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### Women leaders a beacon for future talent

**A**s we enter a new year, the workforce of tomorrow – and I guess as we look at the global supply chain, the workforce of today – is among the biggest issues facing our industry.

The twin solutions of increased diversity and development of appropriate skills have been cited at conferences and summits around the world over the past six months.

Women, once a relative rarity on the conference platforms, have now very firmly found a voice through excellent organisations such as Women in Aviation, Women in Defense, and, of course, the women pilots association – The 99s.

All have been banging the drum with some amazing messages about how organisations with female leaders outperform those of their male counterparts. (The assertion has been backed by a McKinsey report that shows companies in the top quartile for gender diversity on executive teams were 25% more likely to have above-average profitability than companies in the bottom, while companies with more than 30% female executives were more likely to outperform companies that don't.)

This is not news for Africa.

There has been a steady change in the recognition of women leaders, particularly in our industry.

In our last issue we featured Adefunke Adeyemi as she took over the reins of the African Civil Aviation Commission (AFCAC). In this issue we talk to Poppy Khoza, the director of South Africa's regulator, who has

been voted in as the International Civil Aviation Organization (ICAO) General Assembly's first female president in the UN organisation's 78-year history.

Another taking to the world stage later in the year will be Yvonne Makolo, the CEO of RwandAir, who will become the first woman chair of the International Air Transport Association (IATA) board of governors.

And Africa's own airline association, AFRAA, has also seen the light with the election of Jenifer Bamuturaki, the chief executive of Uganda Airlines, as its new president.

With more women leading airlines, these role models should encourage young girls to dare to dream about careers in aviation. Seeing is believing and the more women we see entering the industry, the stronger we become.

That is music to the ears of Ivana Alvares-Marshall, the governor of the African section of the 99s. She will argue that Africa needs to deliver science, technology, engineering and maths (STEM) skills to schools earlier. "It is through STEM initiatives and scholarships that we can help raise future generations to join the aviation sector," she tells us in this issue.

While many have looked at Africa as having a wealth of resource in minerals, these pathfinders will inspire more women and more young people to think about STEM and become a powerful resource – a human resource – that will allow African aviation to soar and achieve its rightful place on the world stage.

Alan Peaford, editor-in-chief



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## SAAF Gripen force halved – but back in the air

At least some of the South African Air Force (SAAF) Gripen combat aircraft are back in the air after the government came to an agreement with manufacturer, Saab, on a new maintenance agreement.

The Gripen force – 26 have been operated since 2008, with 25 still in service – had been grounded since September 2021 after South Africa was unable to come up with the funding for Saab to continue supporting the aircraft.

Late last year Saab finally received a contract for the servicing, repair and maintenance of the SAAF's Gripen C/D jet fighters, worth ZAR 532 million (\$30.7 million) over three years until 2025.

The contract will also cover minor updates of the aircraft's support and training systems. However, continuing budget constraints mean that the funding will only allow for 13 of the fleet to be made airworthy again. The remaining 12 will remain in storage.

## Kenya's Dubai 'first'

Kenya Airways made its inaugural flight from Mombasa into Dubai's DXB in December.

The airline will operate four weekly flights between Mombasa and DXB's Terminal 1 on a B737-800 aircraft, increasing the carrier's frequency to Dubai to 14 round trips a week.

## T-6C delivery

The Tunisian Air Force has taken delivery of the first of eight Beechcraft T-6C Texan II integrated training systems in support of operations at No 13 Squadron at Sfax Airbase.

The US foreign military sales (FMS) contract comprises eight T-6C Texan II advanced military training aircraft, in-country field service and logistics support representatives,

programme management support, interim contractor support for the first year, training for pilots and maintenance professionals, spare engines, spare parts and aircraft support equipment.

■ **Modern eyes, page 30.**

## Travelport boost

Ethiopian Airlines Group has signed a renewed agreement with Travelport International Operations to distribute Travelport+ and other related products in Ethiopia.

Ethiopian Airlines Group CEO, Mesfin Tasew, said: "Travelport's new products, in addition to the main GDS Travelport+, are very important to simplify the business transactions in the market for both the airline and travel agencies. "I am very delighted that

Ethiopian and Travelport decided to continue working together."

## Precision Air crash

A Precision Air flight crash-landed in bad weather in Lake Victoria in November, killing 19 people. The airline said of the 43 people on board, there were 24 survivors.

## EASA does it

EgyptAir Training Academy has successfully passed the EASA recurrent qualification for the full-flight simulators on A320 (neo/ceo), B737-800, and B777 aircraft.

The academy also has successfully obtained the EASA approval for updating the A330-200 simulator to comply with the latest EASA regulation CS-FSTD (A) Issue 2 and ECAR 121.

PICTURE: ETHIOPIAN AIRLINES



## Ethiopian and Boeing deliver again

Boeing and Ethiopian Airlines partnered in December to bring humanitarian aid to those in need in Ethiopia.

Three recently delivered 737-8 aircraft transported more than 12,000 pounds of supplies to Addis Ababa, Ethiopia.

Ethiopian Group CEO, Mesfin Tasew, said: "We have a long history of collaborating with Boeing on humanitarian flights – this is our 43rd humanitarian delivery."

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Djibouti plans ‘strategic hub’

The Djibouti Ports and Free Zones Authority (DPFZA) has selected ADP Ingénierie and Egis for the design of the new Al Haj Hassan Gouled Aptidon International Airport.

The project – to be launched early this year – is part of the Horn of Africa state’s national economic development plan, ‘Djibouti 2035’, and is intended to create a regional hub.

Equipped with a cargo terminal, the airport, in Bicidley, will serve both air and sea freight, handling 1.5 million passengers and 100,000 tonnes of freight annually.

Côte d’Ivoire growth

Air Côte d’Ivoire has signed a firm order for two A330neo aircraft to support its growth strategy.

The airline currently operates a fleet of six Airbus aircraft comprising one A320neo, two A320ceo and three A319.

The new A330neo wide-body aircraft will enable Air Côte d’Ivoire to grow its network and efficiently launch long-haul routes in line with the airline’s transcontinental expansion strategy.

Codeshare move

Air Austral and Kenya Airways have signed a codeshare agreement aimed at facilitating travel between Africa and the Indian Ocean.

Kenya Airways will offer new destinations within the Indian Ocean – Reunion Island via Mauritius and/or Johannesburg, and Madagascar.

Air Austral will offer a wide choice of African destinations via the airports of Mauritius, Antananarivo and/or Johannesburg, Nairobi in Kenya, as well as New York via Nairobi Airport.

PICTURE: BOEING.



Egypt buys 12 new Boeing CH-47F Chinooks

The US Army has awarded Boeing a contract to produce 12 new CH-47F Chinooks for the Egyptian Air Force. With this \$426million foreign military sale, Egypt will replace its fleet of CH-47D aircraft with the modern F model, and benefit from its advanced multi-mission capabilities.

“The F-model aircraft will enhance Egypt’s

Chinook capabilities and help effectively accomplish its heavy-lift objectives,” said Ken Eland, vice president and H-47 program manager. “Boeing’s partnership with the Egyptian Air Force remains strong as we continue to work together to modernise their fleet.”

■ Modern eyes, page 30.

PICTURE: MAUREVA.



Maureva acquires XLM Aero

Maureva, the Mauritius-based company providing global software and service solutions to more than 65 airlines, has acquired French company XLM Aero.

Based in Toulouse, XLM Aero is the developer of KEOPS CC, an airline direct operating cost-control solution.

“The acquisition perfectly complements our range of solutions for airlines, said Maureva co-founder and director Nicolas Boyet. “While our historical expertise focuses on airline revenue accounting, XLM Aero offers us new perspectives in terms of business intelligence, with the possibility of finely managing the profitability of the airline routes.”

AfBAA strengthens support team

The African Business Aviation Association (AfBAA) has announced two new appointments aimed at driving growth and providing increased support to members.

Dawit Lemma (right) is the new AfBAA vice president, international, based in Addis Ababa, Ethiopia, while Samantha Keddle becomes AfBAA manager, based in Johannesburg, South Africa.

Lemma is the founder and CEO of Krimson Aviation, an aviation services company based in Ethiopia and Malta. He serves on the AfBAA board and is the first African representative to sit on the International Business Aviation Council’s IS-BAH standards board. He also represents Krimson in the European Business Aviation Association



PICTURE: BILLYPX.

(EBAA) ambassadors’ programme, and actively engages with the National Business Aviation Association (NBAA) in the USA.

Keddle joins AfBAA from the Commercial Aviation Association of South Africa (CAASA), where she has served as office manager since April, 2016.

10th anniversary

Ethiopian Airlines and Boeing celebrated the 10th anniversary in October of the first 787 Dreamliner delivery to the African carrier.

PICTURE: FAM.



Mozambique finally receives veteran transport aircraft

The Mozambican Air Force (FAM) has announced that a LET 410 and an Airbus CN235 transport aircraft had been acquired from Paramount Group in South Africa.

According to the FAM, the aircraft are to serve in the cargo and troop transport role as well as for special forces insertion.

The CN235M-10 (pictured) is 35 years old and first served with the Botswana Defence Force Air Wing, which retired it from service in 2011. It was then sold on the civilian market and sent to South Africa. It was offered to Togo in 2012 but that country chose not to buy. It eventually ended up being owned by French company,

SOFEMA, which modernised it with a new Garmin avionics suite.

Attempts at selling the CN235 after its upgrade were frustrated by the high price demanded until a deal was struck with Madagascar in 2019. However, the country’s inability to meet its payment obligations meant that the CN235 was eventually repossessed. It was then sold to Interjet Maintenance in 2021 before being acquired by Paramount.

The CN235 may prove challenging to operate for the FAM given its age and limited engine power, which should affect its transport capacity when operating in high temperatures.

ULD partnership

Air Austral and Unilode Aviation Solutions, which deals with outsourced unit load device (ULD) management, repair and digital services, have extended their management partnership until 2026.

Unilode has been managing Air Austral’s ULD fleet since 2016. Under the terms of the renewed agreement it will supply lighter weight and more durable digitalised containers for Air Austral to further reduce the fuel costs and CO2 emissions of five wide-body aircraft.

New African routes

Air Algérie is adding three new African routes to its network.

Algiers to Addis Ababa, Johannesburg, and Libreville are expected to operate early this year. They are the airline’s three largest unserved sub-Saharan African markets.

■ Air Algérie thinking on its feet, page 10.

Back to Tigray

Ethiopian Airlines has restarted flights to the region of Tigray. Flights will connect between the Ethiopian capital, Addis Ababa, and the Tigrayan capital, Mekelle, marking the return of commercial flights to the war-torn northern region after nearly two years.



PICTURE: SOUTH AFRICAN AIRWAYS.

SAA has a call to ARMS

South African Airways (SAA) has chosen Laminaar Aviation Infotech’s ARMS software following a competitive global tender process.

The Star Alliance carrier had specified its need for a one-stop solution that would address flight-planning, aircraft tracking, and electronic flight bag (EFB) services in line with its initiative to promote paperless cockpit operations, enhance crew efficiency, and lower total cost of ownership.

Laminaar CEO, Vivek Sheorey, said: “We are privileged to be chosen by South African Airways and thankful for the trust they have vested in us. We look forward to being the airline’s technology partner of choice in its journey of digital transformation and wish the carrier continued success in the future.”



South African low-cost airline, FlySafair, is on a rapid expansion flightpath.

Guy Leitch found out more from the airline's CEO, Elmar Conradie.

# SAFAIR SO GOOD

OPPORTUNITY KNOCKS FOR SOUTH AFRICAN AIRLINE AS IT EXPANDS ABROAD

**F**lySafair is expanding beyond South Africa. It has already started Mauritius flights and, in October, announced it had received approval to operate routes to 11 new destinations within the southern African region.

It's no wonder, then, that airline CEO, Elmar Conradie, is in bullish mood.

"Mauritius has been a wonderful extension to our existing route network and we certainly see an opportunity for further regional expansion," he said.

The new destinations, approved by the Air Services Licensing Council of South Africa, include flights from Cape Town and Johannesburg to Gaborone, Livingstone, Luanda, Lusaka, Maputo, and Victoria Falls.

In addition, the airline has been approved for frequencies from Johannesburg to Bulawayo, Nairobi and the Seychelles, as well as between Cape Town and Windhoek.

Its application for routes between Johannesburg and Harare, Windhoek and Zanzibar, and additional frequencies to Mauritius, were still pending as *African Aerospace* went to press.

FlySafair can now engage with the relevant airport and civil aviation authorities in each market and begin planning its flight schedules.

□ □ □ □ □

"We'll initiate projects to set everything up and isolate the aircraft to deploy on the new routes. We envisage some services to start early this year," said Conradie.

As of early August, FlySafair had 22 aircraft – five B734 classics and the rest all B738 NGs. "We'll be adding additional aircraft, so that will take us up to a full fleet of 20 B738 NGs and the five classics," said Conradie.

The CEO acknowledged that, with Comair and Mango having recently folded, FlySafair sees opportunities.

"There were a number of great people who were displaced when those companies closed. We have hired a good deal of those to help crew our expansion," he said.

"There is an interesting market dynamic at the moment because there are so many factors at play. These include competitor dynamics, changing interest rates affecting people's disposable income, changing confidence around Covid and particularly corporate travel policies, shifts in inbound international travel volumes, and the increasing cost of fuel.

"When we lay this over expected seasonality trends it becomes pretty tough to really isolate any specific trend for certain.



▼ We believe that there is certainly opportunity in the market and, hence, our expansion plans. ▲

ELMAR CONRADIE

"That said, the net result is that the South African domestic market is far smaller than it was pre-Covid in terms of supply. At this stage, we estimate that about half of what was available then is up for sale now. What has been interesting is that, with the higher load factors and increased frequencies, we believe that the current passenger numbers are only 10% lower than before Comair exited the market.

"The question, though, is whether there is more demand now than before due to all these changing dynamics.

"We are seeing very high load factors at the moment during periods when they would normally have been good, but not very good. This is indicative of the market dynamics being out of sync as that supply seems more easily overwhelmed by demand – but only when there is demand.

"There are times when the demand is obviously softer, where loads and yields would indicate that the market is actually quite adequately served.

"In the bigger scheme of things, and with an optimistic view on economic recovery, we believe that there is certainly opportunity in the market and, hence, our expansion plans."

□ □ □ □ □

One major issue facing the airline, however, is high fuel costs.

"The fuel price is having a huge impact," admitted Conradie. "Fuel is now 50% of our operating costs. Naturally this means that the minimum sustainable price point in the bigger pricing matrix will need to lift in order to maintain a sustainable operation."

Despite the fuel problems, FlySafair is operating about 50% more flights per day than it did going into Covid and Conradie said he was pleased with the way the airline's business-class offering, launched just after lockdown in mid-2020, had been received.

"The model is based on the very common inter-European business-class solution, where airlines use the same seats but block or neutralise the centre seat in a row of three to offer customers a bit more space and, importantly, a bit more privacy," he explained.

"Our solution includes the blocked seat, two pieces of checked luggage at 23kg each, a third piece of checked luggage for sports equipment at 32kg, priority boarding, priority baggage handling, full refundability to a voucher, unlimited penalty-free changes, and an allowance for snacks and beverages off the trolley. It's been very well received." ▲

PICTURE: GUY LEITCH.



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# Late hitch delays Nigeria Air launch date

There are few more complex undertakings than setting up a new airline – as the Nigerian Government is discovering.



