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RUSSIA - MOSCOW Yuri Laskin / ylaski@mail.ru or lauk-media@mail.ru Tel.: 7 495 9121346 What would a flight training focused issue be without the iconic Cessna 172 Skyhawk on our front page? Big Thanks to the Textron Aviation media agency that responded so quickly to our request for some great images – that includes this one here on this page. Read about how Paramount is ramping up efforts to train our next generation aviation workers and beyond. Our colleagues from Malta have sent through a number of different stories that are featured throughout our November. Big thanks to Chris Cauchi and the MAviO team.

Send any comments or questions through to me: heidi@airnews.co.za

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# THE PANEL THAT NEVER WAS



#### By Heidi Gibson

*World Airnews* was invited to be a moderator on a panel at the 4th Aviators Africa Conference and Tower Awards event held last month in Johannesburg, South Africa.

The theme for the award ceremony and the conference was very apt – sustainability in African Aviation and came on the back of the 41st ICAO Assembly that took place in Montreal Canada. The Assembly was historic as the Director of the South African Civil Aviation

Authority SACAA Poppy Khoza became the first female president. Therefore, I was pretty excited to have the chance to moderate a panel consisting of Mrs Khoza and her Nigerian colleague Captain Musa Nuhu – director of the Nigerian Civil Aviation Authority and others on the topic of sustainability. So I begun to prepare. First I had to know a bit of background on these two high level aviation executives. I researched and prepared a short introduction and then went indepth on the topic of sustainability in aviation. Hours went by looking at the three legs – electric flight, hydrogen and sustainable aviation fuel. Through the research questions began to rise.

What does sustainability mean in the context of civil aviation in Africa? How are we going to find a reliable supply of electricity when most of our countries' grid remains unstable? What about storage and distribution of sustainable aviation fuel? And then what about the production of this fuel? Africa has the potential but at the moment we do not have one functioning SAF refinery on the continent.

How are bodies like the Civil Aviation Authorities going to create an enabling environment to drive this issue? How will they regulate it? Who will they draw on to create the regulations and what will they cover? I could on and on – but it all faded out overnight as neither Mrs. Khoza or Capt Musa showed up. Overnight they pulled out of the conference and my panel disappeared. It was a poor show after having committed months earlier and disappointing, to say the least.

It will go down in my experience as the Panel that Never Was. Meanwhile, it looks like the strike by Air Traffic Controllers (members of ASECNA) has ended following a meeting between the Minister and Director General in Dakar, Senegal and members of the union. Of the 19 grievances raised that needed to be addressed - 11 have been resolved.

However, my source told me, that there are another eight that remain unresolved. These will be dealt with at a follow-up meeting set down for January 2023 that will comprise Ministers of Cameroon, Congo, Cote d'Ivoire, and Senegal.

The unresolved issues related to a salary system that was promised but then never implemented a special safety incentive bonus promised to those that did not participate in the strike!

And lastly, sit back and enjoy the read we focus on the world of training and flight schools (given that the industry faces the largest shortage of pilots) as well as a bit of military and defence. Have a look at what is happening in Nigeria and other countries across West and Central Africa.



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Fifteen students have joined the Paramount Aerospace Systems (PAS) technical training academy to become the next generation's leading aircraft technicians and engineers.

The announcement came after a grant provided by South Africa's Transport Education Training Authority (TETA) in 2019, which enabled seven students in early 2022 to complete the three-year course offered by Paramount Aerospace Systems (PAS), and that now have recently qualified.

Paramount Aerospace Systems (PAS) operates a fully accredited Technical Training Academy at Wonderboom National Airport, near Johannesburg, South Africa. It is located adjacent to the state-ofthe-art aircraft production facilities where the Mwari reconnaissance and light attack aircraft is manufactured.

The 'PAS' Technical Training Academy was established to serve the training needs of young Africans from across the continent who aspire to reach careers such as aircraft technicians or aircraft maintenance engineers.

"We are absolutely delighted that, with the support of the TETA training grant, students will be able to participate in our comprehensive programme, presented by industry veterans with decades of combined experience," said Brian Greyling, CEO of Paramount Aerospace Systems.

"We are addressing the dire shortage of technical skills in the local aerospace sector and further, unlocking pathways for our students to embark on prosperous lifelong careers in both the local and international aviation industry".

"With huge growth projected for the local aviation sector, and across the African continent, the increased demand for gualified aircraft technicians is going to soon outweigh the very limited pool of available resources within the country to-date," said Greyling.

The PAS Training Academy, which accommodates two intakes per year in January and July, has plans to expand rapidly over the next decade to address the urgent requirement for more certified technicians.

The calibre of students that qualified in 2022 was of such a high order that three of the graduates were offered immediate starting positions at Paramount Aerospace Industries, and another graduate was retained by Paramount Aerospace Systems.

The three remaining graduates are being assisted to find and secure their first positions by instructors at the Training Academy, alongside private aircraft maintenance organisations or AMOs. "For aircraft to operate safely and efficiently, it is imperative that properly qualified aircraft technicians are available to perform the required maintenance actions and in addition, support actual flight operations. Our Technical Training Academy provides high guality technical training, offering a regular curriculum of exams that lead up to trade test preparation, and then actual trade testing, all from within a single facility, which we believe is an immense achievement," Greyling said.



# **GREECE & ISRAEL OPEN FLIGHT SCHOOL** IN KALAMATA

Greece has in partnership with Israel, opened a flight school in the southern city of Kalamata that will train pilots in combat and other missions.

Greece has in partnership with Israel, opened a flight school in the southern city of Kalamata that will train pilots in combat and other missions.

Israeli defence contractor Elbit, which finalised a (US) \$1.65 billion deal with Greece's government, assisted by Israel last year, will help run the facility located on an air force base. The new training centre began operating late in October with 14 of an expected 25 T-6 singleengine turboprop aircraft.

The fleet is set to expand next year with the delivery of 19 Italian-built M-346 training jets equipped with embedded virtual avionics that simulate combat and flight scenarios. Major Gen. Georgios Vagenas, commander of the Greek Air Force Training Command, said the T-6 aircraft would provide seven thousand flight training hours annually while the M-346 jets would provide 3,500 hours.

"These facilities will prepare fighter squadrons for the generation of fighter aircraft that the air force recently acquired," Vagenas said. "It will be the main mechanism to counter threats...coming from our neighbour to the east."

Defence Minister Nikolaos Panagiotopoulos and his Israeli counterpart, Benjamin Gantz cemented the two countries' desire to proceed together with the strengthening and deepening of their defence cooperation.

Panagiotopoulos and Gantz underlined the importance of the implementation of the International Flight Training Centre in Kalamata, as it strengthens the strategic relationship between Greece and Israel.

Benny Gantz described the event as "a project that reflects the deep and strong bond between our countries and defence facilities."

He said it is "a bond based on shared values and interests, as well as many years of co-operation that has a great impact on the Eastern Mediterranean region. It is a strategic investment in the future capabilities of our friends, which will further promote Greek ties with Israel and international partners."

In recent times Greece and Israel have developed strong defence ties which are demonstrated by the participation of respective air forces in joint exercises over the Eastern Mediterranean.



From left, Major Gen. Georgios Vagenas, commander of the Greek Air Force Training Command, Head of SIBAT Yair Kulas, President and CEO of Elbit Systems Bezhalel Machlis stand on a T-6 single-engine turboprop training aircraft at an airbase outside the southern port city of Kalamata, Greece, October 21, 2022, (AP/Petros Giannakouris)



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# FLIGHT TRAINING IN THE US

By Sam Weigel

Flight training before graduating high school is an excellent idea for any teenager interested in a flying career, but don't rush.

With the recent well-publicised upsurge in pay and benefits thanks to the pilot shortage, there's been a great deal of renewed interest in flight training among prospective professional pilots young and old and also among interested parents looking to set their progeny on a lucrative career path.

Recently, I've seen a question surface that I'm perhaps uniquely qualified to answer: Is there an advantage to starting flight training before graduating high school? How young is too young? Is there an ideal age?

Technically there is no minimum age to start flight training, a fact I discovered as an aviation-stricken 13-year-old who had just taken the stick for the first time on an EAA (Experimental Aircraft Association) Young Eagles ride. I called the local FSDO (Flight Standards District Office) and managed to get a hapless inspector on the phone; he confirmed that one must be 16 years old to solo and 17 to earn one's private pilot certificate in an airplane (14 and 16, respectively, in a glider), but there is no minimum age to begin dual instruction with a flight instructor.

"Can you reach the rudder pedals in a Cessna 150?" he asked. I didn't know. A week later, an introductory flight confirmed that I could, with the aid of a pillow. I started taking lessons, scrimping and saving (US) \$56 for an hour of dual at the end of each month.

I soloed on my 16th birthday and passed my private pilot check ride on my 17th. Today, at the age of 41, I've been flying more than twothirds of my life and have some 15,000 hours of flight time - nearly two full years spent airborne.

In retrospect, I'm a little ambivalent about the path I took. It worked for me because I was utterly obsessed with flight at 13 years old and too impatient to wait a few years - actively flying kept me focused through my teen years. Because I was a broke kid paying out of pocket, starting early helped spread the cost over four years.

Had I waited, it's quite possible my interest and my scant earnings would have wandered. And yet I'm keenly aware that the way I did it was less than efficient, and isn't necessarily the best path for every interested youth.

#### LAW OF RECENCY

Any flight instructor will tell you that a month between lessons is way too long ("law of recency").

You forget a great deal over a month, particularly when the skill is so fresh, meaning that each subsequent lesson wastes time reteaching things.

