



AFRICAN AEROSPACE

THE MAGAZINE FOR AEROSPACE PROFESSIONALS IN AFRICA

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AFTERMATH

HOW ETHIOPIAN IS MANAGING THE MAX CRISIS

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TIMES Aerospace Limited
3-4 Rumsey House, Locks Hill, Rochford
Essex, SS4 1BB, UK
Tel: +44 (0)1702 53 0000
Fax: +44 (0)1702 53 3088

Website: www.africanaerospace.aero

Directors:
Mark Brown & Kevin Sammon

Publisher:
Mark Brown
mark.brown@aficanaerospace.aero

Display Advertising:

David Evans Winship
david.evans@aficanaerospace.aero

Grant Lee
grant.lee@aficanaerospace.aero

Production Coordinator:
Ethan Cobbing
ethan.cobbing@aficanaerospace.aero

Circulation Dept:
Clare Brown
clare.brown@aficanaerospace.aero

EDITORIAL
news@aficanaerospace.aero

Editor-in-Chief: Alan Peaford
Editor: Steve Knight
Deputy Editor: Marcella Nethersole
Francophone Editor: Vincent Chappard
Air Transport Editor: Victoria Moores
Air Transport: Martin Rivers, Alan Dron
Defence: Jon Lake, Alan Warnes
Business Aviation: Dave Calderwood
Space & Technology: Steve Nichols
Airports & ATM: Alan Dron
Contributors: Cindy Lou Dale, Erwan de Cherisey, Chuck Grieve, Chloe Wilson, Anuradha Deenapanaray
News Briefs: In partnership with ch-aviation

REGIONAL CORRESPONDENTS

South Africa: Mark Mansfield, Sam Basch
Namibia, Zimbabwe: Oscar Nkala
Zambia: Humphrey Nkonde
Nigeria: Chukwu Emeke
Ethiopia: Kaleyesus Bekele
Kenya: Githae Mwaniki
Uganda, Rwanda: Hillary Muheebwa
North Africa: Mohamad Al Ahli, Vincent Chappard
Cameroon: Romuald Nguenyap

Picture Editor: Ian Billinghurst
Photographers: Mark Wagner, Jamie Hunter, Tom Gordon
Design: Chris Murray, Allsortz Ltd
Sub Editors: Steve Knight, Kathie Jones
Editorial administration: Petya Ivanova

Editorial head office:
Aerocomm Ltd, Norths, Rectory Road, Orsett
Essex RM16 3JU, UNITED KINGDOM
+44 (0) 208 133 3420

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Governments must trust the professionals to get it right

The remarkable Oscar Wilde once said, to lose one parent may be regarded as a misfortune; to lose both looks like carelessness. For African airlines, the loss of three CEOs comes under the same bracket.

With recent departures from the hot seats by Vuyani Jarana at South African Airways, Sebastian Mikosz from Kenya Airways, and Phillipe Bohn from the new Air Senegal, just as it took delivery of the first aircraft of its new fleet, leads to a sigh of “here we go again,” – although all may move upstairs in advisory roles.

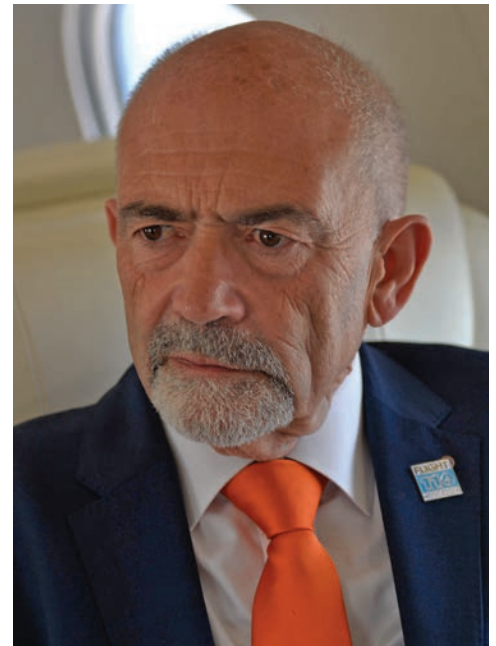
Like top-level football clubs, stability in management can bring around consistency in performance. Ethiopian Airlines is a case in point. CEO Tewolde GebreMariam has more than 20 years in the airline with the last eight as CEO. He followed his mentor, industry veteran and my dear friend, Girma Wake.

There has been a lot of chatter about government roles in the recent upheaval among the airlines. I remember once having the conversation about this after Wake had retired from Ethiopian and was guiding Rwanda on the relaunch of RwandAir.

He said that it didn’t really matter if a government owned the airline, provided that it didn’t try to manage the airline.

So often governments see the airline as a glossy mobile billboard dropping into the world’s glamorous cities, regardless of the financial sense of such routings; others as a cash cow for other ventures, or as an opportunity to order massive “national assets” in the shape of unsuitable aircraft for the type of missions to be flown.

Professionals like Tewolde and Wake, Bohn and Mikosz, know the sense behind carefully developing a route network and a fleet that will serve that network, while delivering the main target for every single airline in the world – to make a return on the capital invested.



Jarana, an experienced businessman, also knows this. He needed the South African Government to deliver on its promises.

Our report in this issue reveals that there are some in that government that would want to see SAA disappear for good. There may be a case for that. I once asked a panel of African airline CEOs and industry experts how many African airlines there should be? FOUR came the answer.

I think, though, if SAA does finally roll over, it would not be long before there would be a reincarnation and, if things don’t change, the same cycle will begin all over again.

Alan Peaford,
Editor in chief

COVER: Ethiopian Airlines Group CEO, Tewolde GebreMariam. PICTURE: TAMRAT GETACHEW.

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The preliminary investigation report on the Ethiopian B737MAX aircraft crash has revealed the initial cause.

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Group's charter and leasing specialist, Loftleidir, has taken a majority shareholding in Cabo Verde Airlines.

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RAPPORT EN FRANÇAIS



Air Serv sends aircraft to Mozambique for flood relief

An Air Serv aircraft positioned to Mozambique in May, where it was to support relief efforts following a devastating period of successive storms. The Cessna Grand Caravan departed Entebbe International Airport carrying a crew of five to be based in Pemba, Mozambique, supporting ongoing efforts to feed, house, and treat those who were displaced from their homes during a catastrophic storm season.

On March 14, Cyclone Idai made landfall near the city of Beira in Mozambique. A second cyclone, Kenneth, touched down in Mozambique on April 24. With sustained winds of up to 130mph, it became one of the strongest cyclones to ever hit the African continent.

■ See Mercy missions, page 68.

GebreMariam re-appointed

Ethiopian Airlines Group CEO, Tewolde GebreMariam, has been re-appointed to the International Air Transport Association (IATA) board of governors for a three-year term. The re-appointment is in recognition of his airline's fast and sustainable growth and his indispensable contribution to the development of African aviation industry in general.

Training Tanzania

Flightline Training Services, a Canadian and Kenyan-based aircraft maintenance training organisation, has been granted recognition by the Civil Aviation Authority of Tanzania (TCAA) for its maintenance training programmes.

Chief executive officer, Phyl Durdey, said: "I am very proud of our organisation. With a lot of hard work and dedication we have achieved this

fantastic milestone – first with Transport Canada, then the European Aviation Safety Agency (EASA) and now the TCAA. This allows the Tanzanian operators to have access to world-class training."

NAS to service Mozambique

National Aviation Services (NAS) was due to begin offering comprehensive ground-handling and cargo services in Mozambique from July as *African Aerospace* was going to press.

This covers ramp, passenger and engineering services, and includes check-in, boarding, ramp handling, maintenance and cleaning, as well as import and export cargo-handling and storage, for scheduled as well as adhoc airlines at all airports in Mozambique.

NAS Group CEO, Hassan El Houry, said: "There is a huge demand for air transport-related goods

and services for both cargo and passenger operations in Mozambique. This requires heavy investment in the latest equipment, technologies and processes at the different airports in the country, all of which NAS can provide easily."

Aircraft seating increases

The aircraft seating market is predicted to hike from \$12 billion in 2018 to more than \$18 billion by 2025, according to a 2019 *Global Market Insights* report.

Increasing aircraft demand owing to rising air passenger traffic across the globe will drive the market. Airlines are upgrading their aircraft fleets and introducing new routes to cater to leisure and corporate travellers.

Advancements in seats, along with enhanced ergonomic designs, are contributing significantly towards improving the air travel experience.

Additionally, major airlines are focusing on utilising maximum space in their aircraft by optimising legroom to accommodate the high number of passengers.

Embraer serves Air Botswana

Embraer has signed a pool programme agreement with Air Botswana to support a wide range of repairable components for its E170 aircraft.

The multi-year agreement includes full repair coverage for components and parts, as well as unlimited access to a large stock of components at Embraer's distribution centre.

"We are delighted to serve Air Botswana with a product that will provide streamlined solutions for its E170," said Johann Bordais, CEO, Embraer Services & Support. "Our mission at Embraer is to ensure customer

satisfaction, which results in creating a competitive portfolio that offers the highest standards on the market."

Air Tanzania expands in Europe

TAL Aviation and Air Tanzania Company (ATCL) have agreed that the former's European sales teams covering France, Ireland and Sweden will act on behalf of the carrier to build Air Tanzania's brand in these territories.

TAL Aviation will provide sales, marketing and distribution services to generate more awareness of the region, as well as travel opportunities available to east Africa.

As part of its revamping programme introduced a couple of years ago, Air Tanzania, the country's national carrier, is continuing on its network and fleet expansion, which has included the purchase of six aircraft.



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Opening up west Africa

Emirates and Africa World Airlines (AWA), the Ghanaian airline headquartered in Accra, have signed a one-way interline agreement.

It means Emirates customers can connect on to selected routes of Africa World Airlines' network, opening up new African destinations.

"The agreement underpins our commitment to provide greater connectivity. This partnership will allow us to further extend west Africa via the selected domestic and regional routes of Africa World Airlines," said Orhan Abbas, Emirates senior vice president, commercial operations, Africa.

Rwanda and Qatar ties

Qatar and Rwanda have signed four bilateral agreements with aviation at the heart of the discussions.

While full details of the agreements have not been released, it is understood that they involve strategic cooperation between Rwanda's Aviation Travel and Logistics (ATL) – the company managing RwandAir – and Qatar Airways.

ATL is also a 25% shareholder in the country's new international hub airport at Bugesera.

Regional A319 for Air Senegal

Air Senegal has just taken delivery of a new Airbus A319, which will serve intra-regional routes such as Abidjan, Cotonou or Conakry.

It is the third aircraft of the A320 family to join the Senegalese airline's fleet.

The new aircraft will fly to southern Europe destinations.

Air Senegal has operated



Southern hemisphere 'first' for Air Mauritius

Air Mauritius took delivery of its first Rolls-Royce-powered A330neo, on a lease from ALC, on April 18 in Toulouse. The aircraft landed in Mauritius the next day and operated its first commercial flight to London in the evening.

The national carrier of Mauritius is the first A330neo operator based in the southern hemisphere, and the first airline in the world to operate both the A330neo and the A350 XWB.

The aircraft, named Aapravasi Ghat in reference to Mauritius' history (the arrival of indentured workers from India), features a two-class cabin with 28 business-class seats and 260 economy seats. It will operate on routes connecting Mauritius to Europe (mainly London and Geneva), India and south-east Asia. It will also serve regional destinations including Johannesburg, Antananarivo and Reunion Island.

Air Mauritius CEO, Somas Appavou, said that the first A330neo was "another milestone" in the fleet modernisation programme of the airline (eight new aircraft including the neos).

The second A330neo will be named Chagos Archipelago.

a daily flight between Paris and Dakar with a A330neo since March 2019. It was the first airline to operate a A330neo in Africa.

It will take delivery of its second A330neo by the end of the year to be operated on new routes in Europe and beyond.

Air Senegal currently serves nine destinations in nine countries.

Its fleet includes three A319s, two ATR72-600s and an A330neo.

Falcon's X-factor

Dassault has completed the critical design review for its Falcon 6X, and frozen the detailed design of the new ultra-wide-body twinjet, as manufacturing of major parts begin for assembly of the first aircraft in early 2020. Speaking at EBACE, the French manufacturer said the 6X is on track for first flight in 2021 and will begin deliveries in 2022.



Acunis completes Africa's largest air cargo terminal

Acunis, the cooperation between Unitechnik and Amova, planned and implemented the new air cargo terminal in Addis Ababa for government-owned Ethiopian Airlines.

The air cargo facility covers 38,000sqm, an area as large as five soccer pitches, and is divided into refrigeration and a dry storage zone. The terminal is pioneering both in regard to throughput and logistics processes, as well as its security standards.

Ethiopia, as a landlocked country without a port of its own, had to guarantee that local goods could be exported and transhipped rapidly and efficiently. The government and Ethiopian Airlines laid the foundation with the new air cargo terminal.

Kilimanjaro mini-hub

Precision Air has strengthened its operations in Kilimanjaro following the establishment of the mini-hub in the region.

The initiative is part of a move to enhance connectivity in the northern region through its latest addition of passenger flight 421, departing from Dar es Salaam, and flight 420, departing from Dar es Salaam at 21.10 to Kilimanjaro.

These new flights make Precision Air the biggest operator into and from Kilimanjaro, with six frequencies a day.

EgyptAir selects FlightSafety

EgyptAir has selected FlightSafety International to design and manufacture a full-flight simulator for the Airbus A220-300 aircraft.

The simulator will be installed at the EgyptAir Training Academy headquarters at Cairo International Airport.

Captain Ahmed Adel, CEO of EgyptAir Holding Company, said: "This step is in line with the EgyptAir fleet modernisation strategy, which necessitates an upgrade of EgyptAir Training Academy simulation devices by installing new types of simulators that could serve well with EgyptAir's new fleet."

Fresh Air-bus

VIP passengers on the ACJ320 family can breathe a little easier thanks to a new agreement signed at the EBACE show. CTT Systems signed with Airbus Corporate Jets to optimise a humidification system for the ACJ320 family which, the airframer says, will further improve efficiency and performance.

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Law of Aviation Insurance (Classroom, 3 days)	10 - 12
Route Forecasting and Development (Classroom, 4 days)	17 - 20
Root Cause Analysis (Classroom, 5 days)	17 - 21
Global Aviation Competition/Antitrust Law (Classroom, 3 days)	24 - 26
Airport Slots and Coordination (Classroom, 3 days)	24 - 26
Airline Payment: from Cards to Blockchain (Classroom, 3 days)	25 - 27

JULY

Airport Terminal Planning and Design (Classroom, 5 days)	01 - 05
Air Cargo Security (Classroom, 5 days)	01 - 05
Aviation Fuel Management Essentials (Classroom, 3 days)	01 - 03
Managing Accident Prevention and Investigation (Classroom, 5 days)	01 - 05
Airline Sales Strategies - Advanced (Classroom, 3 days)	16 - 18
Cargo Sales and Key Account Management (Classroom, 4 days)	22 - 25
Risk Management Implementation (Classroom, 5 days)	29 - 02
Airline Safety Investigation (Classroom, 5 days)	29 - 02

AUGUST

Cargo Skills and Procedures (Classroom, 5 days)	05 - 09
Human Resources Management (Classroom, 5 days)	19 - 23
Cargo Airline Customer Service (Classroom, 3 days)	26 - 28
Safety Management Systems (SMS) - Implementation and Control (Classroom, 3 days)	26 - 28

SEPTEMBER

Airline Marketing (Classroom, 4 days)	02 - 05
Station / Ground Handling Management (Classroom, 5 days)	02 - 06
Emergency Planning and Response for Airlines (Classroom, 4 days)	09 - 11
International Air Law for Lawyers and Legal Professionals (Classroom, 5 days)	09 - 13
Introduction to Flight Operations Management (Classroom, 5 days)	16 - 20

OCTOBER

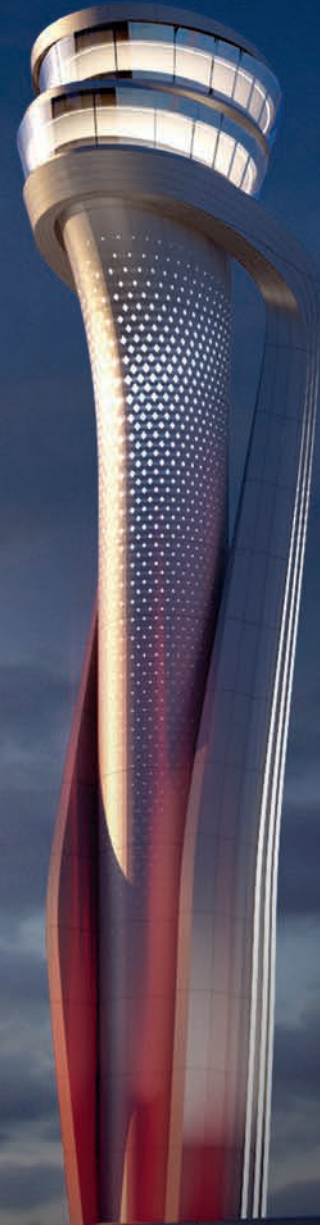
Training Needs Assessment (Classroom, 3 days)	14 - 16
Airline Leading Practices and Cost Reduction Strategies (Classroom, 5 days)	21 - 25

NOVEMBER

Crew Resource Management (CRM) Implementation (Classroom, 3 days)	04 - 06
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Network, Fleet and Schedule Planning (Classroom, 5 days)	11 - 15

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Aircraft Airworthiness and Air Carrier Certification (Classroom, 5 days)	09 - 13
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Turkish Airlines Aviation Academy

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TURKISH AIRLINES

Baggage on the right track

The International Air Transport Association (IATA) is to support the global deployment of radio frequency identification (RFID) for baggage tracking.

In 2018, less than 0.06% of the estimated 4.3 billion bags carried by airlines were mishandled. Since 2007 baggage mishandling has fallen by 70% and, today, 99.9% of mishandled bags are reunited with their owners within two days.

RFID read rates are 99.98% accurate, which is significantly better than bar codes. And modern messaging standards will enable airlines to proactively take action when there is potential for mishandling. Combined, RFID and modern messaging standards, should reduce the mishandling rate by a further 25%.

New wells for Africa

Etihad Aviation Group (EAG) will fund the construction of 30 water wells, named 'Well of Hope' in three African nations to assist in easing a critical shortage of clean water in remote communities.

Globally, more than 844 million people lack access to clean drinking water,

Run Aviation, the newest subsidiary of Air Austral

Run Aviation, founded in 2016 and specialising in private transport in the southern Indian Ocean, has become Air Austral's newest subsidiary.

The company will enable Air Austral to strengthen and diversify its operations within the region. Both airlines will operate on a complementary basis.

Run Aviation will offer medevac in addition to scheduled flights and on-demand business and tourist flights and other services, like air taxi, from the south to the north of Reunion Island, plus transport of spare parts, goods and documents.

Run Aviation had been looking for a new investor for months to solve its financial problems and Air Austral needed a solution to transport spare parts and mechanics when an aircraft is grounded outside the territory.

The company offers on-demand trips from Reunion Island to Mauritius, Rodrigues, Madagascar, Mayotte, Seychelles, Comoros Islands and Mozambique.



equivalent to one in every 10 people on Earth. Each day, more than 800 children under five years of age die because of contaminated water or exposure to poor health conditions.

Africa's leading airport

Cape Town International Airport (CTIA) was named Africa's leading airport for the third consecutive year at the 26th World Travel Awards Africa & Indian Ocean gala ceremony in June.

Airport general manager, Deon Cloete, said: "Once again Cape Town International Airport is honoured to receive this esteemed industry award. The World Travel Awards

are globally recognised as the ultimate independently assessed travel accolade, so being named Africa's leading airport for the third consecutive year is both a testament to the ongoing hard work and commitment to excellence demonstrated by all staff at this airport."

Strengthening Sierra Leone

CAA International (CAAi) is to assist the Sierra Leone Civil Aviation Authority (SLCAA) to strengthen its regulatory oversight capability.

CAAi will help the SLCAA resolve its safety-related deficiencies in several target areas including air navigation services, aerodromes and

ground aids. It will also optimise the organisational design of SLCAA to improve its oversight effectiveness.

This project will work to increase effective implementation in the target areas identified, reaching closer to the Abuja safety target of 60%.

Hybrid hero

French manufacturer, Lisa Airplanes, had already impressed with its two-seat Aloya aircraft, which can operate on land, snow and sea, but a sister company with a potential 19-seat aircraft was launched at EBACE. B.koya will have twin turbine-driven hybrid-electric propulsion. CEO Benoit Senellar is targeting a 2024 entry into service.



New MD for Airbus Southern Africa

Gilbert do Nascimento has been appointed managing director of Airbus Southern Africa, which supports more than 350 civil helicopters operating with customers in the region.

Prior to his appointment, he served as the chief commercial executive and, subsequently, as operations executive and accountable manager for the maintenance and repair organisation, new helicopter deliveries, technical support, as well as quality, safety and regulatory compliance.

Before joining Airbus in 2010, he enjoyed a successful career in the South African aerospace industry, where he held senior management and executive positions in Denel's aerospace division.



Uganda Airlines firms order for two A330neos

Uganda Airlines has firmed up its order for two A330-800s, the latest version of the A330 wide-body airliner.

Fitted with the new 'airspace by Airbus' cabin, the A330neo is set to bring a range of benefits including cutting-edge technology and more efficient operations.

Uganda Airlines plans to use the aircraft to build its medium and long-haul network.

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Aftermath: Tewolde GebreMariam has been comforting victims' families, ensuring the smooth operation of the airline, and following up the aircraft accident investigation process.
Picture: Tamrat Getachew.

Kaleyesus Bekele *meets Tewolde GebreMariam, the CEO coping with the aftermath of the Ethiopian airliner crash that killed 157 people.*

‘We will not be the first airline to return the aircraft back to the air; we will definitely be the last.’

Ethiopian Airlines Group CEO, Tewolde GebreMariam, goes to church with his family every Sunday morning. Sunday March 10, 2019, was no different.

But, while he was attending Bole Holy Trinity Church in Addis Ababa, not far from his home, he received an emergency call from his office informing him that an Ethiopian Airlines Boeing B737-8MAX aircraft had lost contact with air traffic control a few minutes after take-off.

Flight number ET302 departed Addis Ababa Bole International Airport at 8:38am en route to Nairobi, Kenya, and was lost from radar six minutes later. The crew reported that they had encountered a flight control problem and asked for clearance to return to base. The ATC granted that clearance but the aircraft failed to make it back.

□□□□□

One minute later, all the Ethiopian Airlines senior executive management team were informed of the situation. With a short search, the debris of the aircraft was found 60kms south-east of Addis Ababa on a farm. All 157 passengers and crew perished in the accident.

The CEO of Africa's largest airline and his executive management team have had a tough time managing the crisis. Comforting victims' families, ensuring the smooth operation of the airline, and following up the aircraft accident investigation process has been hectic.

GebreMariam, who has 34 years' experience in the aviation industry, has demonstrated his management skill at this trying time. The airline, which has a commendable safety record, continues serving its 120 international destinations without hiccups and the initial accident investigation process went well in accordance with the International Civil Aviation Organization (ICAO) regulations.

Continued
on Page 16

On the spot: Scene of the devastation at the farm 60km south-east of Addis Ababa where the aircraft came down.



CONTINUED FROM PAGE 15

Ethiopia's Ministry of Transport and the Accident Investigation Bureau (AIB) released the preliminary accident investigation report on April 4, 2019. This indicated that the crew encountered problems with the flight control shortly after take-off. The angle of attack (AoA) sensor was feeding erroneous data soon after lift-off, according to AIB.

The report revealed that, though the pilots applied all the emergency procedures recommended by Boeing and approved by the US Federal Aviation Administration (FAA), they could not control the aircraft.

GebreMariam said that Ethiopian Airlines management is satisfied with the factual events displayed in the preliminary report, which are subject to further analysis in the main investigation. "We were not surprised because the factual events were obviously known to us. This was the second accident, next to the Lion Air crash, in less than five months for a brand new aircraft. Although the investigation has to go through due process, we grounded our MAX fleet and China followed us, then the European Union, then Canada, and finally the US."

The investigation is being conducted in the midst of a situation where more than 370 B737MAX aircraft are grounded globally. GebreMariam believes that this makes it challenging. "Perhaps, in the history of aviation, this is the second investigation where the aircraft involved in the accident is grounded globally, next to the Concorde crash decades ago," he said.

American airframer, Boeing, is being criticised for not providing adequate information about the controversial B737MAX aircraft flight control software for its customers.

In the wake of the Indonesian Lion Air

B737MAX aircraft crash in October 2018, Boeing issued a service bulletin and the FAA sent out an air worthiness directive on the flight control software dubbed manoeuvring characteristics augmentation system (MCAS).

GebreMariam noted that the issue with MCAS was not clear. "The MCAS was not clarified. The impact of the MCAS on the flight control system was not clearly explained. It was not clarified adequately."

Ethiopian Airlines had distributed the service bulletin and air worthiness directive to its pilots. "We briefed our pilots and we included it in our training manual and flight operations manual but, as it was later revealed and understood by the entire global aviation community, there was no adequate disclosure."



Africa's fastest-growing airline made a repeat order for 30 B737-8MAX jetliners and received its first aircraft in June 2018. Before ordering the aircraft in 2014, Ethiopian had evaluated various regional jets, including the rival Airbus A320neo.

GebreMariam is unapologetic about acquiring the MAX. "We do not regret our decision because it was a right one. It is still the right one," he said.

Ethiopian compared the B737-8MAX with the A320neo. "These aircraft were replacing their predecessors. MAX was replacing the B737NG and A320neo was replacing the A320ceo. We made a very thorough analysis on commercial terms – technical, operational and financial," he explained. "The decision was not difficult because the aircraft are by-and-large similar – they were both coming with 15% fuel efficiency."

After analysing the benefits and the additional

work needed to phase-in the aircraft, Ethiopian found it logical to continue with the B737 since the airline had already been operating the B737NGs.

"When we compared it with the A320neo, the additional training of pilots and technicians required, and spares holding for maintenance, it was a natural transition from NG to MAX. That was how we chose the MAX and it is still a very good aircraft in terms of performance, economics, and maintenance. So we have no regrets," said GebreMariam.

Ethiopian had a MAX fleet of five. In the aftermath of the accident, it grounded the remaining four. Would pulling five aircraft out of operation compel it to lease B737-800NGs to replace the MAX fleet?

GebreMariam said that the airline has not yet leased additional aircraft. "February and March is a slack period in our operation. With April and May, we shouldered it. So we are managing with the available capacity.

"We have more than 110 aircraft. We are swapping capacity whenever it is needed. So far, we are managing with the available aircraft within our fleet. But, going forward to the summer, if the MAX is not returned to flight, then we may consider leasing additional aircraft."

Ethiopian has 25 B737MAX aircraft on its order book. Many wonder what the airline is going to do with the remaining MAX aircraft?

GebreMariam says the fate of the MAXes on order depends on the solution being worked on by Boeing. "Boeing is in the final stage of a software upgrade and better training. We will see if the FAA certifies it. Then we will also monitor the reaction of global aviation regulators, like the European Aviation Safety Agency (EASA), the Chinese and and Canadian aviation regulatory bodies.

Wreckage: Some of the debris of the aircraft after the accident that killed 157 passengers and crew.



Under investigation: More than 370 B737MAX aircraft are grounded globally.



SOMMAIRE

ETHIOPIAN AIRLINES ET LA GESTION DE LA CRISE DU B737MAX

Tewolde GebreMariam, le DG du groupe Ethiopian Airlines a expliqué à Kaleyesus Bekele comment la compagnie gère la situation après le crash d'un de ses avions ayant coûté la vie à 157 personnes.

“We will not be the first airline to return the aircraft back to the air; we will definitely be the last.

“Right now, our decision is to wait and see the progress of Boeing’s solution and also the certification by the FAA. We will also see the global aviation community reaction.”