Nigeria Air should be flying by now. The fact that it is not will not surprise industry observers, who are well aware of the unexpected bumps in the road that accompany the creation of any new airline.

Just as it seemed as though Nigeria's new national airline was ready to take to the air late last year, it hit unexpected turbulence.

All seemed to be going well, even if the initial planned launch date of July 1 had been missed.

The west African nation has been without a flag-carrier for a decade and its government announced plans in 2018 to re-establish a national airline.

In recent years, the country's airline sector has been populated by a group of relatively small operators. Frequencies between cities – an important factor in stimulating traffic – are typically low.

After a lengthy selection process, the Nigerian Government chose Ethiopian Airlines – the continent's consistently most successful carrier – as its strategic equity partner, with a 49% shareholding in the new company. The Nigerian Government will hold just 5% of the new airline, with other Nigerian investors making up the remaining 46%.

The intention is that Ethiopian will supply its managerial and organisational expertise,

together with an initial batch of aircraft, for the new flag-carrier.

The revised schedule aimed to start operations by the end of last year, initially using three Boeing 737s from Ethiopian's fleet to begin domestic routes, with the intention of gradually expanding into regional, then long-haul services as the new company gained experience and acquired wide-bodied aircraft.

As the parties seemed to be entering the final stretch before launch, however, six Nigerian airlines took legal action against the country's aviation and justice ministries and obtained a temporary injunction, halting the launch process.

□□□□

The apparent reason? Concern that the proposed arrangement will allow Ethiopian to gain entry to the potentially huge Nigerian market, to the detriment of local competitors. The fact that the company will come with government backing, together with a wave of popular support for a new national airline, gave rise to fears that existing companies would be squeezed in the marketplace.

The airlines went to the country's Federal High

Court in Lagos and, in a decision made public on November 15, the court granted an interim injunction, barring the government or any of its agents from progressing work to set up the new national airline.

Specifically, the injunction forbade the sale or transfer of shares in the new airline to Ethiopian.

The complaint alleged irregularities in the selection procedure that saw Ethiopian chosen as strategic partner. The airlines also sought damages of 2 billion naira (\$4.5 million) in compensation for what they said was their "wrongful exclusion" from the project and an unlawful bidding and selection process.

Ironically, the injunction was granted just hours after the country's aviation minister, Hadi Sirika, told journalists that there was no law to prevent the government from setting up Nigeria Air.

The Nigerian media reported that Sirika had also said that he had asked several existing Nigerian airlines to take shares in the new flag-carrier, but that none had chosen to do so.

The injunction was promptly challenged by the Nigerian Government in the country's High Court. A definitive judgement was awaited as African Aerospace went to print.



On the march: Aviation workers protest anti-labour clauses in new aviation bills. PICTURE: AIR TRANSPORT SENIOR STAFF SERVICES ASSOCIATION OF NIGERIA.

## WHY STRIKES KEEP STRIKING NIGERIA

A series of strikes, or threatened action, has been rocking Nigeria's aviation industry. It started in February last year when the National Union of Air Transport Employees (NUATE), and the Association of Nigeria Aviation Professionals (ANAP) joined other unions in a row over conditions of service.

Although action at the time was suspended, the row resurfaced in May just hours after domestic airlines under the Airline Operators of Nigeria (AON) announced plans to shut down flight operations over the astronomical hike in fuel price and other operating costs. Again, a last-ditch change of heart prevented any action.

Then, in July, NUATE and the National Association of Aircraft Pilots and Engineers (NAAPE) held a four-day solidarity protest with the umbrella workers' union, the Nigeria Labour Congress (NLC), over the crisis in Nigeria's education sector.

And, in September, a coalition of aviation workers' unions held rallies at airports nationwide to protest anti-labour clauses in new aviation bills awaiting the president's assent. Some clauses abolished strikes and authorised the minister of aviation to regulate unions' activities.

Also in September, flights in and out of airports in a number of countries in west and central Africa, including Nigeria, were heavily disrupted after air traffic controllers defied a ban and launched a wildcat strike to demand better working conditions. The strike was suspended on September 24.

CHUKWU EMEKE

## AIR ARABIA PLANS LCC JV FOR SUDAN

Sharjah-based low-cost carrier (LCC) Air Arabia, which already has sister companies in Morocco and Egypt, is developing a series of joint venture airlines.

Fly Arna and Fly Jinnah began services in 2022 in Armenia and Pakistan respectively. Air Arabia Abu Dhabi, a partnership with Etihad Airways, has already expanded to nine aircraft and is scheduled to grow to 20 by the end of 2023.

In Sudan, Air Arabia will partner with DAL Group, a local conglomerate with interests in the automotive, earthmoving, energy and industrial gases sectors.

The new airline will be known as Air Arabia Sudan and will mimic the low-cost model.

It will be based at Khartoum International Airport and use Airbus A320s, although it is not yet known if the new airline will fly aircraft from Air Arabia's existing order book, or whether more will be needed. Work on securing the relevant approvals and licences is under way.



A320s over Sudan: Air Arabia Sudan will operate the aircraft, but whether they will come from the parent company's fleet is, as yet, unknown.

PICTURE: AIR ARABIA.

The size of the new Sudanese airline's fleet, timescales for starting operations and details on shareholdings and route networks will be released "in due course", the two companies said.

"Our decision to partner with a leading pioneer of low-cost air travel is driven by our core commitment to perpetually contribute towards realising Sudan's long-term human and economic growth and development potential," said DAL Group chairman, Osama Daoud Abdellatif.

"Given Sudan's rich national cultures, rarely publicised yet fascinating ancient history, and breath-taking topography, our nation enjoys a unique untapped potential, and we are therefore steadfastly committed to developing the diverse aspects of Sudan's tourism, travel, cargo transport, and aviation infrastructure sectors."

Attracting foreign direct investment to Sudan is aimed, at least partly, at improving employment opportunities. Sudan is one of Africa's poorest nations.

The new joint venture will face competition from several existing Sudanese carriers.

Sudan Airways has struggled for several years and is currently thought to operate only a single A320 and a leased Bombardier CRJ200. Two privately owned companies, Tarco Air and Badr Air, operate fleets of around 10 Boeing 737s, mainly Classic models with a few -800s.

## AIR ALGÉRIE THINKING ON ITS FLEET...

Changes are afoot at Algeria's national flag-carrier as it seeks deals for significant numbers of new aircraft.

Air Algérie is embarking on a major re-fleeting exercise as it aims to bring a new generation of aircraft into service.

The Algerian national carrier issued a request for proposals (RfP) for 15 new aircraft in both the narrow-body and wide-body categories.

The planned new aircraft are split into four batches. The first two groups are for five and three narrow-bodies respectively, of up to 200 seats, while the remainder are split into five wide-body types of 300 seats and two of 400-seat capacity.

It is thought that the airline is prepared to either buy or lease the new aircraft. Responses

to the RfP were required by late last year.

If the RfP leads to the acquisition of all the desired aircraft, it will mean a complete renewal of the north African airline's wide-body fleet, which currently consists of eight Airbus A330-200s.

The bulk of the fleet – 57 aircraft – is made up of 33 Boeing 737NGs (mainly -800s with small numbers of -600s and -700s) 27 of which are in service.

For domestic flights to the country's large network of regional airports – many of them serving oil and gas fields in the south of what is Africa's largest country – the company uses

14 Franco-Italian ATR 72 turboprops, of which eight 72-500s and three 72-600s are currently in service.

The airline's route network is biased towards Europe, the northern half of Africa and the Middle East. It serves 73 destinations in 25 countries and, following the pandemic, has good links to France – unsurprisingly, given the historic ties between the two countries.

Air Algérie is steadily re-establishing its routes – for example, to sub-Saharan capitals such as Bamako, Ouagadougou and Abidjan – as well as opening new routes, such as Doha, in Qatar.



On the way out: The planned re-fleeting will see the replacement of the airline's Airbus A330-200s.

PICTURE: AIR ALGÉRIE.



*Is Africa's airline market ripe for new entrants or is consolidation needed to give fewer, larger airlines a better chance of succeeding? Raphael Haddad, commercial division president of global aircraft trading firm, Jetcraft, discussed the prospects with Alan Dron.*

# How partnerships can craft low-risk airlines

Unsurprisingly, given the scale of the African continent, there is no 'one-size-fits-all' theory governing airlines' fortunes. In general, however, in sub-Saharan Africa, well-run airlines have prospered and badly run ones have faltered, said Haddad.

Ethiopian Airlines, for example, is the continent's consistently most successful carrier, at least partly because – although state-owned – the Ethiopian Government does not interfere in its operational running.

As a result, Ethiopian has been free to pursue its own strategy and has set up subsidiaries or made other teaming arrangements in countries such as Togo, Zambia, and now Nigeria, where it has been named as the strategic partner for that country's new national airline.

"I think it's a very smart move by the Nigerian Government to allow a big airline like Ethiopian to come in and take 49% of the new carrier," Haddad said. "Knowing the people at the head of Ethiopian, they're going to make it work. And they have the financial strength to make it happen."

Among other well-run airlines, RwandAir is growing increasingly close to Qatar Airways, one of the world's most highly rated carriers, while Gabon's Afrijet is also benefiting from good management.

South Africa's Airlink and FlySafair are also prospering, Haddad noted, while the country's Cemair has also grown its fleet by around 20% in the past year.

In contrast, South African Airways, for many years regarded as one of

the most efficient on the continent, has been hamstrung by government interventions and corruption. Ironically, when a well-run South African airline such as Comair needed help from the country's government, the administration refused to do so and it collapsed last summer.

SAA and Kenya Airways, which formed a strategic partnership in November 2021, should look to the example set by Ethiopian, Haddad said. The alliance may eventually see them creating a pan-African airline and combining their fleets to generate the necessary critical mass to make them viable.

Both SAA and Kenya Airways' CEOs have said in the past that the African airline market is too fragmented, with too many airlines chasing too few passengers, which makes it more difficult for companies to survive.

"It [the alliance] is a very smart thing to do. It's not full consolidation but it's major cooperation and, if they do it right, and have the capability to do it, they can help each other out," said Haddad.

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The stresses of the pandemic have meant that airlines need to minimise their costs and risks. They are seeking to operate the aircraft that are most economical, especially on 'thin' routes. Those are usually regional aircraft in the 50 to 120-seat range, said Haddad.

"Last year, we sold 50-seaters into Africa. We bought a fleet and sold 60% of them into the continent. Right now, we're buying another fleet of regional jets and the capacity will mostly go into Africa. Regional jets present a minimum-risk solution."

Many sub-Saharan airlines are currently updating their fleets, with several opting for regional jets, often second-hand.

One factor that could help the continent's airlines is the full-scale adoption of the single African air transport market (SAATM), which would effectively create an 'open skies' system, ending decades of visa restrictions and bilateral treaties that have stifled the continent's internal flights.

"They need it. SAATM is going to have to happen. They don't have a choice. Governments are becoming more responsible... and they are going to see that cooperation is the way to survive."

"Some governments are very progressive and are adopting it, but some are restricted by internal political infighting and positioning themselves differently."

"If you take a snapshot today compared to 20 years ago you see governments are bringing in stronger, successful airlines to help them redesign their airline strategy. You see governments stepping away and letting airlines make decisions at arm's length. I'm optimistic." ▲

Raphael Haddad: "Regional jets present a minimum-risk solution."

PICTURE: JETCRAFT.



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**Keith Mwanalushi** looks at aviation protectionist policies in southern Africa to see if they are changing in support of cross-border acquisitions and partnerships between regional airlines.

PICTURE: AIRLINK.



## Covid: the catalyst for change

The Covid crisis hastened an industry shake-out in southern Africa. Rodger Foster, CEO and managing director of South African regional airline, Airlink, reckons this was long overdue considering what he believes was over-capacity in a sector skewed by several carriers' dependence on government subsidies and protectionist regulatory gerrymandering.

"Even privately owned and now defunct Comair saw its own recovery compromised when South African Airways (SAA) avoided paying it the full amount of damages it owed," he noted.

"We were compelled to break up a long and mutually lucrative franchise partnership with SAA when it misappropriated and misused Airlink's money that was in its safe-keeping." Foster added that this gave the airline an opportunity to reimagine, rebrand and rebuild its own revenue and reservations systems to start flying under its own code. Airlink now flies to 45 destinations in 14 countries.

The airline has now embarked on a strategy of cooperation and collaboration with other carriers. In addition to interline and codeshares with major long-haul operators, Airlink recently announced a 40% acquisition of neighbouring FlyNamibia.

"We are putting in place the various elements that underpin the acquisition. These include bringing FlyNamibia on to our reservations and revenue management system, as well as allocating our ticket designator and flight code to their schedule. We expect these changes to be visible to customers and the travel trade soon," Foster said.

He stressed that both airlines are – and will remain – distinct and operate their own schedules. However, he said Airlink's investment in FlyNamibia allows both carriers to take full advantage of the scalability and opportunities for cost efficiencies that are unlocked by the new relationship, including expanding the Namibian and regional route networks.

Andre Compion, managing director at FlyNamibia, said the partnership would offer various opportunities for the Namibian airline to benefit from the size and extent of Airlink's operations.

Training is being done at Airlink's facilities in Johannesburg and will include access to aircraft maintenance and operational support. "We will also tap into

Airlink's suppliers where bulk purchases are concerned to further cut the costs," said Compion.

FlyNamibia currently operates the Embraer 145 on most routes, with some of the smaller domestic services operated by B1900s and F406s. "We envisage moving out of the turboprops on to E145s on most of the existing routes and will migrate to the E170 or E190 as the next step in our fleet expansion," said Compion.

"Our route network domestically is well established but regionally we currently only fly to Cape Town. We plan to introduce services to Johannesburg, Maun, Victoria Falls and Luanda during 2023."

□ □ □ □ □

Certainly, cross-border acquisitions in Africa will have to navigate the often protectionist policies by some governments. "Regionally and locally, regulatory foreign ownership caps are still used as blunt instruments, but increasingly we are also seeing countries' competition authorities reinforcing those limits," Foster observed.

However, for Airlink, market access on a level playing field is more important, Foster noted. Airlink has endorsed the principles of the single African air transport market (SAATM) but, too often, Foster sees the signatories' resorting to distorting tactics to deter competition. He indicated these to include charging differential fees for foreign operator permits, air navigation and airport fees and other sundry items.

"This goes against the spirit of SAATM which, frankly, is unfathomable when one considers the broader economic sustainability and social stability benefits that increased and competitive connectivity will provide," Foster said.

Meanwhile, he is hoping the diplomatic spat between South Africa and Madagascar will soon be resolved. The issue, which allegedly involves unreturned smuggled gold bullion, has caused a diplomatic row between the countries, which led to air access being prohibited by the Madagascan administration.

"We continue urging both governments to resolve their differences so that we can reinstate this vital air bridge for mutually beneficial travel, trade, industry and tourism," Foster concluded.