In my opinion, the most efficient pace for learning to fly is one to two lessons a week. Starting early means that even if you retain the information well, you are likely to exceed the required hours by a good bit. In 1997, I soloed at 32.4 hours (having averaged 11 hours a year until then), and the next year, I got my private at 71.6 hours. Those were well above-average numbers back in the pre-TAA (technically advanced airplane) age. If you're looking for maximum efficiency, I would not start as early as I did - I'd wait until 15 or 16.

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That said, I do think that taking flight training before graduating high school is an excellent idea for any youth interested in a flying career (including those planning on a military track). I've taught primary students in both traditional and accelerated settings, and I rather strongly feel that the private certificate shouldn't be rushed, because it introduces so many new skills and fundamental knowledge that will be built upon over the course of one's career.

For anyone considering a pilot career, private pilot training should afford one the chance to fall in love with flying and assess whether you're well suited to it, without the pressure of having already entered a collegiate programme or aviation academy.

I've come across too many recent stories of primary students getting utterly burned out before they've even experienced the magic of their first solo cross-country flight.

Now, it's true that some programmes won't give you full credit for a private certificate earned outside of a Part 141 or collegiate setting.

In my case, a local community college gave me full credit for my private while I was in high school, which allowed me to transfer into the University of North Dakota's flight programme without taking their private pilot test course.

If this is not an option for you - and you have your heart set on a programme that is not transfer-friendly - consider training at your local FBO just through your first solo, perhaps during your senior year of high school. It will give you a good taste of what flying is about, and will likely allow you to go through your subsequent school's private pilot course in the minimum allotted hours (a rarity these days).

If you are aiming for a military flight slot, prior flight experience will give you a leg up over other applicants in the ultra-competitive selection process and rigorous initial training.

#### SUSTAINING MOTIVATION

Looking back at my early flight training, I realize that those first few years of monthly lessons served more to keep me interested and motivated than anything, and there are cheaper ways to do that.

One of the best is the Civil Air Patrol's cadet programme, so long as you don't mind its guasi-military flavour (which varies considerably by wing and squadron, according to the tastes of the local commanders).

Another is the Experimental Aircraft Association; most chapters involve youth in building and restoration projects, which is an excellent way to gain aviation knowledge while meeting local pilots and getting invited to fly in their airplanes. Many chapters also offer scholarships for youth flight training.

For those who live near a soaring club, gliders offer a fantastic introduction to the fundamentals of flight in a communal setting.

And lastly, flying with friends and family who are not instructors can be a cost-effective option in one's early teens and prior, even if you can't log the hours. Any prior experience will make subsequent flight training more effective, giving you more bang for your buck.

All this said, if you or your child is an aviation-obsessed early teen or preteen who just can't wait to start lessons, and you can make it work financially, there is nothing in primary training that a reasonably intelligent kid can't readily grasp.

Learning to fly delivers a great deal of enjoyment and confidence at an age when "grown-up" activity options are generally limited. I'm grateful that my parents gave me the freedom to fly as early as they did; as a result, I have a lifetime of flying to look back on, with many fond memories throughout.

#### WHO IS SAM WEIGEL?

Sam Weigel has been an airplane nut since an early age, and when he's not flying the Boeing 737 for work, he enjoys going low and slow in vintage taildraggers. He and his wife live west of Seattle, where they are building an aviation homestead on a private 2,400foot grass airstrip.

Article courtesy: https://www.flyingmag.com/what-is-the-right-ageto-start-flight-training





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# **AIR POWER** FOR AFRICAN SECURITY



Article and Photos By Helmoed Heitman

"The Beechcraft King Air is the world leader in twin-turboprop special mission operations because of the aircraft's unmatched capabilities, ruggedness and reliability," said **Bob Gibbs**, vice president, Special Mission Sales and Strategy for Textron Aviation.

Large swaths of Africa are experiencing armed conflict with irregular forces. Many of those use mobility to evade engagement by security forces, using light 4x4 vehicles and motorcycles. Given the sheer size of most of the countries affected, those elusive querrillas are difficult to 'find and fix' so that security forces can engage them.

In a large country with a small military, it is an air force that can:

- Provide effective surveillance over large tracts of territory and along road and river routes.
- Promptly strike hostile forces once detected, far more quickly and over greater distances than ground forces could do so.
- Deploy ground forces quickly over extended distances and across rough terrain, and then support them with reconnaissance, close air support and tactical trooping.
- Provide logistic support to ground forces deployed far from major bases

That makes it surprising that so many of the affected countries have only miniscule air forces. One reason is, of course, money - air forces are expensive to build, maintain and operate. But that can be overcome to an extent by the choice of aircraft types and with suitable operational doctrines.

#### AIRCRAFT TYPES

Intelligence, Surveillance, Reconnaissance: The primary military challenge in fighting irregular forces is to 'find and fix' them. In large countries aircraft are best suited to that task and can also maintain contact until ground forces can engage. Aircraft can also be used in the communications intelligence (COMINT) role, far more flexibly than even mobile ground-based systems. That is how Unita leader Jonas Savimbi was tracked and ambushed.

This can all be achieved using some perfectly affordable aircraft types, the King Air, Caravan and Da-42 being types used by some African air forces in these roles, as are some maritime surveillance aircraft. And, of course, UAVs also have potential in these roles, particularly given the ability of some types to stay on station far longer than any manned aircraft.

Communications Relay: Another problem for small forces in large theatres is communications. Aircraft can be fitted for communications relay, or even used in their standard configuration in that role. The South African Air Force used spotter aircraft and the light attack Impala in this role, so again there is no need for some massively costly type. And again, UAVs have potential here.

**Close Air Support:** Armed aircraft provide the quickest way to focus combat power over distances beyond artillery reach. Aircraft like the Super Tucano. Texan II, Hürkus and Woongbi are effective in this role and can serve in the ISR role, while simpler types like the SF-260 also still have a place, and all are already in service in Africa. And there is the Mwari that was specifically designed for both roles. Apart from cost and complexity issues, a key advantage of these types is that they can be deployed to and operated from austere locations. Armed UAVs can also be useful in this role, but are limited by limited payload and restricted situational awareness - a pilot in a

cockpit sees and senses far more than an operator looking through a camera

Attack helicopters are immensely useful in this role, but generally lack the combat radius to be effective unless forward deployed material for another day.

**Interdiction:** Like any other force, irregular forces depend on logistics and some also depend on smuggling for their funding. That translates into trucks and, sometimes, boats moving goods. At other times guite large groups of guerrillas move around a theatre to carry out a major attack, such as at Haskanita (Darfur 2007), Ndjamena and Omdurman (2008) and Kolbiyow (Somalia 2017). That is where interdiction capability could be a key factor. Ideally this would fall to fighter ground attack types, but the turboprop types will often be able to fly such missions to good effect.

**Gunships:** Fixed-wing gunships would seem ideal for many tasks arising from operations against irregular forces – ISR including armed reconnaissance, close air support, convoy escort, airborne command and control et al. They offer outstanding combat radius and time on station and in the armed role good 'magazine depth'. That does not have to be an immensely costly AC-130; lighter types have been developed on the basis of the C-27J. the C-295 and the CN-235, and Colombia still uses turboprop C-47s in that role. Today, given the funding, they can also be armed with precision weapons.

Transport: Logistics in its broadest sense will often be the key to successful operations, not just supporting deployed forces but also deploying and redeploying them. All of that is logistics, an art often overlooked and seldom to any degree understood, by politicians and civilian commentators. Given the size of many of the African countries facing armed conflict, often difficult terrain and poor transport infrastructure, it is air transport that can render ground forces vastly more effective. One example is the French operations in Mali in 2013, which included para-dropping supplies for ground forces and helicopters.

For operations within a country or even within some of Africa's regions, light types like the C-27J, C-295, CN-235 or one of the Antonovs will suffice and are reasonably affordable. Of course, the C-130 offers much greater payload/range performance. There is a place for utility types, such as the C-212 and lighter types, able to deliver critical supplies, handle some special forces tasks and casualty evacuation.

At the tactical level helicopters will be ideal, but there are challenges of distance to be overcome; again material for another day.

#### DOCTRINE AND ORGANISATION

Having the right numbers and mix of aircraft will not of itself produce success. They will have to be employed according to appropriate



The Alenia C-27J is a light transport specifically developed as a military aircraft and for operations from austere airfields, and can transport light armoured vehicles, which most others cannot. Zambian Air Force C-27Js are currently supporting the SADC mission in northern Mozambigue, while those of the Chad and Kenyan Air Forces are also seeing operational service.



There are multiple military versions of the Super King Air, including surveillance, maritime surveillance and communications intelligence. King Airs are in service with multiple African air forces, and special mission variants could be maintained together with the light transports already in

doctrine that must be developed in concert with the ground forces. Key elements will be to have the ability to promptly and quickly evaluate information from surveillance and reconnaissance, the ability to deploy and sustain air assets to austere locations in the right place, and to have ground forces elements suited to deployment and support by air. And all of that properly integrated into a smoothly running system, kept so by regular training.

# WAMOS CAME TO THE RESCUE





# **A TALE OF CLIPPED WINGS**

#### By Chris Cauchi, MAviO News

During the first half of 2018, there was a serious attempt by Air Malta to diversify its business and the setting up of the Air Malta Academy was seen as a possible revenue stream.

While the whole idea was still in its embryonic stages, it was being championed by then Air Malta chairman Charles Mangion who saw a window of opportunity for the ailing national carrier. The project was entrusted to Captain Eric Abela, who was a familiar face both at the old head office building in Luqa as well as Level 2 SkvParks.