Currently, a lot of investigations are being conducted – on the aircraft, on Boeing, on the FAA, and on how the aircraft was certified. Ethiopian is monitoring the developments.

Boeing has completed flight-testing on the MCAS software upgrade. Industry observers are now asking whether the software fix will restore customer airlines’ confidence on the aircraft?



GebreMariam said: “We still believe in Boeing. We believe in the FAA. Boeing is more than 100 years old and is a successful engineering company with high standards of quality. We definitely have confidence in Boeing. We believe that they would do the right thing.

“We also have strong confidence in the FAA. We hope that they will go through a rigorous recertification process. But, again, as one of the two fatal accidents occurred in our airline, unfortunately we will be seriously considering our analysis.”

He added: “While we still follow what Boeing and the FAA are going to do with full confidence, at the same time we will do our own analysis as an airline to build our internal confidence. We need to build confidence in our service, in our pilots and in our travelling public to make sure that the aircraft is safe back to the air.”

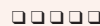
● **IATA calls for harmony on MAX certification – Page 21**

Le 10 mars 2019, alors qu’il était à l’église avec sa famille, Tewolde GebreMariam, apprit qu’un B737-8MAX d’Ethiopian avait perdu le contact avec la tour de contrôle quelques minutes après son décollage. L’équipage avait signalé un problème de contrôle de vol et avait demandé l’autorisation de retourner. L’avion ne parvint pas à revenir malgré l’autorisation de l’ATC.

Une minute après, la direction d’Ethiopian fut informée de la situation. Les débris furent retrouvés à 60 km au sud-est d’Addis-Abeba.

Il a fallu reconforter les familles des victimes, assurer le bon fonctionnement de la compagnie et suivre l’enquête.

Fort de ses 34 ans d’expérience dans l’aviation, Tewolde GebreMariam, gère cette période difficile avec compétence. La compagnie continue de desservir 120 destinations internationales sans incident et l’enquête s’est déroulée conformément aux règlements de l’OACI.



Le ministère éthiopien des Transports et l’AIB ont publié un rapport préliminaire le 4 avril 2019 indiquant que l’équipage avait eu des problèmes avec les commandes de vol peu après le décollage et que le capteur d’angle d’attaque (AoA) fournissait des données erronées.

Le rapport révéla que même si les pilotes avaient appliqué toutes les procédures d’urgence recommandées par Boeing et approuvées par la FAA, ils ne pouvaient pas contrôler l’avion.

Ethiopian décida d’immobiliser sa flotte de MAX et fut suivie de la Chine, de l’Union européenne, du Canada et des États-Unis.

Plus de 370 avions B737MAX sont cloués au sol dans le monde.

Boeing fut reproché de ne pas avoir fourni des

informations suffisantes sur le logiciel de contrôle de vol controversé du B737MAX.

Après le crash de l’avion indonésien Lion Air B737MAX en octobre 2018, Boeing publia un bulletin de service et la FAA envoya une directive sur la navigabilité aérienne concernant le MCAS.

Ethiopian remit le bulletin et la consigne de navigabilité à ses pilotes. Avant de commander les 30 B737-8MAX, Ethiopian avait évalué divers avions régionaux dont l’A320neo.

« Nous ne regrettons pas notre décision car c’était une bonne décision. Elle l’est toujours », a déclaré Tewolde GebreMariam.

Ethiopian a estimé qu’il était logique de continuer à utiliser le B737 car elle exploitait déjà les B737NG.

Son DG souligne que la compagnie gère la situation avec la capacité disponible.

« Toutefois, si le MAX ne reprend pas le vol au-delà de l’été, nous pourrions envisager de louer des appareils supplémentaires. »

Selon lui, le sort des 25 MAX en commande dépendra de la solution proposée par Boeing. « Boeing est au stade final d’une mise à niveau du logiciel et d’une meilleure formation. Nous verrons si la FAA le certifie. Nous surveillerons également la réaction des régulateurs de l’aviation mondiale, comme l’EASA et les organismes de réglementation chinois et canadiens. »

Ethiopian suit les développements et verra aussi comment réagira la communauté aéronautique mondiale.

« Nous croyons toujours en Boeing. Nous croyons en la FAA. Nous croyons qu’ils prendront la bonne décision. »

Il espère que la FAA suivra rigoureusement le processus de recertification et a ajouté qu’entretemps la compagnie doit rassurer ses services, ses pilotes et sa clientèle.

The preliminary investigation report on the Ethiopian B737MAX aircraft crash has revealed that a sensor problem was the cause. **Kaleyesus Bekele** reports.

CRASH BLAMED ON FAULTY FLIGHT CONTROL SYSTEM

A national accident investigation team was formed by Ethiopia's Ministry of Transport and the Ethiopian Civil Aviation Authority (ECAA) following the tragic Ethiopian Airlines accident involving a brand new B737-8MAX aircraft on March 10, 2019.

The accident investigation process was led by the Aircraft Accident Investigation Bureau (AIB), which is the investigation authority in Ethiopia responsible to the Ministry of Transport.

The AIB immediately started working on the crash site and recovered the cockpit voice recorder (CVR) and the flight data recorder (FDR) on March 11. They were both sent to Paris for analysis.

Accordingly, French firm BEA, which is based in Le Bourget, downloaded all the information from the CVR and FDR and handed over the most critical data to the Ethiopian aviation authorities.

The AIB also collected piles of data about the aircraft, the crew and the flight from Ethiopian Airlines and the ECAA.

The Ministry of Transport, together with the AIB, released the preliminary accident investigation report on April 4.

"Shortly after take-off, the angle of attack (AOA) sensor recorder value became erroneous and the left stick shaker activated and remained active until near the end of the flight," said the report, which added, the captain was unable to maintain the flight path and requested to turn back. The crew lost control of the aircraft, which crashed at 5:44 UTC south-east of Addis Ababa near Ejere village, killing all 157 passengers and crew.

Based on the preliminary findings, the report recommended that the aircraft flight control system should be reviewed by the manufacturer and said aviation authorities should verify that the review had been adequately addressed before the release of the aircraft to operations.



Dagmawit Moges: "The pilots could not control the aircraft, though they repeatedly applied the safety procedure recommended by the manufacturer."

Ethiopian Minister of Transport, Dagmawit Moges, told a press conference that the pilots followed Boeing's recommended procedure for regaining control of the aircraft during its fateful dive.

Moges confirmed: "The pilots could not control the aircraft, though they repeatedly applied the safety procedure recommended by the manufacturer."

Ethiopian authorities denied media reports that claimed a bird strike damaged one of the aircraft's AOA sensors. "Everything, including the AOA sensors, was functioning properly during take-off. But a few minutes later the sensor began feeding erroneous data. We do not know what caused that," Amdeye Ayalew, chief investigator of the AIB said.

Ethiopian Airlines CEO, Tewolde GebreMariam, expressed satisfaction in the report's confirmation of the pilots' reaction to the emergency. "We are very proud of our pilots' compliance with the emergency procedures and high level of professional performances in such extremely difficult situations."

Boeing has admitted the faulty flight control system has played a part in both the Ethiopian and the Indonesian Lion Air B737-8MAX jetliner crashes.

Boeing CEO, Dennis Muilenburg, said: "The full details of what happened in the two accidents will be issued by the government authorities in the final reports, but, with the release of the preliminary report of the Ethiopian Airlines Flight 302 accident investigation, it's apparent that, in both flights, the manoeuvring characteristics augmentation system, known as MCAS, activated in response to erroneous AOA information.

"It's our responsibility to eliminate this risk. We own it and we know how to do it," he added.

SOMMAIRE

LE SYSTÈME DE CONTRÔLE DE VOL EN CAUSE

Le ministère éthiopien des transports et l'ECAA ont constitué une équipe dirigée par l'AIB pour enquêter sur l'accident du B737-8MAX survenu le 10 mars dernier faisant 157 morts.

Le CVR et le FDR du B737MAX ont été envoyés à Paris pour analyse par le BEA. Les principales informations ont ensuite été transmises aux autorités éthiopiennes.

Le rapport de l'enquête préliminaire publié le 4 avril a recommandé à l'avionneur de revoir son système de commandes de vol et qu'il soit vérifié avant la remise en service de l'avion.

Le ministre éthiopien des Transports, Dagmawit Moges a déclaré que les pilotes avaient bien suivi la procédure de sûreté

recommandée par Boeing. Il a confirmé que ces derniers n'ont pas pu contrôler l'avion malgré son application de manière répétée. Les autorités éthiopiennes ont démenti les informations selon lesquelles un impact d'oiseau aurait endommagé l'un des capteurs de l'AOA.

Tewolde GebreMariam, le PDG d'Ethiopian, s'est dit satisfait et très fier du respect des procédures d'urgence par les pilotes, et de leur professionnalisme.

Boeing a admis que le système de contrôle de vol (MCAS) avait joué un rôle dans les accidents d'Ethiopian et de Lion Air. « C'est notre responsabilité d'éliminer ce risque », a déclaré son DG, Dennis Muilenburg. ■

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After a false start in 2014, Mahogany Air is riding a wave of pro-aviation government policies in Zambia. **Martin Rivers** talked to the airline's founder and chief executive, **Jim Belemu**.

Mahogany en route to a solid base

When Zambia's late president, Michael Sata, called for Zambia Airways to be resurrected in 2011, local entrepreneur Jim Belemu sensed an opportunity to move into a new sector.

The molecular scientist had already enjoyed a colourful career since obtaining his doctorate, working as a veterinary surgeon, a civil servant, a United Nations researcher and, more recently, setting up a successful mining company. With metal prices peaking in 2011, he and wife Cynthia were actively searching for their next business venture.

"We decided we needed to do something else which is long-term, maybe not very profitable but at least which keeps us going," Belemu recalled.

"At the time there was a new government and their policies were to develop the aviation sector. And, although their emphasis was on recreating the national airline, we knew it might take a long time. So, if the direction of government policies was towards revamping the aviation sector, we decided to go ahead ourselves. We knew as private persons we could put our act together quickly and have an airline launched."

The result was that Mahogany Air took to the skies in February 2014, bringing welcome competition to a domestic market dominated by Proflight Zambia, another privately owned airline.

Just as Belemu predicted, progress has been much slower with the country's proposed flag-carrier, which only appointed a chief executive this year and has yet to set a firm date for launching flights.

Despite its first-mover advantage, however, Mahogany quickly hit turbulence when the husband and wife duo identified flaws in their financial projections. "Just at the time we were launching we realised that the business plan was too good to be true, because airline costs are very high," Belemu admitted. "We realised that if we had continued, the end result is that we would have gone down maybe in three years to come."

"So we decided to take a very bold step to stop the operation, to really fine-tune and come back."

Successful re-launches are rare in the airline industry and Belemu knew that customers would be sceptical of Mahogany's promise to return. But he concluded that short-term reputational damage was a price worth paying for long-term sustainability.

During the three-year grounding that followed, Mahogany's management team dissected every



aspect of the business model. They restructured the network around business routes first and "rural routes supported by the government" later on; they re-negotiated aircraft leases and airport charges; they built slack into the carrier's "excessive" schedules; and – most important of all – they secured \$25 million of funding from a consortium of local and Gulf investors.

Mahogany finally resumed operations in July 2017, linking capital city Lusaka with Ndola in the central Copperbelt Province and Livingstone by Victoria Falls in the south. It later added flights to Mansa in the north and Lubumbashi, situated across the border in the Democratic Republic of the Congo.



The network is served by a 30-seat Embraer EMB-120 and a 19-seat Beechcraft 1900 – both fully owned.

Talks are under way with South Africa's Sahara African Aviation about leasing a second EMB-120, which will facilitate expansion to Zambia's northern border towns and a handful of international markets that Belemu described as "thin" but "worth developing".

"Our expansion is focused on the northern region of Zambia. We think the traditional southern part – Livingstone – is well covered," he explained.

"We want to take advantage of opening the northern part of Zambia to cover it quickly. It makes sense because these are highly populated areas. There is a lot of business that goes around these areas, but the connectivity is a problem. For us, as an airline, we think investing in such

routes is worthwhile."

Mbala and Nakonde are particularly attractive, Belemu said, because the border towns could be springboards for regional expansion. He envisages flights from Lusaka stopping in Mbala en route to Bujumbura, Burundi, for example, and Nakonde en route to Dar es Salaam, Tanzania. Other possibilities include Lubumbashi to Dar es Salaam via either Ndola or Mansa, and Lusaka to Mbeya, just inside Tanzanian territory.

Solwezi in the north-west is also expected to join the network in the near future, followed by either Chipata or Mfuwe in the east. Kasama may then be considered as a stopover for flights to the far north.

Asked why Zambia is ranked as one of the smallest domestic aviation markets in the world by the International Civil Aviation Organization (ICAO) – despite having a population of 17 million and a land mass of 750,000sqkm – Belemu pointed to the country's reliable road infrastructure.

"In Zambia there are quite good roads, so it is tempting to drive," he explained. "We want to break the niche by saying look, you will do your business more efficiently, you will be able to minimise your risks [if you fly instead]. We expect that a lot of businesses are suffering right now because it takes so many hours to drive."

He welcomed pledges by the government to spend \$1.7 billion on the aviation sector. The funding drive has already seen Livingstone Airport fully renovated and Mbala Airport turned from an air force base into a commercial gateway. Major projects currently under way include new passenger and cargo terminals at Lusaka Airport, Zambia's main hub, and the



It is only good that we work as a team. We promote the bringing of passengers from outlying areas and then they come on to the regional routes.

JIM BELEMU

laying of a bituminous runway at Kasama Airport.

Elsewhere in the country, though, facilities are basic and unpaved airstrips remain common.

“That’s why we acquired the Beechcraft 1900,” Belemu affirmed. “They are paving the runways but, for now, many are still gravel. The Beechcraft will help us in the interim while we wait for those runways.”

Developing immature markets has other advantages. Although Zambia Airways has not yet fleshed out its business strategy, Belemu is certain that it will target major regional destinations with medium-sized aircraft. Mahogany has, therefore, scrapped plans to serve Johannesburg and Dar es Salaam from Lusaka, averting a showdown with a deep-pocketed, state-owned entity.

“We don’t want to take a huge risk to come and compete with [Zambia Airways on] the regional routes,” he insisted.

“It is just prudent that as they come in we give each other support rather than competing, because all of us – Mahogany, Proflight – would be Zambian airlines. It is only good that we work as a team. We promote the bringing of passengers from outlying areas and then they come on to the regional routes.”

□ □ □ □ □

Whether or not Zambia Airways will be receptive to the offer of feeder traffic remains to be seen. But, with shareholder Ethiopian Airlines steering the company during its launch, Belemu has high hopes.

“What will matter most, I think, is the model. How are they going to partner with the private sector? Without that, the question will arise, ‘Is it sustainable?’ I know how intricate the aviation business is. It requires timely decisions and less bureaucracy. What we are saying is the national airline should have an ingredient of private partnership.”

If all goes according to plan, Mahogany’s next step will be adding jet aircraft in 2020 or 2021. The Embraer ERJ-145 and the Bombardier CRJ family will both be considered.

Belemu admitted that Zambia’s risk-averse banks will require significant persuasion before agreeing to fund jet purchases.

However, the government’s new focus on aviation is likely to help matters, raising Mahogany’s profile just as the country reclaims its skies from foreign airlines – several of which are currently exploiting fifth-freedom traffic rights.

“The main reason why a Zambian cannot take a risk by going into the aviation business is because they will not get financial support,” Belemu stressed. “If Zambians don’t take a stance on the front line, obviously foreign operators will. So, now that the government has taken a stride, I think the banks and the financial institutions also must take a positive stance.” ■

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Allan Kilavuka became CEO of Kenya Airways' low-cost carrier (LCC), Jambojet, in January 2019, succeeding industry veteran Willem Hondius. Kilavuka talked to Victoria Moores about how it felt to fill those shoes, as a complete newcomer to aviation.

New kid on the block is not kidding around

“I was warned that it [running an airline] was very complicated, it would take me years to settle in, there would be a lot of road blocks and barriers and I should brace myself,” Jambojet CEO Allan Kilavuka said, recalling his first experiences of his new industry.

Kilavuka's predecessor, Willem Hondius, had a wealth of industry experience. Before setting up Jambojet, he had racked up 14 years with KLM. From there he went on to become EVP and CCO of Dutch LCC Transavia – a role that he held for 13 years – before becoming general manager Eastern Africa for KLM.

Hondius launched Jambojet in April 2014 and stayed with the LCC for five years, before returning to KLM as senior advisor for alliance development.

Stepping into the shoes of someone with so much experience was daunting. “He was like a 35-year veteran, compared with a three-month old,” Kilavuka said in March. “I’ve been three months in the industry.”

Kilavuka brings a wealth of experience of a different kind. He studied in Nairobi and then joined management consultancy firm, Deloitte, as an audit and assurance manager. After that, he embarked on a 13-year career with General Electric, working his way up through finance and operational roles to become GE Africa global operations leader. Those various positions took him from Nairobi to South Africa – and now back to Nairobi.

“I’ll be quite honest, I was not specifically looking at airlines; I was looking for an

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on Page 24



Allan Kilavuka: “It’s exciting because you wake up in the morning and what you find is not what you thought you’d find yesterday.”

CONTINUED FROM PAGE 23

organisation that I would be able to add some value to. In fact, aviation was actually one of the last choices for me – not because I didn't want to, just because I never thought this is something I would do," he said.

However, Jambojet saw all the right ingredients for their new CEO in Kilavuka, particularly his experience of start-ups and transformations within a large multinational. He was brought on board to make the airline more sustainable.

"What I am running is a five-year-old airline, which is basically a start-up if you think about it. They need someone like me, who has international experience, has worked for a multinational and has lots of experience in executive management, to take us to the next stage of growth," Kilavuka explained.

Kilavuka was told this would be a difficult start, so he took that advice and braced himself. "That's what I was told to expect, so of course that's what I kind of expected, but what I found was a pleasant surprise."

Jambojet's employees, regulators and airport partners turned out to be very friendly, supportive and "surprisingly excited to have someone from outside the industry", Kilavuka said. "They offered a lot of help; they were only a phone call away."

However, some of that early advice also rang true. Kilavuka modestly says that the highly regulated nature of the industry "complicates things a little bit", but he describes himself as "very curious" and said his experienced team were "very willing to help me have a soft landing".

Kilavuka's predecessor set up the airline, implemented systems and made sure he hired the right people to get Jambojet off the ground. In this second phase, Kilavuka is shifting gears and preparing the company for expansion.

The aim is to be able to scale the business without a fear of losing the people – and experience – that it depends on. "We are still relying a lot on the experience of our people, so what I need to do is to make sure all those processes are very clearly defined and documented," he said.

Jambojet started out as a Boeing 737 operator but, over the last few years, has shifted to become an all-Bombardier Q400 operation.

"Today, we are operating five Q400s, but we are getting four more this year," Kilavuka said, adding that those additional aircraft are

scheduled to arrive in July, August, September and November. "That's a doubling of our fleet. We'll use it for regional expansion."

Jambojet currently serves five domestic destinations from its Nairobi home base – Diani, Eldoret, Kisumu, Malindi and Mombasa – and one regional flight, to Entebbe in Uganda.

"We will increase our frequencies and then we will expand into the regions. We are just waiting to get [traffic] rights. We are hoping to go into Juba (South Sudan), Bujumbura (Burundi), Kigali (Rwanda), Zanzibar (Tanzania) and Goma (DRC). What has stifled our growth a little bit is the speed at which we're getting the

Kilavuka said Jambojet's core mission is to give customers access to affordable and safe travel, but feedback suggests the market may be demanding a bit more than the carrier currently offers.

"Sometimes we hear our customer say, 'Okay, fine. I get that – and thank you – but maybe we want something a little bit more premium'. We are thinking about it and seeing how can that play within the model, while still sticking with making sure it's affordable and minimising our costs. My inventory is not necessarily easy, especially in this region," he explained.

Jambojet already has a strong strategic partner in Kenya Airways. "We are 100% subsidiary, but we are autonomous," explained Kilavuka. "We have a separate board, we have separate management, we have a separate building. In fact, on some of the routes we actually compete – quite aggressively by the way! And I won't say who ends up winning..."

As well as being a tiny bit competitive, Kilavuka is also big on collaboration. This could play into the airline's future, especially once the airline is International Air Transport Association (IATA) operational safety audit (IOSA) registered. Once this approval is in place, he is hoping to secure codeshares with SkyTeam member airlines and other regional carriers within Africa.

"The possibilities for growth are great and we are

open to looking at strategic partners going forward. All options are open for the growth of the business," he said.

Along with the experienced team and established processes, Kilavuka has also inherited a financially stable business. Jambojet became profitable in 2015 – its second year of operations – and maintained this in 2016. However, the Kenyan elections in 2017 disrupted travel and pushed Jambojet to a loss. Now Kilavuka says the business is doing well and is on a sound footing to enter its next stage of development.

Summing up, this rebirth in aviation is keeping Kilavuka on his toes, especially with the unpredictability of the African market. "It's been dynamic in a nice – and not so nice – way. It's exciting because you wake up in the morning and what you find is not what you thought you'd find yesterday," he said, smiling. "It's been easier – not easy – but easier than I thought." ■



“We are open to looking at strategic partners going forward. All options are open for the growth of the business.”

ALLAN KILAVUKA

rights to fly to some of these places. Right now, we have Juba and we have Goma."

Kilavuka is confident that Jambojet has the people skills and processes that it needs for this expansion. "We don't have a shortage of pilots and crew and we are training more," he said. "The people who work for me are very experienced, because we got them mostly from Kenya Airways. I hear the CEO of Qatar saying he gets staff from African airlines, but some of ours are from Qatar, actually."

Under the current vision, Jambojet plans to continue as a Q400 operator. Kilavuka said it might be interesting to bring in other types, but the current fleet gives the airline a cost advantage.

"For us to minimise our costs, we will stick to this one fleet. However, as we grow and expand, of course we want to vary our product a little bit. In the future we will look at whether to change – or have another type of aircraft – to respond to our customers' needs."

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Air Madagascar continue d'implémenter son plan de transformation « Alefa 2027 » qui lui permettra de redevenir un acteur majeur du transport aérien dans l'océan Indien et en Afrique. Un reportage de Romuald Ngueyap et Vincent Chappard.

AIR MADAGASCAR POURSUIT SA MUE EN SE TRANSFORMANT

Rolland Besoa Razafimaharo a pris les rênes d'Air Madagascar en octobre 2017 au moment du partenariat stratégique signé avec la compagnie Air Austral. La compagnie nationale malgache traversait alors de fortes turbulences tant au niveau financier que dans l'exploitation de son réseau.

Air Madagascar et Air Austral ont mis un plan de transformation appelé Alefa 2027. Il repose sur cinq axes : améliorer la qualité du service pour reconquérir la clientèle, assurer l'efficacité économique, organiser les activités MRO, accroître l'engagement citoyen et la mobilisation des salariés pour progresser ensemble. Qu'en est-il de la mise en œuvre ce plan 18 mois après son lancement ?

Selon Rolland Besoa Razafimaharo, l'exécution du plan « Alefa 2027 » se déroule bien. « Nous avons remis en service notre flotte d'avions. Neuf aéronefs sur dix sont désormais opérationnels. De nouvelles routes régionales ont été lancées à savoir Tuléar/Fort Dauphin-La Réunion ou encore Antananarivo-Johannesburg. L'offre a augmentée de plus de 80% sur le réseau domestique et de 53% sur le long-courrier. Nous avons aussi un meilleur taux de ponctualité. Il est passé de moins de 60% en 2017 à 82% aujourd'hui. L'objectif est d'atteindre 85% d'ici fin 2019. Le service à bord a également été amélioré. »

A noter que le programme de fidélité d'Air Madagascar et d'Air Austral ont fusionné pour laisser la place à MyCapricorne. Air Madagascar a également renouvelé sa certification IOSA et a modernisé ses outils de vente et en particulier sur Internet.

La flotte d'Air Madagascar comprend quatre ATR72, trois Twin Otters, quatre ATR72, un Boeing 737 ainsi que deux Airbus A340-300.

Air Madagascar compte avant tout muscler son réseau domestique et régional. En décembre dernier, elle a lancé une compagnie dédiée aux vols intérieurs : Tsaradia.

« Cette compagnie est le fer de lance du processus de transformation d'Air Madagascar compte tenu de la forte concurrence sur le plan régional et international », assure le directeur général de la compagnie malgache. « Tsaradia a fait preuve de dynamisme et d'innovation vis-à-vis de la clientèle avec un programme d'exploitation densifié, une offre de sièges accrue et un service en escale et à bord amélioré », ajoute-t-il.



« L'objectif est de faire de Nairobi une porte d'entrée vers l'Afrique de l'Ouest et Centrale. »

ROLLAND BESOA RAZAFIMAHARO

Air Madagascar privilégie également la coopération régionale à travers l'Alliance Vanille. Celle-ci a été relancée en juin 2018 suite à la rencontre des nouveaux DG d'Air Austral, d'Air Madagascar, d'Air Mauritius et d'Air Seychelles. Ces compagnies veulent toujours œuvrer dans l'intérêt des populations de l'india-océanie pour rendre les billets plus attractifs et compétitifs, et lever les freins (dont l'épineux problème des taxes) pour accélérer son développement. La politique tarifaire et une meilleure connectivité dynamiseront davantage le flux touristique intra régional. Le Pass Vanille, qui va dans ce sens, sera à priori lancé en 2019. Face à la concurrence, le PDG d'Air Austral lance un appel à « l'entraide » entre les compagnies de l'océan Indien.

□□□□□

Par ailleurs, Air Madagascar et Air Austral ont signé un accord de partenariat stratégique avec Kenya Airways pour renforcer la coopération entre les trois compagnies dans le domaine commercial, de la MRO et de l'affrètement.

« Ce partenariat tripartite s'est traduit depuis mars 2019 par la mise en place d'un code share sur les vols entre Antananarivo et Nairobi », rappelle Rolland Besoa Razafimaharo.

« L'objectif est de faire de Nairobi une porte d'entrée vers l'Afrique de l'Ouest et Centrale. »

Air Madagascar compte également monter en puissance sur son réseau long-courrier. La compagnie a préparé activement la saison IATA qui a débuté en avril dernier. Elle opère cinq vols hebdomadaires sur Paris et un vol sur Marseille. « De juin à septembre, nous aurons jusqu'à un vol quotidien sur Paris. Pour cela, une campagne marketing a été menée auprès des intermédiaires du voyage en France et en Europe, et notamment auprès de ceux qui se sont détournés de la compagnie suite à ses déboires. Les résultats sont probants pour la haute saison d'été, le taux de remplissage moyen des vols est déjà actuellement de 80% », souligne le DG de la compagnie.

Air Madagascar se transforme certes mais elle a encore de nombreux défis à relever et en particulier pour améliorer sa compétitivité.

La compagnie doit en effet

Continued
on Page 28

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procéder au renouvellement de sa flotte long-courrier avec son partenaire Air Austral, qui ne devrait débiter qu'à partir de 2021 (fin du contrat de leasing). Cela apportera des garanties de rentabilité et permettra à Air Madagascar de faire des économies. « Nous prévoyons de remplacer à court terme les deux Airbus A340 par des avions plus modernes, ce qui nous permettrait de réaliser une économie substantielle sur nos coûts d'exploitation », rappelle Rolland Besoa Razafimaharo. « Nous prévoyons également de retirer notre B737-800 en 2021 pour le remplacer par trois avions de 120/130 passagers qui sont plus adaptés à notre programme d'ouverture de nouvelles routes régionales.

La compagnie est également pénalisée par le prix du kérosène dans la grande île. Il est par exemple jusqu'à 50% moins cher dans la région ou en Thaïlande. Des solutions alternatives sont à l'étude.