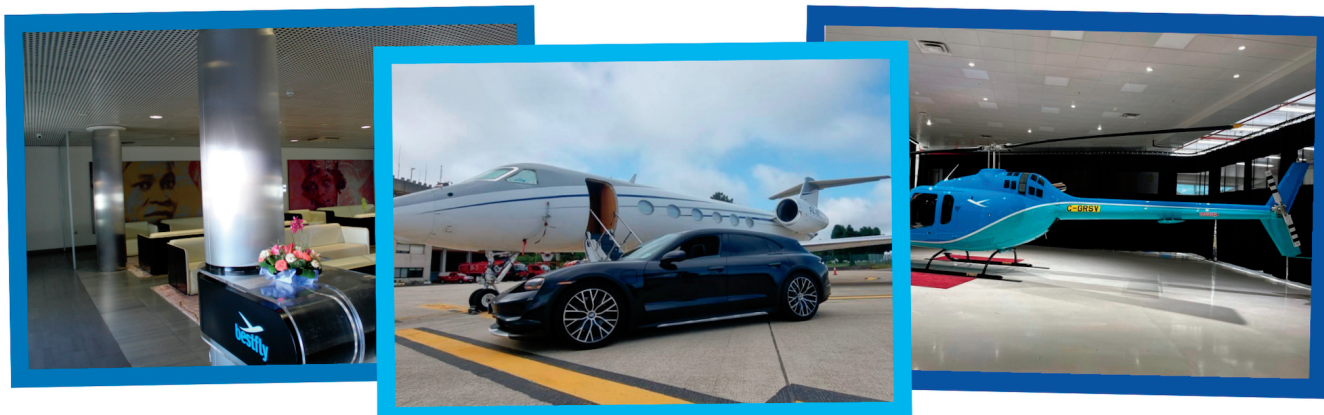
Market access on a level playing field is vitally important. RODGER FOSTER

PICTURE: AIRLINK



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# POPPY APPEAL

## HISTORY-MAKER AIMS TO INSPIRE OTHER WOMEN

South Africa's director civil aviation (DCA), Poppy Khoza, talks to **Guy Leitch** following her election as the first International Civil Aviation Organization (ICAO) General Assembly woman president in the organisation's 78-year history.

**GL: Congratulations on your appointment as president of the ICAO General Assembly. How significant is this accomplishment for both African aviation and for you personally?**

PK: In terms of African aviation, many people may not be aware but the previous president of the ICAO council was a Nigerian national, Dr Olumuyiwa Benard Aliu. So Africa is making its voice heard and my appointment is a further step in the right direction and speaks volumes regarding the talent and skills of Africans.

Personally, the unanimous election by all member states is something I will never forget.

It was a very humbling experience which I thank God for. And I must also acknowledge the South African Government for driving the transformation programme – without apology. Had our government not been so progressive in gender equity initiatives, there would not have been a female DCA and I would not have been recognised by ICAO and its member states.

**GL: Africa has struggled to compete on the world stage with its share of airline traffic having fallen from 2% to currently around 1.8% – despite having 20% of the world's population. Is your appointment due to ICAO's 'no country left behind' policy, which is its effort to assist states in implementing the ICAO standards and recommended practices (SARPs)?**

PK: Maybe it's important to bring context to the concept of the 'no country left behind' campaign. It is based on the principle that countries that have consistently maintained critical safety or security element ratings of above 80% must assist those who are struggling to be compliant within their respective regions, or on the continent. This term cannot, therefore, be used loosely, and stereotypically, to suggest that my appointment is made on such a basis.

I must point out that there are many African countries performing very well and, in this regard, I



PICTURE ICAO.

would also like to recognise the election of Nigeria and Egypt in part II of the governing council because of their contributions to the provision of facilities for international civil air navigation.

Far more significant is that Equatorial Guinea, Ghana, Ethiopia, and Zimbabwe were elected to part III of the ICAO council. These were significant achievements for the countries, their respective regions, and the continent.

**GL: Under your leadership, South Africa set a clear goal of re-election to the 36-country ICAO Governing Council, and you achieved this. How important is this?**

PK: I honestly cannot take credit for this. I was merely part of the team under the department of transport that contributed to making sure this was achieved.

The re-election is important because it gives South Africa a voice on global aviation matters. This means it (along with other elected African member states) will have a role in providing direction to the work of the ICAO, especially as it implements the resolutions of the assembly over a three-year period.

**GL: Aviation is a traditionally male-dominated industry – what does your appointment mean for women in aviation?**

PK: I hope it inspires women in the aviation sector globally, knowing that I also have a role to play in mentoring and coaching other women to challenge the status quo and to be fully empowered in our industry.

The fact that this election made me the first-ever woman president in the ICAO assembly's 78-year history was quite special on its own. What it says is that the world has turned the corner in recognising that women, irrespective of where they come from, can take up leadership positions, including in the highest decision structures of UN bodies.

**GL: How important is transformation of the SACAA for you? You have clearly accomplished much as the organisation has 45% women senior managers, 51% women employees, and 89% black employees.**

**Do you aim to do more?**

PK: It is no secret that the aviation industry is still behind on transformation matters,

“The world has turned the corner in recognising that women, irrespective of where they come from, can take up leadership positions, including in the highest decision structures of UN bodies.”

particularly in South Africa. This requires our collective efforts to ensure an inclusive industry that embraces gender equity and racial inclusivity.

It is the right thing to do.

No child should ever feel left out because the system is not embracing diversity. In fact, diversity is good for our democracy, and it is good for sustainability and progress.

Several SACAA programmes support the transformation of the industry, including a bursary scheme, learnerships, trainee programmes, and enterprise development programmes.

We are mindful that we have a long way to go, but we will take it one step at a time.

**GL: Is your appointment a recognition of what you have achieved with the SACAA?**

PK: I would like to believe that it is two-fold.

Firstly, it's probably due to our own organisational successes, and secondly to the role I have played in representing South Africa in the structures of ICAO over a number of years.

As the SACAA, our international ratings on aviation safety and security with ICAO have increased significantly, which places South Africa among the best-performing countries in this regard.

We have reported nine clean audits in the past 10 years from the auditor-general.

And, just recently, we retained our US Federal Aviation Administration (FAA) category 1 status.

ICAO and its member states must have been convinced that I have the capacity to navigate complex discussions successfully, and with outcomes that are in the best interests of the organisation and the global aviation industry, striking the right balance on complex issues.

**GL: Does the focus on your being an African woman bother you? Would you not prefer to be judged just as a person?**

PK: On the contrary, I didn't feel at all that I was judged by member states as being an African woman. I'm certain that, if it bothered them, I would not have been elected.

There was a broad consensus that this global meeting was said to be the most difficult, with the most contentious matters. In the end, the matters were all delivered in a way that all the parties walked away with the feeling of being heard. That was my intention when I accepted this nomination, and I will let history judge how that went.

I will never denounce, nor be bothered by, my identity as an African and my gender to feed a narrative that this was a chance appointment. It was an appropriate appointment that was long overdue, because many women in civil aviation are capable of performing the role. ▲

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*Pilatus Centre South Africa has a long and enviable track record as the sole distributor for the Pilatus PC-12 NG and Pilatus PC-24 in southern Africa. **Guy Leitch** talked to marketing director, Gerry Wyss, about the secrets of the centre's success.*



Three's company: The Pilatus PC-12 Centre South Africa team (from left) Gerry Wyss, Raymond Steyn and Tim Webster. PICTURE: PCSA.

## WYSS WORDS

### WHY PILATUS IS A THREE-WAY WINNER

**G**erry Wyss believes there are three main reasons why Pilatus has achieved market-dominating sales with the PC-12 single-engine turboprop and, now, the PC-24 jet.

"First is the product itself," he said. "Pilatus has a very high Swiss quality and an excellent safety record.

"Second is after-sales support. This is unsurpassed, with Pilatus having won the product support award in its category of general aviation turboprops for 22 years in a row.

"Third is the aircraft's ability to hold its residual value – the PC-12 exceeds all other makes in resale value."

So, are most PC-12s operated by the private sector, or have governments also come to appreciate the benefit of a single-engine turboprop?

"We have found that the sales are split 95% private/corporate and 5% government," said Wyss. "Both private/corporate operators and governments have come to

accept single-engine turbine safety, especially in the light of Pilatus' excellent safety record.

"Since we started in 1995, we have sold and delivered in excess of 120 Pilatus PC-12s and, as of now, eight PC-24s."

The PC-24, with its rough field capability, might have been designed with African operators in mind but, as Wyss explained: "Some are reluctant to land an asset as valuable as the PC-24 on unprepared runways.

"However," he added, "others have opened their horizons and have gone to extremely remote and exotic places with the jet by using it for what it was designed for."

Both the PC-12 and 24 are particularly popular with mining and transport companies and Wyss said the centre was seeing a boom in both sales and enquiries.

"Africa as a whole was hit hard by Covid-19 and has been slow to recover," he said. "The airlines, in particular, have been slow to get back into the market, which has been to our benefit as corporate aviation has had to fill the connectivity gaps left open.

"We are seeing the economic recovery gain increasing momentum – particularly on the back of higher resource prices and the demand for mining production. However, the current supply chain challenges are also holding back the economic recovery."

But could there be one new threat on the horizon? The Beechcraft Denali is backed by the huge Textron Corporation and has an all-new full authority digital electronics control (FADEC) engine. So could it pose a problem?

"The thing to remember is that the Denali is still a concept aircraft," said Wyss. "Cessna/Beechcraft may be a strong brand around the world, but we doubt that the Denali can take more than 25% of the market. If that is the case, it will not be a great return on investment for Textron shareholders.

"Regarding the new engine, my view is that the Denali has issues in marrying it into a new airframe. So, no, we are not concerned about a bit of what may only be possible competition from Cessna/Beechcraft." ▲

## EAN AVIATION SIGNS AIRBUS PARTNERSHIP

Celebrations: Airbus Helicopters and Nigerian-based helicopter company, EAN Aviation (EAN), have signed a strategic partnership making EAN a distributor for Airbus Helicopters in west Africa.

The deal will focus on the west African civilian market, excluding military products.

"We look forward to leveraging our impressive network and in-depth market understanding to grow the helicopter services industry, and to add value to Airbus Helicopters' activity in the west African region by deepening connectivity and operational efficiency," said EAN CEO Segun Demuren. ▲

PICTURE: EAN AVIATION.



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Chloë Greenbank looks at how African airport design has evolved – from embracing a sense of place and accommodating local climate conditions to incorporating environmentally friendly materials and biometric solutions.

# THE AIR DRESSERS...

**W**hen it came to creating a visual identity for Skukuza Airport in the heart of Kruger National Park, South Africa, the focus was on designing an airport inspired by its natural environment.

The iconic design of Skukuza, which operates under the control of Skukuza Airport Management Company and is served by South African carrier, Airlink, as well as catering for private and charter flights, resembles more of a luxury private lodge than it does an airport terminal.

Having been completed in 2014, the airport's design is also one that has stood the test of time.

One of the key objectives of the building design was to limit any intrusive visual impact on the surroundings by blending the structure into its surrounding natural environment.

The terminal's open-plan layout, thatched roofing, raised timber frames and a central water feature, alongside the use of natural shapes and the palette of soft, neutral, colours all help to place the building at one with its surroundings.

Even the landscape design team worked closely with Kruger Park environmentalists, nursery and plant specialists to identify protected species, which were incorporated within the terminal layout.

This concept of safeguarding the local heritage through innovative design was also key to the redesign of Kilimanjaro International Airport in Tanzania, which was completed in 2019.

A gateway to one of east Africa's most popular tourist destinations, the airport was originally built in the 1970s to accommodate 600,000 passengers.

However, having added new routes and achieved strong growth in passenger traffic over the last decades, the air transport hub had exceeded that capacity.

Netherlands-based airport consultancy and engineering firm, NACO, was brought

on board at the early stages of the airport's revamp to work on its masterplan and new design.

Marcel Langenslag, director aviation at NACO explained: "Central to rebuilding the airport was the need to improve upon the original architecture with a safe, sustainable design that enabled future development and growth. Also integral to the project was the need to deliver greater efficiency and a more commercialised passenger experience, while celebrating the local culture and community."

One of the key inputs for any airport design project, noted Langenslag, is the need to take the local climate conditions into account. "For Kilimanjaro Airport we had to bolster climate resilience and factor in the significant rainfall the region experiences, as well as the dust. The airport's original design featured a big courtyard, which was open to the elements. However, when it rained that space was completely unusable. So, we created a covered roof terrace, which enabled this space to be permanently available to passengers. We also created a louvre system that kept the lounge space open and provided natural ventilation, which limited the need for air conditioning."

**N**ACO is also involved in plans to upgrade Cape Winelands Airport in South Africa.

Explaining that the owners of the privately owned hub hope to turn it into Cape Town's secondary airport, Langenslag said: "What's exciting about this design project is that the owners are determined to build an airport that makes a statement. They want to build something futuristic, but to maintain that sense of place."

Meanwhile, in west Africa, another air transport hub that has garnered attention for fusing contemporary architectural elements with local design inspiration is Terminal 3 at Kotoka International Airport in Ghana. The terminal, which

**Blending in: Skukuza Airport's thatched roofing, raised timber frames and a central water feature, alongside the use of natural shapes and the palette of soft, neutral, colours all help to place the building at one with its surroundings.**

PICTURE: ATHOL FRANZ AND HELENE RAMACKERS.

totals around 45,000sqm, has been designed to process five million passengers per year. Design and engineering firm, Arup, was appointed to provide comprehensive airport planning, as well as architectural design and engineering services for the construction of the terminal.

"We focused on providing solutions driven by quality, safety and functionality, while preserving the design features of the terminal," explained Conor Hoey, Arup Europe business aviation leader. He added that the check-in area, which features brightly coloured motifs on the walls and similar patterns on the floor tiles, was designed to reflect Ghanaian culture and values.

The terminal's entrance hall features an intricate lattice work of steel trusses, a structural design element that is found throughout the terminal's five levels. To optimise the logistics and delivery, the steel beams were prefabricated in Turkey by Mapa Construction before being assembled on site. "Ensuring the terminal's structural safety, while keeping the architect's distinctive design elements, was one of the key challenges of the project," said Hoey.

Like Langenslag, Hoey also noted that local climate and weather conditions have an impact on design. "No matter where you're building, local conditions are always a significant consideration, as is

the requirement for sustainable design."

The need to reduce embodied carbon and design operationally efficient buildings, said Hoey, is core to all Arup's construction projects. "The choice of materials and glazing, the type of roof, as well as the choice of heating and cooling systems, are just some of the criteria which greatly inform the overall solutions. At the same time, they also ensure that an airport can operate in an efficient, effective and sustainable manner."

**W**hether it's building a terminal from the ground up or revamping an existing one, the desire to incorporate smart, sustainable design is echoed across the continent. Langenslag pointed out that creating a facility that can achieve net zero emissions as quickly as possible is integral to the future of Cape Winelands. "The owners want it to be off grid and to achieve net zero as soon as they can. They're pulling out all the stops to make sure they achieve this as they will be building the new airport from scratch."

He also noted that, at Kilimanjaro, the use of local materials, as well as the ability to incorporate natural ventilation and ensure the availability of local maintenance capabilities were all key, not just in embracing environmentally friendly practices within the airport's

build, but also in terms of being able to service it in the future.

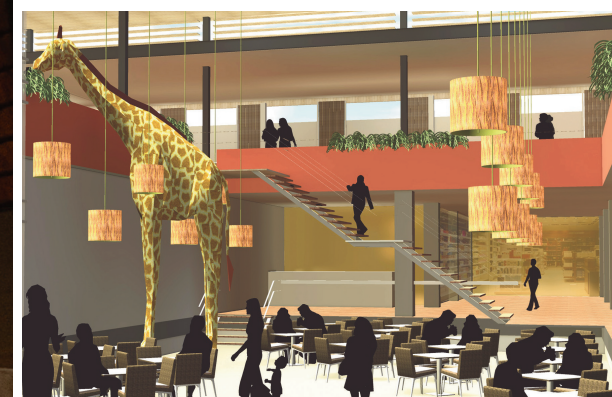
The new Bugesera Airport in Rwanda, which is currently under construction, is another example of a facility that is embracing sustainability within its design.