MAviO News met up with Eric to discuss this stillborn project. He said that the concept he had mapped out was a holistic one that included pilot training, B1/2 aviation mechanic training and thirdparty cabin crew attestation courses.

The captain who hails from Zeitun and is a Hong Kong resident had left Air Malta for pastures new in the Far East. On his return he is clearly eager to get involved in the local aviation scene and embarked on a project to create a standalone company under the name Air Malta Academy, with the national airline receiving royalties in return for the branding and other services.

The concept is not entirely new and MAviO News has knowledge that Air Malta had toyed with the idea in 2008/2009 and also around 2012, although these plans came to naught.

Captain Abela said the Air Malta Academy could have been a highly successful venture, especially with Asian carriers eager to have their cadets trained within an EASA environment.

He said that through his network he could gauge that there was a flurry of interest in the Air Malta Academy idea as a centre of excellence in aviation training in the Mediterranean basin.

He said that the CAAC was dishing out contracts that amounted to more than (US) \$25 million at the time, spread over two years. The nascent Air Malta Academy, under the stewardship of Captain Eric Abela, was also looking at the introduction of a first pay-to-fly concept on the island to provide prospective students with zero experience, the possibility of securing a frozen ATPL, an Airbus A320 type-rating and subsequently 400-hours on the type.

The structure he envisaged would have seen a CEO /accountable manager at the helm with three nominated key personnel reporting directly to the key postholder. These were to include a head of flight training or HOFT, a head of engineering training or HOET and a head of flight attendant training or HOFAT. Instructors and other ancillary staff were to be employed on an ad-hoc basis.

Abela proposed an 18-month road map, with the Air Malta Academy housed in the old training centre. Plans were made for its complete refurbishment and extension.

MAviO News gained access to some exclusive 3D images depicting a modern facility with up to four simulator bays surrounded by classrooms and other training equipment.

Financial projections showed that the proposed Air Malta Academy could reach earnings exceeding one million euros annually before interest and tax.

With the current pilot shortage and a national debate raging on in the country on whether Air Malta will survive to see another year, the idea of an Air Malta Academy might have been a possible way of generating additional income and also an assurance of preserving this iconic name in European aviation circles, much on the same lines of the Pan Am Flight Academy.

Article courtesy: https://news.mavio.org/2022/10/11/a-tale-ofclipped-wings/

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# LEANER, FITTER, STRONGER

By Heidi Gibson

Leaner, fitter and stronger is how African Airlines Association of Southern Africa CEO Aaron Munetsi described the post-Covid pandemic aviation industry at the organisation's annual general assembly held in Cape Town, South Africa recently.

Elmar Conradie CEO of Safair is the new deputy ch

"Our industry emerges in a very different shape to what it was," he said, "but still faces considerable economic and regulatory headwinds and external threats, including the reliable supply of fuel, which is the most immediately pressing issue".

"While some thought fortune favoured the bold, we have been reminded that fortune favours those who are prepared, focussed, responsive, agile, resilient and determined. These must be the new compass points by which we navigate a path to sustainability in its broadest and truest sense," he said.

Munetsi used the opportunity to again called on governments across the southern African region to implement effective financial relief for airlines

He said this in the context of a downward revised GDP outlook for the region against the significant role aviation, travel and tourism play in the economic mix.

"As we saw throughout the pandemic, governments often make the right noises but fail to follow through with suitable actions or the appropriate support. We need our policymakers to step up and treat travel and tourism with the importance they deserve," he said.

" Governments have it within their powers to scrap, waive, lower or hold steady all or any of the myriad of statutory taxes, charges and levies applied to air transport and travel. Any increases in these costs will be detrimental as the industry is beyond saturation. It will be unfortunate that industry will have no option but to pass the costs on to our already-burdened customers," he said.

Raising again the potential benefits of the Single African Air Transport Market which the African Civil Aviation Commission continues to push for support and implementation, he said it is clear that the policy is some way from becoming a reality.

"Most of the governments in the region have recognised these potential rewards and committed to implementing SAATM. But what is said and done can be guite different. Some of these very same governments, at the instigation of their national carriers, act contrary both to the spirit of SAATM and their bilateral air service agreements, by imposing prejudicial requirements on the reciprocal nation's designated airlines. Typically, these manifest in the denial of reciprocal fifth-freedom traffic rights, differential pricing for aircraft landing and airport charges as well as ground handling service fees and FOP fees.

Meanwhile, in his opening speech African Airlines Association (AFRAA) secretary-general, Abdérahmane Berthe highlighted the decreasing share of African airlines in total global air traffic. "In the early 1980s, this had stood at 3.5%, but by 2019 it had fallen to 2.5%. Now, it was about 1.8%.

In terms of intercontinental traffic to and from the continent, in the 1990s African carriers had been responsible for 45%. By 2019 (just before the pandemic), this had fallen to just 20%. And half of that proportion was accounted for by just three African airlines.

"At the moment, as many as 22% of travellers seeking to fly from one African country to another had to do so through hubs outside the continent, either in Europe or the Middle East".

This situation, he said, can change through network and schedules co-ordination at African hubs.

He said intra-Africa trade stands at a modest at 18%, which is very low compared to Europe (64%) or Asia, which is above 50%.

He said other African Union Agenda 2063 flagship projects similar to SAATM that envision an integrated Africa with seamless borders include the African Continental Free Trade Agreement (AfCFTA) and the Free Movement Protocol for people and goods.

These he said, would increase intra-African trade and new routes would emerge to serve the resultant demand and with this connectivity will improve.

He said AFRAA believed in stakeholder engagement as a driver for transformation and to this end, the first laboratory on Air Transport Sustainability in Africa was held in June.

This event was necessary due to the urgent need to stop the marginalisation of Africa's nine airlines, restore industry competitiveness, regain and retain Intra-Africa traffic and grow Africa's global market share.

It resulted in a roadmap with specific actions assigned to stakeholder organisations, with defined timelines for execution and a



AASA new chair - Director General of Linhas Aéreas de Moçambique (LAM) João Carlos Po Jorge was elected chairperson of AASA for the next year

steering committee co-chaired by AFRAA and AFCAC to oversee its implementation of the roadmap.

Kamil Al-Awadhi, IATA regional vice president for Africa and the Middle East, said southern Africa was lagging in its recovery due to market access and connectivity issues.

"IATA's current outlook sees the global loss reduced to (US) \$9.7 billion for 2022 and a return to industry-wide profit in 2023. Africa is on track to follow by the end of 2024," he said.

In terms of intra-African connectivity, and the benefits of the SAATM, he said the industry could not afford to spend another 30 years convening talk shops about it.

"It is now time for governments to demonstrate their courage and commitment by implementing it," he said.

Al-Awadhi said safety remained a priority and is one area where there is no room for compromise.

"While no African domiciled operators on the IATA Operational Safety Audit (IOSA) register have suffered hull losses since 2020, incidents across Africa by regional and global operators continue to be experienced and - regrettably the region's accident rate remains the highest.

Director General of Linhas Aéreas de Moçambique (LAM) Joao Carlos Po Jorge was elected chairperson with Elmar Conradie CEO of Safair as deputy during the organisation's virtual 52nd Annual General Meeting.

The pair will serve for the next 12 months.

"Both João and Elmar are highly respected and knowledgeable leaders in the Southern African air transport industry and well-placed to provide guidance and support as we continue to lead and speak for the airline industry and engage on their behalf with governments and regulators throughout the SADC region, said Munetsi.

The event was attended by over 260 delegates representing airlines, airports, air navigation, and weather services as well as manufacturers, suppliers, and other industry stakeholders.

AASA was established in 1970 and currently has 15 airline members and 38 associate members. It is a regular participant and contributor to the International Civil Aviation Organisation (ICAO) and International Air Transport Association (IATA) and supports their initiatives in the region.

# NIGERIA'S AIR TRANSPORT CHALLENGES PERSIST

#### By Roy Ezze

Nigeria's newest airline, ValueJet, took off early last month, connecting Nigeria's economic capital, Lagos, with the country's political capital, Abuja.

The airline also plans to link more destinations in Nigeria, stirring hopes of improved options for Nigerian air travellers who have been subjected to several months of rising domestic airfares, delayed and canceled flights.

At least two out of the eight regular scheduled commercial airlines in Nigeria have stopped operating on a voluntarily basis or through regulatory intervention.

Though the African Airlines Association (AFRAA) has stated that "African airlines have now resumed operations to 99.2% of routes operated before the pandemic," Nigerian airline operations have decreased because of economic challenges.

By comparison ValueJet is offering comparatively lower airfares, which analysts believe are unsustainable given the high cost of operations in the country.

Its appearance has once again sparked hopes for a new national carrier – something which the government has committed to before the end of the year.

Earlier Hadi Sirika, Nigeria's Minister of Aviation, announced that Ethiopian Airlines would be a technical partner in the venture holding 49 percent stake in Nigeria Air. This elicited a mixed reaction.

Government meddling in the former national carrier, Nigeria Airways and other failed national carrier experiments have created an attitude of mistrust about the ability to deliver a successful operation. On the other hand, the involvement of Ethiopian Airlines with its excellent technical and management pedigree has led some observers to call for patience and support.

The Airline Operators of Nigeria (AON) has expressed its disapproval and the Legislature Committee on Aviation has

African American co pilot Photo credit: https://www.freepik.com/

summoned the Minister of Aviation to explain the details of the share split.

Nnolim Nnaji, chairman of the Committee, has requested the Minister to ensure fairness in dealing with other Nigerian carriers visà-vis Nigeria Air.

Sindy Foster, principal managing partner, Avaero Partners said Nigeria will be shortchanged as it would not have direct access and optimised benefits from various lucrative markets, being co-joined with Ethiopian Airlines.