Air Madagascar devra poursuivre ses transformations avec Air Austral pour consolider ses assises et entrer le Marché Unique du Transport Aérien. C'est une décision gouvernementale. Cette consolidation stratégique est d'autant plus nécessaire dans l'océan Indien dans un contexte concurrentiel de plus en plus agressif. ■

SUMMARY

TRANSFORMATION BUILDING A HEAD OF STEAM

Air Madagascar continues to implement its 'Alefa 2027' transformation plan that's designed to revive this major airline player in the Indian Ocean and African regions.

Rolland Besoa Razafimaharo took over the reins of the troubled Air Madagascar in October 2017 at the time when the strategic partnership with Air Austral was signed.

Based on five key areas, the plan aims to improve the quality of service at all levels; to ensure economic efficiency; to organise MRO activities; to increase citizen engagement; and to mobilise employee involvement.

According to Besoa Razafimaharo, the implementation is on target. He explained: "We have restored our fleet of aircraft with nine out of 10 now operational. New regional routes are launched, including Tulear to Fort Dauphin-Reunion and Antananarivo to Johannesburg. These have resulted in load-factors increasing by more than 80% on the domestic routes and 53% on long-haul."

Air Madagascar's fleet includes three Twin Otters, four ATR72s, one Boeing 737 and two Airbus A340-300s, both of which it plans to replace to save operating costs.

The B737-800 is also scheduled to be retired in

2021 and replaced with three new 120/130-seat aircraft yet to be selected.

Air Madagascar is concentrating on strengthening its domestic and regional network and, last December, it launched a domestic airline named Tsaradia.

"This company is spearheading the transformation of Air Madagascar, given the strong regional and international competition, and it has already created a dynamic customer base through more flights, increased seating and improved on-board service," said Besoa Razafimaharo.

Air Madagascar is also concentrating on the regional 'Vanilla Alliance'. These companies are working to make the tickets more attractive and competitive, and to remove barriers – including taxes – to future development.

In addition, Air Madagascar and Air Austral have signed a strategic partnership agreement with Kenya Airways to strengthen cooperation between the three companies in commercial, maintenance, repair and overhaul (MRO) and chartering. Since March 2019 this tripartite agreement has resulted in code-sharing on flights between Antananarivo and Nairobi, with the goal of making Nairobi a gateway to west and central Africa. ■



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Growing market share: Air Peace will be the first E2 operator in Africa.
Inset: Allen Onyema and Arjan Meijer seal the deal in Mauritius.



E2 wins the Peace prize...

The newest Nigerian private carrier, Air Peace, is the largest airline in west Africa with 80% of market share. Now, the biggest Embraer operator in the region will be the first to add an E2 to its fleet in Africa.

Anuradha Deenapanray reports.

Air Peace has signed a firm order for 10 E195-E2 jets with Brazilian manufacturer Embraer. The announcement was made at the beginning of May during Embraer's Africa business seminar in Mauritius.

The \$2.12 billion contract includes purchase rights for a further 20 E195-E2s.

"Embraer's new E195-E2 presents us with a marvel of economic performance. It's also great that we will be the first E2 operator on the African continent," said Air Peace chairman and CEO, Allen Onyema. "We already have the ERJ145s in our fleet, so we understand the high standards of Embraer products. I've done my mathematics. I look before I leap."

He added that Air Peace needed to serve the feeder airports and enhance connectivity, which he said, is "very poor".

Arjan Meijer, chief commercial officer Embraer Commercial Aviation, underlined the "pioneering spirit" of Air Peace. He added that the airline has delivered successfully on its aims, and has become a fast-growing successful airline. "It's great to now have them on board the E2 as well."

Air Peace subsidiary, Air Peace Hopper, started operating six ERJ145s last year on domestic routes. The

experience with Embraer's products and the economic benefits of right-sizing aircraft, which is often a major cause of financial problems for African airlines, informed Onyema's choice.

He has greater ambitions for Air Peace and is targeting long-haul routes to Europe, the Middle East, Asia and the US.

But, as Onyema told *African Aerospace*, national carriers face numerous constraints with taxes, lack of government support to enhance their competitiveness, and policies that are favourable to carriers from outside Africa, which thrive on its diverse market.

He added that there must be more cooperation between African countries to fully unblock their potential and take advantage of the African open sky.



By setting new standards for the future, Embraer's Pratt & Whitney-powered E2 – "the newest, most efficient and most comfortable aircraft in this segment", is targeting the intra-African market, which is underserved and where 97% of the flights depart with less than 150 people on board.

"The E-Jet E2 is the best single-aisle aircraft in its segment and has a lot of potential in Africa. It is fully adapted to the intra-Africa market," said Raul Villaron, Embraer VP sales & marketing, Africa and Middle East.

According to the company, the aircraft offers easy reconfiguration and modularity, has a wide body with no middle seat for optimum comfort, and cockpit commonality with the E1. It not only shows structural and aerodynamic refinement but also consumes less fuel.

E2 is gaining market momentum with deliveries to Air Astana, Air Botswana, Mauritania Airlines, Binter, Jasmin Airways, Azul, Air Kiribati, Helvetic, Fuzhou and Wideroe.

After five decades, more than 200 of the Brazilian manufacturer's aircraft are currently flying. There are more than 50 E-Jets, ERJS, and turboprop operators in 25 countries within Africa. New market opportunities are high for regional jets and Embraer wants its share.

And, while Air Peace is deploying its development strategy to tap the underserved African market, it is also surely carving its way to connect international destinations.

● See Embraer targets Africa – Page 86

SOMMAIRE

AIR PEACE CHOISIT L' E2

Air Peace, la compagnie aérienne privée du Nigéria, est devenue la plus grande compagnie aérienne en Afrique de l'Ouest avec « 80% des parts de marché ». Elle sera la première à ajouter un E2 d'Embraer à sa flotte en Afrique.

Air Peace a signé une commande ferme de 10 E195-E2 avec le constructeur brésilien. Le contrat de 2,12 milliards de dollars comprend des droits d'achat de 20 avions supplémentaires.

« La nouvelle E195-E2 d'Embraer offre une excellente performance économique. C'est également formidable que nous soyons le premier opérateur E2 sur le continent africain. Notre flotte compte déjà des ERJ145, nous connaissons donc les normes élevées des produits Embraer », affirme Allen Onyema, le CEO d'Air Peace.

Arjan Meijer, directeur commercial

d'Embraer Commercial Aviation, souligne « l'esprit de pionnier » d'Air Peace, ajoutant que cette compagnie en plein essor a atteint ses objectifs avec succès.

Avec l'E2 motorisé par Pratt & Whitney, Embraer cible le marché intra-africain qui est mal desservi et où 97% des vols partent avec moins de 150 passagers.

Selon Raul Villaron, VP ventes et marketing, Afrique et Moyen-Orient, « l'E2 est le meilleur dans ce segment et a beaucoup de potentiel en Afrique. Il est parfaitement adapté au marché intra-africain ».

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*compared to first-generation E195.

La compagnie aérienne privée Jasmin Airways devait effectuer son premier vol à la mi-juin vers Sarajevo. Son PDG, Ali Ben Amara, a déclaré à **Anuradha Deenapanray**, que la philosophie de la compagnie est basée sur l'excellence au service de l'aérien.



Jasmin prend enfin son envol

Ali Ben Amara et son équipe vont enfin pouvoir mettre en œuvre leur projet de développement avec une politique de différenciation et de complémentarité. « Je suis dans une logique de développement et non de concurrence. Nous allons opérer des routes charters à partir d'Enfidha et Djerba. Ce que Tunisair ne fait pas, Jasmin Airways le fera et vice versa. »

Il reste optimiste quant à la libéralisation du ciel en Tunisie et dans le reste de l'Afrique dans le sillage du SAATM. « Dans cinq ans, nous aurons une ouverture totale du ciel en Tunisie. »

Jasmin Airways a choisi l'E170 après avoir conclu un accord (dry lease) avec CIAF Leasing (Egypte) pour deux avions. Jasmin Airways devait effectuer son premier vol à destination de Sarajevo, en Bosnie Herzégovine, au moment où le magazine allait sous presse. Dans un premier temps, Jasmin Airways desservira l'Europe de l'Est et de l'Ouest, l'Italie, Bilbao et Prague.

« Pour le moment, il nous faut un avion pour un rayon d'action d'une heure 50 à deux heures 20 maximum. On peut assurer une rentabilité financière avec un appareil Embraer sur



Ali Ben Amara, PDG de Jasmin Airways et Francisco Moraes, directeur des ventes en Afrique d'Embraer.

les routes que Jasmin Airways desservira. On commence avec l'E170, un troisième sera livré en juillet (loué à Finnair) et dans quatre ans, on aura l'E190-E2 pour consolider et diversifier notre réseau », affirme Ali Ben Amara.

« On espère évoluer vers le low-cost en novembre 2019. Nous mettons actuellement en place une plateforme. »

Soutenir le développement du transport aérien
Chirurgien-dentiste de formation, Ali Ben Amara est aussi pilote de ligne comme son père, instructeur et directeur de l'école de formation aux métiers de l'aérien, l'Airline Flight Academy.

Ce projet familial remonte à 2013 après la révolution ayant engendré une instabilité politique et économique en Tunisie, avec notamment une baisse de la fréquentation touristique.



« La compagnie a été créée par mon père. On a une école pour les pilotes, mécaniciens, les agents du trafic aérien (ATE) et une université sur les métiers de l'aéronautique (ESAT) qui forme des ingénieurs », explique-t-il. « Nous avons de l'expérience dans ce secteur et nous proposons une école d'excellence en Afrique à travers une formation exportable. Par la suite, nos étudiants ont la capacité pour et la possibilité de travailler ailleurs. »

D'ici à 2025, l'industrie du transport aérien aura besoin d'environ 600,000 pilotes pour répondre à la croissance mondiale. Et selon le PDG de Jasmin Airways, il ne s'agit pas seulement d'avoir « une belle flotte ». Il faut « une formation de qualité » surtout avec l'innovation technologique dans le secteur.

« La philosophie de Jasmin Airways est simple. Nous offrons une formation complète avec trois ans d'expérience à nos étudiants dans le monde aéronautique. Ils auront 1000 heures de vol sur un appareil Embraer avec un contrat de trois ans sur Jasmin Airways », souligne son PDG.

La MRO est également un sujet essentiel surtout en Afrique. Ali Ben Amara discute d'un partenariat avec Egyptair concernant une ligne de maintenance à Tunis-Carthage. ■

SUMMARY

JASMIN AIRWAYS TAKES TO THE AIR

Private Tunisian airline, Jasmin Airways, was due to make its first flight to Sarajevo in Bosnia-Herzegovina as *African Aerospace* was going to press. The airline's CEO, dental surgeon and airline pilot, Ali Ben Amara, and his team, will implement a policy focusing on "differentiation and complementarity".

"I am not competing with Tunisair," he said. "We will operate charter flights from Enfidha and Djerba and what Tunisair does not do, Jasmin Airways will do... and vice versa."

He remains optimistic about 'open skies' being implemented in Tunisia and throughout Africa in the wake of the single African air

transport market (SAATM).

Jasmin Airways chose the Embraer E170 after entering into a dry lease agreement with CIAF Leasing (Egypt) for two aircraft.

Initially Jasmin will serve eastern and western Europe, Italy, Bilbao and Prague.

"For now, we need aircraft capable of operating with a flight time from Tunisia of between 50 minutes and two hours.

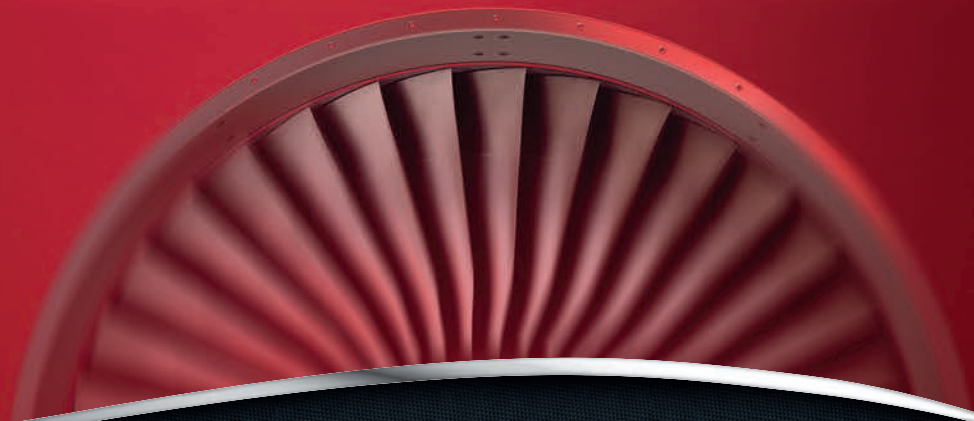
"Our third E170 will be delivered in July 2019 (rented from Finnair) and, in four years, we intend to start flying the E190-E2 to consolidate and diversify our network. We hope to go 'low-cost' in November 2019." ■

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It's all change at the top for the major African airlines in a surge of resignations and reorganisation. Kaleyesus Bekele and Alan Peaford report.

Why two CEOs have quit Africa's big airlines

Tewelde GebreMariam, the CEO of Ethiopian Airlines – the fastest-growing and most profitable airline in Africa – is in a unique position among his major competitors.

He has led the airline since 2011, having been previously the chief operating officer for five years. He knows the airline business through and through and manages it to meet the clearly set targets.

Two of the top-four major African carriers have not had that same continuity of experience.

While EgyptAir enjoyed a regular planned transition of chairman of its holding company in June last year – the latest incumbent is Captain Ahmed Adel, who has 30 years' aviation industry experience – the other two, South African Airways (SAA) and Kenya Airways (KQ) have both had alleged fall-outs between their chief executives and the government owners, resulting in the resignation of both.



SAA's chief, Vuyani Jarana, quit the financially stricken state-owned company in June citing a lack of funding and drop in government support for the carrier's turnaround plan.

He was brought in from Vodacom some 18 months ago charged with leading a recovery at the airline. It has been unprofitable since 2011, amongst accusations of mismanagement and a slew of corruption scandals.

His resignation letter is alleged to have claimed that a lack of clarity on state funding and the slow nature of the decision-making processes led him to his decision to step down.

SAA had secured a \$342 million bailout in the October mid-term budget to help it repay loans, but a further commitment hasn't been forthcoming, according to Jarana's resignation letter.

The airline is understood to have approached the Bank of China and African Export-Import Bank about funding – but the lack of government support is not helping its case, analysts suggest.

"The resignation letter appears to strongly suggest that the airline is being forced into administration, deliberately or indirectly, by government," Peter Attard Montalto, the head of capital markets at research company, Intellidex, told *Bloomberg*.

Jarana is remaining in post until the end of August to meet contractual obligations but may stay longer as an advisor.



Vuyani Jarana: Remaining in post until the end of August to meet contractual obligations.



Sebastian Mikosz: "It is a good time for me and my family to leave."

Johannes Bhekumuzi Magwaza, its chairman, said the airline will continue to implement actions to reduce SAA's cost structure and make it more competitive domestically and globally.

However, reports from the government suggest that Finance Minister Tito Mboweni has made clear the government is reluctant to approve a further outlay, saying he favours shutting down the company.

In east Africa, KQ's CEO is also staying put in Nairobi to meet his contractual requirements, having also resigned his post, which was reportedly accepted on a casting vote by the chairman.

Sebastian Mikosz came to the airline in 2017 boasting a successful background with European airlines, having turned around Poland's LOT.



Mikosz told *African Aerospace* that his management managed to reduce cost, increase revenue and strengthen the route network. "We changed a general atmosphere at Kenya Airways from an airline in problem into an airline which is fixing itself. We started growing the network and that allowed us to increase revenues," Mikosz said.

According to Mikosz, his management has narrowed the airline's loss and increased the revenue by 8% to 1.1 billion dollars. "We managed to absorb an increase in the cost of fuel. We reduced the loss by 18%."

He said the management is looking at reviving the company and starting to fight for its market share. "We are struggling financially but a process like this takes few years. But we are going in the right direction."

As part of the strategy, KQ proposed to the government a takeover of Nairobi's international airport. Kenyan media reported Mikosz decided to leave when his proposal was rejected. Mikosz denies the report. "That is not true. I made the decision after discussing with my family. We have done three full financial years. There is a good turnaround process going on. It is a good time for me and my family to leave. I think it is enough for us."

Mikosz hinted that KQ is working on a fleet acquisition plan. "We are planning to have new narrow-body aircraft. We are discussing the plan with the board and we will announce the decision once we finalise the discussion," he said. ■

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Designing a new look: The new Cabo Verde Airlines colour scheme.



A cape of good hope for Icelandair...

Icelandair Group's charter and leasing specialist, Loftleidir, has taken a majority shareholding in Cabo Verde Airlines. Alan Dron asks why the Nordic carrier is focusing on a tiny island group 5,000km south of its home?

At first glance, Cabo Verde Airlines (CVA) does not appear to be a particularly attractive proposition: a one-aircraft national carrier burdened with debt and with a limited route map thinly stretched over four continents.

The Government of Cabo Verde (Cape Verde in English) has been keen to privatise its national airline for some time and, in 2017, gave Loftleidir Icelandic a management contract as a strategic partner to oversee the necessary changes.

And, in March this year, Loftleidir Cabo Verde, a subsidiary of the charter and wet-lease specialist, bought 51% of formerly state-owned CVA.

So what was the attraction?

"Although looking from the outside, CVA might not seem to have a huge potential, our in-depth evaluation revealed the opposite," explained Jens Bjarnason, who is now CVA's president and CEO. "As a country, Cape Verde has many similarities to Iceland, where Icelandair has built up an extremely successful hub-and-spoke operation, connecting Europe and North America through Iceland, while simultaneously making Iceland a very strong destination for tourism.

"We feel that Cape Verde has much the same potential. It is a unique, intriguing destination, ideally located to connect South America and Europe, as well as west Africa and North America, using a hub-and-spoke system."

The new owners' first action will be to move CVA's base, switching from Praia International Airport to the neighbouring island of Sal.

Sal's Amílcar Cabral International Airport has a considerably longer runway – more than 3,200 metres compared to Praia's 2,100 metres – and is also busier, serving 1.1 million passengers in 2017 compared to 660,000 at Praia. Sal already has the necessary infrastructure in terms of runways, aprons and terminal space to support a hub-and-spoke operation, noted Bjarnason.

Loftleidir's involvement in CVA has already seen the fleet expand from a single Boeing 757-200 to three, with two more scheduled to arrive this year. Three of the four new arrivals will come from Icelandair's inventory.

Although the 757 is relatively elderly, Icelandair Group has become a highly successful operator of the narrow-body type, with more than 20 in service. It is still favoured for long, 'thin' routes.

"We feel that the 757-200 is ideally suited for the [CVA] operation," said Bjarnason. "It has the range to reach North America" – CVA flies to Boston and will start flights to Washington DC later this year – "as well as key destinations in South America."

To mark CVA's 'new start', a new colour scheme for the aircraft is being rolled out.

However, Bjarnason hinted that a new generation of aircraft could find its way into the CVA fleet. "In the near future, we see narrow-body aircraft entering the market that have the same capability, such as the Airbus A321LR. If the hub-and-spoke operation in Sal proves to be successful, we will develop a fleet replacement strategy to meet our future need for new and fuel-efficient aircraft."



At present, CVA has only a few points on its route map. Apart from the two US destinations there are three (Fortaleza, Salvador and Recife) in northern Brazil, together with Lisbon and Paris in Europe and Dakar in Africa. The European destinations are due to be joined by Milan and Rome, while African sectors will be added to Lagos and Luanda.

"The primary connections are South America and Europe on one hand, and west Africa and North America on the other. The addition of destinations needs to be done in an orchestrated way, to maintain proper balance in the network."

Within the Cape Verde archipelago, Bjarnason said: "Our preference is to collaborate with the current domestic operator, Binter, to feed traffic to our Sal hub from other Cape Verdean islands. We see this as a win-win situation for both Binter and us. If this cooperation does not work out, we will explore other options. Inter-island connectivity is a key to our business model."

One major aim of both the airline and the Cape Verde Government is to establish the 10-island archipelago as a year-round tourism destination. The airline is already offering stopover packages for passengers to explore the islands en route between continents.

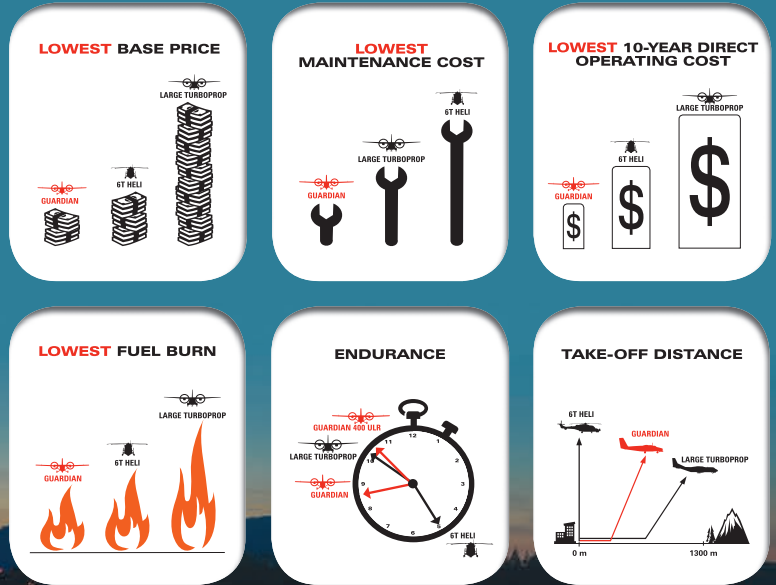
Two years down the road, Bjarnason hopes that Cape Verde will increasingly be seen as "a great place to make a connection". Given Icelandair's success in doing precisely that, who would bet against the same thing happening 5,000km away from the land of fire and ice? ■

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Successful: The Airbus C295 is proving a popular choice with African states, with 34 so far sold across the continent, including Ghana.

PICTURE: ALAN WARNES.

TWIN GIANTS SQUARE UP FOR HERCULEAN TASK...

With most African countries ignoring the more expensive C-130J Hercules, both the Leonardo C-27J and Airbus C295 are now battling it out for tactical airlift supremacy in Africa. Alan Warnes looks at the state of play and the status of the North African air forces.

North Africa is dominated by the Sahara Desert and thousands of miles of uninhabited territory. Add to that the serious threat from terrorists, militias and conflicts scattered across many parts of the region, and you begin to understand why so many air forces have large transport fleets.

The most dominant military tactical airlifter is undoubtedly still the C-130 Hercules, with more than 60 different examples serving countries situated along the Mediterranean's southern basin.

They serve as a reliable workhorse and spare parts are easily accessible, which is a top requirement for aircraft averaging 40 years old. But Lockheed Martin's rule looks to be coming to an end, because most countries will not spend around the alleged \$150 million or so on the new C-130J.

Only Tunisia has opted for the new generation Hercules; the remainder are happy to keep their old C-130Bs, C-130Es, C-130Hs and L100s airworthy.

The Hercules might be the best-selling tactical airlifter in the world but, in Africa, it's the cost that counts usually.

European aerospace has moved into the

Hercules market, with the Leonardo C-27J and the Airbus C295 on offer.

Powered by a pair of Rolls-Royce AE 2100D3 turboshaft engines, the C-27J can fly up to 602km/h with a maximum cruise speeds of 583 km/h and a maximum payload of more than 1,000kg.

In July 2015, Alenia Aermacchi (now Leonardo) successfully completed first flight-tests of the C-27J battlefield airlifter configuration aircraft with new winglets. The aircraft benefits from better hot-and-high runway performance, increased payload, range and endurance, to make it more attractive to African operators. The new configuration should be available this year.

Leonardo must be disappointed with the number it has sold in Africa. Morocco operates four, purchased in 2011, while Chad acquired two in 2013 and, more recently, Zambia has bought two and Kenya three. As well as being a strategic and tactical airlifter, the Italian option can serve as a multi-mission aircraft in electronic surveillance, fire-fighting and search-and-rescue operations.

So why has the C-27J flopped

Continued
on Page 38

CONTINUED FROM PAGE 37

slightly in Africa? Probably because it is too expensive. The Ghana Air Force (GAF) looked at both the C-27J and C295, and a senior officer told me after opting for the latter, that the reason was the cost.

The GAF has praised the aircraft's endurance and range, as well as the ability to operate on unpaved runways. Two C295Ms work closely with the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA).

The C295, just like the C-27J, is marketed as a tactical airlifter serving the light and medium lift role. Its two Pratt & Whitney Canada PW127G turboprop engines ensure the aircraft reaches a respectable 576km/h and a cruising speed of 480km/h.

Being 41ft 8ins long, it has the longest unobstructed cabin in its class, albeit not as high as the C-27J, and a maximum payload of 9,700kg. But, unusually, the C295 does not have an auxiliary power unit (APU), which you would think is a pre-requisite when landing in some of the most inhospitable airfields in Africa.

□ □ □ □ □

That doesn't seem to have put the Egyptian Air Force off. With 24, it is the biggest operator of the type. The new C295W version is equipped with winglets and uprated engines to deliver an improved performance.

To date, 35 aircraft have been delivered to African states: Algeria (6 – but lost 1), Egypt (24), Ghana (3), Mali (1) and Ivory Coast (1).

On the sale to the Ivory Coast in March 2018, Bernhard Brenner, Airbus Defence and Space head of marketing & sales, said: "The C295 has proven its outstanding capabilities in the exceptionally harsh sub-Saharan Africa operating environment. The aircraft will be a game-changer for Ivory Coast and we feel very proud to welcome a new operator into our C295 family."

The Angolan Government announced in March 2018 that it would be acquiring three C295 maritime patrol aircraft to monitor its exclusive economic zone (EEZ). The deal, financed by Spain's Banco Bilbao and Vizcaya Argentaria (BBVA), is worth €159.9 million (\$180.56) and is said to be between Leonardo and commodities trading company Simportex.

The aircraft will house the fully integrated tactical system (FITS), which has proved popular in this role. According to reports in Angola, the aircraft will be operated by the Navy.

AVIC (Aviation Industry in China) has been trying to sell more transport aircraft, like the Xian MA60 and Harbin Y-12, to African air forces. But, despite the strong relationships between China and many African nations, it has not been too successful. There looked to be a future for the Saudi/Ukraine Antonov An-132D in Africa, but that project has now been cancelled.

NORTH AFRICAN

ALGERIA

Algeria's 14 C-130 Hercules were delivered in the early 1980s to shuttle cargo and personnel all over the vast state. Unfortunately, the fleet has not fared well and two have been lost in recent years.

On February 11, 2014, a C-130H-30 – serial 7T-WHM – crashed reportedly due to poor weather conditions, claiming the lives of 77 people on board, including the four flight crew. Then a C-130H – 7T-WHT – skidded off the runway at Biskra Airport, 450kms south of Algiers, on June 3, 2018, resulting in the seven crew being injured.

That came two months after Algeria's worst ever aviation crash on April 11 2018, when an Il-76 – 7T-WIV – crashed on take-off from its Boufarik base killing 257 people. Three days of national mourning followed.

The Algerian Air Force flies 17 of the lumbering Il-76/78 transport jets, with the bulk of the Il-78 air-to-air refuellers acquired from 2002 onwards.

Six Airbus C295Ms were delivered between November 2005 and February 2007 but tragedy struck on November 9, 2012, when one of them crashed into mountains in France, killing all six on board.

The Presidential Transport Squadron at Boufarik has operated two glass-cockpit-configured ATR 72-600s since 2015.

CHAD

Chad operates a mix of transport aircraft from the US (one C-130H-30), Europe (two C-27Js and one ATR 42) and Ukraine (one elderly An 26). It is unclear if the latter, which was seen being overhauled at Metiga in Libya with Maintenance Unit 003 in 2007, is still operational after two brand new C-27Js were delivered by September 2014.

The latter, based at N'Djamena, have enhanced the Chad Air Force's capabilities, which are used by the United Nations in the region. An ATR 42 is used by the government's VIP unit.