International consultancy, Dar Group, has been tasked with overseeing the latest design as well as the construction of the greenfield air transport hub.

Speaking at Aviation Africa 2022, Elie Kharrat, partner and director of operations Rwanda and Mozambique for Dar, underlined that the aim is for all the airport buildings to be leadership in energy and environmental design (LEED) certified. "We will use solar panels alongside other renewable sources and measures to achieve our sustainability goals, in line with Rwanda's green objectives and to help achieve the highest possible level of LEED certification," said Kharrat.

Another trend being seen in airport design across the globe is the desire to implement more automation and self-service solutions, such as bag drop and check-in kiosks. "In some cases, African airports are also beginning to request biometric solutions," said Stephan Castagnetta from Amadeus airport and airline operations, EMEA.

He added: "The use of biometrics has design implications within the terminal. For example, it can help reduce queues at



**TOP RIGHT: Boosting climate resilience: Kilimanjaro Airport's big courtyard was originally open to the elements. The revamped design created a covered roof terrace and a louvre system that kept the lounge space open and provided natural ventilation, which limited the need for air conditioning.**

PICTURE: NACO.

**BELOW, RIGHT: Terminal 3 at Kotoka International Airport in Ghana, fuses contemporary architectural elements with local design inspiration.**

PICTURE: ARUP.

document checkpoints and, therefore, has the potential to free up space both land and air side." This in turn enables airports to focus on value-added retail and hospitality services.

Cloud-based solutions are also proving popular when it comes to enhancing the passenger journey while futureproofing an airport's design and development. "If an airport decides to migrate to the cloud, that has an immediate impact on design inside the terminal," added Castagnetta. "Removing the need for on-site servers allows an airport to better utilise space to improve passenger flow and increase capacity."

**A**madeus' airport cloud use service (ACUS) solution was deployed remotely at Nouakchott Airport in Mauritania during the pandemic. It was installed as part of airport operator, Afroport's, wider transition to Amadeus flow – a cloud-based platform for delivering passenger services, which is also available at Cape Verde Airports – to help modernise the west African hub.

Whether it's incorporating innovations in technology to make better use of space, making use of local building materials, or creating a terminal that embodies the local heritage, airports across the continent are embracing the latest design trends to ensure they leave a lasting impression on passengers. ▲



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## AIRPORTS

AÉROPORTS

The Airports Council International (ACI) Africa/world annual general assembly (WAGA) in Marrakech addressed key issues facing the airport ecosystem and highlighted the paradigm shift in the post-Covid 19 era and the wake of the new global geopolitical context. **Anuradha Deenapanray Chappard** was there.

## WAGA strengthens the aero dynamic

A trio of resolutions to strengthen the sustainability and resilience of airports as key players in the aviation ecosystem were approved by the assembly.

It called on governments to support global electrical grid transitioning, update the regulatory framework to accommodate the integration of alternative fuel sources at airports, and incentivise infrastructure development with appropriate financial mechanisms.

"These resolutions will help airports deliver the long-term net zero carbon goal, restore economic equilibrium, support small, emerging, and regional airports, and build aviation's workforce," said ACI world director Luis Felipe de Oliveira.

The assembly heard that ACI recognises the important role that small, emerging, and regional airports play within global connectivity and the socio-economic development of communities worldwide. Therefore, governments and the industry must support their capital and human resource development plans and facilitate their transition to renewable energy.

□□□□□

Emanuel Chaves, ACI Africa president and CEO of Aeroportos de Mocambique, said the association would relentlessly uphold "the strategy and roadmap of all African airports towards enhanced safety, security, best industry practices, decarbonisation, digital transformation and sustainability through various programmes and assistance services".

At the regional level, poor connectivity, protectionism and systemic constraints continue to plague the aviation industry. ACI Africa urged its members to implement the single African air transport market (SAATM).

African Civil Aviation Commission (AFCAC) secretary general, Adefunke Adeyemi, said liberalisation would bring huge benefits to air traffic, especially intra-African, and national economies through increased trade, tourism and job creation.

Habiba Laklalech, CEO of the



**Ali Tounsi:**  
"We are fully aware that staying competitive and up-to-date can be challenging."

PICTURES: ACI WORLD.

Moroccan Airports Authority (ONDA), was even more direct: "The need to anticipate and transform our models is a question of survival for the aviation industry in the low-carbon world of tomorrow. It's therefore vital to embrace energy transition and digital transformation, and face cybersecurity issues together.

"We (ONDA) are going to include the environmental component in all our infrastructure projects from the design stage to operations and management," she said.

□□□□□

Ali Tounsi, ACI Africa secretary general, underlined the fact that sustainability should be a priority for African airports. It should be embedded within their overall vision and development strategy.

"At ACI Africa, we are fully aware that staying competitive and up-to-date can be challenging. We are, therefore, pursuing our knowledge-oriented vision to reskill or upskill airport workforces with the setting up of the Sustainable Aviation Academy (SAA) under the African airports development programme. This is yet another effective and user-friendly tool to accompany Africa's airports on the path to net zero carbon," he said.

According to Sharon Mahony, sustainability expert and commercial partner of ACI Africa, the SAA aims to improve the level of training and awareness to move up on the sustainability journey.

Another major issue addressed was aerodrome certification in compliance with International Civil Aviation Organization (ICAO) standards.

It was pointed out that only 45% of aerodromes are certified in Africa, despite approximately 55 APEX ACI reviews led by industry peers and experts to optimise airport operations, regulatory compliance, and aviation standards worldwide, being conducted across the continent.

AENA, the organisation which manages 46 airports in Spain, will host WAGA 2023 in Barcelona, in partnership with ACI Europe. ▲



### Evolution of the airport workforce

During WAGA 2022, ACI World released the first edition of The evolution of the airport workforce: turning challenges into opportunities white paper.

The document comes at a time when many airports are facing workforce shortages, leading to flight delays or cancellations.

It examines the context, trends, and factors that have led to the current aviation workforce shortage, and provides recommendations to help airport operators, aviation stakeholders, and governments build a stronger workforce that meets the needs of tomorrow and ensures the long-term sustainability and resilience of the aviation ecosystem.



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FOCUS ON

# AIRPORTS

AÉROPORTS

*Ethiopian Airports has been undertaking a massive expansion at Addis Ababa Bole International Airport since 2014. Now, work on the third and final phase of the project is near completion.*

**Kaleyesus Bekele** reports.

Ethiopian Airports has a plan to become the leading airport company in Africa by 2025 and Bole International is its flagship project.

In the expansion project first phase, the international terminal II's floor area was expanded from its original 48,000sqm with a further 74,000 sqm. It meant that the passenger-handling capacity rose from six million per annum to some 22 million.

Modern duty free shops, cafés and restaurants are sprawling in the spacious terminal. Cravings, Pizza Hut and Burger King are among the international restaurants that serve departing passengers.

Ethiopian Airlines runs a spacious business-class lounge and Star Alliance platinum and gold business-class lounge.

Ethiopian also recently inaugurated an in-terminal hotel that has 96 rooms, a bar and restaurants that cater for passengers 24 hours-a-day. Exhausted travellers can get a massage in the hotel.



"Transit passengers, who have a long lay-over time but do not wish to go out into the city, can wine and dine and sleep here," explained Daniel Tsige, director, Ethiopian ground service. "Most of them are business-class passengers who book online. They get the service they are used to receiving on board the aircraft."

Ethiopian has also built a five-star hotel a few minutes' walk away from the airport. It has 373 rooms, various bars and restaurants, conference halls, a swimming pool, and fitness centre. Currently, the airline is completing the construction of a second hotel with 627 rooms in the same locality. When completed the Ethiopian Skylight Hotel complex will have 1,000 rooms.

In the second phase of the airport project, Ethiopian Airports has completed the construction of the VIP terminal. This has two floors featuring restaurants, a press briefing room, a meeting hall and cocktail ballroom, plus a VIP saloon.

There are three different access ways



**Transformed:**  
Bole International Airport can now handle 22 million passengers a year.  
PICTURES: ANTHEHEH GIRMA.

## WELCOME TO THE SUPER BOLE

for diplomats, senior government officials, and heads-of-state. It has its own car park and access road.

Addis Ababa is the seat of the African Union, the United Nations Economic Commission for Africa (UNECA) and other international and regional organisations. "As Addis Ababa is the political capital of Africa, the construction of the VIP terminal was crucial," explained Ethiopian Airports CEO, Eskinder Alemu.

The third phase of the expansion – the domestic terminal 1 – is near completion and will transform the facility into an international-standard terminal.

When the project is fully complete, the Addis Ababa Airport will have the capacity to handle up to 25 million passengers annually. Before the outbreak of Covid-19 it was handling 12 million.



In addition to being the Ethiopian Airlines hub, some 13 foreign carriers also operate scheduled flights to the airport.

It's been a considerable international effort to get this far. The China Communications Construction Company (CCCC) is the contractor, while the French firm, ADPI, is project consultant. The passenger terminal expansion building is designed by CPG, a renowned Singaporean company. EXIM Bank of China has financed

the project, the total cost of which is estimated at \$500 million.

"Addis Ababa Airport has become the largest gateway to Africa. To meet the growing demand we are constantly investing in the infrastructure," Alemu said.

Ethiopian Airports has also undertaken work on the tarmac. The apron, which used to accommodate 53 aircraft, now can handle 75 at a time. The authority has also built a separate stand for general aviation light aircraft, operated by private operators.

The runways have been upgraded and maintained. Three new taxiways have been created to double the capacity. This has increased the number of arrivals and take-offs the airport can handle.

Ethiopia has outlined an ambitious growth plan, dubbed vision 2035, which aims to increase the number of aircraft to 271 from the current 140 and see passenger traffic rise to 67 million per annum. This has prompted the state-owned aviation group to plan to build a new mega airport outside of Addis Ababa.

According to Alemu, the planned airport will have four runways, one big terminal and a commercial area. It will have a capacity to handle 80-100 million passengers per annum.

"It will be comparable with all the major known international hub airports," Alemu said. The total cost of the project is estimated at \$5 billion. ▲

▼ Transit passengers, who have a long lay-over time but do not wish to go out into the city, can wine and dine and sleep here. ▲  
**DANIEL TSIGE**



# TRAVAILLER ENSEMBLE

Kigali a accueilli la première édition du Salon mondial des infrastructures, équipements et services aéroportuaires (SMIESA 2022) en septembre dernier. Daniel Lefebvre, Président de l'UGAACO et initiateur de cet événement revient sur les temps forts de ce salon. Un reportage de **Romuald Nguayap**.

Le SMIESA avait pour objectif de susciter du networking entre les acteurs de l'industrie aéroportuaire. « J'ai maintenant beaucoup de confiance pour l'avenir de l'activité aéroportuaire en Afrique », a déclaré Daniel Lefebvre. 14 pays ont participé à ce salon avec la participation des ministres des Transports du Burkina Faso, de la Guinée-Bissau et du Rwanda.

Le SMIESA 2022 a permis de faire un état des lieux des aéroports africains après deux années de crise.

Selon Daniel Lefebvre, nous sommes désormais plus aguerris pour faire face à de nouvelles crises. Même si la reprise revient progressivement, nous restons encore sur des équilibres financiers assez fragiles. Je tiens à saluer les gouvernements qui ont pris la pleine mesure de la situation et ont apporté un soutien aux gestionnaires aéroportuaires ».

Les tables rondes ont mis un renforcement nécessaire entre les acteurs du tourisme, les compagnies aériennes et

les aéroports africains. « Les aéroports ont besoin d'avoir une visibilité sur les projets d'avenir, ils ont des incidences directes sur les aménagements des aéroports et des terminaux ». Le Sénégal regroupe sous un seul ministère le tourisme et le transport aérien.

Côté transition énergétique, les panélistes ont déploré que l'aviation ait été la cible de dénigrement de l'opinion publique dans la lutte contre le réchauffement climatique. En Afrique, les aéroports africains doivent poursuivre leurs efforts en matière de réduction de ses émissions de CO2. Cela impose de lourds investissements,

« 25 aéroports représentent 40 % du trafic aérien sur le continent, ils traitent leurs émissions de CO2 dans le cadre du programme (Airport Carbon Accreditation) ». À noter que l'aéroport international d'Abidjan s'est vu attribuer la certification de neutralité carbone (3+) avec un objectif de tendre vers le net Zéro carbone d'ici 2030.

Les participants ont en outre mis en exergue la nécessité d'un développement plus accéléré des infrastructures aéroportuaires en Afrique.

Les responsables d'aéroports ont estimé que des actions devraient s'orienter vers les partenariats public-privé (PPP) en vue de capter davantage d'investissements. « Seulement 10 % des aéroports africains bénéficie d'un PPP contre 45 % en moyenne dans le monde ».

La conformité des aéroports africains reste un problème face aux lenteurs politiques. En décembre 2019, seuls 54 aéroports internationaux en Afrique étaient certifiés, soit 27,6 %. 70 aéroports étaient certifiés un an plus tard.

« Les dirigeants africains devraient désormais en faire une priorité. Cela doit aller de pair avec le renforcement des mesures et dispositifs de sécurité et de sûreté aéroportuaire », estime Daniel Lefebvre.

À la sortie de la crise du Covid-19, les aéroports africains estiment qu'ils doivent développer les revenus extra-aéronautiques. Ils sont très faibles en Afrique « La part des revenus extra-aéronautiques dans les recettes des aéroports africains est très basse. Elle doit augmenter à 30 à 40 % de parts pour atteindre un équilibre. ▲

# EST LA VOIE À SUIVRE



Daniel Lefebvre: « J'ai maintenant beaucoup de confiance pour l'avenir de l'activité aéroportuaire en Afrique. » PICTURE: AERCO

## SUMMARY

### NETWORK FIRST

Rwanda's capital, Kigali, hosted the first World Exhibition of Airport Infrastructure, Equipment and Services (SMIESA 2022).

SMIESA aimed to encourage networking within the airports industry, explained the event's creator, Daniel Lefebvre, president of the Union of Central and West African Airport Managers (UGAACO).

Lefebvre says that he now has a lot more confidence in the future of airport activity in Africa following two years of crisis.

Fourteen countries participated in the exhibition, along with the transport ministers of Burkina Faso, Guinea-Bissau and Rwanda.

According to Lefebvre, airports and industry operators are now more experienced in dealing with crises. "Even if the recovery is starting we're still experiencing fairly fragile finances," he reported, adding that he wanted to salute the governments that have understood the situation and provided support to airport operators.

"Airports must have advanced knowledge of future projects as they have a direct impact on the layout of airports and terminals," he said.

Coming out of the pandemic, African airport operators believe they need to develop non-aviation revenues as these are very low in Africa. "The revenues at African airports should increase to 30-40% even to break even," concluded Lefebvre. ▲

## DU MATÉRIEL AÉROPORTUAIRE D'OCCASION

La première « market place » spécialisée dans les équipements aéroportuaires de seconde main a été lancée récemment.