A senior airline manager in Lagos said, "Nigeria should have partnered with Ethiopian on a different, more respectable level; not as a technical partner controlling 49 percent equity in Nigeria Air." "This position is only appropriate for small countries with less aviation and economic resources."

The Ethiopian carrier owns 49% of Air Malawi, 45% of Zambia Airways, 49% of Guinea Airways and 100% of Ethiopia-Mozambigue Airlines, as well as 49% of Chad Airlines.

A chief executive officer of a Nigerian airline also said with a 49% stake in Nigeria Air, Ethiopian Airlines would enjoy a lopsided advantage of providing aircraft, maintenance and other technical support - taking revenues accruing to such services. The airline could rescind the deal with Nigeria if its choices concerning overall management of the airline are not respected by the Nigerian government or other partners, he added.

Essentially, the number of potential air travelers in Nigeria, where less than 5% of Nigeria's population of 200 million currently flies for leisure or business, is limited.

This coupled with poor aviation infrastructure including the lack of proper transit facilities at Nigeria's key airports, can combine to retard the international growth of the new national carrier that will have to tap into an annual combined domestic and international passengers' numbers of about 16 million.

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# **POSSIBLE** CAMEROON AIRBUS CO-LAB

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By World Airnews correspondent Romuald Ngueyap

Cameroon will soon be able to count on the support of OEM manufacturer Airbus in two sectoral aspects that are close to its heart in aviation – recycling and bio fuel production.

On an earlier working visit to the European aircraft manufacturer offices in Montreal, a Cameroonian delegation led by the Minister of Transport Jean Ernest Massena Ngalle Bibehe discussed the possible collaboration.

He stated, "the environmental projects which the Aeronautical Authority is going research include aircraft recycling and the production of biofuel", according to the Cameroon Civil Aviation Authority (CCAA).

In relation to these two areas, Marc Hamy vice president corporate affairs Airbus said the company was "happy to work with Cameroon".

In February of this year, the CCAA Training School (EFO), in partnership with the École Nationale Supérieure Polytechnique de

Yaoundé (ENSPY), launched a programme to promote training in aircraft maintenance and recycling.

Calification Cool

The training – due to begin shortly - is scheduled to last one year and will result in a certificate of proficiency that will attest to the skills in the management of end-of-life aircraft.

"This diploma will also be proof of the learner's professional certification in the field of aircraft airworthiness and aircraft maintenance (dismantling and retraining)," said the CCAA.

In the wake of the exchanges between the Cameroonian delegation and Airbus, Jean Christophe Ella Nguema, managing director of Camair-Co also provided a broad overview of the development plan of the national carrier.

The Cameroonian carrier is an operator of Boeing, Embraer and the Dash8-400 aircraft. In 2019 at a previous meeting in Montreal, the aircraft manufacturer had touted the capabilities of its Airbus A220 - the latest addition to the family.

Satisfied with the competitive advantages of this aircraft, the Cameroonian delegation promised, at that time, to continue discussions with a view to the possible acquisition for the national carrier.

# **DRC** REGAINS ICAO VOTING RIGHTS

By World Airnews correspondent Romuald Ngueyap

The Democratic Republic of Congo (DRC) is now up to date with its contributions to the International Civil Aviation Organisation (ICAO).

In a letter dated September 29, 2022, the Montreal-based institution acknowledged receipt of the payment of (US) \$216,212 (CFAF 145 million) as contributions for the years 2018, 2019, 2020, 2021 and 2022.

Following the clearance, Olga Nam, ICAO deputy director of finance, informed the DRC Civil Aviation Authority that the country's voting rights had been restored and the African nation was able to use this right at the recent 41st ICAO general assembly.

In recent years, the accumulation of arrears, particularly from countries in the southern hemisphere, together with the delays in the payment of the current year assessments, has been an obstacle to the implementation of ICAO's programme of work. It has also created serious cash-flow difficulties. In response to this situation, in 2010 at the ICAO 37th general assembly, resolution A37-32 marked out a settlement by contracting states of their financial obligations to the organisation and measures to be taken in the case of states that do not meet these obligations.

It provided that "voting rights in the Assembly and the Council shall be suspended for contracting states whose arrears are equal to or greater than their total contributions for the preceding three financial years and for contracting states which do not comply with agreements concluded [...] such suspension shall be lifted immediately upon payment of the sums due under the agreements'.

According to ICAO, the contributions of contracting states are considered due and payable in full on the first day of the financial year to which they relate. Additional measures shall be applied to contracting states whose voting rights have been suspended.

These include, inter alia, the ineligibility to host meetings, conferences, workshops and seminars wholly or partially funded by the ICAO regular programme; the limited right to documents that are provided free of charge to non-contracting states; the ineligibility of nationals or representatives to stand for elected office and ineligibility for the ICAO familiarisation course.



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# TAAG ANGOLA **AIRLINES ON THE RISE**

By World Airnews correspondent Romuald Ngueyap

Since the appointment last year of the Spanish Eduardo Fairen Soria as the head of TAAG Angola Airlines, the company is gradually regaining its vitality of vestervear.

The Angolan national carrier has reconnected with its entire pre-pandemic network concentrating on both the domestic and international markets.

This month TAAG Angola introduced two new routes to its African network one between Luanda and Accra in Ghana - three times a week on Mondays, Wednesdays and Saturdays. The carrier will have no competition for this route.

It will use its Boeing 737 fleet having last served Accra in December 2007.

With this addition, Ghana will now become the second most connected country in West Africa after Nigeria.

Next, the airline will also open a new route to Durban from Luanda. The route will be operated three times a week (Tuesdays, Thursdays, and Saturdays) with the same type of aircraft.

Departures from Luanda are scheduled at 20:30 for arrivals at 22:50. In the opposite direction, departures will leave at 02:00 to land at 06:30.

Once launched. Durban will become its third destination in South Africa, after Johannesburg and Cape Town. For these two new destinations, the schedules have been judiciously chosen to allow connections on its flights to Europe (Lisbon and Madrid) and America (Sao Paulo).

As part of its expansion plan, TAAG Angola Airlines also plans to relaunch its service to Cuba in November as well as increase its offer to Spain and Portugal. This operational flexibility is now made possible by the recent reinforcement of its fleet, with the introduction of an Airbus A330-300 and an Airbus A340-300, all leased from Hi-Fly Malta.

At this rate, the company is well on its way to achieving its financial targets for the year. This is already the case for its cargo segment. Between January and August 2022, this segment generated about (US) \$67 million in revenue.

This "exceptional" result is 20% higher than the annual target, set at about (US) \$55.5 million, four months before the end of the year.



# FOUR FROM AFRICA

By World Airnews correspondent Romuald Ngueyap

After a two-year hiatus due to the Covid-19 pandemic, ICAO has resumed its global recognition programme, which recognises states that have made major advances in aviation safety and security oversight.

Africa made a very good impression at this year's 41st Assembly of the International Civil Aviation Organisation (ICAO).

Council President Salvatore Sciacchitano acknowledged the significant progress made by nine states - four from Africa - for their improved safety and security oversight systems and awarded them

certificates based on the results of the ICAO Universal Safety and Security Oversight Audit Programmes.

These programmews relate to the effective implementation of ICAO standards and recommended practices (SARPs) in these areas.

For example, Ethiopia, Fiji, Honduras, Slovenia and Ukraine were awarded certificates for their progress in security while Serbia and

Tunisia were honoured for their achievements in aviation security. Côte d'Ivoire had made significant progress in both categories and Nigeria earned praise for "the exceptionally high level of effective implementation of ICAO's safety and security standards, one of the highest in the world".

The organisation stressed that these distinctions demonstrate the success of the "No Country Left Behind" initiative.

The effective implementation of ICAO's global standards and recommended practices by states is essential to the optimisation and alignment of the 193 regulatory frameworks that govern international civil aviation.

"This, in turn, is critical to the safety and security of global aviation, on which the sector's ability to act as a driver of sustainable development around the world depends," the organisation said.

# **DURBAN HAS LIFT-OFF**



Bv Heidi Gibson

In true Durban style, complete with Zulu dancers and a Bollywood style Indian dance troupé - Lift Airlines began a daily route between Johannesburg and Durban, South Africa.

It's something the start-up airline, established two years ago by former Uber-exec Jonathan Ayache and Kulula.com founder Gidon Novick, has claimed was always on the cards - as Durban is the country's third largest financial hubs.

Now Lift Airlines CEO and co-founder Jonathan Ayache said, "It's co-chair of Durban Direct. no secret that Durban has had its fair share of struggles over the Lift Airline began its operations in 2020 with a fleet of three Airbus past two years, and we are just so proud and happy to play a small A320-200s and has since added two more of the same type. part in bringing back travel and tourism to such a deserving City. Indications are that there are plans to add more. Currently the airline Durban is one of the most common requests we receive on social will operate three times daily flights to and from Johannesburg media and has been on our radar for a while and for that, we couldn't Monday to Friday and on a Sunday. On a Saturday there will be two be more excited." flights.

Siboniso Duma, KZN MEC for economic development, tourism and environmental affairs in KwaZulu-Natal said, "The launch of Lift Airlines air services to Durban is a welcome addition to King Shaka International Airport, improving the much-needed capacity on one of South Africa's most popular routes Durban- Johannesburg," "We aim to continue working with our airline partners to drive sustainability and stability in the market to ensure that air travel remains accessible, for the benefit of all our stakeholders," he added

Domestic airlines play a significant role in driving the recovery and rebuilding efforts of South Africa's local aviation industry ensuring that it continues to benefit business and leisure travel.