DJIBOUTI

In recent years, Djibouti has welcomed investment under the Chinese Government's belt and road initiative. Consequently, it is not surprising that the air force has taken delivery of a Xian MA 60 and a Harbin Y-12E Turbo Panda, now based at Ambouli International Airport.

EGYPT



Model performer: This model of a C-130J in Egyptian Air Force markings was seen at the EDEX exhibition in Cairo during December last year. According to a Lockheed Martin source, the company has never been closer to selling the C-130J to Egypt.

PICTURE: ALAN WARNES.

Egypt's air force has the biggest transport fleet in Africa, which is not too surprising given the size of the country and the vastness of the Sinai Desert, where a large scale anti-terrorism operation is ongoing.

It has been operating 24 ageing C-130Hs since 1976 and Lockheed Martin displayed a model of a C-130J in Egyptian Air Force markings at the EDEX show in Cairo in December.

The US giant has been pursuing the Egyptian

market for several years and, according to one source, "is closer to sealing a deal than ever before".

While Lockheed Martin has been pressing for a C-130J deal, Airbus Defence and Space has gone a step further by selling 24 C295s in several batches to Egypt between 2010 and 2016. The C295s are taking some of the workload off of the old Hercules fleet, and utilising its favourable short take-off and landing capabilities compared to the C-130.

AIR FORCE REVIEW

ETHIOPIA

One of the oldest transport fleets in north Africa is flown by the Ethiopian Air Force (EAF), with a mix of Ukraine and US assets.

The EAF has operated 16 Antonov An-12s since 1980, most from ex-Soviet air force stocks. All but one are believed to have survived.

On August 9, 2013, one of them hit the headlines for all the wrong reasons when it crashed at Aden Abdulle IAP in Mogadishu, Somalia. The large Soviet transport aircraft was carrying weapons and ammunition and was destroyed by fire, which claimed the lives of four crew.

In September 2016, the Addis Ababa-based government contracted Lithuanian maintenance specialist, FL Technics, to provide a spares supply for several of the Soviet-era types in the EAF inventory, which included the An-12 medium transport and Antonov An-32 tactical transport aircraft.

An initial batch of spares had already been delivered by the time the contract was formally announced in mid-March 2016, and the remainder of the contract was due to be completed by late spring.

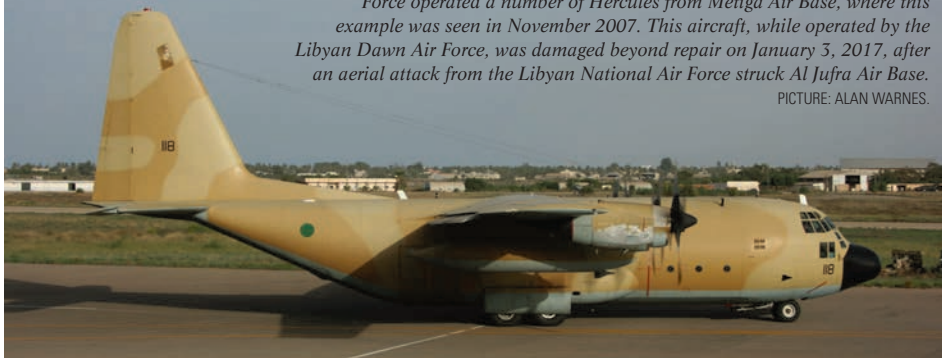
The transport fleet flew troops for peacekeeping efforts in the Sudan and South Sudan War (2013-2018).

The EAF acquired two Hercules, one L100-30 in 2007 and a C-130E in June, 2018. The latter, a former Puerto Rico Air National Guard mount, is used for the tactical airlift of troops and equipment to support Ethiopian participation in African Union and UN peacekeeping operations.

LIBYA

Dominant: Just before the demise of Colonel Gaddafi in 2011, the Libyan Air Force operated a number of Hercules from Mitiga Air Base, where this example was seen in November 2007. This aircraft, while operated by the Libyan Dawn Air Force, was damaged beyond repair on January 3, 2017, after an aerial attack from the Libyan National Air Force struck Al Jufra Air Base.

PICTURE: ALAN WARNES.



After Colonel Gaddafi fell in 2011, the ensuing civil war saw the Libyan Air Force (LAF) splinter and the bulk of the massive transport fleet has all but gone.

One of the two huge An-124s was seized in Ukraine in 2011 after the military never settled the maintenance bill, while the whereabouts of the other is unclear.

Many An-24s served the LAF back then, but these days the number is around four. Several have been lost in accidents, the most recent being on February 21, 2014, when an aircraft on a medical evacuation flight from Tripoli-Metiga to Tunis-Carthage crashed in Tunisian air space, with the loss of all 11 on board.

Four An-32P Firekillers were acquired in 2005, but

they have been destroyed, and the five An-72 Coalers have all been retired or destroyed, along with the largest fleets of Ilyushin Il-76/78s in Africa.

In early 2011, there were about 12 C-130H/L100-30s in the LAF inventory, and several original equipment manufacturers (OEMs) were keen to get them operational. Portugal's OGMA was doing the bulk of the work, but today only a handful are still intact.

A Libyan Dawn Air Force C-130H was shot down by a Libyan National Army MiG-21MF on January 3, 2017, while a L100-30, chartered by Akakus Oil, crashed and exploded after take-off from El Shaharara oilfield on April 29, 2018. Three crew members were killed.

MOROCCO

Tactical: Morocco operates four Leonardo C-27J Spartans in the tactical transport role, which work alongside seven Airbus CN235Ms and 14 Lockheed Martin C-130 Hercules.

PICTURE: ALAN WARNES.



Morocco boasts one of the most modern transport fleets. Four C-27Js fly alongside seven CN235Ms delivered in 1990. Five Bombardier 415s also double up as fire-fighting assets, while there are 14 surviving C-130Hs. Two are air-to-air refuellers, working with Mirage F1Cs and F-5E/Fs, and another is used for electronic warfare work fitted with a sideways-looking-radar.

NIGER

Niger has operated two C-130H Hercules, delivered in 1978, but one of them was written off on April 16, 1997.

MALI

China connection: The Mali Air Force took delivery of two Y-12E Turbo Pandas in September 2017. AVIC has sold several to African nations alongside the larger Xian MA60.

PICTURE: AVIC.



In addition to the C295M delivered in December 2016, the Mali Air Force is believed to still be flying a Basler BT-67 alongside two Harbin Y-12E Turbo Pandas acquired in September 2017.

TUNISIA

Planted: A Tunisian Air Force C-130B sits on a wet and weedy ramp at Bizerte, Tunisia during a military medical exercise.

PICTURE: USAF/153RD WING.



The only African-owned C-130Js are operated by the Tunisian Air Force (TAF). They were delivered in 2013 and 2014.

As well as the new generation C-130Js, the TAF also flies four ex-USAF C-130Bs and a C-130H.

Man with a mission

When Air Marshal Sadique Abubakar was appointed as the Nigerian Air Force (NAF) chief of air staff in July 2015, only 50% of his aircraft were serviceable. In one of his first speeches, he said he wanted “effective and efficient capacity building” and training new pilots is where he would start. Alan Warnes looks at the situation today.



Modern ideas: Air Marshal Sadique Abubakar is shown the PAF's air defence system at last year's IDEAS exhibition in Karachi.

PICTURE: ALAN WARNES.

During a graduation ceremony at the 301 Flying Training School at Air Force Base Kaduna in May 2016, Air Marshal Sadique Abubakar told the 20 young flying officers being sent to the United Kingdom and South Africa for pilot training: “Go out there, do your jobs, be good ambassadors and we expect you back with your wings.”

He also told the audience the NAF had recently concluded the purchase of 10 new Super Mushshaks from Pakistan to train future pilots in-country.

That led to a contract being signed on October 21, 2016, which included the lease of eight Pakistan Air Force (PAF) and Pakistan Aeronautical Complex (PAC) Kamra aircraft in early December. They were replaced by 10 new aircraft by early-2018. One of the Super Mushshaks has since had a mishap but will be repaired by PAC Kamra.

Since they were delivered in December 2017, three primary flying training courses have taken place at Kaduna.

The NAF enjoys a close working relationship with the PAF, which has offered to overhaul its F-7Ns and C-130s. According to one source, the first C-130 will be overhauled by the PAF next year.

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However, the biggest deal between the two countries is the acquisition of three JF-17 Thunders – a part-payment of \$47 million to Pakistan being approved last June in the 2018 Federal Appropriation Bill, coming after a down payment of \$25 million being made in the 2016 Bill. More of these lightweight multi-role combat aircraft are likely to follow.

At the International Defence Exhibition and Seminar (IDEAS) conference in Karachi last November, Abubakar revealed: “When I became chief, we were almost dependent upon foreign support for our maintenance, so keeping them flying was demanding [on our finances].”

Now, after nearly four years in office, he has returned 15 previously grounded aircraft to service with the help of foreign technical assistance teams. This includes three Airbus Helicopters EC 135 helicopters, two Lockheed C-130Hs, three Dassault Alpha Jets and three Aero L-39ZAs.

Prague-based Aero Vodochody has sent a team to Kano, to assist the NAF personnel with the service life extension program (SLEP) of the

to modernise



New aircraft: The NAF is set to acquire three JF-17s from PAC Kamra, with speculation that more will follow.

three L-39ZAs, before funds are freed up through the NAF's 2019 budget for a periodic depot maintenance (PDM).

Abubakar is keen to transition eventually to the L-39NG by acquiring the necessary engines and avionics. He is also keen to send more pilots for basic and tactical training, following the four NAF instructor pilots who went to LOM Praha's Pardubice facility in the Czech Republic last year. They were already proficient in air-to-ground ops given the NAF's ongoing Operation Diran Mikiya against militants in the north-east of the country, but needed additional tuition in air-to-air.

The Alpha Jets and F-7NIs have been playing a particularly big part in the offensive operations against the likes of Boko Haram, and the former have been providing post-battle damage assessment (BDA) imagery alongside the new Beech 350i ISR aircraft.



In another step-up in capabilities, the NAF opened up a state-of-the-art Geospatial Intelligence Data Centre (GIDC) at NAF Abuja on March 19.

The GIDC will advance the ongoing intelligence surveillance and reconnaissance (ISR) efforts in the north-east and other parts of Nigeria, improving the NAF's capacity to acquire, exploit, analyse and interpret the imagery being gained from the four Beech 350is, even if it is unclear how many of these have been fitted with an electro-optical/infrared (EO/IR) turret. One of them, NAF 202, was seen in March with the system fitted.

On November 28, 2018, the US State Department awarded Sierra Nevada Corporation a \$329 million contract to supply the NAF with 12 A-29 Super Tucano counter-insurgency aircraft, with six of them being fitted with an EO/IR forward-looking infrared (FLIR) system. All of them are expected to be delivered by 2024,

and the pilots are expected to be trained at Moody AFB, Georgia, where Sierra Nevada trained the Lebanese and Afghan Air Force A-29 Super Tucano personnel.

Helicopter acquisitions to fulfil counter-insurgency ops have increased since the air marshal's appointment, which isn't surprising given he is a Mi-35M and Mi-17 pilot.

During the 2019 NAF Day celebration on April 29, Nigeria's President, Muhammadu Buhari, inducted two new Agusta 109 Power Helicopters just a week after they were delivered.

In his speech, the president acknowledged his appreciation to the NAF in addressing the security challenges of armed bandits, cattle rustling and kidnapping in the Nigeria's north-west. He didn't mention the ops against Daesh-backed Boko Haram in the north-east.

The two gunships, acquired from Leonardo Helicopters in a deal worth \$19 million, are part of a six A109 Power Helicopter order the CAS announced on December 18 last year.

The 2018 budget also included provision for an additional Mi-35M, which would increase the fleet to four; after one was lost with all five crew members on January 2, 2019. The armed helicopter was shot down by Boko Haram militants during a close air support mission as part of the government's Operation Lafiya Dole in the north-east.

Longer term, the NAF wants 12 Mi-35Ms.

The 2018 budget includes the periodic depot maintenance of a C-130 Hercules transport aircraft and two Alpha Jets. In addition, the government has set aside \$8 million for the acquisition of various aircraft spares, and various arms and ammunition that include ammunition for fighter jets and attack helicopters.

An aircraft maintenance hangar is also being built at the Bauchi Special Operations Command base, alongside the upgrade and rehabilitation of existing military infrastructure at various air bases around the country. ■

AS365N DAUPHINS FOR DJIBOUTI

As part of an ongoing expansion programme, Djibouti's small air arm, the Force Aérienne du Djibouti (FAAd, Djibouti Air Force), has taken delivery of four newly refurbished AS365N Dauphins, writes *Jon Lake*.

The four helicopters are believed to have been previously used by the Royal Saudi Naval Forces on board the kingdom's Al Madinah class frigates before being operated by the Royal Saudi Armed Forces Medical Services.

They may have been funded by and donated to Djibouti by Saudi Arabia, if reports by the Stockholm International Peace Research Institute are accurate.

The Dauphins followed two second-hand Shorts C-23B transports donated by the United States, a single Xian Aircraft Corporation (XAC) MA60, delivered in 2014 and used to support Djibouti's peacekeepers in Somalia and for VIP transport, and two Harbin Y-12E light transports.

The latter were formally inducted in a ceremony on July 13 2016, presided over by President Ismail Omar Guelleh, who then viewed a static display of the four Dauphin helicopters presented by Saudi Arabia.



The four helicopters were then refurbished and upgraded by Airbus Helicopters Romania, with the overhaul taking two years at a cost of five million Euros.

One of the helicopters reportedly remained in its original medical configuration, and two more were converted to passenger transport configuration, while the fourth was converted to VIP configuration for presidential transport duties, carrying two crew and up to four passengers. All four were painted in the same two-tone sand and brown camouflage colour scheme.

On January 16 2019, they were loaded at Bucharest (Romania) on board an An-124-100M (registration UR-82009) for delivery. The helicopters will be based at Djibouti-Ambouli (Base Aérienne 188), one of two air force bases in Djibouti, along with Tadjoura. ■



Refurbished: The Dauphins delivered to Djibouti were upgraded and modernised by Airbus Romania before being put into service.

Algeria and Egypt have ordered the Sukhoi Su-35S multi-role fighter (known to NATO by the reporting name 'Flanker-E'), risking incurring the wrath of the USA. **Jon Lake** reports.



Taking to the air: The first prototype Su-35S in flight.

ALGERIA AND EGYPT SIGN UP FOR SU-35 FIGHTERS

In September 2018, the Trump administration imposed sanctions on China following its purchase of the Su-35SK under the terms of the Countering America's Adversaries Through Sanctions Act (CAATSA).

This act is intended to counter Russian influence in Europe and Eurasia, and to punish Russia for its involvement in the wars in Ukraine and Syria and for its alleged interference in the 2016 election, by restricting its ability to export weapons.

The US subsequently threatened to apply similar sanctions if Indonesia goes ahead with its own Su-35 purchase.

Algeria first requested an evaluation of the Sukhoi Su-35 in May 2016, hoping to acquire more than 10 aircraft to augment its fleet of 58 older generation two-seat Su-30MKAs. In August 2018, Russian state media reported that the Algerian Air Force had placed an order for 18 Su-35SK fourth-generation fighters.

Egypt's \$2 billion order for 20 Su-35SKs (or for "more than two dozen" aircraft according to the *Kommersant* newspaper) was also enacted in late 2018, but it was not formally announced until March 18 2019. Deliveries are expected to start in 2020-2021.

Egypt is a long-standing customer for Russian combat aircraft, though it has also procured fighters from the US and France, diversifying its sources of supply.

Following the 2013 military coup, which saw Abdel

Fattah el-Sisi emerging as Egypt's new leader, the country began placing large contracts with Russian arms manufacturers. The first covered the supply of S-300VM4 'Antei 2500' and Buk-M2E surface-to-air missiles, delivered in 2015-2017 at a reported cost of \$3.5 billion.

Egypt subsequently ordered 46 MiG-29M/M2 fighters for \$2 billion and 46 Kamov Ka-52 'Nile Crocodile' helicopters for more than \$1 billion.

Since then, Egypt has ordered 32 ship-borne Ka-52K Katran helicopters for its navy. Some of this equipment may be funded by Saudi Arabia and/or other wealthy GCC states.

The Su-35S is an advanced derivative of the original Su-27 Flanker, a heavy, twin-engined interceptor and air superiority fighter, which was equivalent to the US Boeing F-15A-D Eagle in concept. Like the F-15, the Su-27 spawned a two-seat multi-role strike fighter variant (the Su-30M), and other versions.

An upgraded 'Flanker' air superiority fighter was first developed at the end of the Cold War. About 15 Su-27M prototypes were built, and the prototype flew in 1989.

The canard-equipped, tall-finned Su-27M was subsequently redesignated as the Su-35, but today's Su-35S (originally known as the Su-27M2 or Su-27BM) is a very different aircraft, aerodynamically and structurally closer to the original Su-27, but with a modern glass cockpit and new sensors and systems. It has a formidable multi-role and air-to-ground capability.



The new Su-35S began development in 2003 and the first prototype flew in 2007. The type entered production in 2009.

The Su-35S is equipped with an N-035 Irbis-E passive electronically scanned array (PESA) radar, with OLS-35 infrared search-and-track (IRST) targeting system, and an L175M Khibiny electronic countermeasures system.

The Su-35S is powered by thrust vectoring engines and has 12 to 14 weapons hardpoints, allowing it to carry up to 17,000lb of air-to-ground munitions, or large numbers of the latest Russian air-to-air missiles.

The Russian MoD ordered 98 Su-35S aircraft, and the type entered service in 2014. Since then, the type has flown combat missions in Syria, targeting both the Islamic State and anti-government groups.

China was the first export customer, signing up for 24 Su-35SKs at a total cost of, \$2.5 billion. The first four aircraft were delivered in 2016, with 10 more following in 2017, and the remainder being delivered by April 2018.

In February 2018, Russia and Indonesia agreed a \$1.14 billion deal for 11 aircraft with the first delivery due in October 2018.

The Algerian and Egyptian deals promise to allow full capacity output to be maintained at the Komsomolsk-on-Amur Aircraft Production Organisation (KnAAPO), the largest aircraft-manufacturing plant in the Russian far east, for several years to come.

They will also represent, arguably, the most advanced fighters in service with an African air force, though some would accord this distinction to Egypt's Dassault Rafales, or perhaps to South Africa's Saab Gripen. ■



AHRLAC future in the balance as partners fall out

The fate of Africa's first indigenously built combat aircraft hung in the balance as African Aerospace was going to press. The company behind AHRLAC was going through South Africa's 'business rescue' process in an attempt to save the project.

Alan Dron reports.

A falling-out between the two parties involved in developing South Africa's Advanced, High Performance, Reconnaissance, Light Aircraft (AHRLAC), and its Mwaru armed variant, led to the aircraft's designer and manufacturer, Aerospace Defence Corporation (ADC), being placed in the country's business rescue system.

Similar to the US Chapter 11 process, business rescue involves an external 'practitioner' being appointed to take charge of a company to try to find a way of restructuring it to allow it to continue in business.

The move came as the innovative AHRLAC design was nearing production status.

It is categorised as a versatile, low-cost platform with the same intelligence-gathering and strike capabilities usually associated with larger and significantly more expensive aircraft.

Accusations have flown from both partners behind the project – Paramount Aerospace Holdings and ADC – as to who is responsible for the problems. Part of the difficulty has been that the two organisations are 50-50 partners in the project, which has led to a deadlock.

A spokesman for Paramount Group said that, as ADC was in business rescue, it was unable to comment, due to the regulations of the process. Paramount's response would have to wait until the business rescue practitioner had made public his recommendations for the future of the aircraft.

Paul Potgieter, ADC's managing director, said: "The split with a partner... has caused financial distress and that's what we're trying to solve. We're seriously trying to resolve it. I think we're making very good headway."

As the AHRLAC project continued, he added: "We're ticking all the boxes that matter but we're at a critical stage to raise the final bit of capital before we start delivering production-standard aircraft. That went wrong and we're trying to resolve it."

Potgieter said he was uncertain when the business rescue practitioner was due to set out his report for moving forward with the project, but it should be long before the

end of the year. "We can't wait until December. The market won't wait for us," he said.

As recently as February this year, the project had been continuing to move forward, with the AHRLAC/ADC team's selection of Leonardo's Osprey radar to be the aircraft's off-the-shelf surveillance radar option.

The Osprey's active electronically scanned array (AESA) design means that its search pulses are emitted via fixed panels, rather than by the conventional rotating aerial dish.

On the AHRLAC, this means that a two-panel fit of the radar can be integrated inside the nose of the aircraft, providing a 270° field of view, while keeping external space free for other sensors and equipment. By the time of its announcement, an advanced level of integration work had already been completed and ADC intends offering the sensor as an off-the-shelf option to all future AHRLAC customers.

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Despite the project's problems, Potgieter said he remained convinced of the aircraft's merits. Other aircraft trying to fill this gap in the market were either what he described as "modified cropdusters", such as the Iomax Archangel, or armed training aircraft, such as the Embraer Super Tucano and Beechcraft AT-6 Wolverine.

The Super Tucano had made inroads in several African air forces, he said, simply because there was nothing more suitable available in the marketplace.

None of the rivals to the South African design had the capability to act as an ISR aircraft like the AHRLAC, he said, whose dedicated fuselage mission bay, plus open systems architecture and 'plug-and-play' capability for different sensors, allowed new sensors to be added.

Potgieter said that he continued to see a strong market for the AHRLAC, but that it was likely to be too sophisticated for African nations. Southeast Asia and the Middle East were the most likely destinations for the type. ■

GREEN LIGHT FOR MOROCCO F-16V

The US Department of State has approved a possible \$4.8 billion sale to Morocco of 25 Block 72 F-16C/D (F-16V) aircraft, together with upgrades to the kingdom's existing fleet of 15 Block 52 F-16s and eight Block 52 F-16Ds to bring them to virtually the same standard, writes *Jon Lake*.

Post upgrade they will be designated as F16V Block 52+ aircraft. The Block 52 and 72 designations reflect the type of engine fitted.

Since the introduction of the alternative fighter engine project, F-16s powered by the 29,100lb Pratt & Whitney F100-PW-229 engine have a block designation ending in '2', while aircraft powered by the rival 29,500lb General Electric F110-GE-100 use block designations ending in '0'.

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The Block 70/72 F-16V is the newest F-16 configuration to date, with a structural life that is claimed to be 50% greater than that of previous F-16 variants, according to Lockheed Martin.

The F-16 Viper variant includes a Northrop Grumman AN/APG-83 active electronically scanned array (AESA) radar, also known as the scalable agile beam radar (SABR).

The aircraft also features new and improved cockpit displays, a new Raytheon modular mission computer, a MIDS-JTRS Link 16 datalink, an enhanced AN/ALQ-211/213 electronic warfare system, an LN260 embedded global navigation system, and an automatic ground-collision avoidance system.

The new aircraft will be supplied with six DB-110 advanced reconnaissance systems, 26 AN/AAQ-33 sniper pods, and 40 joint helmet-mounted cueing systems (JHMCS II). Weapons supplied will include 30 M61A1 20mm Vulcan cannon, 40 AIM-120C-7 advanced medium-range air-to-air missiles, 50 GBU-49 bombs and 60 GBU-39/B small-diameter bombs. The package will include four spare Pratt & Whitney F100-229 engines and one spare APG-83 AESA radar.

Other customers for the F-16V include Bahrain (16 plus upgrades), Greece (85 upgrades), Slovakia (14) and Taiwan (66 plus up to 144 upgrades). ■

Angola in line for China's K-8 trainers?

A photograph of Luo Ronghuai, the president of the Aviation Industry Corporation of China (AVIC), visiting the Hongdu aircraft factory, showed a K-8 trainer in the background wearing the National Air Force of Angola (FANA) roundel on its tailfin, writes *Jon Lake*.

There has been no official announcement that Angola has ordered the K-8, but the aircraft shown in the photograph appeared to be almost complete, painted (in a green and brown camouflage scheme), and ready to be shipped or air-freighted to its new operator.

The JL-8 aircraft (the K-8 designation is applied to export variants) was jointly developed by the China Nanchang Aircraft Manufacturing Corporation and Pakistan's Pakistan Aeronautical Complex, with Pakistan providing 25% of the funding.

The aircraft is manufactured by the Hongdu Aviation Industrial Group (Hongdu) and has also been assembled by the Pakistan Aeronautical Complex (PAC) and in Egypt.

The JL-8 was originally designed to be powered by the 3,500lb thrust Allied Signal (formerly Garrett, now



Improvements: Morocco's existing F-16Cs and F-16Ds are to be upgraded to F-16V standards.

SOMMAIRE

FEU VERT POUR LA VENTE DES F-16V AU MAROC

Le département d'État américain a approuvé la vente éventuelle de 25 F-16C / D (F-16V) Block 72 au Maroc, d'une valeur de 4,8 milliards de dollars, ainsi que la mise à niveau de la flotte actuelle de 15 F-16 Block 52 et de huit F-16D Block 52 pour les amener pratiquement au même standard.

Après quoi, ils seront désignés comme des F-16V Block 52+.

Selon Lockheed Martin, le F-16V Block 70/72 est la plus récente configuration du F-16, avec une durée de vie structurelle de 50% supérieure à celle des versions précédentes. Le package comprendra quatre moteurs de rechange Pratt & Whitney F100-229 et un radar de rechange APG-83 AESA. ■

Honeywell) TFE731-2A geared turbofan.

The TFE731 is also used by the Spanish CASA 101, Argentina's FMA IA-63 Pampa, Taiwan's AIDC AT-3 trainer, and by the Textron AirLand Scorpion. It even powered the prototype L-39 Albatros, but was primarily designed for use by a range of business jet aircraft.

However, due to the US embargo on Allied Signal TFE731-2A turbofan, most JL-8 and K-8 trainers have been powered by alternative engines. Some use the Ukrainian Ivchenko (now Motor Sich) AI-25TLK turbofan, which produces 3,972lb of thrust, while others used the Chinese WS-11 (a licenced copy of the AI-25TLK).

Export K-8 variants tend to be better equipped than the JL-8 models used by China, with some western components, including Martin Baker ejection seats, and some cockpit displays. The Angolan aircraft may be to the improved K-8W standard with improved avionics.

The K-8 has been sold to a number of African countries, including Egypt, Ghana, Namibia, Sudan, Tanzania, Zambia, and Zimbabwe. ■



Firm favourite: The K-8 trainer has been exported to a number of African air forces.

Lift off: A C-5M Galaxy of the 301st Airlift Squadron, takes off from Lungi, Sierra Leone, carrying 398th Air Expeditionary Group personnel and equipment that have been supporting efforts in Liberia, bound for Naval Air Station Keflavik, Iceland.



Galaxy still out of this world

The US Air Force's Lockheed C-5 Galaxy remains a stalwart of airlift operations to and from Africa, supporting deployments and delivering humanitarian assistance, writes *Jon Lake*.

Operation Africa-1 saw the C-5 delivering humanitarian cargoes to Gambia, Chad, and Equatorial Guinea, in what was one of the largest humanitarian airlifts to Africa in the 1980s. More recently, the aircraft participated in Operation Atlas Response, moving 937 passengers and 920 tonnes of cargo in the wake of two cyclones which caused extensive flooding in southern Africa, especially in Mozambique.

Boeing's C-17 outshines the larger, older C-5 in some respects, and is uniquely able to straddle the strategic and tactical transport missions. The C-17 has proven to be a reliable and 'available' aircraft, with a mission-capable rate of around 83%, whereas even the upgraded and modernised C-5M has struggled to achieve 60%.

And, while the C-17 has a rough and short-field performance that allows it to operate from semi-prepared and austere runways, the C-5 demands long conventional runways.

However, the C-5 remains a crucially important and significant asset for the US Air Force. Its crews make the proud boast that: "Nothing in the inventory can move as much stuff as far as the C-5 Galaxy."

The C-5 is certainly a heavy lifter, able to carry a 270,000lb payload (including two Abrams tanks), 91,000lb more than the C-17, or almost as much as six C-130J Hercules.