**Anuradha Deenapanray Chappard** a rencontré son fondateur, Xavier del Valle. Selon lui, sûreté et sécurité sont les piliers de ce modèle économique solidaire et environnemental.

Ce projet trottait dans la tête de Xavier del Valle, International Procurement & Supply Chain Senior Manager du Groupe Aéroports de Paris depuis plusieurs années.

« Le déclencheur a été la crise économique sans précédent dans les aéroports du monde en raison de la pandémie. Ce sont les aéroports avec un faible trafic (entre 10 et 15 millions de passagers) qui ont été les plus touchés », explique-t-il.

De cette prise de conscience vers octobre 2020 naquit Airport Market.

Le projet s'inscrit dans la politique RSE et la démarche environnementale du Groupe ADP. La pierre angulaire de cette plateforme repose sur une économie circulaire durable entre les aéroports. « Elle intègre avant tout une forte dimension solidaire basée sur l'économie des moyens qui contribue à la décarbonation de l'activité aéroportuaire », ajoute Xavier del Valle.



Deux véhicules livrés à l'aéroport international de Conakry en Guinée. À gauche : Xavier del Valle. PICTURES: ADP

Il prévoit trois phases de développement de la plateforme. La première (de 2022 à 2023) propose dès à présent des équipements de seconde main provenant des aéroports parisiens du groupe ADP. La deuxième, qui s'étalera jusqu'en 2025, permettra la cession d'équipements des 32 aéroports gérés en concession par le

## POUR LE MARCHÉ AFRICAIN

groupe à l'international. La troisième phase verra son ouverture à l'ensemble des aéroports du monde.

Il s'agit pour Xavier del Valle, « de permettre aux autres aéroports en dehors du groupe ADP d'élargir le marché des biens de seconde main à l'ensemble des aéroports ».

Airport Market propose des équipements aéroportuaires de seconde main en état de fonctionnement et de complétude. Qu'en est-il de leur fiabilité ?

Selon Xavier del Valle, les équipements proposés sur la plateforme sont identifiés, expertisés et certifiés par les fournisseurs des équipements du groupe, garantissant ainsi le respect des normes de sûreté et sécurité durant leur deuxième vie. Deux véhicules incendie et trois EDS (standard 2) ont été récemment livrés à l'aéroport international de Conakry en Guinée.

Les opérations de promotion d'Airport Market ont démarré en juin dernier.

Ce nouveau « business model » peut-il trouver sa place dans l'industrie aéroportuaire même s'il est basé sur une économie circulaire, sachant que les aéroports investissent davantage dans des équipements de nouvelle génération avec des contrats de maintenance et sur le long terme ?

« Ma première démarche est d'apporter des solutions économiquement viables et durables. Notre marché prioritaire reste les aéroports d'Afrique et en particulier les pays d'Afrique centrale et de l'Ouest », soutient Xavier del Valle. « J'ai présenté la plateforme au dernier forum de l'UGAACO à Abidjan et elle a été très bien accueillie. »

Il mise énormément sur le retour d'expérience à chacune des étapes du projet. ▲

## SUMMARY

### AFRICAN MARKET IS TARGETED FOR SECOND-HAND EQUIPMENT

The first marketplace specialising in second-hand airport equipment was recently launched amid claims that safety, security, and the environment are the pillars of this economic model.

Marketplace founder, Xavier del Valle, the international procurement & supply chain senior manager at the Aéroports de Paris Group (ADP), explained: "The trigger was the unprecedented economic crisis at airports around the world due to the pandemic.

"Airports with low traffic of between 10 and 15 million passengers were the most affected, so the Airport Market idea was born in October 2020."

The project is in line with ADP Group's corporate social responsibility (CSR) policy and environmentally friendly approach.

The project has three phases.

The first (from 2022 to 2023) offers second-hand equipment from the ADP Group's Paris airports.

The second, running until 2025, will facilitate the transfer of equipment from the 32 airports managed under concession by the group internationally.

The third phase will see it being opened for all the world's airports.

Airport Market offers second-hand airport equipment in working order. Two fire vehicles and several other pieces of ground equipment were recently delivered to Conakry International Airport in Guinea. ▲



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## Armed drone makes a huge impact in Africa

**Amari Adebayo**  
takes a look at the  
rise and rise of the  
Bayraktar TB2  
armed unmanned  
air vehicle (UAV).

**R**enewed hostilities between Armenia and Azerbaijan in Nagorno-Karabakh in 2020 put the Bayraktar TB2 on the map as an extremely capable armed UAV.

The type was instrumental in Azerbaijan's military successes, acting as an effective strike platform against Armenian ground forces.

Multiple observers thought, however, that the TB2's success had been made possible by the permissive electronic warfare and air defence environment in Nagorno-Karabakh and that the Turkish UAV was unlikely to prove as capable in a high-intensity conventional conflict.

The war in the Ukraine has, however, shown this analysis to be largely erroneous and, while Ukrainian TB2 losses have taken place, the type has proven to be one of the most effective weapon systems in Kyiv's arsenal.

The TB2's performance in Nagorno-Karabakh caught the attention of several countries and Baykar started receiving a growing stream of foreign orders from mid-2020 onwards. Several African air arms were among the new customers, having grasped the potential of the aircraft, particularly for counter-insurgency operations.

□ □ □ □ □

The first publicly announced order in the region came from Niger, and was disclosed by Turkish President Recep Tayyip Erdogan in November 2021. The exact number acquired was not revealed but the delivery of a first batch of six was announced by several media outlets in May 2022.

In late 2021, following media reports of TB2s being flown by the Ethiopian Air Force in combat operations against Tigrayan forces, satellite imagery of the Bishoftu Airbase, near Addis Ababa, confirmed the type was, indeed, operational.

Other confirmed customers for the TB2 in sub-Saharan Africa include Djibouti, which has received at least three aircraft, two of which were displayed during its Independence Day military parade on June 27 last year. One was armed with Roketsan MAM-L precision-guided munitions.

Togo started flying the TB2 in 2022 and three aircraft are understood to be operating from Niamtougou Airbase.

Burkina Faso and Nigeria are also fielding the type. Indeed, photos of Nigerian Air Force TB2s being assembled in Turkey appeared online and, while the Nigerian Air Force

has yet to publicly confirm this, it has been reported that at least part of these aircraft have already been delivered.

The TB2 is also reported to have been spotted in Somalia, although it is unclear if the aircraft noted there were Somali or Turkish. The latter is a possibility since Turkey has a military base in-country and has been providing support to the Somali military, including equipment and training.

Rwanda has also been listed as a TB2 customer, although this remains unconfirmed.

The TB2's success in Africa comes on the back of a massive Turkish effort to increase its footprint on the continent. Defence equipment sales have featured prominently, with Erdogan, himself, acting as an ambassador of the Turkish military industry in the course of multiple official visits to the continent.

The reasons for the aircraft's commercial success include its combat record in Nagorno-Karabakh and Ukraine, its competitive price, short delivery timeframe, and reliability, which come into sharp contrast with the checkered record of Chinese armed UAVs in African service.

The latter have generally suffered from poor availability, as well as sub-par performance. Indeed, it is telling that Nigeria, which already fields a large fleet of CASC CH-3A and CH-4Bs, as well as CAIG Wing Loong IIs, has decided to acquire the TB2 rather than continue expanding its inventory of Chinese aircraft.

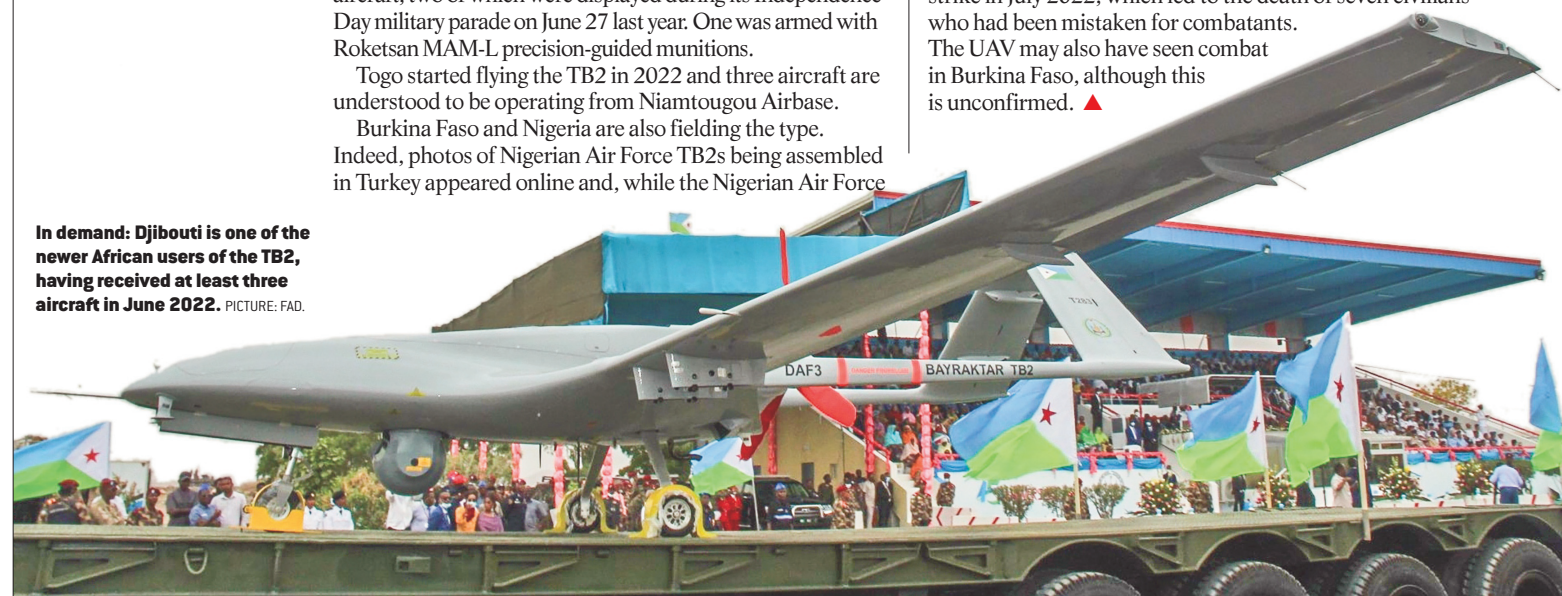
Furthermore, with a price range of less than \$20 million for a single system comprising two aircraft and a control station, the TB2 is much cheaper than even armed turboprop aircraft and provides a self-contained combat and surveillance capability well suited to countering the asymmetric threats facing many African countries.

This allows militaries with limited funding to acquire a capable offensive platform, which they would otherwise not be able to afford.

The TB2 has been used in offensive action by Ethiopia and Togo, where it is likely that it was involved in a night air strike in July 2022, which led to the death of seven civilians who had been mistaken for combatants.

The UAV may also have seen combat in Burkina Faso, although this is unconfirmed. ▲

**In demand: Djibouti is one of the newer African users of the TB2, having received at least three aircraft in June 2022. PICTURE: FAD.**







**Homing in:** KAI is mounting a sustained effort to sell the armed version of the T-50 Golden Eagle to Egypt.  
PICTURE: KAI.



**Getting ready:** Three Egyptian Rafales being prepared for flight as part of the ongoing modernisation.  
PICTURE: DASSAULT.



**Testing:** A US Air Force AT-6E seen during AERONet trials, which involved pilots from Tunisia, Thailand, Colombia and Nigeria.  
PICTURE: US AIR FORCE AIRMAN 1ST CLASS DEANNA MUIR.

# MODERN EYES

*Air force modernisation is taking place throughout north Africa and big money is being spent.*  
**Jon Lake reports.**

**E**gypt, Libya, Tunisia and Morocco are among the African Mediterranean countries bolstering their air arms. Egypt has, in recent years, discarded its last F-4E Phantoms, Dassault Mirage 5s and Chinese-built F-7 ‘Fishbeds’, and is replacing them with more modern fighter types. Libya has reportedly ordered an undisclosed number of Hürkus-C turboprops from Turkish Aerospace (TAI), with Major General Muhammad Gojil, the Libyan Air Force chief of staff, signing a formal agreement. Tunisia has an order for eight T-6C Texan II trainers from Textron Aviation Defence moving ahead. And the Royal Moroccan Air Force (RMAF) will soon take delivery of an unspecified number of H135s, which will replace about 10 surviving

Agusta-Bell 206Bs in the rotary-wing pilot training role. All this adds up to big money. The latest stage in Egypt’s modernisation programme, for example, now seems likely to include the acquisition of 24 Eurofighter EF-2000 Typhoon aircraft, as part of a wider \$10-12 billion arms package from Italy. This will also reportedly include 24 Leonardo M346 Master training aircraft, 20-24 more AW-149 medium-lift/utility helicopters, four FREMM heavy frigates (additional to the two already being discussed), 20 Falaj-II class patrol boats to be co-manufactured in Alexandria Shipyard, and a Telespazio radar-equipped military surveillance and reconnaissance satellite. Egyptian President, Abdel Fattah El-Sisi, is reportedly committed to acquiring the Eurofighter

Typhoon from Italy to further diversify and modernise the Egyptian Air Force, and is determined to prevent ongoing US efforts to blunt Egyptian capabilities in an effort to maintain Israel’s qualitative military edge (QME). Egypt is, therefore, determined to have a ‘full spec’ Typhoon with AESA radar and the Meteor beyond-visual-range air-to-air missile (BVRAAM). All the Typhoons will be new-build aircraft assembled in Italy, and not second-hand Italian Tranche 1 jets, as was once expected, although delivery details have yet to be disclosed. Egypt’s fighter modernisation began in earnest in February 2015 with an order for 24 Dassault Rafales, followed by an order for 46 MiG-29M/M2s in April 2015. In 2018, Egypt ordered 24 Sukhoi Su-35S heavy fighters but, in 2019, US Secretary of State, Mike Pompeo, threatened that if the sale went through, the USA’s countering America’s adversaries through sanctions act (CAATSA) would require sanctions to be imposed on Egypt. After a brief stand-off, Egypt refused delivery of the aircraft (several of which were by then flying) and they were eventually sold instead to Iran. Abandoning the Su-35 purchase proved to be a blessing in disguise, as testing had shown that the aircraft’s Irbis phased array radar was vulnerable to jamming (notably by the Rafale’s Spectra electronic warfare system). This, in turn, led to the decision to order 30

additional Rafales, while the United States has undertaken to deliver Boeing F-15 Advanced Eagle aircraft to Egypt, according to General Frank McKenzie, the commander of US Central Command (USCENTCOM), when he gave evidence to a session of the Senate armed services committee. These would probably be similar to the F-15SA for Saudi Arabia, or the Qatari F-15QA, and the USAF’s new F-15EX variant. The backbone of the fighter fleet will continue to be provided by six wings of approximately 200 F-16s, which may be upgraded in the near future. With Typhoons and Advanced F-15s augmenting F-16s, Mirage 2000s, Rafales and MiG-29M/M2s, the Egyptian Air Force will have probably the most diverse fighter fleet in the world, and one of the most modern in the region. However, such diversity could also complicate the air force’s logistics and support arrangements, and may make operational integration more difficult, although Egypt is understood to have a compatible identification friend or foe (IFF) system for all types, and an intent to develop a universal datalink. For now, though, Egypt faces real difficulties in integrating its MiG-29M/M2s into command-and-control networks that are predominantly of western origin. The Egyptian Air Force’s next priority is likely to be pilot training. The dwindling fleet of ageing Alpha Jets is increasingly in need of replacement and, while