Mayor of eThekwini Municipality. Mxolisi Kaunda, echoed the positive sentiments expressed at the event held at the entrance to the airport surrounded by interested passengers, members of the media and the general public.

"We want to extend our warmest welcome to the new member of our family and wish LIFT Airlines growth and resilience that will make it a global player in the aviation sector."

Kaunda said, "For any city to compete on a global stage, it is crucial to have a vibrant and competitive aviation industry because it

Lift Airlines A320-200 ZS-GAL receives a water cannon salute as Lift Airlines A320-200 ZS-GAL receives a water carmon out the aircraft arrives at King Shaka International Airport, KZN, South Africa for the first time

facilitates international trade and drives rapid growth in tourism. We are pleased that this launch takes place at the time when the city is implementing its summer season campaign. We have no doubt that this event will contribute immensely to our efforts of attracting more than 900 000 visitors to the city during the festive season."

"In June 2022, King Shaka International Airport's traffic volumes recovered to 56% of their pre-pandemic levels. KSIA is one of the fastest-recovering international airports in South Africa with the majority of the traffic driven by leisure travel, including people visiting friends and family. Domestic air travel has also played a significant role in driving this growth. The entry of Lift Airlines into the market should stimulate development and accelerate traffic volumes." said Hamish Erskine CEO of Dube TradePort special economic zone and



Dignatries at the launch from left to right include: Jonathan Ayache, CEO Lift Airlines, Hamish Erskine, CEO Dube TradePort SEZ and co-chair Durban Direct, Mpumelelo Zikalala, board chairperson Dube TradePort SEZ, Mxolisi Khahawunda, mayor eThekwini municipality, Phindile Makwakwa ACEO Tourism KZN and co-chair Durban Direct and Nkosinathi Myataza, ACSA regional general manager

# **AFRICAN AIRLINES'** PERFORMANCE **UPDATES**

The African Airlines Association has released its performance updates for the month of September



AFRAA Secretary General Abderahmane Berthe

#### COVID-19

There are improvements in Asia compared to last month. The region is reopening and easing movement restrictions linked to the Covid-19. In Europe however, there are renewed fears of the occurrence of an eighth wave of Covid-19 infections, especially in the UK where a rise in the number of new cases is growing.

In Africa, the number of new contaminations remains low. The total case count has reached 619 million and 12.6 million worldwide and in Africa respectively.

The global recovery rate is 98.9%. Only 22.3% of Africans have received at least one vaccine compared to the global average of 67.9%.

### AIRLINE PERFORMANCE

This September, traffic and airlines capacity deployed reached 82.52% and 82.1% of the 2019 level respectively.

Domestic market share is now at 39.5% capacity and 32.8%% of passengers carried while intra-Africa passengers carried represented 29.5% and corresponding capacity at 24%.

Intercontinental traffic this month is 37.6% and capacity 36.5%. African airlines have now resumed operations to 99.2% of routes operated before the pandemic.

Eight African airlines have exceeded the number of international routes they operated before COVID.

AFRAA estimates revenue loss for 2022 to be (US) \$3.5 billion, equivalent to 20% of 2019 full-year revenues. The projected revenue loss due to COVID for the third guarter of 2022 is approximately (US) \$800 million.

Jet fuel price continues in its upward trend. Year to date, global average price per barrel is (US) \$142. The impact on global airlines fuel bill is estimated at (US) \$131.6 billion for the full year.

#### REGULATORY DEVELOPMENTS

- o The Indian government has imposed bans on certain single-use plastics (SUP) products through a series of regulations. It appears that airlines and their catering partners will not be able to source these restricted items in India. Members with operations to India may wish to obtain advice on the ban from their legal teams (See the Plastic Waste Management Rules, 2016, as amended, and 2021)
- o China has reviewed its data protection and privacy laws. The Cyberspace Administration of China ("CAC") has published the final version of its Measures for Security Assessment of Cross-Border Data Transfers related to cross borders transfers of data outside of China. The draft measures released can be found here.
- o Since the late 1970s, airlines with international operations have been required to file a duplicate and documented airline security program prior to, during and post scheduled services between countries. IATA has been working with ICAO to get this redundant requirement modified at the ICAO Annex 17 level to reduce the burden on airlines. ICAO Amendment 18 to Annex 17 is now effective and will become applicable in November 2022. For more details see IATA information paper and ICAO guidance on how best to implement these new requirements.
- o The U.S. Department of Transportation (DOT) issued a Notice of Proposed Rulemaking (NPRM) on ancillary fees on 26 September. Operators to the US market are encouraged to study review the NPRM and submit comments to the DOT.

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# **AIRBUS** GLOBAL **SERVICES**

# FORECAST Airbus expects the services market to recover

to pre-pandemic levels in 2023 and to double in value over the next 20 years - from (US) \$95bn to over (US) \$230bn in 2041, according to its latest Global Services Forecast (GSF).

As a result, the number of people working in aviation services, keeping the world's fleets flying on a daily basis, is set to increase by a further two million.

"Every day millions of people in services, hidden champions behind the scenes, keep our global fleet of aircraft flying. Alone the number of pilots, cabin crews and maintenance specialists are set to grow by a further two million by 2041", said Philippe Mhun, Airbus EVP programmes and services.

"Accelerated digitalisation of operations and maintenance as well as a higher proportion of latest generation aircraft in service will lead to a massive requirement for new skills and job creation, leveraging new tools and ways of working in order to further increase our sector's efficiency, reduce fuel consumption and emissions."

A compounded annual growth rate of 3.7%, will lead to a doubling in the value of the services market in the next two decades with a bigger than ever demand for highly skilled labour: 585,000 new pilots, 640,000 new technicians and 875,000 new cabin crews.

As operators focus more on their core business, services to improve aircraft availability and efficiency will increasingly be outsourced, boosting the market for those providers. These services will be driven by sustainability and enabled by digitalisation, connectivity and innovation, to maximise efficiency in support of CO<sup>2</sup> net zero ambitions.

Mhun said, "The GSF confirms our strategy and we are ready. Customer experience is our priority. Customer value will be underpinned by excellence in sustainable services and new energy transition, fully leveraging our Airbus Skywise digital capabilities.

Aviation services will remain one of the most advanced and international industries, keeping our customers and society at large at the heart of our operations."

Services accompany an aircraft throughout its entire life-cycle, from before the Entry-Into-Service up until its dismantling and recycling. The GSF looks at the evolution of this fast pace, evolving, exciting market, navigating the industry to anticipate where, when and how we should develop future services capabilities.

This sector is hitting the ground running, with an additional 21% spend expected in 2022 vs 2021, representing an annual demand of (US) \$95Bn. Major business opportunities for aftermarket players are being created due to operators seeking more resilience and flexibility in contractual conditions, prioritising fuel efficiency solutions, looking to ease maintenance bottlenecks constrained by current capacity and reinforced connectivity enablement.

The number of passengers will double to reach more than 9 billion by 2041.

This significant increase will generate a rise in demand for legacy and new services so the industry will need to adapt to do more with less. Impactful and innovative technologies will be required and sustainability ambitions will shape the next steps for commercial aviation services.

Flight Cycles, one of the key drivers to forecast services demand, are recovering at different paces, depending on routes and regions.

Even with pandemic restrictions being progressively lifted; supply restrictions and skilled workforce shortages, coupled with economic uncertainty, is affecting the short-term traffic recovery.

In most aftermarket business domains, recovery to pre-crisis levels is expected in 2023, with maintenance and training markets at the forefront.

By 2041, new generation passenger aircraft will represent 95% of the operated fleet. As a direct consequence for services, we foresee an industry requiring new competencies (digital, automation, connectivity, etc.), where services become fully integrated into the aircraft platform and aviation ecosystem.

Fuel supply, energy consumption and overall lifecycle are significantly optimised. Linking with door-to-door transportation solutions could reshape the market towards a more traveller centric approach.

Over the next 20 years, we will considerably change the way we supply commercial aviation services. But one thing will not change aviation services will be one of the most advanced and international industries that keeps people at its heart.





# **ARRAIOLOS** MALTA AIRCRAFT

By Chris Cauchi

An array of interesting military and government aircraft visited Malta last month when the Arraiolos meeting was held.

The Arraiolos Group is composed of the heads of state of 15 European Union member states that do not have executive powers.

The name of the group is derived from the Portuguese town of Arraiolos, which is where the heads of state originally convened in 2003 with only six presidents. Next year the Arraiolos group will celebrate its 20th anniversary.



Airbus A319 Hungarian Air Force: The Airbus A319-112 604 of the Hungarian Air Force looked amazingly graceful in its all military grey colour scheme. The aircraft landed on runway 13 at Malta International Airport on



Embraer 135 Hellenic Air Force: The Greek delegation attending the Arraiolos meeting flew in on this Hellenic Air Force Embraer ERJ-135LR landing on runway 13 a day prior to the commencement of the event

5th October 2022.

Airbus A319 German Air Force: The Airbus A319-133/CJ 15+02 with Republic of Germany titles and small Luftwaffe inscription on the tail arrived in Malta on 5th October, landing on runway 13 for the Arraiolos Meeting.



Airbus A321neo German Air Force: One of the highlights during the Arraiolos Meeting was this German Air Force Airbus A321-251NX which arrived in Malta on 7th October 2022. The aircraft which is just months old, having been outfitted to GAF specifications by Lufthansa Technik flew in from Coloane/Bonn.



Airbus A319 Bulgarian Government: The Bulgarian delegation arrived at the Arraiolos Meeting in this Airbus A319-112 registered LZ-AOB. This aircraft has an interesting history, having originally been delivered to the now defunct Air Berlin in July 2007 as D-ABGF.