Lockheed built 131 Galaxies, comprising 81 C-5As and 50 C-5Bs. Two of the latter were modified with a larger internal cargo capacity – becoming C-5Cs – to accommodate large payloads, such as satellites.

The C-5C was also known as the C-5A SCM (space cargo modified). These received new avionics under the avionics modernisation programme (AMP), and new engines and airframe upgrades under the reliability enhancement and re-engining programme (RERP).

The 52 C-5s upgraded under the RERP are designated as the C-5M Super Galaxy. ■

SOMMAIRE

LE C-5 GALAXY ENCORE BIEN UTILE

Le Lockheed C-5 Galaxy de l'armée de l'air américaine demeure un pilier des opérations de transport aérien en Afrique en soutenant le déploiement de l'aide humanitaire.

Dans le cadre de l'opération Africa-1, le C-5 a acheminé des cargaisons humanitaires vers la Gambie, le Tchad et la Guinée équatoriale. Plus récemment, l'avion a participé à l'opération Atlas, à la suite de deux cyclones, ayant provoqué de graves inondations en Afrique australe, surtout au Mozambique.

Le C-17 de Boeing surpasse à certains égards le C-5. Il intervient plus efficacement lors des missions stratégiques et tactiques.

Le C-5 reste cependant un important atout pour l'US Air Force.

Lockheed a construit 131 avions Galaxy. ■

US MAY OFFER LIGHT ATTACK AIRCRAFT TO TUNISIA?

There have been reports that the USA may offer light attack aircraft to Tunisia, perhaps in return for a permanent basing agreement, writes *Jon Lake*.

The Tunisian Air Force presently relies on about 15 elderly Northrop F-5E/F Tiger IIs and 10 Aermacchi MB326s – the latter representing the survivors of 12 two-seat MB326Bs and MB326LTs – and seven dedicated single-seat MB326KT ground-attack aircraft. These are augmented by nine Aero L-59T armed trainers.

None of these aircraft are well-suited to the asymmetric counter-insurgency operations currently being undertaken against Al Qaeda, Ansar al-Sharia and other radical groups.

The US has helped Tunisia to recapitalise its support helicopter force in recent years, and is supplying 18 Bell OH-58D scout helicopters and 12 Sikorsky UH-60M Black Hawk transport helicopters.

Tunisia is likely to be offered a light attack aircraft – probably the Sierra Nevada/Embraer A-29 Super Tucano, or possibly Textron's AT-6 Wolverine, depending on the results of the US Air Force's ongoing light attack aircraft



One possibility: The Embraer A-29 would give the Tunisian Air Force a tailor-made counter insurgency aircraft. ■

competition. Such an acquisition will form part of a much wider growth in security cooperation between Tunisia and the USA, which has already seen the supply of large quantities of equipment, including rifles, body armour, and night-vision goggles, radios and devices to counter improvised explosives, helicopters and fast patrol boats.

The value of US military equipment delivered to Tunisia increased ten-fold between 2012 and 2017.

The Tunisian Government is sensitive about the presence of US forces in its territory, fearing that publicising this could provoke greater extremist

violence. However, it is known that the US deployed MQ-1 Predator UAVs to Tunisia in June 2016, and the type has been seen operating from the Sidi Ahmed Air Force base in Bizerte, the Tunisian Air Force's main air base.

The Predator was replaced by the MQ-9 Reaper in March 2018, when the older UAV was retired by active-duty US Air Force and Air National Guard units, though contractors flying the older MQ-1 in the Middle East continued operating the type until December 2018.

The UAVs have been used to track and strike terrorists and insurgents infiltrating across Tunisia's borders with Libya and Egypt. ■

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Opérationnelle depuis septembre 2018, Sarah Airways se positionne dans le transport privé VIP et les évacuations sanitaires, un marché en croissance au Maroc. Son PDG, Khalid Serghat, a partagé avec **Vincent Chappard** sa vision et ses ambitions pour sa compagnie.



Khalid Serghat, PDG de Sarah Airways.

Sarah Airways sur la bonne trajectoire

Une nouvelle compagnie a pris son envol au Maroc sous l'impulsion de Khalid Serghat. Sarah Airways, détenue à 100% par son fondateur, a été créée en 2018.

« Je voulais donner naissance à cette compagnie il y a une dizaine d'années. Mais les conditions n'étaient pas favorables pour son lancement. Aujourd'hui, l'environnement a changé, le marché s'est développé, le besoin est là », rappelle-t-il.

La décision fut prise au premier semestre 2018 avec l'achat d'un premier avion, un Cessna Citation VII. Il a ensuite constitué son équipe. « Nous avons établi notre feuille de route en coordination avec la DGAC du Maroc. Les opérations ont pu démarrer en septembre 2018. Notre second avion (un Citation III) est entré en service fin 2018 ».

« Nous nous focalisons sur le transport VIP et les évacuations sanitaires et nous opérons principalement en Europe, en Afrique et également au Moyen-Orient », affirme Khalid Serghat. « Nous souhaitons développer notre offre de services avec plus de latitude dans ces

régions et étoffer notre flotte pour s'adapter à tous les types de trajets ».

Basée sur l'aéroport international Mohamed V de Casablanca, Sarah Airways intervient également dans l'acheminement rapide de colis à l'import comme à l'export.

Sarah Airways va ainsi acquérir un troisième avion (Hawker 900XP) avec un rayon d'action plus important. Cela lui permettra d'assurer davantage d'opérations à l'international, en particulier vers New York et Dubaï. La compagnie travaille principalement avec des clients privés, gouvernementaux et de nombreuses compagnies d'assurance de ces régions.

Le bilan de Sarah Airways est positif au bout de dix mois d'exploitation.

« Nous avons atteint pratiquement 95% des objectifs de notre business plan avec plus de 150 vols à notre actif », souligne Khalid Serghat.



Sarah Airways compte poursuivre son développement en consolidant ses positions sur le marché au Maroc et en affinant son offre tout en maintenant et capitalisant sur ses atouts : sa ponctualité, sa qualité de service et son rapport qualité/prix. Elle compte aussi toucher d'autres clients internationaux.

Sarah Airways investit fortement dans la formation. La réussite d'une compagnie passe avant tout par la qualité et le professionnalisme de son personnel selon Khalid Serghat. Il assure une formation spécifique dans chacun de ses domaines d'activité pour respecter les temps réglementaires de service en vol et assurer les conditions optimales d'exploitation de sa flotte. Elle dispose aujourd'hui de cinq mécaniciens et de trois équipages, un 4ème termine actuellement sa formation.

Le Maroc se place parmi les pionniers dans la création d'un hub médical et d'évacuation urgence. Le pays dispose d'une bonne infrastructure. Pour Khalid Serghat, c'est un marché solide, en pleine expansion et avec un réel potentiel de croissance. Les autorités marocaines accompagnent davantage le développement de l'aviation générale et d'affaires. Il faut rehausser la compétitivité dans ce secteur, d'où « un besoin de soutien et de souplesse » pour soutenir les opérateurs du pays.

Sarah Airways compte surfer sur cette dynamique et atteindre d'ici les cinq prochaines années une flotte de huit avions. ■

SUMMARY

MOROCCAN START-UP SARAH SETS OUT ITS STALL

Operating since 2018, Morocco's Sarah Airways is concentrating on VIP transport and medical evacuations – both growing markets in Morocco.

Founder and owner/CEO, Khalid Serghat, said he has been planning for his new airline for around a decade but waited until market growth justified the investment.

He explained: "We took the decision in the first half of 2018 and soon acquired our first aircraft, a

Cessna Citation VII. Working closely with Morocco's Department of Equipment, Transport and Logistics (DGAC), flights began in September 2018 and our second aircraft – a Cessna Citation III – soon arrived.

"We focus on VIP transport and medical evacuations, operating mainly in Europe, Africa and the Middle East, and we will develop our service, offering greater flexibility through fleet expansion."

Based at Casablanca's Mohamed V International

Airport, Sarah Airways is soon to acquire a third aircraft – a Hawker 900XP – offering greater range and enabling international network expansion to places like New York and Dubai. It intends to be operating a fleet of eight aircraft within five years.

With a positive balance sheet after its first 10 months, Serghat says that the company "has achieved almost 95% of the business plan's objectives with more than 150 flights to its credit". ■

Business jets have been a controversial subject across Africa as governments of developing nations recognise a need for top-level travel for their heads-of-state while, at the same time, fending off accusations of buying expensive white elephants. Now, as Alan Peaford discovers, there is an alternative from the Middle East.

The BBJ's Royal family



All smiles: Rob DiCastrì with some of his team.

The jet touched down on the runway of a central African country's main airport. The only thing that distinguished it from the other Boeing 737s or Airbus narrow-bodies was its lack of airline livery. It could easily have been a white tail carrying out a temporary service for a regional carrier.

But the giveaway was a small national flag on the horizontal stabiliser. This indicated the aircraft was on official government business in service for the country's head-of-state and senior government officials.

Events like the African Union, key UN meetings, or special gatherings, such as the World Economic Forum meeting at Davos, are the must-attends for heads-of-state across Africa – and a private jet is essential. This is not to massage the ego but, in fact, to offer all the things that makes business aviation a key sector in the aviation industry – security, privacy and speed.

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Interestingly, although the aircraft is one of the top-of-the-range business aircraft, this Boeing Business Jet (BBJ) was not a capital burden for the country – it was chartered from the largest BBJ operator in the world, Abu Dhabi's Royal Jet.

"Leaders who don't need to have a head-of-state aircraft sitting in a hangar for most of the year are typical of our customers," explained Rob DiCastrì, CEO of the Royal Jet business. "When the head-of-state does need to travel with an official entourage, say from Africa to a UN function in Europe or the USA, then the BBJ is ideal."

Royal Jet is the world's largest operator of the Boeing Business Jet with eight of the VVIP aircraft in service – and is planning to add more.

"We have just had a record year and we want to build on that momentum," DiCastrì said.

Royal Jet was spun out of the UAE's Presidential Flight 15 years ago and has been growing a reputation for a

capability that maintains that pedigree, matching expectations of the some of the world's most discerning passengers.

"We've been providing mainly heads-of-state a viable alternative to owning their own aircraft or fleet and can also provide aircraft buyers with bridging solutions until a new aircraft is delivered," DiCastrì said.

Royal Jet's eight Boeings come in different configurations, from a traditional 19-seat layout right through to 52 seats. That allows for great flexibility as the company has several 'combi' aircraft that, in three hours, can transform from executive layout to economy or business-class seating to meet the individual customer requirements.

Africa is also high on the operator's agenda with increasing enquiries coming from governments.

"We're looking for the most ideal locations in Africa to base our BBJs and provide a BBJ level of service which isn't otherwise available," DiCastrì said. "We can then improve efficiency and reduce the costs for the customer by reducing positioning flights."

As well as the jets themselves, Royal Jet is also marketing its fixed-base operation (FBO) services.

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The Royal Jet terminal is favourably situated right next to the runway at Abu Dhabi International Airport which, DiCastrì said, allows for swift taxiing time. "With no queue or slot restrictions, we are able to offer our clients a guaranteed 40-minute turnaround time for technical stops," he said. "Our FBO also benefits from its own security, customs and immigration department, meaning that discretion and security are always assured."

The operator is building its own hangar at Abu Dhabi and will provide maintenance services.

DiCastrì said Africa offers great opportunity. "There's a bit of a vacuum, a gap in Africa in terms of the larger aircraft. Our niche is the BBJ. We're not going to put a Global 5000 in there or a Gulfstream, because there are plenty of those. But there's not a lot in the entourage-type aircraft that have more seats and space," he said.

Royal Jet also includes two Bombardier Global 5000 standard business jets in its fleet.

Four of the BBJs also have the capability of adopting a medevac layout.

The plainness of the Royal Jet fleet is a selling point. "We are discreet on the ramp and a lot of people like that. We can also quickly change the appearance so a national flag or a club or government logo can appear on the tail or the fuselage."

Service is the main key to the Royal Jet offering. "We have two galleys on each BBJ, and we have additional crew, so even staff entourage get that special service.

"We say that the 'Royal' in our name reflects that royal service," DiCastrì said. ■



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The European Business Aviation Conference & Exhibition (EBACE) is not just for Europe – it's a world event these days – and it is embracing the global challenges like the environment and new technology as **Dave Calderwood and Alan Peaford** report. Pictures by **Billypix**.

IT'S GREEN FOR GO AS TIMES CHANGE



Athar Husein Khan: Warned that to achieve targets there needed to be greater involvement by industry and governments.

EBACE is traditionally focused on new metal from the global airframers. However, although there was still interest in the debutant business aircraft, the central theme of the annual Geneva event was about change.

The environment and the need for the industry to be “greening up its act” lay at the heart of the show, with calls to not just be more committed to emission reduction targets, but also to be seen to be more active.

Recent protests against climate change pinpointed aviation – and the business aviation community has been tasked with playing its part to negate that criticism.

Of the 58 aircraft on the static display, 23 had flown into the show using biofuels. Spectacularly, 13 of them flew in a loose convoy to the show from TAG's Farnborough Airport near London. A global coalition of business aviation organisations had gathered ahead of the fly-out to highlight the path forward for continued adoption of sustainable alternative jet fuels (SAJF) and European Business Aviation Association secretary-general, Athar

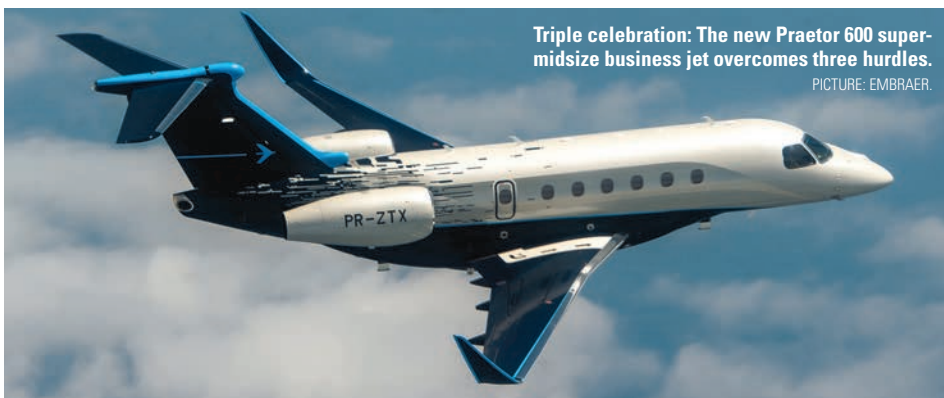
Husein Khan, warned that to achieve targets there needed to be greater involvement by industry and governments.

Khan said: “Uplifting this fuel was no easy task. Market availability still leaves a lot to be desired. Costs are more, but decreasing slowly. We need regulators to step in and help industry take steps towards a carbon neutral future.”

The cost of the alternative fuel is currently around three times the cost of Jet A1 and, although recognising that business aviation and, particularly, corporate flight departments would be prepared to pay a premium for the environmental benefit, Khan said there still needed to be a reduction in price.

“We need a bit more market pressure on the system,” Khan added. “I would expect and hope that operators will put a bit more pressure on their fuel suppliers and fuel manufacturers to actually produce more of the fuel and have a more appropriate geographical spread.”

EBACE also focused on other alternatives than fuel with manned and autonomous urban air vehicles on display and featured in the keynote addresses.



Triple celebration: The new Praetor 600 super-midsize business jet overcomes three hurdles.
PICTURE: EMBRAER.

PRAETOR CERTIFICATED AS IT MAKES EURO DEBUT

Embraer's new Praetor 600 super-midsize business jet celebrated triple type certification by the European Aviation Safety Agency (EASA), the Federal Aviation Administration (FAA) and Brazilian regulator ANAC as the aircraft made its European show debut.

“It is the most disruptive and technologically advanced super-midsize business jet to enter the market, paving the way to begin deliveries now in the second quarter,” said Michael Amalfitano, president & CEO at Embraer Executive

It is capable of flying beyond 4,000 nautical miles in long-range cruise speed or beyond 3,700 nautical miles at Mach .80 from runways shorter than 1,550 metres. It is the first super-midsize jet with full fly-by-wire technology, which powers the active turbulence reduction that not only makes every flight the smoothest but also the most efficient possible.

WebManuals for BestFly

Angolan operator, BestFly, is one of the customers for WebManuals, the digital documentation specialist.

It helped BestFly achieve ISBAH Stage II accreditation earlier this year.

But, as well as helping operators stay compliant with regulations, WebManuals saves its business aviation customers an average of 2,400 hours of work each year, according to Martin Lidgard, CEO and founder of Web Manuals.

On average, business jet operators have up to 30 operations manuals and make up to 75 revisions every year, with each one taking around 40 hours to complete. Using Web Manuals' web-based application, updating and revising an operations manual typically takes a day, saving its customers at least 32 hours per revision.

“We truly value our customers' needs and recognise that time means money for air operators,” said Lidgard. “It is essential for business jet operators to keep their documentation and manuals up-to-date so, by providing them with our innovative digital solution, we enable them to save at least 70% of the time it takes to update each manual, ensuring they can more easily remain compliant to the latest industry standards.”



Convoy: 13 aircraft flew in a loose convoy to the show from TAG's Farnborough Airport near London using biofuels.



That special something: The Latitude ambulance at EBACE.

TEXTRON LOOKS TO SPECIAL MISSIONS

Textron Aviation showed a Cessna Latitude business jet configured as an air ambulance at EBACE, demonstrating the company's special mission capabilities.

The Latitude, acquired by Babcock Scandinavian Air Ambulance for aeromedical operations in Norway, has what Textron says is the first custom original equipment manufacturer (OEM) interior solution for medevac missions on the platform.

"For our mission-centric customers, we are excited about what the medevac Citation Latitude offers by the way of range, cabin size and speed in emergency situations, where minutes count," said Doug May, vice president, special missions.

The medevac Citation Latitude on display featured a single-sled stretcher, expanded cabin door and a satcom radio system for emergency communications.

Plans for interior certifications on other aircraft, including medevac options for the Citation CJ4 and Citation XLS+, are also under way.

Textron's two new aircraft in development, the Cessna Denali and Cessna SkyCourier, will also include special mission capabilities as part of their type certifications.

PEGASUS PREPARES TO SADDLE UP

A new start-up company from South Africa made its debut at EBACE showing a two-metre scale model of a revolutionary business jet, Pegasus One.

It's revolutionary because it has the ability to vertically take-off and land (VTOL), as well as cruise at nearly 430kt (800km/h).

The aircraft is the brainchild of Dr Reza Mia whose company, Pegasus Universal Aerospace, was started seven years ago with the aim of making business air travel more convenient. Instead of wasting hours travelling to and from an airport, with its VTOL capability Pegasus One can land anywhere that a helicopter could.

The model was exhibited in the innovation zone at EBACE, where Dr Mia was pitching for investment, having funded development of the project so far from his own pocket. He estimates \$400 million will be required to bring the aircraft to production, which he would like to keep in Africa because development and production costs would be lower.

The all-composite six-to-eight-seat Pegasus One will achieve its VTOL ability with thrust diverted from two 2,300shp turboshaft engines. Two giant ducted



Head and shoulders above: Dr Reza Mia with the Pegasus One model.

fans are beneath the wings. When airborne, the thrust is taken to rear-mounted fans in stages to build up airspeed. Pegasus is targeting a range of 2,375nm (4,400km) from runway take-off or 1,147nm (2,124km) in VTOL mode.

"We are working hard to build a full-scale cabin mock-up of Pegasus One, which we plan to bring to London to start a demonstration tour of Europe in 2020 to drum up interest. We look forward to meeting forward-thinking investors and, of course, potential operators during the tour," said Dr Reza.

AFRICA'S FIRST AVANTI

Troubled Italian manufacturer, Piaggio, is fighting its way out of administration and was given a boost at EBACE with the sale of its first Avanti aircraft to Africa. A Ugandan operator has taken delivery of a P180 Avanti Evo, the turboprop with a cabin that matches a midsize jet.

The Evo has extended range capabilities, environmental friendliness and an ability to take off and land on short runways.

Piaggio says it is now "actively working at developing a support organisation in the area".

The former Mubadala and Ferrari subsidiary has been in administration since November 2018. It now has two aircraft in its backlog and is confident of survival.

"My aim is to sell the company as a whole and not break it up," said Vincenzo Nicastro, the state-appointed commissioner responsible for finding a buyer, or buyers.

The administrator has received 26 expressions of interest to acquire the whole company, three to buy the aircraft business only, and 10 for its engines business.

VALCORA
OPENS
IN SOUTH
AFRICA
WITH
SUPPORT
FOR
WILDLIFE



Playing the right cards: Daniel Coetzer and Valerie Bouthiaux are eyeing a number of future wildlife protection projects.

Swiss-based fuel purchasing service, Valcora, launched its first venture into Africa with the opening of a new office in Johannesburg, South Africa on May 1. It followed this up at EBACE with an announcement about its support for wildlife protection schemes in the region – two rhinoceros orphanages in South Africa, as well as chimpanzee and orangutan refuges in Africa and Indonesia.

Daniel Coetzer, CEO, and Valerie Bouthiaux, general manager, who run the South African office, are also eyeing a number of future projects, including

one to protect the pangolin. These are complemented by Valcora's 'be smart, fly bio' initiative, which encourages operators to switch to biojet fuel where available, and a carbon offsetting option.

"The growing business aviation sector needs access to easy, international, fuel purchasing options to support continued economic growth in Africa," said Coetzer, a South African national.

One benefit to African operators flying to Europe is Valcora's experience handling the complexities of European taxes.

Pilatus puts PC-24
jet back on sale

Pilatus Aircraft reopened the order book for its 'Super Versatile Jet', the PC-24, at EBACE. It was closed with 84 orders taken just days after the aircraft was announced at EBACE in 2014. The Swiss manufacturer wanted feedback from the first PC-24 operators – one of which is in South Africa – before taking more orders.

The twin-engine jet is back on sale at a base price of \$10.7 million, with delivery positions available in late 2020 and 2021.

The PC-24 is now certified by EASA and the FAA for operations on unpaved runways. Work to obtain post-certification for other surfaces, including grass, is currently under way. The aircraft has also been certified for steep approaches, such as London City Airport.

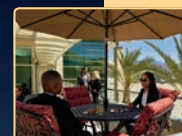


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Sikorsky UH-60 Black Hawk family helicopters have been used in Africa for several decades, with military operators including Egypt, Morocco, and Tunisia. Commercial operators, however, were non-existent... with one exception. Erwan de Cherisey reports.

How the Black Hawk can give commercial operators an edge

Black Hawk commercial operation in Africa has started, with South African helicopter operator, Leading Edge Aviation, acquiring a single former US Army UH-60A.

Company owner, Mark Jackson, explained that Leading Edge Aviation was established in 1996 in Nelspruit, Mpumalanga: "We initially did helicopter and fixed-wing refurbishing work, as well as freelance helicopter flying for local companies. We then started doing flood relief and emergency flying, assisting with the great floods of 2000 in Mozambique, then the Boxing Day Tsunami in Indonesia, and the earthquake in Pakistan later that year [2005]."

In 2006, the company purchased its first Bell UH-1H 'Huey'. The aircraft was a former US Army helicopter, which was acquired through US Company Billings Flying Services.



The UH-1H made its debut as a firefighting platform in South Africa in late 2006 and proved successful enough for Jackson to decide to procure a second example some time later. The Hueys flew several thousand hours in firefighting operations over the ensuing years. Yet, their age also started showing and Jackson, thus, started contemplating options for a replacement.

Billings Flying Services proposed he consider a used UH-60 from US Army stocks. Jackson warmed to the idea and, as a result, a UH-60A was purchased in August 2016 under the US Army's Black Hawk exchange and sales programme.

In 2017, one of the Hueys was sold to get the necessary funding for the deposit on the Black Hawk. The UH-60 procured for Leading Edge was manufactured in 1980 and flew more than 4,500 hours with US Army special operations forces before being disposed of.

A restricted type certificate for the aircraft was approved by the US Federal Aviation Administration (FAA) for Billings Flying Services in March 2017. Obtaining the relevant flying



Big performer: The UH-60A Black Hawk has proved its worth in a number of different roles.

authorisation for operating in South Africa then required coordinating between the FAA and the South African Civil Aviation Authority (SACAA). This was no easy task, given that the UH-60A would be the first of its type to be operated on the civilian market in South Africa.

In May 2017, the FAA restricted type certificate for the aircraft was approved by SACAA airworthiness inspectors, allowing Leading Edge to get the helicopter shipped to South Africa. The Black Hawk arrived in the country in October 2017.

Maintenance and support personnel training was conducted in October and November 2017 at Flight Safety International's West Palm Beach facilities in Florida, while aircrews were first trained at Billings by an FAA-approved Black Hawk instructor, who then provided additional training in Nelspruit.

Following reassembly and additional training, the aircraft started operating commercially: "We started flying the Hawk in mid-2018. Then, in September, October and November, we used her for firefighting in the Lowveld area with great success.

In August 2018, a fight between two Rhino bulls in the Highveld region left one of the animals stranded at the bottom of a valley. After

unsuccessful attempts were made to remove it using ground means, the only option left was to airlift it out. Due to its weight of approximately 2.3 tonnes, using a Bell UH-1H was out of the question. The UH-60A, with its heavier lifting capability and significant engine power, proved a perfect match.



The lifting itself involved Leading Edge's UH-60A and a Robinson R44. The latter was used to dart the recalcitrant rhino from the air, sedating it for its airborne journey. The Black Hawk lifted the animal using its underbelly hook and a special set of harnesses, successfully relocating it.

In March 2019, Cyclone Idai hit southeast Africa, causing significant loss of life as well as damage to infrastructure in Mozambique, Malawi, and Zimbabwe. Leading Edge Aviation, which was carrying out firefighting operations at the time, was called in to help with relief efforts.

Following negotiations at government level, Leading Edge's fire-fighting contract was modified to allow for the UH-60 and the UH-1H to deploy to Zimbabwe.

The aircraft deployed to Mutare, in the Eastern Highlands, close to the border with



Relief work: The aircraft mostly flew medicines, food, clothing, blankets and starter kits for the flood victims after the cyclone hit and carried out limited search-and-recovery.”

Mozambique, where they joined several other civilian aircraft, as well as a number of Air Force of Zimbabwe helicopters.

“We mostly flew medicines, food, clothing, blankets and starter kits for the flood victims. We did limited search-and-recovery with local companies,” Jackson said, adding that operational costs were met by Zimbabwean company Econet, with assistance from the Bill and Melinda Gates Foundation, as well as Richard Branson

Jackson emphasised several of the Black Hawk strongpoints: “The UH-60 has two engines and the capability to fly on one if needed. It also comes with three hydraulic systems, each independent of each other, and it carries out its own leak check. It is very powerful in that it lifts its own empty weight.”

Despite these impressive capabilities, the operating cost of the UH-60A is still perceived as an issue by a number of prospective customers but Jackson is confident that the huge potential of the aircraft and its successes over the past year have helped change mind-sets: “It costs twice the rate charged for the Hueys but delivers three times the amount of water with each drop. Not to mention that it cruises at one-and-a-half times the speed of the Hueys.”

The rigid rotor system of the Black Hawk is another of its strengths, especially when operating in the firefighting role, where turbulences are a significant issue: “Quite often the two-bladed Huey has to stand down whereas the Hawk would still operate effectively,” Jackson enthused.



Leading Edge Aviation now has a long-term contract for both its Huey and Black Hawk, and is unlikely to find itself short of work, thanks to the very positive impression that its UH-60A has created in more than a year of intense operations.

While great challenges have been encountered, Jackson is positive about Leading Edge’s Black Hawk endeavour: “Although I love operating my Huey, I do feel that we cannot rely on this type being around forever. The most important aspect is that of safety. Take nothing away from the Huey, they have more than proved themselves, but new technology and multi-system type aircraft will be the way of the future.

“I have two sons that fly and, if only for them, I feel as a father that this is the best tool in the firefighting tool box and have peace of mind thinking about my decision.”