Egypt’s Hongdu K-8Es are newer, they are unrepresentative of the more modern aircraft types that now form the backbone of the fighter force. Dassault delivered the first four Alpha Jet MS1 trainers from French production in June 1983, while the remaining 26 aircraft were supplied in kit form for assembly in Egypt. Some 15 further Alpha Jet MS2s, ordered in the early 1980s, were manufactured by Dassault. Egypt licence-assembled 80 K-8E (JL-8) Karakorum advanced trainers using Chinese-supplied kits, and these were delivered from 2005. Licence production of a further batch of 40 K-8Es began in time for deliveries to continue uninterrupted. Even if Egypt does acquire 24 M-346s as part of the reported arms package from Italy, this would barely scratch the surface of its trainer requirement. Though the Alpha Jets and K-8Es will not be replaced ‘one-for-one’, there is still likely to be a requirement for at least 100 advanced trainer/light attack aircraft, and some sources suggest that Egypt plans to select an aircraft this year. Aircraft known to have been under evaluation in Egypt include the Korea Aerospace Industries (KAI) T-50, the Leonardo M-346, the Aero L-39NG and the turboprop-powered Embraer Super Tucano. KAI has reportedly said that Egypt is interested in acquiring up to 100 FA-50 Fighting Eagle armed trainers, and Lee Bong-geun, the

general manager of KAI’s Export Innovation Centre, has said that the company will promote joint production of the aircraft in Egypt. In support of the KAI sales and marketing campaign in Egypt, the Republic of Korea Air Force dispatched the Black Eagles aerobatic team to participate in the Pyramids Air Show on August 3 2022. The team is equipped with nine T-50B aircraft (eight display aircraft and one spare). In Libya, meanwhile, the Hürkus-C turboprops sale has yet to be formally acknowledged by TAI. The company has, however, confirmed orders from the Niger Air Force and, more recently, from the Chad Air Force, as well as reporting strong interest from the Azerbaijan Air Force. The Hürkus-C is an armed close air support variant of the Hürkus-B turboprop trainer. It is fitted with a forward-looking infrared (FLIR) sensor and can carry 1,500kg of weapons, including 12.7mm machine gun or 20mm cannon pods, Cirit laser-guided rockets and L-UMTAS anti-tank guided missiles.

□□□□□

In neighbouring Tunisia, the US Department of Defense has now agreed a \$90 million deal towards the production of eight T-6C Texan II trainers from Textron Aviation Defence. These are expected to be followed by four AT-6E Wolverine close air support variants. Tunisia has also signed letters of offer and acceptance to acquire the airborne extensible relay over-horizon network (AERONet) mobile ad-hoc networking communication suite that was developed by the US Air Force as part of its continuing light attack experiment programme. AERONet is being supplied to US international partners who operate light attack aircraft by Persistent Systems LLC. Morocco’s new H135s, meanwhile, are planned to serve with the L’Ecole de Pilotage Hélicoptère at 1 Air Base at Rabat/Salé. The H135 is already in Moroccan service, with four EC135s serving with the Gendarmerie Royale’s Escadron Aérien at Rabat/Souissi. The contract also covers an extensive support package, including the delivery of flight-training devices and the training of instructor pilots and maintenance personnel. Airbus Helicopters will provide support in cooperation with its Moroccan strategic partner, Heliconia. The training programme will enable the RMAF to take full advantage of the H135’s multi-role capabilities and will include flying on night vision goggles (NVGs) and winching – a core skillset for the search-and-rescue role. More than 130 IFR-certified H135s are operated by military agencies in the training role, and the type has now been selected by 12 military customers, including the armed forces of Australia, Brazil, Gabon, Germany, Ireland, Japan, Morocco, Nigeria, Spain, Thailand and the United Kingdom. ▲



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Left: Senegal placed an order for two Airbus Defence C295W transport aircraft in 2021, the first of which was officially received in Dakar in July 2022.

PICTURE: DIRPA.

Right: In July 2021, a Schweizer 300C piston-engined helicopter was delivered to the Senegalese Air Force's Air School. Then, in March 2022, an order for a further five of the type was signed on behalf of the Senegalese Air Force.

PICTURE: AFRICOM.

## SENEGAL AIR FORCE MODERNISATION HOTTING UP

*The Senegalese military has been undertaking a major equipment recapitalisation effort over the past few years. Amari Adebayo reports.*

Senegal's modernisation has included the procurement of several new aircraft for its air force. Among these were four KAI KA-1S light attack aircraft, which were commissioned into service in 2020 and 2021 and have since taken part in several counter-insurgency operations in the region of Casamance, acting as reconnaissance platforms in support of Senegalese ground forces.

A single Indonesian Aerospace CN235-220 MPA maritime surveillance aircraft was also received in 2021, having been acquired through brokering company AD Trade Belgium.

That same year, the Senegalese president took over a new Airbus A320neo to replace the A319 acquired second-hand from France in 2010. This led to significant backlash from the political opposition, which criticised the price of the aircraft. However, the government highlighted the growing serviceability issues of the A319 and its rising sustainment costs in justifying its replacement.

In July 2021, a Schweizer 300C piston-engined helicopter was delivered to the Senegalese Air Force Air School for rotary-wing pilot training, joining two Bell 206B3 already in service. Then, in March last year, a new order for a further five Schweizer 300Cs was signed on behalf of the Senegalese Air Force by the US-registered Foreign Asset Trade Company.

The first of these was delivered in May with others expected to arrive as *African Aerospace* was going to press.

The helicopters are intended to serve in the ab-initio, instrument flying, and vertical reference training roles, and are outfitted accordingly. It is likely that they will be used as part of both the air force's air school and the new International Academy of Aviation Trades (AIMAC), which was set up in October 2021 under a partnership between the air force and Air Senegal to train commercial pilots and aeronautics specialists in multiple fields.

Several other aircraft, including three Bell 505s, five Diamond DA40s and four DA42s are also being acquired for the AIMAC.

Senegal also placed an order for two Airbus Defence C295W transport aircraft in 2021, the first of which was officially received in Dakar on July 28 last year. The remaining example is due for delivery in late 2023 and,

together with the three Indonesian-made CN235-220s currently in service, should provide the air force with a transport capability it had not possessed since the early 2000s, when it still fielded six Fokker F27-400Ms.

The training of the C295W aircrews took place at Airbus facilities in Seville.

The new aircraft is likely to be used to support ongoing peacekeeping deployments conducted by Senegal's armed forces to airlift personnel and supplies.

An Mi-35P, three Mi-24Vs and two Mi-171Sh aircraft have also returned to Senegal following an overhaul performed abroad.

In January 2022, the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA) donated its ATR 42-300 to the Senegalese Air Force, which will operate it for personnel transport.

The Senegalese Air Force also has the pending purchase of a new combat jet. While it had originally selected the Aero Vodochody L-39NG for this requirement, the deal apparently failed to proceed owing to financing issues, as well as delays in the aircraft's certification process. ▲

### SOMMAIRE

## L'ARMÉE SÉNÉGALAISE SE MODERNISE

Un important effort a été réalisé au cours de la dernière décennie.

L'armée de l'air sénégalaise a acheté quatre KAI KA-1S qui ont été mis en service en 2020 et 2021. Un CN235-220 MPA a également été livré en 2021. À noter que la Présidence sénégalaise dispose d'un nouvel Airbus A320neo en remplacement de son A319 acheté à la France en 2010.

Côté hélicoptère, un Schweizer 300C a rejoint l'école de l'armée de l'air sénégalaise en juillet 2021.

Celle-ci dispose déjà de deux Bell 206B3. Cinq Schweizer 300C supplémentaires ont été commandés en mars. Un premier exemplaire a été livré en mai. Plusieurs autres aéronefs dont

trois Bell 505, cinq Diamond DA40 et quatre DA42 sont également en cours d'acquisition pour l'AIMAC.

Notons également une commande par le Sénégal de deux C295W en 2021 dont le premier avion a été officiellement réceptionné à Dakar le 28 juillet 2022.

Le second est prévu pour fin 2023. Le Sénégal a aussi enregistré le retour d'un Mi-35P, trois Mi-24V et deux Mi-171Sh suite à une maintenance MCO. L'ASECNA a aussi fait don d'un ATR42-300 au pays.

L'armée de l'air sénégalaise a également plusieurs projets en cours dont l'achat d'un nouvel avion de combat. ▲

AMARI ADEBAYO



Alan Dron and Jon Lake take a look at some of the wider defence stories taking place throughout Africa.

Rough and ready: Mwari's rough-field capability suits it for the asymmetric warfare role.

PICTURE: PARAMOUNT GROUP.



## PARAMOUNT'S MWARI CHALKS UP FIRST SALES

South Africa's radical Mwari multi-role military aircraft has racked up its first sales, with more to come, says its manufacturer.

Paramount Aerospace Industries says it hopes to be able to reveal more orders for its Mwari turboprop at the IDEX exhibition in Abu Dhabi in February, after it announced that nine of the aircraft have been sold.

Mwari, which is aimed at the intelligence, surveillance, reconnaissance (ISR) and light attack markets, has been under development for several years. The sales are the first of a South African-manufactured combat aircraft since the 1980s.

Paramount has sealed deals with multiple unnamed customers for the aircraft. Deliveries began in September.

Asked if he could say which nations had bought the twin-boom aircraft, a company spokesman told *African*

*Aerospace*: "Not right now, but I hope we can announce it fairly shortly."

He made it clear, however, that there is more than one client and noted that the South African media had reported that at least one of them is an African nation.

Announcing the sales at the Africa Aerospace and Defence (AAD) 2022 defence exhibition near Pretoria, the company added that demand levels have enabled "full levels of production" at its factory in Wonderboom, near Pretoria.

The aircraft contains an interchangeable mission systems bay (IMSB) located in the belly of the aircraft, in which sensor and payload options can be integrated and swapped in less than two hours to take advantage of its innovative 'plug-and-play' mission system.

These can include surveillance radars and electro-optical devices for the ISR role. This, the company says,

makes Mwari suitable to carry out duties that previously required several different aircraft, such as helicopters, surveillance platforms and light attack types.

The aircraft has been designed for the kind of asymmetrical warfare that modern military forces across the world are increasingly being asked to conduct.

The two-crew cockpit, range of sensors and long endurance particularly suit the aircraft for duties such as lengthy border patrols.

"I think we'll be in a position at IDEX to maybe announce more customers, in terms both of the nine [aircraft] we've announced, but also, completely new customer orders," said the spokesman.

Intriguingly, Paramount has established an office in Athens and its website contains a section in Greek. ▲



On its own: The sole non-Russian equipment supplied to Mali was this Airbus C-295 tactical transport.

PICTURE: MALI AIR FORCE.

The Mali Air Force is rebuilding its inventory with the arrival of a package of military aircraft.

Mali has been involved in a fight against Islamic insurgents for a decade.

The situation worsened recently with France, which had devoted significant manpower to the campaign, pulling out as relations deteriorated following a 2020 military coup.

This has left the country's government largely relying on the Russian Wagner mercenary organisation for military aid.

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However, recently, the Sahel state has received at least four Aero L-39 jet trainers, which can be used in the ground attack role, as well as a single Mi-8T Hip transport helicopter and two Mi-8MTs, two Mi-24 Hind attack helicopters, two Sukhoi Su-25 Frogfoot ground attack jets, and a single Airbus C-295 tactical transport.

At least one of the Su-25s has already been lost in an accident.

Most of the new aircraft appear to have come from Russian stocks, said Douglas Barrie, senior fellow for military aerospace at the UK's International Institute for Strategic Studies.

"They are basically trying to rebuild the Mali Air Force. The question is, who is going to fly

## RUSSIANS DOMINATE MALI'S AIR REBUILD

these things? Are Malian pilots going to Russia for training, or are they [the Malians] using Wagner people?"

Barrie added that one of the Frogfoots appears to have been lost in October, with its Russian pilot killed. The cause of the crash is uncertain.

The L-39s, 1970s-vintage single-engined jets, are the L-39C trainer version rather than the L-39ZA ground-attack variant, he said.

Siemon Wezeman, an analyst with the Stockholm International Peace Research Institute, added that further photographs of the handover ceremony had revealed a total of six L-39s. "These were not very capable. They're not really meant to carry weapons. We've seen pictures of them carrying two little rocket pods."

Taken as a whole, however, the aircraft package "does add quite a lot of capability".

The Malians' other main counter-insurgency type, Brazilian-built Super Tucanos, of which the country received four in 2018 "are designed for ground attack, can carry a lot more weaponry and are definitely more capable".

At least one has been lost, apparently through pilot error. ▲

### SOMMAIRE

## L'ARMÉE DE L'AIR MALIENNE EN RECONSTRUCTION

Le Mali est impliqué dans une lutte contre les insurgés islamiques depuis une décennie. Or la situation s'est fortement dégradée avec le retrait de la France notamment suite à un coup d'état militaire en 2020.

Ce vacuum a poussé le gouvernement malien à s'appuyer sur l'organisation de mercenaires russes Wagner pour un appui militaire.

Le Mali a successivement pris livraison de quatre Aero L-39, d'un hélicoptère Mi-8T Hip, deux Mi-8MT,

deux Mi-24, des hélicoptères Hind, deux Sukhoi Su-25 Frogfoot et un C-295 d'Airbus. L'armée de l'air malienne a également réceptionné quatre Super Tucano brésilien en 2018.

La majorité de ses nouveaux aéronefs proviendrait donc de stocks russes. Des interrogations demeurent concernant la formation des pilotes, l'implication des soldats de Wagner et la perte de plusieurs avions. ▲

## 'MODERN ARK' GOES INTO MALAWI SERVICE

The Malawi Defence Force (MDF) has finally placed two Xian MA600 'Modern Ark' medium transport aircraft into service.

The aircraft undertook a five-day ferry flight from Kunming Changshui International Airport, China, to Blantyre-Chileka International Airport, Malawi, passing through 13 countries during the 7,280 mile journey.

They were initially used for testing and further training and did not enter service for some months.

It is unclear whether they will augment or replace three surviving Dornier 228 light twin turboprops of four acquired between 1986 and 1989.

The Xian MA600 is an improved derivative of the Xian MA60, which was, in turn, a stretched variant of the Xian Y7-200A, itself based on the Antonov An-24.

The aircraft has new avionics, more



Long journey: The five-day ferry flight passed through 13 countries on the 7,280 mile route. PICTURE: MALAWI AIR FORCE.

powerful Pratt & Whitney Canada PW127J turboprop engines, and an improved passenger cabin for its 60 passengers.

The older MA60 is in service with the National Air Force of Angola, the Royal Cambodian Air Force, the Cameroon Air Force, the Djibouti Air Force, the Laotian Army Air Force and the Zambian Air Force.

China and Malawi established diplomatic relations in 2008 and, since then, China has assisted with a number of infrastructure projects, including a new parliament building, a national stadium, new roads, technical colleges, conference centres and hotels, and the Malawi University of Science and Technology, as well as a presidential villa. ▲

## AFRICA LOOKS TO SHARE HARD-PRESSED TRANSPORT AIRCRAFT

African Union nations are looking at developing an air transport sharing mechanism (ATSM) to improve the organisation's airlift capability.

The ATSM is intended to enhance African Union strategic lift capability, including medical evacuation, non-combatant evacuation, and humanitarian action and natural disaster support.