# **A ROUTE** INTELLIGENCE PORTAL



A dedicated aviation route intelligence portal has been launched as a partnership project between the African Airlines Association (AFRAA) and an African marketing intelligence provider – Milanamos.

The data-backed portal will provide a gateway for airlines to access useful market insights on networks within Africa and routes from Africa to the rest of the world.

The AFRAA Route Intelligence Portal will provide insights and reports on the following: traffic demand analysis on routes, analysis of revenue forecasts per route, airlines' opportunities for beyond connections, analysis of potential route partnerships, insights on underserved markets, and analysis of the future demand for tourism.

AFRAA secretary general, Abdérahmane Berthé said the partnership between AFRAA and Milanamos is anchored on data intelligence which is AFRAA's 5th strategic objective under the Association's 2021-2025 Strategic Plan.

He invited airlines to subscribe to the AFRAA Route Intelligence Portal

Christophe Ritter, CEO of Milanamos, said "Benefiting from specific market intelligence reports is of paramount importance in the challenging African aviation market, and Milanamos is proud to be a partner of this strategic initiative launched by AFRAA".

The portal can be accessed via the link

https://afraa-routeintelligence.com Complimentary vouchers for access are available for AFRAA members for a limited period.

For a demo and inquiries, please contact ririe@afraa.org. The portal complements AFRAA's efforts to provide Africa-specific data and analysis for African airlines and the wider aviation fraternity. Other AFRAA portals in place include the AFRAA Capacity Sharing portal and the AFRAA Spare Parts Pooling

# TANZANIA **PILOT TRAINING** CENTRE

The Tanzania Pilot Training Centre is a Civil Aviation Authority-approved training organisation (ATO) that operates out of the Julius Nyerere International Airport Terminal 1.

The flight school has five training airplanes and an approved flight simulator (advanced flight training device). Their offices can be found at the airport, exit gate of the Terminal 1 car park.

They offer the following pilot licence programmes all issued by the Tanzania Civil Aviation Authority as "ICAO" and can be converted in most countries in the world.

They offer private pilot (PPL) and commercial pilot (CPL) training in single-engine and multi-engine training aircraft. The PPL course will typically take four to five months and about 40-65 hours depending on the performance of the individual.

Part-time PPL courses can be arranged for weekdays and weekends. The PPL full-time course takes place on Monday to Friday mornings for Ground School. Ground School courseware materials are based on the EASA (Europe) training programmes tailored for the country of Tanzania. The commercial pilot's licence programme is a full-time course that requires a PPL. It will take about one year to complete the CPL course after completion of the PPL programme.

There are other options including instrument, multi-engine ratings and ATPL ground school.

Payments can be staggering to suit any possible budget constraints. School holiday ground school programmes are also available for school students 15 years and flying from 16 years and above.



Contact us by telephone, or email or come and see us at Terminal 1 at the Airport (JNIA), near the Terminal 1 car park exit gate. Covid-19 precautions are still in place.

Now watch the video: https://youtu.be/MLangosQNxE Tanzania Pilot Training Centre, Mosswood Transport (Tanzania) Limited, Car Park Exit Gate, Terminal 1

Julius Nyerere International Airport, PO Box 80250 DSM, Dar es Salaam, United Republic of Tanzania Tel (m) +255 715 555 777 / Email: airport@flymwaa.com/ website : www.flymwaa.com

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# SEMI-WING INSTALLATION **FOR KC-390**

Embraer has started assembling the semiwings on the fuselage of the first of two KC-390 Millennium transport aircraft for the Hungarian Defence Forces.

The integration comes after Embraer painted the wings in the colours of the Hungarian air force.

After the assembly is completed, the first KC-390 will take its maiden test flight in 2023, after which it be delivered to the Hungarian Defence Forces by 2024.

Productions for the second KC-390 will begin in December 2022, with the plane expected to be delivered by the end of 2024.

"We regularly follow the assembly of our first KC-390, and the production of the aircraft is significantly ahead of what was stipulated in the contract compared to the original plans, progressing better than planned," Hungarian Air Force Systems Development Head Col. László Nagy said.

Embraer begins sem

"We have also established a good relationship with the Brazilian Air Force, which gives us an opportunity for consultations that can be used extremely effectively by our teams in Hungary." The aircraft will be utilized for various military and civilian missions, including cargo and troops logistics, paratroopers operations, precision cargo airdrop, medical evacuation, and air-to-air refuelling.

The jet will be fully NATO-compatible in hardware, avionics, and communication.

KC-390's probe and drogue refuelling system will enable it to replenish Hungary's existing Saab JAS 39 Gripen and other units that utilize the same system.

# **INTRODUCING DASSAULT AVIATION BUSINESS SERVICES**

From now onwards, TAG Maintenance Services, a major Maintenance Repair and Overhaul provider, will be rebranded Dassault Aviation Business Services (DABS).



The new named operation is part of Dassault Aviation's global MRO support organisation, which includes 40 factory service locations and 20 authorised service facilities around the world.

At the same time Dassault has re-confirmed its commitment to supporting multiple OEM brands at Dassault Aviation Business Services. The network has broad expertise with Dassault aircraft and other OEM brands built up over decades of dedicated service.

The company originated as Aeroleasing in 1966 and was renamed TAG Aviation in 1998.

TAG Maintenance Services was created after Dassault purchased the maintenance operations of TAG Aviation in 2019. Later, the business jet MRO operations of RUAG in Switzerland were acquired and added to the network.

"Customers will see a new name, but the commitment to applying advanced technology and the ultimate in-service quality will remain the same as ever," said Franck Madignier, president of DABS.

"In fact, since the acquisition by Dassault, we have invested heavily to expand to new locations, upgrade facilities and, as always, stay at the leading edge of the MRO business."

# **COMO TO MALTA** SEAPLANE RALLY - ROBERTS CUP



Story by Chris Cauchi and photos from Mario Caruana / MAviO News

The Malta Seaplanes Association in collaboration with the Aero Club Como held the annual Como to Malta Seaplanes Rally - Roberts Cup recently.

MSA president Jonathan Galea, explained that due to inclement weather along the route some participants had to withdraw their participation. Only two aircraft made it to Malta, with an ICP Savannah arriving on Saturday and a Cessna 172M amphibian on Sunday.

The amphibian ICP Savannah registered I-9206 had Sergio Scaramuzzi at the controls accompanied by Bruno Garbellini. The following day the Cessna 172M registered I-GNHR landed safely. Due to the prevailing winds, it was not possible to see the aircraft



Unfortunately due to inclement weather the Como to Malta Seaplanes Rally saw only two arrivals. An amphibian ICP Savannah registered I-9206 arrived on Saturday, while this Cessna 172M I-GNHR arrived on Sunday.

Gardjola Gardens where a networking reception was held on 1st October 2022 at the historic venue. The guard tower at the tip is known in Maltese as "Il-Gardjola". The gardens were planned by Grandmaster De La Sengle in 1551.



MAviO Head of News Marvic Bugeja interviews Malta Seaplanes Association president Jonathan Galea.

performing any touch and goes in the waters of the majestic Grand Harbour

MAviO Head of News Marvic Bugeja, interviewed Jonathan Galea during a networking reception organised by the Malta Seaplanes Association at the historic Gardiola Gardens perched on the bastion that offers fantastic panoramic views of Valletta and the Grand Harbour.

The Gardjola Gardens were planned by Grandmaster De La Sengle in 1551. Galea spoke at length about the plans that the Malta Seaplanes Association has to resuscitate seaplanes flying on the island.

It was expected that two ICON A5 aircraft, with the first being N751BA with Greek Captain Kostas Rossidis at the controls and a second ICON amphibian registered N534BA with Dragisa Raicevic in the left-hand seat would also arrive but - unfortunately, none made

# THE HOLBORN ASSETS **SPRINGS SEASON FINALE** SPEED NAVIGATION RALLY



by Rob Jonkers photos by Jaco Pitout and Rob Jonkers

The South African Power Flying Association (SAPFA) held the end of year season finale Speed Navigation Rally at Springs last month.

The event was celebrated with a black-tie gala dinner on the Saturday evening against the standard already set in 2020 ending Season 2. Previous season 4 events were held in Witbank, Middelburg, Groblersdal and lastly Springs.

Groblersdal was a new venue for this season, as SAPFA had been looking at diversifying venues and club partnerships and this will continue in 2023.

Where in 2021 season finale - also held at Springs - was rained out, this time, conditions were totally the opposite. Summer-like clear skies and temperatures, the density altitude was around 8000 ft. Wind and turbulence affected aircraft performance and as a result many speeds were reduced from expectations.

The amount of entries for this finale was somewhat subdued at 14, inline with previous entries since Witbank given the current economic climate with fuel prices over R35/I in most places.

The Springs club provided their facilities to hold the event and the briefing was held in the new open area adjacent to the club-house.

The competition took place over two days Saturday and Sunday, with prize giving as an evening function. Previously the event began on a Friday with an early morning start on Saturday and departures on Sunday.

Race Master David le Roux called for the briefing, teams were introduced and race numbers handed out. We welcomed back the Mach 1 school entry of Manaf Mubarak competing in a Beechcraft Sundowner. Then Iaan Myburgh, competition director went through the safety and route briefing for the day.

After that the teams prepared their aircraft, scruntineered, received their papers - with a minor map glitch - and the take-off times were moved by 25 minutes.

Martin Meyer and myself were under starters orders to man the start line on runway 03, and waved off (air carrier style...) all the teams. The arrival time was 13h25 with the Lanceair crossing the line first followed by the Sling. Everybody was home safely, just the Falco had some engine difficulties and had to return early (with two missed turnpoints) but still finished to score.