SOMMAIRE

UNE NOUVELLE VIE POUR L’UH-60

Les Sikorsky UH-60 Black Hawk sont en service en Afrique depuis plusieurs décennies, assurant notamment des missions militaires en Egypte, au Maroc et en Tunisie. Un reportage d’Erwan de Cherisey.

Il n’y avait pas d’opérateurs commerciaux du Black Hawk en Afrique jusqu’en 2017. Cette situation a cependant changé avec l’acquisition par Leading Edge Aviation d’un ancien UH-60A de l’armée américaine.

Cet opérateur sud-africain a été créé en 1996 à Nelspruit, dans le Mpumalanga. « Nous faisons au départ des travaux de rénovation pour les hélicoptères ainsi que des vols pour des sociétés locales. Nous commençâmes ensuite des vols d’urgence pour venir en aide lors des inondations au Mozambique, du tsunami en Indonésie et du tremblement de terre au Pakistan », affirme son propriétaire, Mark Jackson.

Un premier UH-1H a été acquis en 2006 par l’intermédiaire de la société américaine Billings Flying Services. Il débuta ses opérations dans la lutte contre les incendies en Afrique du Sud. Un UH-60A fut été acquis en août 2016 dans le cadre d’un contrat Black Hawk de l’armée américaine. Celui-ci avait enregistré plus de 4500 heures de vol avec les forces américaines.



Le Restricted Type Certificate (RTC) fut approuvé par la FAA en mars 2017. C’était une étape importante pour obtenir une autorisation de vol en Afrique du Sud. Cela a nécessité une étroite coordination avec la SACAA. La formation du personnel pour la MRO a ensuite été réalisée par Flight Safety International en Floride.

« Le Hawk fut mis en service à la mi-2018 pour ensuite être déployé dans la lutte contre les incendies dans la région de Lowveld avec un grand succès », assure Mark Jackson.

En août 2018, un UH-60A intervint aux côtés d’un Robinson R44 lors d’une bagarre entre deux rhinocéros dans la région de Highveld.

En mars 2019, après le passage du cyclone Idai au Sud-Est de l’Afrique, causant des victimes et des dégâts au Mozambique, au Malawi et au Zimbabwe, Leading Edge Aviation fut sollicité pour apporter son aide.

« Le contrat de lutte contre les incendies fut modifié pour permettre le déploiement de l’UH-60 et de l’UH-1H au Zimbabwe », poursuit-il.

Les hélicoptères ont ainsi rejoint d’autres avions civils et de la force aérienne du Zimbabwe. Ils ont acheminé des médicaments, de la nourriture, des vêtements et des couvertures jusqu’aux victimes.

Le Black Hawk a ainsi pu démontrer toutes ses capacités. Mark Jackson songe désormais à ajouter un deuxième UH-60A à sa flotte.

As FAI marks its 30th anniversary it is looking to increase its business in Africa. **Marcelle Nethersole** reports.

FAI celebrates and targets Africa



Siegfried Axtmann:
“Reaching 30 years is a great achievement for our company and I am very proud of how far we have come.”

Inset: The FAI air ambulance Challenger 604.

Founded in 1987, FAI was a private repatriation club flying helicopters, moving into business jet flying two years later. Today, as the company celebrates its 30th anniversary, it offers fixed-wing air ambulance, special missions, charter and aircraft management, as well as full maintenance, repair and overhaul (MRO) services with FAI Technik – now a big part of the business.

Its fixed-wing fleet has grown from a single Citation 500 and two rescue helicopters (Eurocopter AS 350 and Airbus BK 117) to five Bombardier Challenger 604s, one Challenger 850, 11 Learjet 60s, plus a Premier 1A and a King Air 350.

The company welcomed its seventh Bombardier Global Express in February. This makes it one of Germany’s largest business jet operators with 25 jets and more than 13,500 hours logged in 2018.



Located at Albrecht Durer Airport in Nuremberg, FAI has three hangars capable of accommodating up to four BBJs or ACJs simultaneously.

“Over the years, FAI Aviation Group has grown organically and today it has revenues in excess of €80 million (\$90.1m),” said Siegfried Axtmann, founder and chairman.

Recent new collaborations include working with purchasing organisation Convolus (now AVIAA) and in-flight broadband provider, Gogo.

Additionally, in January last year, FAI became an authorised Collins Aerospace distributor for avionics and cabin electronics equipment.

“Reaching 30 years is a great achievement for our company and I am very proud of how far we have come. Our growth and success is testament to our commitment to safety, service and continued investment. It also highlights the importance of our tremendous team of people, now 200-strong, who have made our business what it is today,” said Axtmann.

FAI, which also has offices in Dubai and Miami, is generating revenue of around €15 million (\$16.89m) per annum. Around 90% of its flights are medical evacuations from the African continent to Europe.

Indeed, its air ambulance business has grown significantly and today the company is a market leader in patient transport by jet aircraft, having logged more than 200,000 hours of ambulance missions over 30 years.



“Air ambulance makes up two-thirds of the business,” said Axtmann. “Around 25% of total revenue generated by our air ambulance division is connected to the African continent. This is where a lot of help is needed.”

“The special mission service provided to the African continent mainly consists of medical evacuations and stand-by services for NGOs.”

“Djibouti to Germany is only one of many routes on which we frequently provide patient transport services within Africa.”

In terms of providing executive charter to and from Africa, Axtmann said there are enough operators in the region already.

“There is a good supply of charter availability in Africa,” he said. “What that means is charter flights originating from the African continent are mostly provided by operators who have aircraft based in the region, while European-based operators mostly transport travellers from Europe to Africa and back within round trips.”

Some challenges FAI faces in Africa include working with governments. “Unfortunately, we do not deal much with African governments,” said Axtmann. “Most of our flights are initiated by US or European clients, as well as assistance companies in relation to air ambulance.”

“Our current goal is just trying hard to increase our business related to the continent, and we are already seeing that.” ■



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AIRPORTS

As African cities recognise the value of extending in and around airports, **Chloe Wilson** takes a closer look at the plans behind Lusaka's Airport City.

THE WAY LUSAKA WILL LIVE NEXT...

According to John D Kasarda, author of *Aerotropolis: The Way We'll Live Next*: "The 20th century was about cities building airports. The 21st century will be about airports building cities."

Airports have evolved beyond the traditional boundaries of being glorified waiting areas and increasingly act as urban microcosms with cities developing around them. Nowhere is this more evident than with the rise of the airport city.

Offering retail opportunities, commercial premises, accommodation, entertainment and conferencing facilities, airport cities – or aerotropolis – are becoming destinations in their own right.

But more than that they are socio-economic powerhouses generating jobs, revenue and infrastructure opportunities. And, as airport cities continue to emerge around the globe, African airports and authorities are getting in on the act.



Lusaka is certainly gaining weight in the African airport sector. Zambia recorded a 10.5% increase in passenger traffic in 2018 over 2017 across all four of its international airports, with its primary hub, Kenneth Kaunda International Airport in the Zambian capital, handling 70% of total general passenger movements last year.

To address further projected growth in air traffic passenger numbers and cargo volumes, Kenneth Kaunda is currently undergoing an extensive expansion project with the new passenger terminal due to open in October 2019.

Situated just 27km from the city centre and positioned half way between two of Africa's largest hubs – Nairobi and Johannesburg – Lusaka is ideally situated to become a regional aviation hub for southern Africa.

"This is a primary focus for Zambia Airports Corporation Limited (ZACL)," explained Fumu Mondoloka, managing director, ZACL. "In line with the



corporation's strategic plans for the years 2017-2021, we have embarked on new revenue-generating projects and have engaged the services of the Dutch-based consultancy firm, Netherlands Airport Consultants (NACO), to develop a land utilisation plan for several pieces of land at Kenneth Kaunda."

Having worked on various airport and airport city projects, NACO has a proven track record to support ZACL's ambitious airport infrastructure programme.

"The airport offers unrivalled access to the Zambian market, but also it has huge potential to serve as a gateway to the 14 surrounding countries and capital cities," said René-Alexander Marey, senior architect and head of the airport city design group within NACO.

"It has always struggled with its lack of port access but, in fact, its strategically and conveniently located for the big air carriers and has earned a reputation for political stability, having managed to avoid much of the war and upheaval that has afflicted its neighbours."

What's more, Lusaka is believed to be the fastest-growing city in central Africa, according to the Southern African Development Community (SADC), and Zambia as a country has one of the world's fastest-growing populations with the UN predicting numbers will triple by 2050.

While plans are already under way to develop various facilities, including a

The road to success: Lusaka Airport City will include retail facilities, hotels, commercial spaces and a conferencing centre.

shopping mall, office park and hotels, as part of Lusaka's Airport City plans, Marey underlines that establishing an overarching airport development plan, including the airport city zoning plan, is a priority and "establishing reliable air services is integral to the overall plan".

The revitalised national carrier, Zambia Airways, is due to begin operations later this year, but plenty of work is also being done to relaunch European connections that have been lost in recent years and Marey divulged that "connecting directly to Asia will also be big in terms of leveraging growth in the country's tourism sector".



Mondoloka agreed saying: "With the infrastructure investments taking shape, now is a great opportunity for us to address the growth of passengers through targeted solicitations to airlines. We are in the process of commissioning an air service development assignment that we are confident will underpin our growth in terms of traffic and passengers. This will direct our geographical position to attain our aspiration of being an aviation and logistics hub for the southern African sub-continent."

Describing the country's awe-inspiring natural landscape and its rich wildlife and cultural heritage, Marey concurs that





Zambia's tourism industry has the potential to be massive. Traditionally, the country's economic growth has relied primarily on its mining industry. But diversification is vital for sustainable growth and both agriculture and tourism have been identified as having the potential to enhance the economy and encourage greater foreign investment. Lusaka's Airport City will feed into both these sectors.

"Airports and airport boards have increasingly focused their attention on creating airport cities largely to become less dependent on aeronautical revenue," noted Marey. "But they are also recognised as engines for regional growth – Lusaka Airport City, which will include retail facilities, hotels, commercial spaces and a conferencing centre, will contribute towards the development of the country's existing industries as drivers of growth, but it will also complement these with new opportunities and better the lives of those living locally."

The land that's currently been earmarked for NACO's development phase of the airport city belongs to the airport and covers 550 hectares. Although Marey says that the final project will be bigger, the total land allocation is yet to be confirmed. And, as part of NACO's planning, it has established flight paths and noise contours to enable sustained development surrounding the airport.

The meetings, incentive, conference and exhibitions (MICE) industry could be huge, so establishing a world-class conferencing venue, is key. "The kind of activities we've projected to be established in and around the airport city should profit from the inbound air traffic, but they should also be generating traffic," said Marey. "Having a world-class conferencing centre will be a reason for people and businesses throughout the region to travel to Zambia, whatever industry they're working in."



There will also be a business cluster with offices for those enterprises that see a benefit in being located close to the airport, as well as an agro cluster featuring storage for agricultural products and the processing that will take place in this area. Referencing how, in previous years, Zambia enjoyed a 'blooming' flower export industry, Marey underlined how the increased storage, as well as the ability to ship produce more easily by air, will help revitalise agriculture and horticultural exports among other industries.

In addition, a university research cluster within the airport city will also create and support educational and learning opportunities.

"Architecturally, the whole development should express the Zambian

Big thinking:
Lusaka's new upgraded facility will have the capacity to handle three million passengers per year.

spirit and style and it won't be high density. It will reflect the landscape in which it is located, rather than an urban landscape and will be as eco-friendly as possible, with renewable energy sources where conceivable," said Marey.

He added that his team has been sensitive to the natural habitat and ecosystems currently occupying the land to be developed, which "is largely agricultural, but still an important ecological corridor".

And, for the local community, the benefits of the airport city are huge, asserted Marey. An underlying principle is to create permanent, sustainable jobs to improve the lives of those living locally, but also to communicate a message of stability, opportunity, sustainability and desirability to the rest of the world.

Of course, the development of the airport city resides currently at the mercy of the success of the airport itself and ensuring it achieves its threshold of at least three million passengers annually. Otherwise the airport city simply isn't sustainable.

But, with a strategic framework and a clear roadmap that will promote socio-economic growth, while adding value to the airport's non-aeronautical revenues in a sustainable way, the future certainly looks promising for ZACL's ambition to become the aviation and logistics hub for the southern African sub-continent with Lusaka's aeropolis at its core. ■

*With significant growth forecast across the continent's aviation sector, **Chloe Wilson** reports on how the industry is tackling challenges to safety and security in African airports.*

IT'S GOOD TO TALK

WHY COLLABORATION IS THE NAME OF THE GAME

Home to some of the fastest-growing economies on the planet, Africa's growth rate has been trending upwards in recent years.

Subsequently, the number of air passengers travelling to and across the continent is also on the rise.

While the continent's aviation sector has the potential to grow significantly in the years to come, Angela Gittens, Airports Council International (ACI) World's director general, also underlined during the 2018 ACI Africa Annual General Assembly that airports need to realistically assess challenges together and implement aviation-related safety and security actions and initiatives, in line with this growth.

"One of the main challenges facing African air travel remains safety and security," noted Ali Tounsi, director general, ACI Africa. And with the International Air Transport Association (IATA) predicting that air travel growth in Africa will outpace all other regions of the world over the next 20 years, this will not only put additional pressure on the continent's existing airport infrastructure, but it will also pose new challenges for safety and security management.

Whether it is due to acts of terrorism, inconsistency in the implementation and enforcement of internationally accepted standards, threats from insiders, aviation cybersecurity, security on the ground, or conflict, the aviation industry around the

world continues to be highly exposed to operational safety and security risks – and African airports are no exception.

Papa Diery Sene, deputy director general, Teranga Sureté Aéroport, the agency that handles security at Dakar Blaise Diagne Airport in Senegal, elaborated further, citing the "political will of governments" as a significant challenge to the industry. "We need to move from security operated by public security forces (police or governmental bodies) to join the global movement of outsourcing security measures to private security operators," he said.



Meanwhile, Sene's colleague, Yacine Kebe, safety, environment and quality manager at Dakar Airport, underlines that achieving aerodrome certification (a requirement for all airports by 2022 under the Abuja Declaration) is another challenge for airports, when it comes to ensuring safety standards.

"Certain requirements that comply with modern safety standards can be difficult and costly to implement," Kebe stated. While "training costs can be a significant challenge for smaller hubs with low traffic, especially when it comes to airport rescue and fire-fighting training".

To address the threats faced by African airports, measures, including the deployment of new screening technologies,

implementation of safety management systems, and effective management practices and training, alongside a solid safety and security culture, are imperative, according to ACI Africa.

Capacity-building is one area where Kebe believes airports can work together to address their challenges. "If we work as a unit, we could pool our human resources and create an African experts pool. All airports could then benefit from expertise throughout their region. We could develop 'train the trainers' programmes to share competencies among ourselves, which would also reduce the cost of training."

It's an idea, she adds, that is being implemented by ACI Africa under its African airports development programme (AADP).

Tom Kok, director of AviAssist Foundation, agrees that the cost of training can be prohibitively expensive for some airports. He suggests that, as an alternative, airports could buy in-house editions of a training course of an industry branch association.

But he would also like to see more opportunities being created "closer to home" to enable the volume of training that will be needed in the coming decades. He highlights Kenya Airports Authority as doing a great job with its internal academy. "But those kinds of initiatives are still too few," he added.

Fostering exchange programmes between African airports is also key to overcoming the challenges. "During Dakar's aerodrome certification process, we welcomed experts from other airports in the region, which encourages collaboration and learning from each other's experiences," explained Kebe. "Many issues faced by African airports are common and sharing best practices can save us time and resources," she added.

The big picture: During Dakar's aerodrome certification process, experts were welcomed from other airports in the region.





While industry associations have undertaken various actions such as ACI's airport excellence (APEX) programme, which actively supports Africa's airport sector in raising the bar on aviation safety and security, Sene points out that the continent's airport community now needs "strong support from its governments to better understand and consider the economic potential of airports in developing countries going forward".



Concluding that airports have become businesses in their own right and have to excel in a full range of activities, Gittens highlights that safety and security remain "top priorities" and airports are urged to embrace risk-based safety and security concepts, advanced technologies and process innovation in order to tackle the challenges.

But most important is the call for collaboration.

As Kebe rightly summed up: "We can only succeed if we work together, making sure we do not leave any airport behind." ■

Pooling the talent: All airports could benefit from expertise throughout their region, developing 'train the trainers' programmes to share competencies, which would also reduce the cost of training.



San Bernardino Regional Emergency Training Center

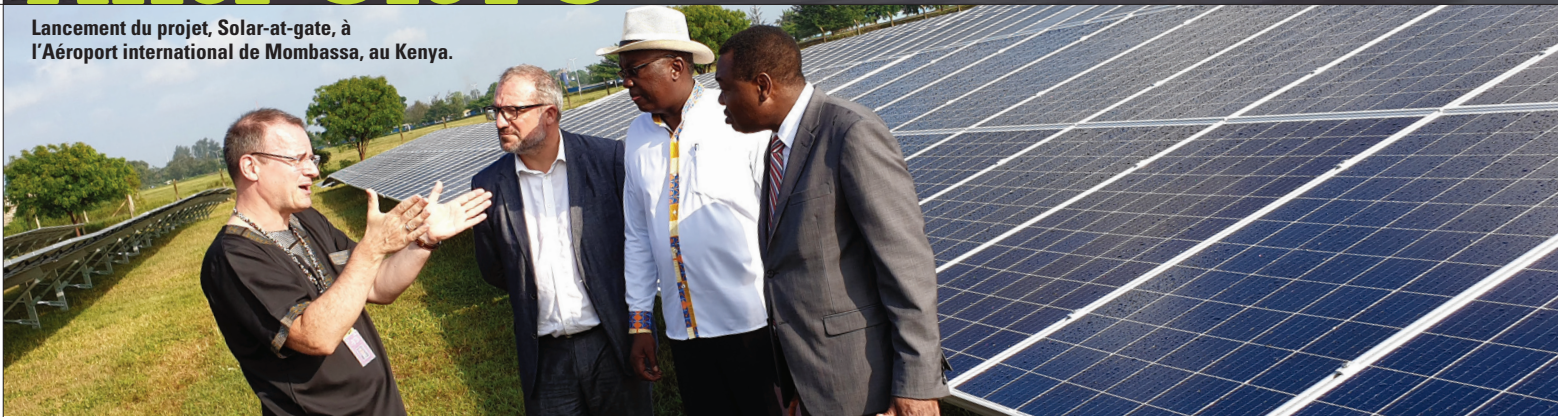
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AIRPORTS

Lancement du projet, Solar-at-gate, à l'Aéroport international de Mombassa, au Kenya.



Plusieurs aéroports africains emboîtent le pas aux pionniers dans l'utilisation de l'énergie solaire pour réduire leur coût opérationnel et leur empreinte carbone. Un reportage d'Anuradha Deenapanray.

L'énergie solaire éclaire les aéroports

Les plateformes aéroportuaires et le secteur aérien qui représentent environ 5% et 3% des émissions mondiales de CO2 respectivement prennent davantage d'initiatives pour réduire leur dépendance sur les énergies fossiles et leur empreinte carbone face aux enjeux environnementaux et climatiques.

Le concept d'aéroport vert gagne graduellement tous les continents. Et dans cette mouvance, les pays africains font un retour vers la nature en greffant des programmes écologiques à leurs projets de développement aéroportuaire.

« Beaucoup de nos membres, dont de nombreux en Afrique, sont conscients des enjeux environnementaux. Ils ont engagé des efforts pour limiter leur contribution au changement climatique en réduisant leurs émissions grâce au programme ACI Airport Carbon Accreditation », a déclaré le secrétaire général d'ACI Afrique, Ali Tounsi.



Sept aéroports sont accrédités au niveau 1 en Afrique, représentant 29% du trafic aérien sur le continent.

Et, ils sont de plus en plus nombreux à miser sur le solaire en s'inspirant de leurs voisins et surtout du pionnier indien, Cochin International Airport qui offre son expertise technique aux pays africains.

Ainsi, Kotoka International Airport, à Accra, sera le premier des trois aéroports ghanéens (avec Kumasi et Navrongo) à bénéficier de l'accord conclu entre la Ghana Airports Limited Company et le gestionnaire du premier aéroport vert du monde pour installer une centrale de 6 MW.

Le pionnier africain, George Airport d'Afrique du Sud, est devenu l'exemple à suivre depuis 2016 même s'il n'accueille que 700 000 passagers. Les 2000

panneaux photovoltaïques produisent deux fois plus d'énergie dont l'aéroport a besoin tout en diminuant son bilan carbone de 1230 tonnes.

Non loin, Mombassa International Airport souhaite atteindre un taux de zéro émission d'ici à décembre 2020. Le projet pilote, Solar-at-gate initié par la Kenya Airports Authority et financé par l'Union européenne, a été lancé par le président du conseil de l'OACI, Dr. Olumuyiwa Benard Aliu, en décembre 2018.

D'autres aéroports africains adhèrent aussi au programme global de l'OACI comme l'Aéroport international de Douala (Cameroun), l'Aéroport

international Ahmed Ben Bella d'Oran (Algérie), et les aéroports de Marrakech-Ménara et de Casablanca Mohammed V (Maroc).

Dans l'océan Indien, l'Aéroport international Roland Garros de La Réunion a fait le choix volontariste d'une conception bioclimatique pour l'extension de son aérogare. Selon Guillaume Branlat, président du directoire, il s'agit de se différencier tout en étant « en adéquation avec la politique de la France et de La Réunion en termes de développement durable ». L'île ambitionne d'atteindre une autonomie énergétique en 2030.



SUMMARY

SOLAR POWERS AFRICAN AIRPORTS

African airports are pioneering the use of solar energy to reduce both their operational costs and carbon footprints.

The concept of 'green airports' is gradually gaining ground on all continents and African countries are also thinking 'green' for future development projects.

"Many of our members in Africa are aware of environmental issues and they have undertaken to reduce their emissions through our airport carbon accreditation programme," said Airports Council International (ACI) Africa secretary general, Ali Tounsi.

Seven African airports have reached level 1 accreditation, accounting for 29% of air traffic on the continent, and now more of them are using solar energy, drawing inspiration from their neighbours and especially from the Indian pioneer, Cochin International Airport, which offers its technical expertise to African countries.

For example, Kotoka International Airport in Accra will be the first of three Ghanaian airports (with Kumasi and Navrongo) to benefit from the agreement between the Ghana Airports Company and the manager of the world's first green airport.

The African pioneer, George Airport in South Africa's Western Cape, has become the example to follow since 2016 as its 2,000 solar panels produce twice as much energy as the airport needs while reducing its carbon footprint by 1,230 tonnes a year.

Nearby Mombassa International Airport aims to reach a zero emissions by December 2020.

L'Aéroport international SSR de Maurice a été le 10ème en Afrique à rejoindre l'ACI Airport Carbon Accreditation Programme et a reçu le Level 1. Il a été un pionnier dans la région en adoptant une stratégie efficace pour réduire son empreinte carbone.

Les nouveaux projets aéroportuaires à Madagascar allient pour leur part développement durable, nouvelle approche du business et nouvelle technologie. « Le nouveau terminal d'Ivato répondra à des critères environnementaux élevés. C'est le premier projet aéroportuaire à respecter la qualification en matière d'environnement durable de la SFI-Banque mondiale, EDGE », explique Jacques Follain, directeur général délégué d'ADP International.

L'énergie solaire a le vent en poupe et sera certainement adoptée par un plus grand nombre d'aéroports africains à l'avenir.

Tanzania's economic hub is due to get a boost as Dar-es-Salaam airport's new terminal opens its doors for business. Alan Dron reports.

A major increase in the capacity of Tanzania's main airport has been signalled with the new Terminal 3 at Julius Nyerere International Airport scheduled to open as *African Aerospace* was going to press.

Design of the new terminal began in mid-2013, with work on site getting under way in early 2014.

Initially planned to be built in two phases, with phase one adding 3.5 million passengers and phase two an additional 2.5 million, the construction programme eventually merged the two, so that the entire 6 million capacity became available as the building began operating.

The new terminal is designed to have a distinctly local appearance, with its roofline echoing the shape of the sails used by traditional Tanzanian fishing boats.

Terminal 3 will triple the airport's annual capacity; at present, Terminal 1 (domestic flights) and Terminal 2 (international) have the capacity to handle around 3 million passengers a year. Figures from the Tanzania Civil Aviation Authority show that 2.4 million passengers passed through the airport in 2017.



The significant increase in the airport's capacity follows a major re-fleeting exercise for the national carrier, Air Tanzania, that has hugely increased the number of seats it can offer to passengers.

The airline has added a Boeing 787-8 to its fleet, with a second scheduled to follow later this year.

In December 2018, it became the first African customer for the Airbus A220-300, two of which will be used for domestic and regional services, as well as opening new routes to India and the Middle East. It has also recently received a third Bombardier Q400 turboprop to handle short-haul sectors.

Passengers at the new terminal will find significantly improved facilities. There will be no fewer than 41 check-in desks, while eight airbridges will allow swifter boarding and disembarking for passengers. The arrivals area will have four baggage carousels.

The new building has technical spaces on the ground floor, with arrivals on the first floor and departures at the second-floor level. A partial third floor will

TERMINAL PLUGS NEW LIFE INTO TANZANIA



Bridging the gap: The new terminal has eight airbridges to help speed passenger flows on and off aircraft.



Huge boost: Julius Nyerere Terminal 3 will approximately triple the airport's passenger-handling capability.

contain further technical areas.

The new terminal was designed by Egypt's Arab Consulting Engineers, while Dutch firm, BAM International, carried out the construction. As well as the terminal building itself, the project has involved the creation of 90,000sqm of apron and parking space for 2,900 cars.

BAM International project director, Wolfgang Marschick, said challenges that had to be overcome during the construction process included a change to the building's foundation design after ground conditions were discovered to be not as originally reported.

The biggest problem was finding enough skilled workers, said Marschick. At the peak of construction work, around 2,500 people were employed on site.

Workers needed to be trained in every aspect of the building process, he said, including concrete, reinforcement work, even how to erect scaffolding. "We had to do a lot of training and brought in people from outside to do that."



BAM International instituted very high safety standards, he added, with daily checks on aspects of the work. Considerable effort was also put into minimising the environmental aspects of the construction process, with waste being segregated on site and disposed of by a licensed company. Quarterly environmental checks were carried out by independent outside examiners.

The construction process was lengthy. *African Aerospace* understands that one reason for this was a fear among Tanzanian civil servants that if they made a decision relating to progress on the terminal, they could be held accountable if that decision was later questioned by a retrospective audit of the project. This meant that decisions were consistently referred upwards to senior officials or ministers for decisions.

With Terminal 3 up and running, the question remains as to what will happen to the existing two buildings. Reports vary – one says that Terminal 2 will become the domestic terminal, while others say that Terminals 1 and 2 will be combined, or that Terminal 1 will become a VIP facility. Attempts by *African Aerospace* to contact officials at the Tanzanian Civil Aviation Authority to verify the future shape of the airport were unsuccessful. ■

Trending upwards: The capacity of Addis Ababa's Bole International Airport has been hugely increased with this year's opening of a new terminal.



BOLE IN POLE POSITION

Ironically, until recently, the largest transit hub for African destinations was not even on the continent.

Dubai International Airport was the busiest centre for connections, due to Dubai-headquartered Emirates Airline's steady expansion into Africa and the gravitational pull exerted on airlines by the airport's size and facilities.

That situation is changing, with the growth of both Addis Ababa's Bole International Airport and of Bole-based Ethiopian Airlines.

A late 2018 report by Spain-based data and business intelligence organisation, ForwardKeys, named the Ethiopian capital as having taken top position from Dubai as Africa's biggest transit hub for long-haul passengers to Africa.



ForwardKeys' data showed that Dubai International and Bole had both been expanding steadily from 2013-16, with the UAE hub maintaining a lead over its Ethiopian rival. However, in 2017, the two airports were almost level and figures for the first 10 months of 2018 showed that Bole had moved into a clear lead.

