in the aviation market and innovative propulsion methodologies to promote a positive transformation of the aviation ecosystem. This entails the transition to net-zero and improving the services they provide. The importance of collaboration cannot be overstated and needs to reach higher levels, as the challenge is significant and unprecedented. The cooperation of aviation stakeholders to ensure the sustainable development of the sector is critical, particularly regarding the decarbonization of aviation emissions. Some airports can facilitate the deployment of sustainable alternative sources of energy onsite, especially SAF in the short- to mid-term.

NO COUNTRY AND NO AIRPORT SHOULD BE LEFT BEHIND

The challenge to decarbonize aviation is significant, but airports have committed and are taking action to decarbonize. Support from government and collaboration with stakeholders will be essential for airports to have access to renewable energy, finance, and capacity building to decarbonize globally. Collaboration will act as a catalyst for impact by providing benefits to several stakeholders. Climate change is a global challenge; No country, and no airport should be left behind.

Therefore, ACI will invite the upcoming ICAO 41st Assembly session to recognize airports' efforts and the challenges they face to decarbonize; support airports' work to develop and implement their net-zero roadmaps; and support increased collaboration among relevant stakeholders and actions to facilitate the availability of renewable energy, finance, and capacity building.

Article courtesy: <https://blog.aci.aero/aci-at-icaos-a41-reaching-aviations-environmental-long-term-aspirational-goal/>

VALLAIR ACQUIRES A321 FOR PART-OUT

Vallair, a Luxembourg-based, asset specialist, has purchased an Airbus A321 (MSN 1008) for imminent part-out.

The 1999 vintage aircraft was previously operated by Atlas Global and managed by TrueAero LLC.

The airframe will be fully disassembled at the Vallair facility in Montpellier, under the supervision of Armando Filho, director of material management.

"Part of the group's strategy is to build and sustain a good-quality spares hub in France. We are fully committed to supporting this aircraft type for airlines, lessors and asset managers," he said.

Intelligent repair management with an integrated supply chain and global network of audited MRO facilities ensures that Vallair provides a streamlined service to support the market needs.

Filho said the parts will be removed from the A321 aircraft,



PHOTO COURTESY OF: airlines.com.

processed and made available for sale in Q4 2022. Vallair material management team works in close partnership with the teardown function and manages the processing of hundreds of aircraft parts every month alongside Vallair's in-house aerostructures repair shop based in the Châteauroux facility.



FLIGHT OF QUEEN ELIZABETH II'S COFFIN CONFIRMED AS MOST TRACKED EVER

By Sanj Atwal

The flight carrying Queen Elizabeth II's coffin to London is officially the most tracked flight in history.

Flightradar24 recorded 4.79 million users viewing the Queen's final flight, with a further 296,000 following along via YouTube live stream.

The RAF Globemaster C-17 aircraft took off from Edinburgh Airport at 17:20 on Tuesday 13 September and landed at RAF Northolt one hour 12 minutes later.

Despite Flightradar24 anticipating a spike in traffic during the flight, the number of people attempting to track the plane went far beyond what they had expected.

Six million people tried to click on it within the first minute of the plane's transponder activating, resulting in "unprecedented strain" on the platform.

Regardless, the site remained stable enough for the record to be broken, which was set last month when 2.2 million people tracked Nancy Pelosi's trip to Taiwan.

The Queen's coffin was accompanied on board by Princess Anne and her husband, Sir Timothy Laurence.

The plane was welcomed at Northolt, a military base in west London, by a small group including newly-appointed Prime Minister Liz Truss.

Upon landing, pallbearers from the Queen's Colour Squadron carried the coffin to the Royal Hearse. It was then transported to Buckingham Palace to rest in the Bow Room.

Big Ben tolled at one-minute intervals as a procession followed the coffin - draped in the Royal Standard and adorned with the Imperial State Crown - to the Palace of Westminster.

There, the Archbishop of Canterbury held a short service attended by King Charles III and members of the Royal Family. Following this, the Lying-in-State began at Westminster Hall, where the public are able to pay their final respects to the late Queen. As expected, a huge queue formed, stretching around five miles in length as of Friday morning, with an estimated queueing time of over 14 hours.

Queen Elizabeth II will Lie-in-State until the day of her funeral on Monday 19 September in Westminster Abbey.

She was an avid aviation As the longest-reigning queen ever and **oldest reigning queen ever**, she will be fondly remembered and missed by many.

Article courtesy. <https://www.guinnessworldrecords.com/news/2022/9/flight-of-queen-elizabeth-ii-coffin-confirmed-as-most-tracked-ever-717676>

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