The scoring team then got on to provide individual results for everybody. Most retired to their accommodation and were expected back at the airfield for the gala dinner.

This took take place in Gavin Brown's Classic Wings hangar with a great backdrop of some of his classic aircraft and around 60 quests expected.

	Speed Rally - Overall Season 4 Results					
Position	Reg	Aircraft	Pilot	Navigator	Scoring Best of 3 events	
Season Ov	erall Results				-74 221-5 - 2707-20 -	
1	ZS-FVV	Piper PA-28-235C	Quintin Kruger	Johan Whiteman	6	
2	ZS-CNY	Cessna 210A	Phil Wakeley	Mary De klerk	13	
3	ZU-LNC	Lancair ES	Leon Joubert	Jonty Esser	17	
Season Fa	stest Overall Res	sults				
1	ZS-FVV	Piper PA-28-235C	Quintin Kruger	Johan Whiteman	8	
2	ZS-CNY	Cessna 210A	Phil Wakeley	Mary De klerk	17	
3	ZU-LNC	Lancair ES	Leon Joubert	Jonty Esser	19	
Season Ac	curacy Overall R	esults				
1	ZS-FVV	Piper PA-28-235C	Quintin Kruger	Johan Whiteman	5	
2	ZS-CNY	Cessna 210A	Phil Wakeley	Mary De klerk	14	
3	ZU-LNC	Lancair ES	Leon Joubert	Jonty Esser	14	



An almost perfect track – with a minor excursion at turnpoint 10

Race Master David le Roux opened the proceedings with thanks to all the helpers, officials and the Springs Flying Club for hosting this event. The main Season Sponsor Holborn Assets gave a short over view of their business and drew the lucky winner. David also advised about planning being done for 2023's fixtures that would be concluded within the next week. David also recognised Rob Jonkers as the previous competition director for all the work carried out on Speed Rallies since inception.

It is now more relevant than ever to bring in new competitors to enjoy the sport.

Then the results were called out. First the placings for the Springs event; first place went to Leon Joubert & Jonty Esser in their Lanceair ZU-LNC, second place went to Hendrik & Jandre Loots in their Sling ZU-IHK and in third place Sean Cronin and Roger Ford in their Jabiru ZU-JBJ.

The overall season placings went to father & son team of Quintin Lanceair ZU-LNC.

the Handicap and Accuracy categories as well.

The formal proceedings ended and Leon Joubert and his band WASP got everybody in the mood for a party time. Thanks to all the officials who put in the effort to make the Speed rally what it has become, David le Roux as the Race Master, Nigel Musgrave as the Safety Officer, Iaan Myburg as Competition Director and scorer, Sean Cronin & Martin Meyer doing test flights and starting, Marc & Shane for Century Avionics for GPS & Fuel Scrutineering, Chareen Shillaw & Anthea Cronin on Scrutineering.

dinner spread with all the décor and trimmings.





Jabiru triplets at the starting line with daughter & father team Tarryn Myburgh & Derek Orford in ZU-BSA under starters orders with Martin Meyer wielding the flag



Sling with father & son team of Hendrik & Jandre Loots preparing their Sling ZU-IHK



# CLEAN AVIATION FIRST FUNDING

by Richard Schuurman

European aerospace OEMs like Airbus, Dassault, Pipistrel, Rolls-Royce and Safran can continue or start their research and development programmes of disruptive technology for new commercial aircraft.

Fourteen projects have been granted a combined €735 or (US) \$ 722 million for phase I under the Clean Aviation Joint Undertaking project on innovative solutions.

The Clean Aviation Joint Undertaking (CAJU) is a successful public-private partnership between the European Commission and the European aeronautics industry that is on the way to achieving its environmental performance targets.

It is the successor of two earlier EU CleanSky programmes and was officially launched on December 1, 2021.

The call for proposals for phase 1 closed in June and runs until 2025. Phase II covers 2025 through 2030 with the European Commission having contributed €1.7 or (US) \$1.6 billion to Clean Aviation, with another €2.4 or (US) \$2.3 billion coming from industrial partners and research agencies, and universities.



Honeywell's Newborn project looks at a multi-megawatt fuel cell system

These 14 projects selected will be reviewed before they receive a grant, targeted before the end of the year.

It is interesting to note 14 isn't just a random number. It corresponds with the number of so-called technology bricks that according to Clean Aviation need further research before the technology is mature enough for the launch of an aircraft or engine project.

The 14 are part of four bigger programmes namely: hybrid-electric powered aircraft, hydrogen-powered aircraft, ultra-efficient shortand-medium-range aircraft, and so-called transversal areas.

#### HYBRID-ELECTRIC

The hybrid-electric powered aircraft programme includes five sub-programmes. Airbus Defence and Space is participating in the Herwingt project for an innovative wing design. The airframer is working on various wing projects, including the Wing of Tomorrow. Rolls-Royce and GE Avio are researching a multi-megawatt hybridelectric propulsion system. Rolls-Royce's project is called HE-ART and is studying technologies for an optimised hybrid propulsion system for future regional aircraft. It includes a ground demonstrator of a hybrid-electric thermal turboprop. The Derby-based company is collaborating with partners in ten European countries.

Honeywell International has a project called TheMa4HERA, which focuses on thermal management, while Collins Aerospace is looking at electrical distribution solutions in the HECATE project. Thermal management and electrical distribution both need thorough research as hybrid-electric aircraft behave differently at higher altitudes, as GE Aviation's Mohamed Ali explained at the Farnborough Airshow.

#### HYDROGEN

There are six sub-projects for hydrogen-powered aircraft, all looking Under the so-called transversal areas are five projects, of which at propulsion technologies. Again, Rolls-Royce and GE Avio work two (Airbus SMR ACAP and Leonardo's HERA) will investigate together, this time on the research of direct combustion of hydrogen aircraft concepts that should reduce emissions by 30 to 50 percent. in engines. The Rolls-Royce project is called Cavendish but includes Dassault's Concerto is focused on certification and means of academic, research, and industrial partners from Brazil, France, compliance with all these new disruptive technologies. Germany, the Netherlands, Portugal, Spain, and the United Kingdom. Aerospace Valley will look at the European Clean Aviation Regional Cavendish will integrate liquid hydrogen systems onto a modern Ecosystem. donor engine for ground testing, but also explore a dual fuel combustor system, and a cryo-compressed tank system and define Parts of this article originate from: https://airinsight.com/cleanrequirements and activities for flight demonstration, Rolls said. Chief aviation-awards-first-funding-for-new-research-projects/ Technology Officer Grazia Vittadini said earlier that Rolls-Royce



is getting close to starting ground tests with hydrogen on an AE-2100 engine. Rolls is putting its full weight behind hydrogen, having identified pros and cons of the technology.

Honeywell's Newborn project looks at a multi-megawatt fuel cell system, while Aciturri Engineering's H2ELIOS is focused on largescale, lightweight storage tanks for hydrogen.

Pipistrel, the small airplane maker known for its electric two-seaters, is also joining the hydrogen research project and will look at nearterm disruptive technologies.

### **ULTRA-EFFICIENT SHORT- AND-MEDIUM-**RANGE AIRCRAFT

This programme includes five sub-projects, two from Airbus. UP Wing looks at an ultra-performance wing, while Faster-H2 is dedicated to researching an advanced, low-weight, integrated wing and empennage. Rolls-Royce, Safran and MTU Aero Engines all have programmes on ultra-efficient propulsion systems.

The Rolls-Royce HEAVEN project again is done by a consortium of key academic, research and industrial partners in five European countries. It uses the UltraFan architecture and technologies as a platform for hydrogen and hybrid-electric engine technology. Safran participates with the Ofelia project and MTU with SWITCH.

### TRANSVERSAL AREAS

SAF



# EAA SUN AND FUN 2022 RALLY

#### By Rob Jonkers

This year's EAA Sun and Fun flying event was the seventh in the series of rally events held yearly in support of the EAA.

Previous events followed the Adventure rally format, but in recent years some level of accuracy of maintaining track has also been part of the route. This year, it was decided that the route should be more of a formal ANR type (Air Navigation Race). This type of rally is the newest as part of the FAI events series.

In an ANR, there are only two objectives, the first being on-time at the start and finish gates, each second early or late attracts three penalty points. The second objective is to remain inside the corridor which in this case is 1 nm wide any excursion outside the corridor also attracts three penalty points per second being outside the corridor. For the Brits ANR it was decided not to measure the start & finish gate timing due to the busy airspace for the day.





The route is normally fairly short at 25 nm. It was planned to start south east of the field, route over Brits town and find a way through the scenic Crocodile River valley to end north west of the field.

There were eight teams and the briefing commenced at 9 am. Here the teams got on with plotting their routes and could fly at their own pace. As they returned, logger downloads commenced and scoring could be done.

Best for the day was the Bert v Jaarsveld & Lance Holland team flying a Bushcat ZU-FEW, which was an excellent platform to fly this type of rally - slow enough for observation and being able to keep the turns fairly tight. In second place was Bryan Nicolau and Roger Ford in their Bathawk ZU-IGI – another good observation aircraft and in third Roger Bozolli and Dean Nicolau in the Piper Arrow ZS-KFM.

Prize giving was held at the evening braai together with the EAA awards. The floating trophy was not available and will be handed over at an appropriate date. This trophy is the Sling (previously The Airplane Factory) Sun and Fun rally trophy awarded annually.