The company said: "At least some of Ethiopia's increase in international flight bookings is being attributed to new-found confidence in the wake of reforms carried out by Prime Minister, Abiy Ahmed, since he took office in April.

"These include signing a peace deal with Eritrea in July, a new e-visa policy introduced in June, which allows all international visitors to apply for a visa on-line, and a promise to open Ethiopia's

Ethiopia's increasingly relaxed visa regime and the expansion of the country's national airline have helped Addis Ababa become Africa's biggest long-haul transit hub. Alan Dron reports.

markets to private investment.

"International bookings for Ethiopia, for the period from November 2018 to January 2019, are ahead by more than 40% on the same period in 2017 – well ahead of all other destinations in sub-Saharan Africa."

Liberalising visa regimes has proved to be a major factor in increasing the number of passengers to Africa in general. ForwardKeys particularly noted the huge increase in Chinese tourists to African nations that had made visa applications easier – notably through the provision of visas on arrival, or visa exemptions.

Morocco and Tunisia, for example, gave Chinese visitors visa exemptions in 2016 and 2017 respectively. Within six months, the number of Chinese visitors to Tunisia had grown by 214%, while Morocco recorded an astonishing 440% rise.

ForwardKeys' statistics did not give actual figures, so the increases are likely to have been from a low starting base, but they nevertheless show the effect of liberalising visa regimes.

Ethiopia introduced e-visas in May 2018 and, although the rise was much more modest, it nevertheless saw a 17% increase in Chinese tourists by November that year.

The relaxation of visa regulations has combined with January's opening of Ethiopian Airlines' new \$360 million passenger terminal. The airport has now tripled its passenger capacity and will be able to accommodate up to 22 million passengers annually, making it the biggest in Africa.

Opening the new terminal, prime minister Abiy said that the country had even larger future ambitions. "We expect the [Ethiopian Airlines'] board and management not to be complacent with the new terminal, but rather to aim for a bigger facility with a capacity to accommodate at least 100 million passengers."



Abiy also set a new challenge for Ethiopian Airlines: to build a 100 million passenger airport in Bishoftu, a resort town located just over an hour south-east of the capital.

Ethiopian Airlines is implementing Vision 2025, a 15-year strategic plan aimed at making it Africa's leading aviation group. Over the last 13 years, the carrier has been growing at 20-25% annually, becoming the largest airline in Africa and serving more than 60 destinations on the continent.

The Star Alliance operates around 110 aircraft, with an average fleet age of just five years. An influx of aircraft in recent years has seen it adopt the Airbus A350-900, Boeing 787-8 and -9 and – sadly, in the light of recent events – the 737 MAX 8.

A further 65 aircraft are on order for delivery in coming years, reinforcing the airline's position as Africa's largest. ■

Liberalising visa regimes has proved to be a major factor in increasing the number of passengers to Africa.



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Le district d'Ukerewe, une île située sur le lac Victoria en Tanzanie, a bénéficié d'un service régulier de livraison de médicaments par drone durant six mois. Un reportage de Vincent Chappard.

DHL LIVRE DES MÉDICAMENTS ESSENTIELS PAR DRONE

Depuis quelques années, il existe de multiples initiatives pour assurer la livraison de matériel médical via des drones dans les régions éloignées, enclavées ou inaccessibles par voie terrestre en Afrique.

En 2016, le projet Redline, le premier port accueillant les drones fut lancé au Rwanda, permettant la livraison du sang et des médicaments dans des hôpitaux. Depuis la même année, la startup Zipline utilise des drones pour livrer du sang.

Le géant de la logistique allemande DHL (filiale de la Deutsche Post) s'est lancé dans cette révolution via son projet « Delivering future ».



Des opérations ont ainsi été menées en Tanzanie par DHL en partenariat avec la Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) et le fabricant allemand de drones Wingcopter.

« L'un des principaux défis était que les 400 000 habitants de l'île d'Ukerewe avaient des soins médicaux très limités partiellement en raison des mauvaises conditions routières et du terrain. C'était quasi impossible de fournir des médicaments d'urgence ou de faire le plein des produits frigorifiés rapidement en cas de rupture de stock », explique Alexander Edenhofer, porte-parole de la Deutsche Post DHL Group.

DHL, GIZ et Wingcopter travaillent sur le projet



Le drone DHL Parcelcopter 4.0 : Révolutionner la distribution de médicaments.

Parcelcopter depuis 2013. Ces livraisons ont été effectuées grâce à leur drone de dernière génération : le Parcelcopter 4.0. Il décolle et atterrit à la verticale. Il peut voler à une vitesse de 130 km/h, parcourir une distance de 65 km et prendre une charge utile de 4 kg. Le Parcelcopter 4.0 met en moyenne 40 minutes pour traverser les 60 km reliant le continent à l'île d'Ukerewe. Il a parcouru 2 200 km, effectué plus de 180 décollages et atterrissages et volé durant environ 2 000 minutes au total.

Ces opérations sont bénéfiques pour les habitants du district d'Ukerewe. L'île est habituellement reliée par ferry en trois heures et demie. Par la route, il faut six heures pour parcourir les 240 km qui relient Mwanza jusqu'au point de départ d'un autre ferry (3,8 km à traverser) pour rejoindre l'île.



SUMMARY

DHL DELIVERS VITAL MEDICINES BY DRONE

Ukerewe District, an isolated island located on Lake Victoria in Tanzania, has been receiving regular deliveries of essential medicines by drone.

Recent years have seen many initiatives to ensure the delivery of vital medicines by drones in remote, landlocked and inaccessible areas throughout Africa.

In 2016, the 'redline project' was launched in Rwanda allowing the delivery of blood supplies and medicines to hospitals.

Now German logistics giant, DHL, (a subsidiary of Deutsche Post) has joined this revolution through its 'delivering future' initiative.

DHL has been operating in Tanzania in partnership with Deutsche Gesellschaft für

Internationale Zusammenarbeit (GIZ) and the German drone maker, Wingcopter.

"The main challenge was that the 400,000 inhabitants of Ukerewe Island had very limited medical care. It was almost impossible to provide emergency medicines or to re-supply refrigerated products, including vaccines," explained DHL's Alexander Edenhofer.

DHL, GIZ and Wingcopter have been working on their 'Parcelcopter' project since 2013. Deliveries are made by their latest generation drone, the Parcelcopter 4.0. It takes off and lands vertically; flies at up to 130km/h; travels up to 65km and carries a payload of 4kg. The drone takes an average of 40 minutes to cover the 60km to Ukerewe... a huge reduction over travel by road and ferry that takes many hours.

« Fort du succès de ce projet, DHL et GIZ/BMZ poursuivront la livraison de matériel médical d'urgence par drone et notre coopération avec les autorités », rappelle Alexander Edenhofer. « Nous allons encore évaluer notre système pour voir dans quelles conditions le Parcelcopter 4.0 pourra assurer un service régulier et utile pour la population. »

Les drones sont indéniablement en train de révolutionner la livraison de médicaments ou de résultats d'analyses dans des régions isolées d'Afrique.

Pour DHL, outre l'amélioration du support logistique dans le domaine de la santé publique, le Parcelcopter 4.0 peut également aider à prévenir des crises sanitaires mondiales à travers des réponses rapides face à la propagation d'épidémies comme Ebola.

De nombreuses études montrent que les drones pourront bientôt assurer 10 à 20% du transport régional de marchandises en Afrique.

More than 1,000 people were killed and property destroyed as two cyclones tore through southern and eastern Africa in March and April. Humphrey Nkonde reports.

Mercy missions flood cyclone-hit areas with relief

The terrifying Cyclone Idai made its landfall on March 14/15 near Beira and left about 1,000 people dead and close to two million in need of life-saving support in Mozambique, Malawi and Zimbabwe.

Later, Cyclone Kenneth struck on April 21 and affected Mozambique, Madagascar, Seychelles, Comoros, Mayotte, Malawi and Tanzania, leaving at least 50 people dead.

Cyclone Idai created massive floods and severely damaged about 90% of the infrastructure in the Mozambique port of Beira.

Winds reached speeds of nearly 200kmh as the cyclone tore through the region, destroying buildings and equipment valued at more than \$1 billion.

Operations at Beira International Airport had to be temporarily halted after the storm damaged the control tower and runways.

Thousands of people were trapped by floods, with many seeking refuge on higher ground surrounded by water, or in trees, on rooftops, in schools and other public buildings.

The storm destroyed bridges and roads, meaning that air transport was urgently needed to rescue people and deliver relief supplies.

□□□□

Mercy Air, a non-profit Christian humanitarian aviation organisation, headquartered in White River, South Africa, was the first to respond after the cyclone struck.

The organisation's fleet comprises two AS350 B2 helicopters, a Quest Kodiak 100 and a Cessna 310. Since 2000, it has been involved in monitoring floods in southern Africa.

One of its helicopters was involved in rescuing people from the floods, distributing food and materials that were used to set up the first camp, and conducting initial aerial surveys.

Mercy Air, which has been providing aviation services to humanitarian and mission organisations since 1991, is focused on educational, medical and evangelical outreach programmes to remote areas of southern Africa. It has also offered relief services in previous storms to hit Mozambique over the past two decades.

That background knowledge made it easier for the organisation to respond quickly to the emergency.



Emergency aid: Mercy Air's AS350 B2 helicopter delivers relief maize in Mozambique after Cyclone Idai struck.

PICTURE MERCY AIR.

"Ours was the first helicopter on the scene in Beira to rescue people, deliver food and materials that were used to set up the first camp, and complete survey flights," said Mercy Air authorities.

Although the humanitarian aviation organisation was on the ground early, its officials did not anticipate that the 2019 storm would be more intense than others previously experienced.

"Specifically, big floods occurred in 2000, 2007, 2009, 2010, 2013 and now in 2019," said Mercy Air's chief executive officer, Allan Luus.

"We are on standby every year during the flooding season. Because Mercy Air is independent, we can react immediately.

"This year we were in Mozambique the day before the cyclone hit Beira. We knew to be prepared by simply monitoring the aviation meteorological services for Mozambique, Zimbabwe, Malawi and Swaziland."

Airbus, the manufacturer of the AS350 B2 helicopter, said the make was suitable for rescue operations. Linden Birns, the public and media relations representative for Airbus in sub-Saharan Africa, explained: "The AS350 B2 helicopter has a wide and flat cabin floor that can be quickly and easily reconfigured for a variety of missions, including rescue, firefighting and law enforcement."

Birns said Airbus employs more than 100 people at its large maintenance, repair and

overhaul (MRO) facility in Midrand, South Africa, and satellite facilities in Nairobi and Cape Town, where the AS350 B2 can be serviced.

Civil aviation efforts following Idai were later beefed up by military operations of the United Nations Humanitarian Air Service, the UK's Royal Air Force, US Command in Africa and others.

The South African National Defence Force (SANDF) came in to rescue people who were trapped by the floods.

□□□□

SANDF told journalists that it rescued 417 victims of Cyclone Idai and also delivered medicine and 62 tonnes of relief food to Mozambique and Malawi.

South African military officers distributed supplies to Malawi through Chileka International Airport in Blantyre.

The US Command in Africa was also involved in air delivery of supplies and transporting by air of personnel, who loaded goods on planes following the cyclone's devastation.

It also opened up airfields, on top of advising the Mozambican Government on how relief operations could be enhanced logistically.

The UK's Royal Air Force delivered 20 tonnes of life-saving supplies, including water filters,

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Trapped: Several people were cut off after the storm made its landfall near Beira in mid March.

PICTURE MERCY AIR.

SOMMAIRE

UNE RÉPONSE AÉRIENNE APRÈS LES CYCLONES IDAI ET KENNETH

Les cyclones Idai et Kenneth ont fait plus d'un millier de morts et d'importants dégâts matériels en Afrique australe et orientale en mars et avril dernier. Le point avec Humphrey Nkonde.

Le cyclone Idai qui a sévi à la mi-mars a causé plus d'un millier de morts, des inondations massives et de lourdes pertes matérielles estimées à plus d'un milliard de dollars. Environ 90% des infrastructures du port de Beira au Mozambique ont été détruites. Les opérations à l'aéroport international de Beira ont été temporairement interrompues. Le transport aérien a donc été vital pour acheminer les secours et l'aide d'urgence aux populations en détresse.

Un mois plus tard, le cyclone Kenneth a fait une cinquantaine de victimes.

Mercy Air, basée à White River (Afrique du Sud) a été la première ONG à intervenir. Elle s'était fortement engagée lors des précédentes tempêtes ayant frappé le Mozambique. Sa flotte comprend deux AS350 B2, un Quest Kodiak 100 et un Cessna 310.

La connaissance du terrain de Mercy Air lui a permis de réagir rapidement et efficacement. Le premier hélicoptère a ainsi pu atterrir à Beira. « Nous faisons de la surveillance pendant la saison des inondations. Cette année, nous étions à Beira au Mozambique, la veille du cyclone », a affirmé Allan Luus, son PDG.

Pour Linden Birns, porte-parole d'Airbus en Afrique subsaharienne, l'AS350 B2 est un

hélicoptère particulièrement adapté aux opérations de sauvetage.

Les opérations de Mercy Air ont été renforcées rapidement entre autres par l'ONU, la RAF du Royaume-Uni et le commandement américain en Afrique.

La SANDF est également intervenue pour secourir les personnes piégées par les inondations.



Le commandement américain en Afrique a permis l'approvisionnement aérien de matériels et de vivres aux victimes ainsi que l'ouverture des aérodromes. Il a aussi conseillé le gouvernement mozambicain tant sur le déploiement des opérations de secours que sur les besoins en logistique.

La RAF a livré 20 tonnes de matériel en particulier des filtres à eau, des lanternes solaires, des couvertures et des kits d'abris. Des opérations de dons ont également été initiées au Royaume-Uni.

Airbus a opéré son nouvel A330neo en fournissant des équipements d'assainissement ainsi que du matériel pour la construction d'abris temporaires. Ainsi, 26 tonnes ont été transportées par Airbus

Foundation via la Croix-Rouge et le Croissant Rouge.

« Nous sommes attristés par les dégâts et les pertes causées par le cyclone Idai et soutenons les habitants du Mozambique durant cette période extrêmement difficile », a déclaré Guillaume Faury, directeur d'Airbus Commercial Aircraft (aujourd'hui président d'Airbus) et membre du conseil d'administration de la Fondation Airbus.

Mission Aviation Fellowship (MAF) a également apporté son aide (eau, nourriture, matériel sanitaire et médicaments) aux sinistrés avec un Cessna Grand Caravan, adapté pour ce type d'opération comme l'a expliqué Brad Hoaglund, son directeur de Corporate Communication.

Le passage de ces deux cyclones a suscité des réflexions sur la manière de réagir face aux catastrophes naturelles. Malgré une réaction massive des agences de l'ONU, des gouvernements et des forces armées, l'intervention la plus rapide fut celle de Mercy Air surtout concernant le cyclone Idai. Alors que les catastrophes liées au climat se multiplient en Afrique, la SADC peut collaborer avec des organisations humanitaires et météorologiques pour apporter des réponses plus rapides et coordonnées. ■



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solar lanterns, blankets and shelters kits. The Department for International Development made available donations from the UK.

Meanwhile, Airbus tested the A330neo aircraft by delivering water, sanitation and hygiene equipment, as well as materials that were used to make temporary shelters for survivors of the cyclone. The 26 tonnes of supplies were provided by Airbus Foundation through the International Federation of Red Cross and Red Crescent Societies.

The test aircraft left Geneva in Switzerland on the evening of March 25 and landed at Mozambique's Maputo International Airport the following morning.

"We are saddened by the devastation and losses caused by Cyclone Idai and stand with the people of Mozambique during these incredibly difficult times," said Guillaume Faury, president of Airbus' commercial aircraft.

Faury, who is also a member of the Airbus Foundation's board of directors, said that providing humanitarian support by delivering critical assistance was the core of the foundation's mission.

Mission Aviation Fellowship (MAF) was another humanitarian aviation organisation that offered relief services after cyclones Idai and Kenneth struck.



Since 2000, MAF, operating as Ambassador Aviation, has maintained a base at Nampula in Mozambique, from where it mainly offers medical evacuation services.

Its fleet in Nampula comprises a Cessna Grand Caravan and Cessna 206.

Brad Hoaglund, MAF's director of corporate communication, said his organisation delivered 16.1 metric tonnes of food, shelter and medicine to victims of Cyclone Idai. "MAF used the Cessna Grand Caravan to conduct assessment surveys that were shared with Mozambique's Disaster Management Agency to determine the storm's impact and areas with greatest need of relief food," Hoaglund added.

He explained that the Cessna Grand Caravan was suitable for such operations.

"It is a robust aircraft that performs well in disaster response situations. It is able to land on rugged grass or dirty airstrips while carrying up to 11 passengers or a significant amount of cargo."

MAF was formed in 1945 by World War II pilots, who had a vision of using aviation to spread the gospel.

With a fleet of 131 aircraft and headquartered in Nampa, Idaho in the US, it has grown into a global organisation serving 37 countries in Africa, Asia, Eurasia, Indonesia and Latin America.

It also responded to Cyclone Kenneth, whose highest winds reached a maximum speed of 215kmh.



It delivered 12,916kg of cargo comprising water, food, sanitation and hygiene materials, as well as medicine, to Ibo and Matemo islands in Mozambique.

Cyclone Kenneth destroyed communication infrastructure on Ibo Island, resulting in MAF setting up a very small aperture terminal (VSAT) satellite communication system for relief workers and others.

The two cyclones brought out lessons regarding response to natural disasters by non-profit humanitarian aviation organisations, the United Nations (UN) agencies, and the military.

The disaster showed that, while there was a massive response by the UN agencies and the military, the quickest reaction – particularly for Cyclone Idai – came from Mercy Air.

As climate-related disasters intensify in Africa, the Southern African Development Community (SADC) and similar organisations can work with small humanitarian organisations to offer first-line responses to disasters.

Countries in the SADC region have government-controlled, private and non-profit humanitarian aviation organisations that provide aero medical and pest control services. Those organisations can extend their mandates to natural, human-made and climate-related disasters. They can work together with meteorological service providers to offer quick responses to natural disasters in a coordinated manner. ■

When the International Air Transport Association (IATA) annual general meeting kicked off in Seoul, South Korea, on June 2, issues surrounding Boeing's MAX aircraft came under the spotlight. **Kaleyesus Bekele** was there.

IATA calls for harmony on MAX certification



Trust in the certification system has been damaged – among regulators, between regulators, within the industry and with the flying public.

ALEXANDER DE JUNIAC

The industry has never faced anything like this in recent history, with a specific jetliner globally grounded in the wake of fatal crashes.

Presenting his annual report, director general, Alexander de Juniac, stated that the recent Boeing B737 MAX accidents have put the airline industry's reputation in the spotlight. "Serious questions arise with two accidents of a new aircraft model in quick succession," he said.

IATA, which held a meeting with Boeing MAX 737 operators on May 23, stressed the need for a harmonised recertification process on the aircraft. "Investigators will ultimately reveal the cause and a remedy will be found," de Juniac said.

However, he added that the consequences of the accidents go "far beyond" the technical. "Trust in the certification system has been damaged – among regulators, between regulators, within the industry and with the flying public," he said.

According to de Juniac, there is lack of a common, coordinated approach on the grounding of the MAX. "People were confused as grounding decisions rolled out in some markets, while it was business as usual in others." He called on regulators to avoid a repeat of the patchy approach in the ungrounding of the type. "Put yourselves in the shoes of travellers and I am sure anyone would expect better."

De Juniac said that he does not advocate knee-jerk reactions but urged airworthiness authorities and industry to take a transparent and coordinated response in bringing the aircraft back into service to maintain public confidence in safety.

At the CEOs' insight panel discussion, moderated by news organisation CNN's Richard Quest, prominent executives revealed their fear on the absence of harmonised re-certification of the MAX aircraft. The Federal Aviation

Administration (FAA) may approve the return of MAX fleet to the skies soon but the European Aviation Safety Agency (EASA) approval process may take longer. This has worried operators.

Goh Choon Phong, CEO of Singapore Airlines, said carriers operating in large countries like the USA and Canada may operate the aircraft on domestic routes after their regulators allow the B737MAX to return to service, but Singapore Airlines does not have that luxury.

"We operate internationally. What that means is that beyond having the approval in Singapore I would need approval from countries that we intend to operate into with the MAX. That is another complexity. Of course, beyond that we need the pilot community to be able to accept the solution and we need the public confidence to come back."

Singapore Airlines has six MAX aircraft grounded and 31 on order.

Lufthansa Group CEO and new chairman of the IATA board of governors, Carsten Spohr, added his concern over the MAX recertification process.

□□□□□

Spohr expressed his worry on the possible divergence on the timing between the FAA and other regulatory bodies' approval. "Everyone must be confident that processes are sufficiently thorough not to warrant duplicative and redundant examinations jurisdiction by jurisdiction," he said. "While Boeing and the US Federal Aviation Administration are at centre stage, the close collaboration of counterpart manufacturers and civil aviation authorities around the world is essential. Any rift between regulators is not in anybody's interest."

He added that this was about more than restoring confidence in how aircraft are certified. He also said that when issues arose, coordination among regulators and with industry must improve.

Ethiopian Airlines Group CEO, Tewolde GebreMariam, who attended the summit, told *African Aerospace* that his airline would be the last airline to return its MAX fleet to service. "We want to evaluate the solution that Boeing comes up with. We want to see the recertification process by the FAA and we will also see the reaction of other regulators. We also want to assess how the global airline industry would react. As we are victims, we will not be the first airline to return the aircraft to operation," GebreMariam concluded.

Ethiopian was the first airline to ground its MAX fleet on March 10, when its jetliner crashed with 157 on board shortly after take-off from Addis Ababa Bole International Airport en route to Nairobi. Africa's largest airline grounded its four B737-8MAX aircraft and has 25 more on its order book.



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The MEBAA Show Morocco is the only dedicated business aviation event in north Africa – and its growing popularity reflects market demand. **Marcelle Nethersole reports.**

MEBAA'S NORTH STAR



We're expecting more than 2,000 trade visitors across the two days of the show.
ALI ALNAQBI

The International Air Transport Association (IATA) predicts that, by 2036, there will be 400 million passengers in the African aviation marketplace alone.

The continent is starting to see a real boom with the rest of the aviation world keeping a keen eye-out.

However, it is still north Africa that reaps much of the benefit when it comes to commercial travel, and, of course, business aviation.

The number of registered aircraft in the MENA region is predicted by WINGX to increase to 1,200 by 2020, with business aircraft movements predicted to reach 175,000 in the same timeframe.

This alone leads to market demand for the MEBAA Show Morocco (MEBAA).

MEBAA 2019 will be the third running of the event.

Taking place on September 25-26, it will be the second time it has been hosted at Marrakech Menara Airport.

"We're expecting more than 2,000 trade visitors across the two days of the show, which will include heads-of-state, corporate aviation end-users, private buyers and high-net-worth individuals, plus many companies from within the business aviation supply chain," said Ali Alnaqbi, founding and executive chairman of MEBAA.

"We are currently expecting up to 70 exhibitors, including companies that have been with us previously. This includes Air Ocean Maroc, XJet and Milano Prime, as well as first time names, including AMAC Aerospace."

There will also be a line-up of aircraft on the static that was yet to be announced as *African Aerospace* was going to press, but Alnaqbi said: "I can assure people, it will be fantastic."

Alnaqbi has seen the event thrive over the last few years and said this shows the importance of business aviation in north Africa.

"When you look at the driving factors, you see that business aviation in the region is growing, and Morocco is leading this with an expanding wealthy elite increasing business jet usage," he said.

"Office National Des Aéroports (ONDA) reports the country's airports manage 50% of north Africa's business jet movements. Combined with government support, it makes sense that the MEBAA Show Morocco is growing."

The event works closely with governments across the region.

"This industry reputation and backing is enhanced with our partnership with ONDA in Morocco," added Alnaqbi.

In addition, the MEBAA Conference Morocco takes place on September 24, the day before the show opens. It features key business leaders and roundtables to promote discussion and share industry knowledge.



Key topics to be discussed include: innovations and the future of business aviation; the impact of big data in the industry; new technologies, such as blockchain and cyber security; airports and infrastructure; and the African market influence in Morocco.

"The country has shown 70% of private jet usage for business purposes, while the remaining 30% is for pleasure," explained Alnaqbi. "With figures such as this, it's hardly surprising that the industry has such positive implications."

There are now around 200 aviation companies present in Morocco including Bombardier, Safran, Boeing and Airbus. The Moroccan Government has identified the growth potential in the aerospace and business aviation industries and has focused on creating an environment for manufacturers to establish themselves.

"Morocco's 2020 aerospace goals include bringing in 100 new investors, creating 23,000 new jobs and generating \$1.6 billion in new revenue, and ONDA announced a plan for a dedicated business aviation airport – Tit Mellil in Casablanca – to be operational by 2025," said Alnaqbi.

He added that the strategy to attract business aviation was further enhanced when ONDA awarded Jetex and Swissport Executive Aviation fixed-base operations (FBO) contracts for nine facilities.

"It has caught the attention of industry leaders. Khader Mattar, Bombardier's vice president of sales for Middle East and Africa, mentioned that Dubai started with one FBO in 2001 and now there are six," said Alnaqbi. "Morocco is clearly seeing the demand for business aviation." ■

Cindy Lou Dale turns the spotlight on a maverick pilot who – 90 years ago – revolutionised the airways over South Africa and effectively created the country's most famous airline.

The Major breakthrough for South African aviation

It all kicked off in 1929 when Major Allister Mackintosh Miller founded Union Airways in Port Elizabeth on South Africa's east coast.

An early aviation pioneer and entrepreneur, Allister Miller (commonly referred to as the 'Major') contributed significantly to both military and civil aviation during the first half of the 20th Century.

He joined the Royal Flying Corps (RFC) in World War 1 and the South African Air Force in World War 2; in between he set up Union Airways – the predecessor of South African Airways.

At the outbreak of The Great War, Miller joined the British Army; then a year later transferred to the Royal Flying Corps and trained as a pilot. He fought over Belgium and France's western front.

He was posted back to South Africa on an RFC recruitment drive and persuaded more than 2,000 men to enlist with the corps. Most were accepted and were sent to England for pilot training. Later they were known as 'Miller's Boys'.



After WW1, the Major pursued a career in civil aviation. His first two ventures were short-lived: the South African Aerial Navigation Company, which became South African Aerial Transports Ltd (1919–1920), and Rhodesian Aerial Tours (1922).

The Major was elected a member of South Africa's parliament in 1924. In this capacity, he successfully lobbied for government backing of civil aviation.

This was an age of dreamers and schemers – and the Major had a plan. He gave flying demonstrations, toured the country to popularise aviation and encouraged the formation of flying

ALLISTER MACKINTOSH MILLER, WAR HERO AND PIONEER

Born in Schombeni, Swaziland, in 1892, Allister Mackintosh Miller was schooled at St Aidan's College, Grahamstown. He spent a year at Rhodes University before enrolling as an engineering student at City and Guilds College, London University in 1912.

He received the OBE and DSO, retiring at the end of WW2 as a Lieutenant Colonel. Nevertheless, he is remembered as 'Major' Miller because it was in this rank that his great reputation was won.

War hero, recruiting officer for the RFC, barnstorming pilot, pioneer, founding father of South African civil aviation, devout family man and husband



Flying high: SAA has a presence in 19 countries and a fleet of 48 aircraft.

clubs. His plans were big, and the way he saw the future was simple.

He saw an opportunity with the postal system. On Monday mornings, mail would be collected from the Union Castle steamships from Britain, docked in Cape Town harbour.

His plan was to fly the mail to Port Elizabeth in a de Havilland DH 60 Gipsy Moth bi-plane. In Port Elizabeth two further Gipsy Moths would be waiting to continue the service, one to fly mail to Bloemfontein and Johannesburg and the other to East London and Durban. Three days later the return service would reach Cape Town in time for the departing UK-bound steamships.