It would operate through a new Africa air mobility command centre (AAMCC) – a multi-national African airlift unit operating under the authority of the African Union.

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Speaking during a recent conference hosted by US Air Forces Africa and the Botswana Defence Force in Kasane, Brigadier Collen Mastercee Maruping, acting deputy air arm commander, Botswana Defence Force, explained: "We need to come up with mechanisms of optimising the use of the very limited resources available to us."

Major James Johnson, a southern Africa regional desk officer with US Air Forces in Europe and Air Forces Africa (USAFE-AFACRICA) described the ATSM as: "A dependable, organised, readily available, effective and efficient air transport operations system on the continent to carry persons and cargo in support of common national and regional peace and security requirements."

And Colonel Kais Sghaier, commander of the Tunisian Air Force 11th Air Unit, summed up many feelings when he said: "I think it's every African's dream to see an African aircraft with all African flags across its tail, flying across the continent providing relief and support to Africans." ▲



Colonel Kais Sghaier: "It's every African's dream to see an African aircraft providing relief and support to Africans."

PICTURE USAF.



## NIGERIA AND UGANDA GO ON THE ATTACK

African air forces are continuing to re-equip with modern, more capable attack helicopters. **Jon Lake** reports.

Attack helicopters have long formed the backbone of many African air arms, frequently providing the main frontline element of smaller sub-Saharan air forces, rather than fast jets. These are often older aircraft types, including Gazelles in Niger, Angola, Burundi, Cameroon, the Central African Republic, Egypt, Eswatini, Gabon, Malawi, Morocco, Rwanda, and Tunisia; Bell AH-1 Cobras in Kenya; and Mi-24 'Hinds' and rocket-armed Mi-8/17 helicopters across the continent.

Recently, however, the Nigerian Government's proposed 2023 budget included provision for a N27 billion (\$61 million) acquisition of six TAI T-129 ATAK attack helicopters from Turkish Aerospace Industries, and Temel Kotil, CEO of TAI, announced at the Farnborough International Airshow that deliveries to Nigeria are expected in the near future.

The contract followed the signature of a defence industry cooperation agreement between Turkey and Nigeria, which came into force in October 2021.

Nigeria plans for new aircraft to first augment and eventually replace the air force's quartet of light attack-configured Leonardo AgustaWestland AW109E Power helicopters and the survivors of seven Mil Mi-24V/P



Wanted by Nigeria: The T-129 ATAK helicopter from Turkish Aerospace Industries. PICTURE: TAI.

'Hind-E/F' and 17 Mi-35M/P 'Hind-E/F' gunships.

In east Africa, meanwhile, Uganda has received the first of six new Mi-28 Night Hunter helicopters.

This follows commissioning of a new helicopter maintenance, repair and overhaul (MRO) facility at Nakasongala Airbase by Ugandan President Yoweri Museveni, which will refurbish the Ugandan Air Force's existing Mi-24 helicopters, and will support the new aircraft.

The facility is a joint venture by the Ugandan People's Defense Force's commercial arm, the National Enterprise Corporation (NEC), and Pro-heli International, a Russian company.

The first three Mi-28s, wearing Ugandan markings, were seen at Entebbe Airbase last year during a visit by the president.

The Mi-28N Night Hunter is a night-attack derivative of the original Mi-28, armed with up to 16 Shturm and Ataka radio-command-guided and radar-guided anti-tank missiles.

The new helicopter is expected to augment Uganda's five or so surviving Mil Mi-24 Hind gunships, as well as a number of Mi-8/Mi-17s, several AB 206 Jet Rangers, half-a-dozen Bell 205s, and a couple of Bell 212 helicopters. Five refurbished Huey II helicopters were delivered from 2017. ▲

Four years after the last African Aerospace and Defence (AAD) combined military and civil aviation show, people were looking forward to its return with great anticipation. Much to the South African Air Force's (SAAF) credit, they were not disappointed. But, as **Guy Leitch** reports, the exhibitors may not have been as happy.

## AAD FEELS THE HEAT

**T**he lack of appetite, and probably budget, for the show was evident in the inability of the organisers to sell out its exhibition space. They reported 70% of the stands sold – and that number may be on the inflated side as the expo seemed smaller than in previous years when all the hangars had been filled with exhibitors.

This year there were some eerily empty hangars and show stands where exhibitors just failed to arrive. The expo was notable for the absence of the usual key players – including Boeing and Embraer. Airbus had a chalet, but was focused mainly on helicopters – perhaps showing how low the two major manufacturers consider their chances are of a new airline order from South African Airways (SAA) – or any of the other local airlines.

There were, however, nine country exhibitors, of which notable ones were Sudan and Turkey.

India, Russia and Pakistan also staged a large presence and, despite its continued bankruptcy, Denel featured strongly.

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A frequent comment from exhibitors is that it has become painfully expensive to participate in AAD and most of the chalet operators reported having to spend well above R2.5 million (\$300,000) to participate. Worryingly, few said that they had achieved value for money.

A notable exception was ExecuJet, which jumped at the opportunity to take over a chalet paid for by the intriguing 'Queendom of Sheba' – which had pulled out at the last minute.

Thankfully, the weather for the two public days was perfect. Saturday kicked-off with the now traditional parade of emergency vehicles, which ended with a water canon salute. The emergency services had, unfortunately, been called into action on the Thursday of the trade days when a soldier had been critically injured falling from a fast rope demonstration from an Oryx helicopter.

The public got their first taste of jet flying with a solo display by a now classic Aero Vodochody L-29 Delfin. This



Blazing on: The SAAF C130B Hercules also performed a spectacular flare discharge. PICTURE: GUY LEITCH.



Massed spectators: The huge and appreciative crowd. PICTURE: BRIAN EMMENIS.

was followed by the later model Aero Vodochody L-39 Albatros – with the pilot giving the crowd live commentary from the cockpit.

The Americans were out in force with two huge Boeing C-17s, a Lockheed C130J Hercules, a UH60Pavehawk helicopter and even a Predator drone, which had been flown out in a C-17. The Lockheed C130J and Pavehawk performed a first for South African audiences – a simulated fixed-wing-to-helicopter air-to-air refuelling.

The SAAF surprised everyone by managing, against huge odds, to get two Gripen flying. It had required a herculean team effort to get their maintenance contracts reinstated, the aircraft serviced, flown and signed off.

The Gripen were flown by test pilots Musa 'Midnight' Mbhokota and Blokkies Joubert.

The SAAF's 85 Combat Flying School in Makhado brought an impressive four-ship BAE Hawk Mk120 display team and the air force also managed to field its full five-ship Siler Falcons team – despite having had a minor mid-air collision in practice the month before.

The SAAF did themselves proud with show-stopping pyro technical anti-missile flare displays from the Rooivalk and C130B Hercules – a great favourite with the photographers.

The history of the glory days of the SAAF was much in evidence. An ex-SAAF Harvard, no 7111 – naturally known as Nelson – flew a smooth aerobatic display; helicopter action was provided by a BK117; and the SAAF Museum's two Allouette IIs and two Allouette IIIs performed an aerial ballet.

The big crowd pleaser was the 'mini-war' with much explosion, smoke and machine gun fire. The scenario called for a 'highjacked' business jet, which had been forced to land at Waterkloof. A tactical operation using several multi-disciplinary teams was put through their paces to liberate the jet and capture the hijackers.

The SAAF made a big thing about showing their anti-drone capability – with state-of-the-art detection and 'shoot-down' equipment. ▲



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Air Senegal hosted the African Airlines Association (AFRAA) 54th annual general assembly and summit (AGA) last month in the Senegalese capital. **Vincent Chappard** reports from Dakar.



Abderahmane Berthe: “We cannot protect our own airlines and enjoy the benefits of liberalisation at the same time.”  
PICTURE: BILLYPIX

## AFRAA on alert for Covid’s sting in the tail

While portraying the current African air transport trends, AFRAA secretary general, Abderahmane Berthe, shared the view of most panellists that the Covid-19 pandemic is not over.

New variants are significantly affecting many countries, particularly in Asia.

The global economy slowed in 2022, growing by only 2.9% due to the conflict between Russia and Ukraine. After a nine-year contraction, Africa’s GDP bounced back by 6.9%, mainly attributed to global demand, combined with the resurgence in household consumption and investment in most countries after restrictions were eased.

Recovery to reach the 2019 level is still under way throughout the African continent, even though airlines have reopened almost all international routes that were interrupted due to pandemic restrictions.

Some companies, particularly in west and north Africa, have even added new destinations to their network.

This analysis corroborates the International Air Transport Association (IATA) outlook. Global airline net losses are expected to reach \$6.9 billion in 2022, a far more positive figure compared to the mid-year forecast of \$9.7 billion. African carriers are expected to record a \$638 million loss in 2022.

“African airlines should reduce their losses by about two-thirds, falling to \$213 million in 2023. We see this being driven by a 27% rebound in passenger traffic and capacity

increasing by 22%”, said Kamil Al-Awadhi, IATA regional vice president for Africa and the Middle East.

“There has been good progress and we are expecting a return to profitability in 2024.”

According to Berthe, the priorities are twofold: ensuring the sustainability of air transport in Africa and continuing to roll out its five-year strategic plan.

Last June, AFRAA organised a meeting, in collaboration with the African Aviation Group (AAIG), to sharpen its sustainability roadmap.

Its aims were ambitious and included: accelerating liberalisation to improve intra-African connectivity; improving guidelines and an economic regulatory framework to streamline taxes and charges; reducing taxes in the wake of the Russo-Ukrainian fuel crisis; eliminating custom duties on spare parts in accordance with the provisions of the Chicago Convention; standardising processes to grant flight permits; and increasing the efficiency of flight operations within the African airspace.

According to Randal Heisey, Boeing’s managing director commercial marketing MEA & RCA, Africa will need more than 1,000 new aircraft over the next 20 years.

The leasing market is also picking up. According to a National Airways Corporation (NAC) spokesperson, there is “a gradual recovery in demand for new and used aircraft. However, the prices are rising, depending on the context. There is much interest and good opportunities in several African regions.”

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There have been fiery discussions around the single African air transport market (SAATM). According to Berthe, even though 35 states have signed the agreement, steps are not being taken for implementation.

“We cannot protect our own airlines and enjoy the benefits of liberalisation at the same time,” he said.

AFRAA supports the initiative launched by the African Civil Aviation Commission (AFCAC) to work with states that are ready and willing to implement the Yamoussoukro Decision. More than 20 years after the signing of the SAATM agreements, Berthe says it’s time to take action to ensure the sustainability of air transport in Africa.

Al-Awadhi agreed: “Liberalisation of aviation is the best way to achieve the roadmap. First, we must get the countries on the same level playing field. We must identify the specific needs in Africa, be it in civil aviation, airport, airlines regulations, and then smoothly go towards SAATM.”

AFRAA has taken an initiative to narrate the story of African aviation, dating back to the 1930s with the setting up of the first African airlines. The first issue was released during its AGA.

AFRAA also welcomed four new members (Afrijet, Jambojet, Advantage Air, Dragon Fly Aviation) and four additional partners (NAS, KIU Systems, MixJet and Zenith Oil Terminals).

Uganda has taken over the AFRAA presidency. “It will be an opportunity for our aviation and tourism sectors to showcase the country’s abundant biodiversity, colour, and serene beauty,” said Jenifer Bamuturaki, Uganda Airlines CEO, and new AFRAA president. ▲

■ The next AGA will be held in Uganda from November 19-21 this year.

Boeing is big in Africa – it manufactures 70% of the total number of aircraft on the continent. Yet, as **Jill Stockbridge** found out when she talked to **Kuljit Ghata-Aura**, the company’s president Middle East, Turkey and Africa, no-one is complacent.



▼ Since 2016, we have partnered with 40 organisations and invested around \$12 million, working with under-represented communities and young people. ▲  
**KULJIT GHATA-AURA**

PICTURE: AEROCOMM.

# BOEING’S PASSION FOR AFRICA

A SPECIAL RELATIONSHIP FOR 75 YEARS - AND IT’S STILL GROWING

**B**oeing has been in Africa for 75 years. It has 60 customers and supports 500 aircraft – a fact not lost on Kuljit Ghata-Aura.

“We are in a privileged position with the fleet size in Africa but nobody is taking that for granted,” he said. “We know we have to work hard to maintain that position and we see the potential of one of the last genuine growth markets.”

Boeing’s research forecasts are tracking above average gross domestic product (GDP) growth over the next 20 years, with a continent benefiting from a young, smart population.

For Ghata-Aura, the desire to serve the sector well is personal. “We are bringing diversity to the team supporting Africa. We have a lot of people of African origin and I include myself in that. My entire family history for the previous generation was in east Africa, and I was born in Kampala,” he said.

“The way we [Boeing] have presented ourselves at events has shown a different side of the company – one that is resonating with the stakeholders.”

The *Boeing Commercial Market Outlook* is predicting a doubling of the number of aircraft operating in Africa by 2040, rising to 1,010. Ghata-Aura said: “This will be driven by a strong inter-regional, intra-Africa and domestic performance in some of the larger countries. We see that as being a 6.1% annual growth compounded. It is based

Continued on Page 41 ▶





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### CONTINUED FROM PAGE 39

on the intra-Africa traffic, which is driving the air growth numbers of 5.2%. This would put Africa third on the global list.”

The Boeing team is committed to supporting growth across the entire aviation sector through certain key elements – talent; safety; finance; competitiveness, and operational efficiency.

“Since 2016, we have partnered with 40 organisations and invested around \$12 million, working with under-represented communities and young people in a range of ways related to science, technology, engineering and maths (STEM) education and employability,” explained Ghata-Aura. “We have given them skills that will allow them employment in the 21st century, even if it is not in aviation.”

**S**afety is always a priority and Boeing has had ground to make up. Ghata-Aura details the extensive changes within the group since the accidents that took the 737MAX out of service, and specifically within Africa. He added: “Not a day goes by when people at Boeing don’t remember the accidents, one of which involved an African carrier and an important customer of ours.

“We held our first Boeing African operators’ forum in Tanzania earlier this year and it was really successful. Fifty customers attended and it was a great opportunity for the teams within Boeing to coalesce with the customers on priorities and best practice.

“We are not in any way taking away responsibility from operators and in-country regulators, but we are providing our support, assistance and guidance, and working closely with the International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO) to ensure there is a commonality of approach.”

In September, the company announced a partnership with AviAssist, the independent, non-profit organisation dedicated to promoting professional development and research in African aviation safety. Ghata-Aura said: “They are creating safety promotion centres to ensure that African safety champions have access to the latest resources and training. Also, their research is linked to safety professionals and policymakers, to ensure that whatever they are doing is reflected in policy and taken on board.”

When it comes to finance, the Boeing Capital Corporation is an integral part of the vast majority of any sales campaigns run in Africa.

Ghata-Aura said: “They have unparalleled access to the lessor and finance communities to enable a customer to have all the options needed in terms of how to finance an aircraft. Another really important role they play is to help customers through the different processes, maybe to avail themselves of export financing.

“We have the experts on the ground who regularly work with these customers, and we are out with lessors and financiers and telling them the story of Africa,” he added.



▼ We want an open sky, where you don’t have to continually negotiate bi-laterals. That will improve the choice and cost for the consumer. ▲  
KULJIT GHATA-AURA

PICTURE: AEROCOMM

However, when it comes to competitiveness and operational efficiencies, challenges remain.