RANK	PILOT NAME	NAVIGATOR NAME	AIRCRAFT TYPE	AIRCRAFT REG	SCORE
1	Bert Van Jaarsveld	Lance Hollard	Bushcat	ZU-FWE	579
2	Bryan Nicolau	Roger Ford	Bathawk	ZU-IJI	894
3	Roger Bozolli	Dean Nicolau	PA 28-200	ZS-KFM	989
4	Chris Shaw	John Shaw	C177	ZS-IFY	1530
5	Sean Cronin	Roger Ford	Jabiru	ZU-JBJ	1392
6	Byron Krikland	Caroline Koll	Sling	ZU-KRJ	2208
7	Hilton Wolff	Milan Danitz	Mushak	ZS-OKR	3096
8	Herbert de Graaf	Wolter de Graaf	Sling	ZS-DXH	3219







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### **LIBYA AVIATION FORUM & EXPO** ملتقى ومعرض ليبيا الدولى للطيران

November 6th-8th 2022 Corinthia Hotel, Tripoli, Libya



# LEADING ELECTRIC AVIATION

Boosted by Ampaire's selection of its Epic energy storage system to convert the Cessna Grand Caravan turboprop aircraft to hybrid-electric propulsion, Electric Power Systems (EP Systems) is stepping up plans to secure a larger stake in the growing electric aviation sector.

At the JetBlue Ventures Sustainable Travel Summit in San Francisco, the US company's founder and CEO Nathan Millecam said that he expects the Epic battery packs to be installed on as many as 14 aircraft models in 2023.

Earlier this month, Ampaire confirmed that it will use the Epic system for its EcoCaravan programme, for which it is developing a hvbrid-electric propulsion system.

According to EP Systems, its battery pack will deliver an energy density of over 200 Wh/kg and will be able to support 2,000 fastcharge cycles before needing to be replaced. It says that a full recharge takes 20 minutes for each pack.

Ampaire has been evaluating the Epic system during extensive flight trials of its Electric EEL technology demonstrator aircraft, which is itself a conversion of the Cessna Skymaster.

In July, the company announced the selection of Red Aircraft's AO3 engine to provide the combustion component of the hybridelectric powertrain.

EP Systems has already supplied battery systems for several new and existing aircraft, including Diamond Aircraft's eDA-40 electrified version of its DA-40 trainer, NASA's X-57 technology demonstrator, Boeing's Cargo Air Vehicle, the Aurora Flight Sciences Pegasus uncrewed air vehicle, and Embraer's Ipanema.

The company says its cells have been or will be used by new eVTOL aircraft developers, including Archer, Supernal and Elroy

Air, as well as by other aircraft manufacturers such as Bell, Bye Aerospace, Aura Aero and VoltAero.

According to Millecam, EP Systems has purposely started to supply the Epic system for small aircraft with up to four passenger seats, before scaling up the technology to larger models.

He told the JetBlue summit that the system can support flight cost savings of around 46 percent on aircraft such as flight trainers. compared with the cost of existing types burning fossil fuels.

In 2019, EP Systems received funding from Boeing's Horizon X venture capital division and also from aircraft engine maker Safran. Millecam said that the company is now seeking fresh funding as it prepares to scale up to produce higher volumes of battery cells.

"One of the key challenges we face is how you scale up [manufacturing of] aviation propulsion batteries," Millecam said.

He pointed to the complex manufacturing technologies that are needed to meet airworthiness requirements for aviation applications of the technology.

EP Systems seeks to achieve certification of the Epic packs in 2023 and is currently working with the FAA on a technical standard order to support this effort.

"The most advanced [electric propulsion] projects are actually in Europe right now, so we're working with our European customers to get supplemental type certificates [for aircraft conversions] as well as new type certificates," Millecam said.

According to Millecam, flight training and utility aircraft will be the most successful early adopters of electric propulsion, followed by new applications such as eVTOL air taxis.

"With bigger aircraft [such as larger airliners], the assumption is that now you're getting into hybrid [electric] architectures," he said. "These need very big batteries and there are other types of integration that need to happen at the propulsion powertrain. This level of complexity hasn't been developed or flown yet so that is a huge step forward for the industry to get that level of complexity."



EP Systems has already supplied battery systems for several new and existing aircraft, including Diamond Aircraft's eDA-40 - the electrified version of its DA-40 trainer



# AN **INNOVATIVE** AUTONOMOUS **CARGO AIRCRAFT**

Natilus, a US company producing a purposefully flexibility of the PT6 turboprop engine family, the world's most popular engine in its class." designed and manufactured autonomous air cargo Today, there are only two ways to move cargo internationally: by freight transport aircraft has selected Pratt air and by sea. & Whitney Canada to supply the engines for the The difference between the cost and time of these two modes first of the Natilus family fleet: the N3.8T. of transportation is dramatic, with sea freight currently 13 times

The company is producing the N3.8T as a prototype and a longterm short-haul air cargo feeder. The first N3.8T aircraft is under production and is scheduled to fly in 2024.

"Natilus has designed and developed a blended-wing autonomous aircraft that can offer services at a fraction of the cost of today's transport and reduces negative impacts on our environment. We wanted to select an engine supplier that shares our vision of innovation, safety and efficiency. Pratt & Whitney Canada is recognised and respected for their worldwide support of customers, while the PT6A engine is the benchmark in reliability and has an unmatched history of performance with low TBO (Time between Overhauls)," said Aleksey Matyushev, Natilus co-founder and CEO.

"Pratt & Whitney has a long-standing commitment to supporting innovation for sustainable aviation, and so we are pleased that Natilus has recognised the capabilities of the PT6 engine family to increase efficiencies in the air cargo transport industry while reducing carbon emissions," said Nicholas Kanellias, vice president, general aviation, Pratt & Whitney Canada.

"The selection of the PT6A-67D to power Natilus' innovative cargo aircraft further asserts the dependability, versatility and

less expensive, but 50 times slower in delivery. Natilus intends to revolutionise the air transport industry by providing the timeliness of air freight at an affordable cost reduction of 60% to increase the competitiveness of the air cargo market.

### **ABOUT NATILUS**

Natilus was co-founded by Aleksey Matyushev and Anatoly Star in 2016 to expand and democratize the air cargo transport industry by designing and manufacturing a new fleet of blended wing body (BWB) autonomous freight aircraft that will increase volume by 60% and lower costs by 60%, while reducing carbon emissions by 50%. Natilus aircraft use existing ground infrastructure and standard air cargo containers, to produce an innovative turnkey solution for customers.

The Natilus family of cargo aircraft includes:

- 8 ton payload short-haul feeder UAV
- 60 ton payload medium/long range UAV
- 100 ton payload long-range UAV



# **ACHIEVED:** NET ZERO CO<sup>2</sup> EMISSIONS GOAL

The International Air Transport Association (IATA) is strongly encouraged by the adoption of a long term aspirational goal to achieve net zero CO<sup>2</sup> emissions by 2050 that was reached at the 41st assembly of the International Civil Aviation Organisation (ICAO).

This important step forward by states aligns with both the objectives of the Paris Agreement and the net zero CO<sup>2</sup> emissions by 2050 resolution agreed by airlines at the 77th IATA Annual General Meeting in October last year.

"The significance of the agreement cannot be under-estimated. The aviation industry's commitment to achieve net zero CO<sup>2</sup> emissions by 2050 requires supportive government policies. Now that governments and industry are both focused on net zero by 2050, we expect much stronger policy initiatives in key areas of decarbonisation such as incentivising the production capacity of Sustainable Aviation Fuels (SAF).

"And the global determination to decarbonise aviation that underpins this agreement must follow the delegates home and lead to practical policy actions enabling all states to support the industry in the rapid progress that it is determined to make," said Willie Walsh, IATA director general.

The decision on a long-term goal at ICAO comes after intense negotiations bridging the different levels of development across the world. There was overwhelming support at the ICAO Assembly for the goal.

### CORSIA

The Assembly also re-inforced its commitment to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and increased its ambition by agreeing to stabilise emissions of international aviation at 85% of the 2019 level.

In agreeing this, many governments emphasised CORSIA's role as the only economic measure applied to manage the carbon footprint of international aviation.

"The Assembly's agreement strengthens CORSIA. The lower baseline will place a significantly greater cost burden on airlines. So, it is more critical than ever that governments do not chip away at the cement which bonds CORSIA as the only economic measure to manage the carbon footprint of international aviation. States must now honour, support and defend CORSIA against any proliferation of economic measures. These will only undermine CORSIA and the collective effort to decarbonise aviation," said Walsh.

#### SUSTAINABLE AVIATION FUEL (SAF)

Industry expects SAF to play the largest role in decarbonising aviation. IATA estimates that perhaps 65% of the mitigation needed for net zero emissions in 2050 will come from SAF. While the industry purchased all one hundred million litres of SAF available in 2021, the supply remains limited and the price far higher than conventional jet fuel.

"With this agreement in mind, state efforts should now be focused on ways to incentivise an increase in SAF production capacity and thereby reduce its cost. The tremendous progress made in many economies on the transition of electricity production to green sources such as solar power and wind is a shining example of what can be achieved with the right government policies, particularly production incentives," said Walsh.

### IMPLEMENTATION

"Governments must not lose the momentum that has driven the outcomes of this assembly. The costs of decarbonising aviation are in the trillions of dollars and the timeline to transition a global industry is long. With the right government policies SAF could reach a tipping point in 2030 that will lead us to our net zero goal. By the next Assembly the 'aspirational' characterisation of the agreement must be transformed into a firm goal with a clear plan of action.

That means governments must work with industry to implement an effective global policy framework capable of attracting the financial resources needed to put aviation on an unstoppable track to achieve net zero by 2050.

"There is lots of work to do, and not a minute to lose," said Walsh.