Ghata-Aura’s view is one echoed at aviation conferences across the region. There must be liberalisation of the market.

He said: “We have always been advocates of the single African air transport market (SAATM) but another significant consideration is the African Continental Free Trade Area (AfCFTA).

“We want an open sky, where you don’t have to continually negotiate bi-laterals. That will improve the choice and cost for the consumer. But a free trade area is also important as you have to support these aircraft, so being able to get aircraft parts, or move people between borders easily, is a key element in making sure there is a holistic approach in the African aviation business.”

**T**he second big challenge is around operational efficiencies. Ghata-Aura said: “There are some statistics that say that the cost of a ticket if you are African is around 75% of average income, whereas in the UK or Thailand it is 10%.

“Every new aircraft that we deliver is more fuel-efficient so, hopefully, they will bring fuel costs down.

“We also have an array of digital products that can help operators become more efficient, such as predictive maintenance, which reduces cycle time for maintenance and lessens the time that aircraft are on the ground when they shouldn’t be.

“The market would benefit from these types of enhancements in terms of cost but, clearly, until there is a broader liberalisation, that is still going to be a challenge.”

The final major challenge is sustainability. Ghata-Aura said: “This is probably the most important issue facing the world.

“I think that we are all now seeing it up close and personal in a way that, maybe, we didn’t before. At the moment, aviation accounts for just 2% of the overall emissions and only 12% of transport, but given the predicted growth, that is going to change.”

Boeing went net zero in its operations in 2020, and is producing new aircraft that are 20-25% more fuel efficient. However, older aircraft are going to be in use for some time, especially in Africa.

Ghata-Aura suggests that the company’s suite of digital products can help. “Statistics have shown that you can get another 10% of efficiency by deploying some of these. That could be to help you do a continuous descent landing, which burns less fuel, or to navigate you through better weather that doesn’t burn up as much fuel.”

**H**owever, sustainable aviation fuel is the bigger solution. The challenge is to ensure it is available in the African markets.

Ghata-Aura said: “We are working with the Roundtable on Sustainable Biomaterials (RSB) on a programme to help the aviation industry play a leading role in tackling climate change, creating jobs and supporting the economy of Africa.

“We are working with Ethiopian on a sustainable aviation fuel (SAF) road map, to help them assess what feedstock is available for SAF production. We are also working in South Africa with the RSB on a feasibility study for SAF development in the sugar cane sector.

“If you look at where and how SAF is produced, the pathways include waste-to-energy, wind and solar. So you have to say that, clearly, there is the right feedstock for SAF here.

“Is it as well developed as other places? Probably not.

“But it is an area where a lot of people are looking at how to get Africa involved in ramping up SAF to a worldwide scale where it is affordable. And that requires a concerted effort from SAF producers, and governments to create incentives to enable operators to buy it and still make money.” ▲

■ A few days after this interview was completed, 17 of the SAATM signatories reached an agreement on a pilot phase as a next step.



If you can't take your aircraft and components to the MRO shop for maintenance, why not bring the shop to your aircraft? Magnetic MRO thinks it has the answer, as **Chuck Grieve** reports.

# Plug in to Magnetic's attractive idea

**A**n innovative solution for hassle-free set-up of wheel, brake and battery workshops has been launched in Africa by Magnetic MRO. The Estonia-based MRO specialist, part of the Magnetic Group, believes its modular plug-in workshop is the way forward for African operators, and is working with a number of interested parties to pilot the idea. The workshop is assembled from modules, each based on a standard TEU container, fabricated and equipped to the customer's specification, shipped to site, installed by experts and commissioned, all in a fraction of the time it would take to construct a similar facility by traditional methods. Margus Graf, workshop manager at Magnetic MRO, described the plug-in workshop as "unique". He said the concept evolved from Magnetic's direct experience of the African MRO market, much of it through its subsidiary, Direct Maintenance, which operates stations in east Africa.

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That experience, plus the current difficult operating conditions around the world, convinced the MRO group that the time was ripe for its tailored solution. "It's difficult for [airline] clients who are focused on their core business to refocus on building and developing a workshop," said Graf. "With our solution, they don't have to because we take care of constructing and equipping the workshop." As well as offering long-term savings, the plug-in workshop could generate a possible revenue stream, he said. "It's a first step to setting up in-house maintenance facilities – something a lot of African airlines are seriously looking into now." The Magnetic Group sees huge potential for growth in the African MRO market. Original equipment manufacturer (OEM) forecasts suggest more than 1,000 new aircraft will enter the region's fleet by 2040, alongside increased leases of mid-life assets as regional operators renew their fleets. "We know the fragmented nature of the market and the huge distances involved on the continent, which present African customers with much greater logistical problems than most airlines," said Graf. Shipping parts in and out "can be a nightmare" for smaller airlines with limited resources.



**Margus Graf: "It's a first step to setting up in-house maintenance facilities."**  
PICTURE MAGNETIC GROUP.

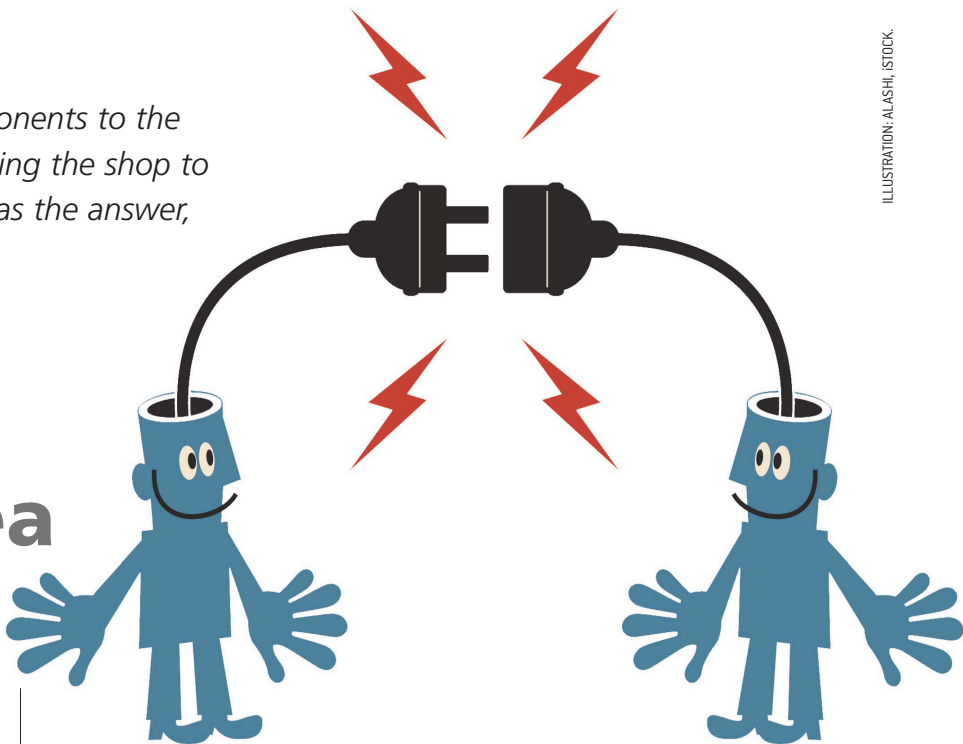


ILLUSTRATION: ALASHI, ISTOCK.

Magnetic has developed its plug-in workshop as a standard base-line solution designed to handle up to 1,000 wheels, 300 brakes and 300 batteries annually. "Of course, every customer is different," said Graf. "So, while we have created a standard solution, every project starts with mapping the customer's needs so we can tailor the design of their shop to their specific requirements and capabilities." "Based on our standard solution, we estimate the lead time to be six months, not including transportation to the customer's location. Setting up on site takes one to two weeks, depending of the size of the shop." Before any construction work begins, the Magnetic team conducts a site inspection and assesses environmental factors. It works with the customer to develop a workshop layout appropriate for the tooling selected, with access, storage and office areas included.

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Construction of the modules takes into account the unique conditions of the location. To counter harsh weather conditions, module frames are coated with anticorrosive primer and paint. Walls are constructed of pre-painted zinc-coated steel sheet; 0.5mm trapezoidal zinc-coated steel sheet protects the bases. The module walls, floor and roof are made of 100mm mineral wool or 80mm polyurethane sandwich panels. Climate-control systems are fitted as standard. Each plug-in workshop is assembled at Magnetic MRO's base station. Tooling is installed and inspected before the modules are disassembled for shipping to the location, which the customer will have prepared ready for installation. At site, Magnetic MRO's team assembles and inspects the facility and connects it to the power grid and compressed air lines. The group's instructors will provide initial training on the use of the tooling before handing the facility over to the customer's team.

Female pilots remain a rarity, especially in Africa, but the African section of the 99s is on a constant mission to change that. **Marcelle Nethersole** speaks to its governor, **Ivana Alvares-Marshall**.

# How the next-gen of aviatrix can become high flyers

**W**orldwide, 6% of pilots are women, with less than 1% represented in Africa. However, the African section of the 99s International Organisation of Women Pilots is working hard to improve this figure. The organisation was established in 1929 by 99 female pilots, founded by Amelia Earhart. It currently has more than 6,000 members, divided into chapters and sections depending on their geographical locations, from 44 countries. At the helm in Africa is governor Ivana Alvares-Marshall. "The African section works with schools in Africa through grassroot programmes to help enthuse girls to look into gaining a career in aviation," she explained. "The organisation teaches educational sessions to young people, concentrating on girls. However, boys also will benefit. "We aim to bolster science, technology, engineering, and mathematics (STEM) subjects in Africa through the 'girls wings for Africa' (GWFA) project. Working with underprivileged children, visiting local schools in villages, and starting STEM camps will inspire a new generation achieve their goals."

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The African section partnered with the Airbus Foundation in 2020 to launch Airbus little engineer (ALE) – an interactive digital programme in Malawi, promoting STEM in aviation. The aim is to educate 10-to-16-year-olds through a series of interactive online 3D modelling workshop. Alvares-Marshall said: "Financial difficulties and the exorbitant costs of becoming a pilot are what hinder females joining. It is through STEM initiatives and scholarships that we can help raise future generations to join the aviation sector. "Any aviatrix holding a current pilot licence or student pilot licence may join the African Section 99s. We are looking for partners who would be willing to add programmes to our existing ones for variety, or would like to sponsor some of the resources for our STEM programmes. "Females in Africa need to build networks inside and outside of their organisations, work with gender diversity programmes, promote and support other women, be a mentor and role model."



For Alvares-Marshall, her interest in aviation was sparked when she was 10 years old. "The dream of becoming a pilot started when I did a round-the-world-trip and was emigrating to New Zealand with my parents," she explained. "Years ago, airlines would allow passengers to visit the cockpit on long-haul flights. On one of those journeys I asked if I could visit and, to my surprise, they allowed me to. There I was, a little girl sitting on the jump seat, mesmerised by all the switches, lights, and the beautiful night sky. I was hooked immediately and made it my ambition." Today, back home in Malawi, she works for a corporate bank flying a King Air B200, which involves some bush flying.

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However, while she is flying high now, Alvares-Marshall did experience discrimination on occasion. "I experienced misogynistic behaviour, sexism, harassment, gender discrimination, pay difference – all in the workplace, as well as racism in just ordinary day-to-day living," she explained. "These are things that I and other women in aviation have experienced. There is a small minority of men who may cause problems for women but the majority of the time most want to see you succeed and applaud your success. It was the men who welcomed me into aviation and continue to support my career." Now she enjoys working with communities in Malawi sharing her passion for aviation. "I was honoured to receive the award of inspiration 2021 for the work we have been doing from the 99s," she said. In 2019 she organised the first international women pilot's conference to be held on the African continent hosted in Malawi. The next will be held in Tanzania in 2024. What is her advice to any African youngster dreaming of becoming an aviatrix? "The key is to be passionate in what you do. Be bold and go for it," she concluded.

**Ivana Alvares-Marshall: "It is through STEM initiatives and scholarships that we can help raise future generations to join the aviation sector."**

**Below: The 99s team in Malawi along with the Tanzanian Ambassador before flying to Ngorongoro Crater in Tanzania.**  
PICTURES: 99S AFRICAN SECTION.





# Rotimi Makanjuola

Marcelle Nethersole speaks to the managing director / accountable manager of Caverton Helicopters.

## What does Caverton Helicopters do?

Caverton Helicopters is an aviation company headquartered in Lagos, Nigeria. The company's focus and primary business is to render logistics and environment support services to the Nigerian oil and gas producers, with broader aims to support energy operations along the west African shelf.

We also run a flight-training centre with the only AW139 full-flight simulator in Africa. An AW109 FNPT II flight simulator is scheduled to be installed in May 2023.

Our MRO is the largest of its kind in Nigeria and west Africa, primarily for rotary-wing aircraft operations.

## Can you tell me about the types the company maintains?

We carry out all maintenance checks for the Leonardo fleet, which includes AW109s, 139s, and 189s, and we also have capability on the Bell fleet (206, 407, 429, 412), Sikorsky S92, and S76 series; and Viking Twin Otter 300 & 400 series.

We also carry out other maintenance jobs like blade repairs, non-destructive testing (NDT), composite repair, sheet metal work, floats and life jackets and many more.

## The company has the first AW139 simulator in the region – why did you choose it?

The AW139 is easily the most successful helicopter ever made and the market for this aircraft keeps growing so that even the manufacturer can't keep up with the production demands.

Seeing as Africa is the next developing frontier, it only made sense to be a step ahead of the game.

Also, as the majority of our contracts use the AW139 helicopter, it only made sense to invest in a simulator to reduce the foreign exchange losses from flying outside to country to conduct our training.

## Are there any hurdles that you face within the region?

There are hurdles in every part of the world but west Africa and Nigeria is particularly different. Things that take hours in other parts of the world could take days if not weeks.

It is quite unfortunate because a lot of the clients are not used to this and it very often has an impact on our reputation.

Some are gradually coming to understand the

challenges we face doing business in this part of the world, but others just don't get it, for which I can't blame them.

We have tried several approaches but the more creative you are the more difficult it gets.

Another major area we suffer from is the foreign exchange availability and currency devaluations.

Around 95% of aviation expenses are in US dollars but we are often paid in local currency.

So sourcing for USD or Euros can be a challenge; either the rates are high or there is no availability.

## What is next for the company?

Our next step is to streamline our business units and start adding value across the board.

Maintenance is a huge problem in Africa but this is not from a lack of talent – simply that the maintenance culture is not being driven enough.

Our plan to expand in west Africa is not to dominate, but to empower and develop new operators with a focus on local content.

For example, if we set up in a country, I will expect that, within 18 to 24 months, the operation should be run by 80% local staff.

Our own part is to oversee and support. This is the only way we can grow sustainable aviation in Africa.

## What does a typical day involve for you?

Every morning I do a quick check to see if there was any activity overnight. We have standby medical evacuation contracts and sometimes we do about three to four medevac flights in one night.

If it's a light day we schedule business development meetings about midday to plan on new tenders, contract review etc.

If it's busy, I leave the team to carry on with operations and then I meet with the business unit.

Aviation generally is not for the faint-hearted, especially in Nigeria. Regulations and policies change at the drop of a hat.

Similarly, crewing can be challenging due to economic activities, new market entries, and, of course, customs issues on a daily basis.

My day in the office ends at about 5:30pm, but that's around the time the US/Canada opens up, so I normally have another three to four hours extra added to the day.



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