Thus, in an extraordinary feat that had never been attempted before, the Major lowered his slight frame into a BE2e bi-plane, built by

to Marion Mercy, member of parliament, aviation entrepreneur and great gentleman, generous to the extreme, the Major wrote a magnificent page in South Africa's aviation history.

He was laid to rest in Port Elizabeth in 1951 with little more than a small bust in the South African Air Force Museum in Port Elizabeth to remember him by – and the road leading to Port Elizabeth's airport, which bears his name.

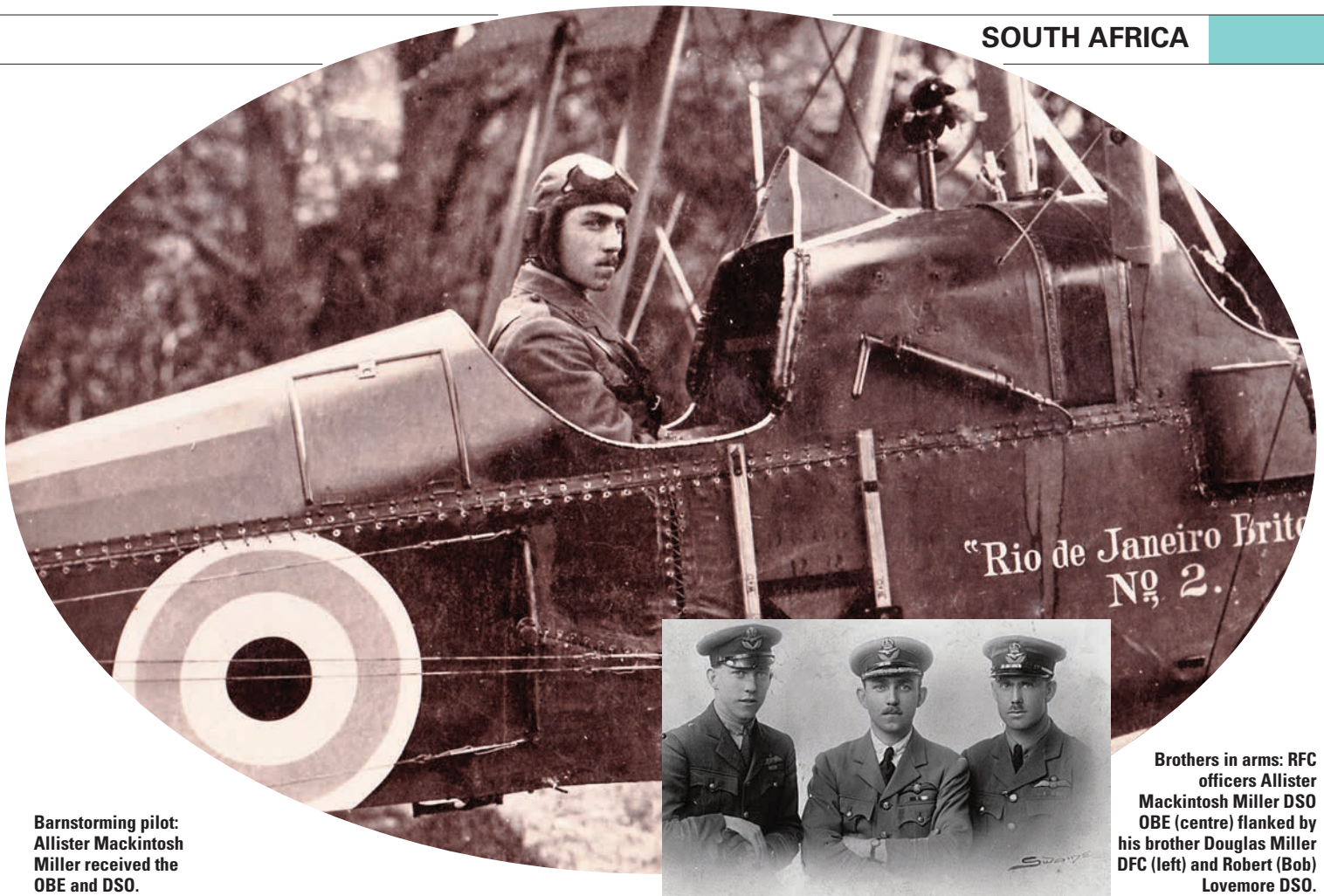
For those needing something a little more tangible, all that needs doing is look up, his legacy is up there, flying between the sun and the stars.

Wolseley Motors, and attempted South Africa's first ever airmail delivery, flying the 528-mile journey from Cape Town to Port Elizabeth. From Young's Field airbase, he flew for five hours and 18 minutes, at an altitude of 5,000 feet, travelling at 70mph. He touched down on the 18th fairway of the Port Elizabeth Golf Club, the first aircraft to ever land at the city.



The *Eastern Province Herald* describes the scene: "Major Miller's approach was signalled from Humansdorp at about 11h25 and the great crowd on the golf links watched the south-western sky with excited expectancy. There was a cry, which rapidly swelled when a dot, no bigger than a butterfly, swung over the hills some miles away, and for the next 13 minutes every head was craned skywards. Major Miller made straight for the landing place.

"The bi-plane grew rapidly larger till its chief details were easily visible. The sun caught it and transformed it into a thing of gold with scintillating points where metalwork caught the rays. The flashing circle of the revolving propeller grew distinct and twin feathers of smoke from the exhausts streamed out behind. A bird in flight was not more graceful, and the air hummed with exclamations of admiration.



Barnstorming pilot: Allister Mackintosh Miller received the OBE and DSO.

Brothers in arms: RFC officers Allister Mackintosh Miller DSO OBE (centre) flanked by his brother Douglas Miller DFC (left) and Robert (Bob) Lovemore DSO.

“It circled twice, dropping in altitude all the time until, at a couple of hundred feet, a white message bag was dropped to the waiting crowd of around 5,000 – all fascinated at the concept of flight and witness the arrival. He volplaned (glided) down to the fairway, dashed towards the green, but was forced to crash his craft into a fairway bunker as over-eager spectators rushed out in welcome. The only damage to the plane was a broken propeller, which was presented to the golf club as a memento of an historic occasion.”

Coupled with this feat, was the fact that the Major carried 80 copies of the *Cape Times* newspaper, as well as some mail. As such, this mail rightfully claimed the title of first airmail from Cape Town to Port Elizabeth.

In 1929, after obtaining financial backing for a commercial air service, the Major founded Union Airways, South Africa’s first commercial mail carrier between Cape Town and Port Elizabeth. Soon thereafter, Union Airways was awarded a government contract to deliver mail to other major centres throughout the country.

Originally a mail carrier with a fleet of just five DH60 Gypsy Moths, Union Airways began transporting passengers once a Super Fokker Universal and two DH Puss Moths joined the fleet.

Funded by the Atlantic Refining Company and a small government subsidy, they were struggling to make ends meet until four years later, when

A legacy upon which to build

In 1888, the Major’s father, Allister M Miller, arrived in Mbabane, a town in Swaziland founded by canteen-keeper Mickey Wells. It was later established by the British as the capital of the small protectorate.

Two months after Miller’s arrival, King Mbandzeni appointed him as the resident justice in charge of the Mbekelweni district.

A year later, he was appointed a permanent secretary and agent of the king. This position earned Miller Snr a place on the Swaziland Government committee. He was a go-between of the king and European business interests and was responsible for registration of documents and the transfer of grants.

As a trusted friend of the Swazi people, and prominent white settler, Miller became their advisor. Nine years later he founded *The Times of Swaziland*, which was geared as the settler’s platform to criticise the colonial government. By then he was affectionately known to the Swazi people as *Mabhala* (writer).

South West African Airways, already successfully providing a weekly airmail service between Windhoek and Kimberley, bought a substantial share in the Union Airways.

But the nail in the proverbial coffin was when a couple of Union Airways planes fell in 1931. It was a major blow to the airline and forced the Major to approach the South African Government to take over the operation.



Thus, in 1934, Union Airways, with its 40 staff members and fleet of seven aircraft, was bought out by the South African Government, which rebranded its new acquisition as South African Airways (SAA).

It became clear that Johannesburg would become the country’s aviation hub, so SAA moved its headquarters from Durban to Rand Airport in Germiston in 1935. This coincided with SAA’s launch of the Rand-Durban-East London-Port Elizabeth-Cape Town services, transporting 3,074 passengers in its first year.

Within five years, SAA had 29 Junkers in operation. Now it has a presence in 19 countries and a fleet of 48 aircraft.

In 2017, SAA transported more than 6.8 million passengers around the world and provided employment to 9,856 people. ■

La Banque africaine de développement (BAD) est engagée depuis plusieurs années dans l'accompagnement du transport aérien en Afrique. Romain Ekoto, chargé aviation en chef de la BAD a parlé de sa vision et des projets en cours avec Romuald Ngueyap.

La BAD compte sur l'intégration régionale

Romain EKOTO a pris ses fonctions au sein de la BAD en juin 2018 après plus de onze ans d'expérience cumulés auprès de l'Organisation Internationale de l'Aviation Civile (OACI). Il est responsable du développement et de la mise en œuvre de la stratégie de la BAD pour soutenir le secteur de l'aviation en Afrique.

« La Banque africaine de développement s'est fixée des objectifs stratégiques parmi lesquels l'intégration régionale. Nous soutenons l'aviation parce que ce secteur apparaît plus que jamais comme un facteur contributif à cette intégration », affirme-t-il.

Selon l'IATA, l'industrie aéronautique en Afrique génère une activité économique de 55,8 milliards de dollars et 6,8 millions emplois. Au cours des 20 prochaines années, le secteur devrait connaître une croissance d'environ 6% par an.

Romain Ekoto estime que le transport aérien en Afrique constitue un secteur stratégique pour l'institution, basée à Abidjan, en Côte d'Ivoire.



Au cours des dix dernières années, la BAD a investi environ vingt milliards de dollars dans des infrastructures de transport dont plus d'un milliard dans le secteur de l'aviation. « 75% des financements dans l'aviation sont consacrés à la modernisation des infrastructures aéroportuaires », indique-t-il tout en reconnaissant que le déficit reste encore important.

L'un de ses plus récents financements est la modernisation de l'aéroport international Nelson Mandela de Praia au Cap Vert, qui entre dans sa phase finale. Selon les prévisions de la BAD, après les travaux, il pourra accueillir 940 000 passagers d'ici 2020 et 2,2 millions à l'horizon 2035.

Des investissements similaires ont été faits dans la construction ou l'agrandissement d'aéroports au Ghana, au Kenya, au Maroc et en Tunisie de même que dans l'amélioration de la

sécurité et de la navigation aériennes en République démocratique du Congo (RDC) et dans d'autres pays d'Afrique Centrale et de l'Ouest.

« L'un des objectifs de la BAD est d'accompagner le secteur à renforcer sa rentabilité donc à améliorer ses performances économiques. En permettant aux gestionnaires aéroportuaires d'accéder à des financements moins chers et en travaillant avec eux sur les problématiques de gouvernance et de génération de revenus notamment à caractère commercial, on devrait leur permettre d'améliorer leurs résultats. »

La BAD soutient aussi un programme régional, sous forme de subventions, pour le renforcement des capacités et des systèmes de coordination dans 25 pays d'Afrique de l'Ouest et du Centre. « À terme, le soutien de la BAD vise à porter le nombre d'aéroports certifiés conformément aux normes de l'OACI à 20 d'ici fin 2019. »

L'institution soutient également d'autres composantes du secteur notamment les compagnies aériennes. « Nous avons déjà financé l'acquisition d'aéronefs par Ethiopian Airlines et plus récemment, par Air Côte d'Ivoire ».



L'institution travaille surtout sur les mécanismes de financement à coût compétitif pour les transporteurs du continent. « Nous avons démarré une étude pour la création d'une plateforme de leasing en Afrique. L'objectif est de permettre aux compagnies aériennes d'accéder à des avions aux prix du marché contrairement à la situation actuelle où elles doivent souvent faire face à des primes plus élevées dans leurs recherches de financement », affirme Romain Ekoto. « Nous voulons ainsi les aider à améliorer leur efficacité opérationnelle pour atteindre des niveaux de rentabilité intéressants », ajoute-t-il.

C'est davantage avec les institutionnels du secteur que la BAD coordonne ses actions pour

une meilleure efficacité. Elle accompagne aussi la mise en œuvre intégrale du Marché Unique du Transport Aérien (MUTAA).

Elle est convaincue des bénéfices que représentera le marché unique pour l'industrie. En mars 2018, l'institution a lancé une consultation pour recueillir l'avis des parties prenantes, ayant abouti à un plan d'action. « Nous menons actuellement une étude qui donnera des éléments concrets sur l'impact de la libéralisation sur les compagnies aériennes et le voyageur », indique Romain Ekoto.

En parallèle, la BAD travaille en étroite collaboration avec les parties prenantes à l'instar de la Commission Africaine de l'Aviation Civile (CAFAC) et l'Association des compagnies aériennes africaines (AFRAA) pour dynamiser le secteur de l'aviation civile sur le continent.



Romain Ekoto pense que la libéralisation du secteur va stimuler l'intégration régionale, l'emploi, les investissements et le commerce en rapprochant les 54 marchés africains fragmentés.

Il constate cependant que l'industrie aéronautique africaine est encore freinée par des « coûts élevés liés aux taxes, redevances aéroportuaires et au prix du carburant entre autres ». Il ajoute que « l'environnement réglementaire est également très restrictif et limite la taille du marché ».

Enfin, Romain Ekoto estime que le succès d'une Afrique intégrée, interconnectée et compétitive passera par une collaboration étroite entre tous les acteurs multisectoriels.

La BAD a d'ailleurs fait de l'adhésion au MUTAA, une condition préalable au financement des investissements dans les pays qui la sollicite. « De façon concrète, dans ses lignes directrices, notre Conseil a adopté le principe selon lequel toute intervention de la Banque sera désormais sujette à l'adhésion de l'État au MUTAA. » À ce jour, vingt-huit États africains sont signataires du MUTAA. ■

SUMMARY

AFDB BANKS ON MORE REGIONAL INTEGRATION

For several years the African Development Bank (AfDB) has been supporting commercial aviation in Africa and the organisation's chief aviation officer, Romain Ekoto, has been explaining about current projects and his vision for the future.

Ekoto joined the AfDB in June 2018 following more than 11 years with the International Civil Aviation Organization (ICAO). He is responsible for the development and implementation of AfDB's strategy to support the commercial aviation sector.

"The AfDB has set key strategic goals, including regional integration, and we support aviation because this sector appears more than ever as a contributing factor," he explained.

According to the International Air Transport Association (IATA), commercial aviation in Africa generates \$55.8 billion in economic activity and 6.8 million jobs. Over the next 20 years, the sector is expected to grow by about 6% a year.

Ekoto believes that air transport in Africa is a strategic sector for the AfDB... an organisation that's based in Abidjan, Côte d'Ivoire, in west Africa.



Over the past decade, the AfDB has invested about \$20 billion in transportation infrastructure, including more than \$1 billion in the aviation sector. "Around 75% of funding in aviation is devoted to the modernisation of airport infrastructure," he said, while acknowledging that the deficit remains significant.

One of its recent projects was financing the modernisation of Nelson Mandela International Airport at Praia in Cape Verde, which is entering its final phase. According to AfDB forecasts, after the work it will be able to accommodate 940,000 passengers annually by 2020 – and 2.2 million by 2035.

Similar investments have been made in the construction or expansion of airports in Ghana, Kenya, Morocco and Tunisia, as well as in the improvement of air safety and navigation in the Democratic Republic of Congo (DRC).

"Another of the key objectives of AfDB is to enhance commercial aviation's profitability, so improving economic performance. By allowing airport managers to access cost-effective financing, and then working closely with them on governance and revenue generation, they should be able to improve results," he said.

The AfDB is also supporting a regional programme, in the form of grants, for building capacity and coordinating operating systems in 25 west and central African countries. "In the long term, AfDB supports aims to increase the number of airports certified to ICAO standards to 20 by the end of 2019."

The institution also supports other parts of the sector including airlines. "We have already financed the acquisition of aircraft by Ethiopian Airlines and, more recently, by Air Côte d'Ivoire," he concluded. ■

75% des financements dans l'aviation sont consacrés à la modernisation des infrastructures aéroportuaires.

ROMAIN EKOTO



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Lufthansa Technik sets up shop in South Africa

Lufthansa Technik has become the first foreign MRO provider to establish line maintenance operations in South Africa through a new contract with Comair – and it bodes well for the region.

Chuck Grieve reports.

When Lufthansa Technik (LHT) people talk about the German company's new engagement with South Africa's Comair as "something special", they're being modest.

The size and scale of the contract to provide comprehensive technical services and integrated fleet management at Comair's home bases, officially launched on May 22, is a breakthrough for South Africa with significance for aviation beyond the country's borders.

The plan is for LHT, by the end of 2020, to support the entire Comair fleet, which will then comprise at least 25 Boeing 737 NG and 737 MAX aircraft. The first two of what's envisaged as a network of in-country stations are already operational.

For Erik Venter, Comair's recently resigned chief executive, the benefits of this MRO partnership are easy to define: more efficient maintenance processes and aircraft spending less time on the ground. But he also sees it as a possible game-changer for MRO in Africa.

LHT has made no secret of its ambitions to build its customer base with more regional airlines. Last autumn, the MRO reinforced its commitment to the region by joining the Airlines Association of Southern Africa (AASA) as an associate member. A spokesman said at the time it was a "unique opportunity" to network with key players in the industry and "to

keep track of the needs and developments of the aviation community in this region".

The wide-ranging total technical support (TTS) agreement with Comair covers comprehensive technical services and integrated total operations management (TOM) for Comair's 737 fleet, plus establishment of local maintenance stations.

It includes extensive engineering services, the provision of consumables and expendables, and integrated component supply as part of total component support (TCS).

□□□□□

Robert Gaag, LHT's vice-president corporate sales EMEA, said: "This is the first time we've won a contract of this magnitude in this region. It's a welcome opportunity for us to establish an even stronger presence in southern Africa."

Ulrich Hollerbach, chief executive of Lufthansa Technik Maintenance International (LTMI), said the company has set up maintenance stations in different regions of the world, but South Africa is "something special for us".

"It's a much bigger project than most, since we've had to construct the entire organisation literally from the ground," he said.

With Comair's support, LTMI

Continued
on Page 80

CONTINUED FROM PAGE 79

arranged hangars and offices, as well as creating space on the apron. Tooling, equipment and vehicles followed.

Meanwhile, planners worked out reliable lines of supply for components, consumables and expendables. The all-important approvals from the South African Civil Aviation Authority (SACAA) were granted to allow operations to start in March.

The partners were clear that the venture would be staffed by local personnel, and began by holding recruiting events. Those efforts paid off, said Christian Haas, technical operations manager for Comair and the project manager on site in South Africa. "There are a lot of well-trained people in South Africa. We've been working with local employees from day one."

The company hired its first 20 mechanics, avionics technicians and managers in December 2018. It currently has 45 employees, all but seven of them South Africans. Future expansion could see the permanent workforce growing to 120 throughout a network of stations.

Andreas Liagos, LHT Group corporate key account manager, who manages LHT's sales activities in South Africa and the Comair relationship, said the deal was "one of the major contracts that we have done in recent years" in Africa.



Beyond its importance in establishing the first LTMI entity in South Africa for line maintenance, it covers a big portion of the technical operations of the Comair fleet, including engineering and component support, consumables and rotables. "It's a big package," he said.

The first two bases – the main base in Johannesburg and line station in Cape Town – opened at the beginning of the year and have been up-and-running since March.

In Johannesburg, a dedicated maintenance hangar can handle work up to A-checks, while the Cape Town facility is approved up to weekly checks. Full technical support for the first Comair 737-800 started in mid-May.

The partners' next moves may be to establish further line stations in Durban, Port Elizabeth and other main airports in South Africa. Business expansion is an "ongoing discussion" with Comair; the partners are also exploring possibilities with other operators in South Africa.

Liagos sees LHT's partnership with Comair as a key step in expanding its footprint in the region. "Our new stations can easily be reached by other airlines based in South Africa and nearby countries," he said.

LHT's experience on Boeing, Airbus, Bombardier and Embraer types, combined with the local expertise, "will contribute to a more competitive and reliable aircraft operation in this region of the world". ■



Training is an integral part of the contract.

CHRISTIAN HAAS

BUILDING AFRICA'S AVIATION FUTURE

Finding good qualified personnel in the area has undoubtedly helped LHT in the initial stages of its South African venture. Going forward, it intends to contribute to that pool of talent.

The operation brought in only seven expats from Frankfurt and Hamburg for build-up and training, and intends to reduce that number in due course.

One of their first tasks was to set up internal training to familiarise staff with LHT quality standards, processes, procedures and new aircraft types. This was followed almost immediately by programmes to induct people into the company.

Haas said the operation has started to hire unlicensed engineers to train up to the level of licenced engineer. "We very much want to employ people who are available in the market and develop new mechanics by providing them with on-the-job training and theoretical training at a later stage."

There is competition for employees, but LHT has

learned to live with it. "We know there are other MRO players in the market," said Liagos, adding it's "the normal situation" that every employer deals with.

"We are looking for a win-win situation between us and the MRO market in South Africa," he said. "We believe this market needs more competition. We trust we can contribute by bringing our knowhow and methodology into the country."

"Part of our intention is to expand the local footprint established with the Comair contract with other major operators and MROs in the region."

"I believe it's time for the region to enhance its local MRO capabilities and capacities by providing more reliable and efficient services to the airlines. LHT's footprint in South Africa will contribute a significant portion to the growth of the aviation industry in the sub-Saharan Africa region by investing in the local workforce and transferring our expertise to the region." ■

AN END TO OUTDATED METHODOLOGY?

Comair former chief executive, Erik Venter, believes bringing LHT into the South African market as the airline's maintenance partner could have implications and benefits far beyond the country's borders. For a start, he expects LHT to introduce the region's maintenance providers to a new way of working that would turn outdated methodology on its head.



Erik Venter.

Venter observed that MROs in South Africa "typically" set work schedules to suit themselves. "They tell the operator when they will do the maintenance, and the operator has to accommodate it," he said.


Venter sees bringing LHT into South Africa as a "big step forward" that puts customer operational considerations first. "The way they package the maintenance tasks actually means that the airlines can use the aircraft for commercial purposes for much longer periods of time and the maintenance is arranged around it. "I'm sure this way of working will soon spread to other airlines in South Africa and become a standard practice." ■

Joint CEOs to succeed Venter

Following the surprise resignation of Comair chief executive, Erik Venter, on May 21, the airline has announced the appointment of industry veterans Glenn Orsmond and Wrenelle Stander as joint chief executives, effective from July 31.

Standar will be responsible for the airline division and Orsmond for non-airline business and financial services.

Board chair, Piet van Hoven, said in a statement that Venter, who leaves to pursue other interests, was responsible for the diversification strategy that has strengthened the company. He added: "Comair will continue to benefit from Erik's contribution in terms of the course he has set for the business and the team he has appointed and nurtured to deliver it." ■



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Excellence in Motion



Lufthansa Technik

African aviation has a quandary: operators can't afford to keep spending their maintenance budgets abroad, while establishing their own maintenance, repair and overhaul (MRO) facilities is prohibitively expensive.

*But there is movement in the right direction, as **Chuck Grieve** reports.*

Can Africa keep the wheels turning on its MRO potential?

Africa embodies "great unrealised potential" in aircraft MRO, and a growing number of international and domestic operators are moving to provide for the continent's needs.

Inspiration comes from the successes and ambitions of the likes of Nigeria's Aero Contractors and the maintenance divisions of Kenya Airways and Ethiopian Airlines, and the drive of global companies such as the parts supplier AJW, Lufthansa Technik and ExecuJet.

With more than \$1.5 billion annually in airlines' heavy maintenance spend lost to the continent, there's no lack of incentive to help keep MRO at home.

Hafsah Abdulsalam, AJW group sales director, is hopeful that the single African air transport market (SAATM) accord will help Africa realise its potential by encouraging collaboration and cooperation and a pan-African outlook to MRO.

From west Africa, Chidi Izuwah, acting director-general of Nigeria's Infrastructure Concession Regulatory Commission (ICRC), said it was "incomprehensible... considering the

importance of MRO" that the region does not have its own facilities.

Nigeria recently took the step of advertising for private sector partners to help underwrite the cost of MRO facilities.

The government is reportedly looking at a build-operate-transfer (BOT) arrangement at either Abuja or Lagos.



The proposed facility would incorporate narrow-body and wide-body capabilities beyond the scope of Nigeria's Aero Contractors. It's been suggested Aero could form the core of a new, more ambitious national MRO operation.

Amos Akpan, a former managing director of Capital Airline, told *ThisDay* the government should help Aero Contractors – currently the "most patronised" operation of its kind in west Africa – and Arik Air grow their facilities to world-class standards. "We should move from proposals into the stage of execution of workable ideas using what we have as launching pads," he said.

The anticipated growth in African demand has prompted the MRO division of Kenya Airways to set itself the target of tripling third-party business in five years. Ambitious? "If we don't do it, someone else will," MRO sales and marketing manager, Cornelius Mayende, told reporters.

Domestic airlines and operators from around Africa already fly to Nairobi for heavy maintenance on some of the most common aircraft on the continent, including Boeing 737 classics and NGs, 787s and Embraer ERJ-170/190s. In addition, Kenya Airways does line maintenance in a growing number of other African airports.

Ghana, meanwhile, is also reported to be proceeding with its own MRO project in Kumasi, capital of the Ashanti region. Ghanaian scientist, Dr Thomas Mensah, heads a group planning to build the country's first such facility on land donated by the ruler of Ashanti. The \$400 million project is part of long-term plans to make Ghana an aviation hub in west Africa.



DESERT DUST'S OPEN SEASON ON ENGINES

Maintenance trends in Africa map the prevailing weather conditions.

During the Harmattan season, for example, MROs usually notice a spike in engine-related events.

Gavin Kiggen, ExecuJet's vice-president, Africa, said migratory bird strike and other foreign object debris (FOD) events occur regularly during the December-January period, when strong winds carrying dust from the Sahara Desert can increase the risk of damage to some engine components. "The fine dust, over time, can cause damage, but when an aircraft flies through an intense dust storm, this can cause aggravated issues on components.

"We have also found that aircraft air-conditioning systems can get clogged quickly, requiring more frequent cleaning and/or replacement."

Operating from three locations in Africa – Johannesburg, Cape Town and Lagos – ExecuJet sees numerous examples of these problems.

Its newly built Nigerian facility, which offers fixed-base operations (FBO) and MRO services, recently concluded the C-check on a Learjet 45, which included repairs to difficult-to-access flight controls.

Said Kiggen: "This was such a rare occurrence – it was only the fourth Lear 45 in the world that had this specific repair done – but the team in Lagos did a sterling job."



Keeping a weather eye open: Gavin Kiggen sees specific conditions as the culprit in many engine-related events.

Understanding customers: AJW strives to deliver to each unique requirement.



Support for CRJ Series aircraft is unaffected. Todd Young, head of the Q Series aircraft programme, said strategic repositioning of support teams was “another step in our ongoing efforts to enhance our accessibility and support to customers and operators in the region.”

Q400 component repair has also given the African business of ST Engineering a boost. The Singapore-based global group has announced contracts with unnamed new customers.

Recent contracts with Air Côte d’Ivoire, Air Senegal and Mauritania Airlines show AFI KLM E&M is “extending its footprint across the dynamic west Africa market”, according to the MRO’s senior vice-president commercial, Fabrice Defrance.

The Air Côte d’Ivoire deal “factored in” help for the airline in developing its own MRO capabilities. The airline’s chief executive, René Décurey, said AFI KLM E&M’s offer “delivers genuine added value for us”.

Estonia-based Magnetic MRO is expanding into Africa through the acquisition of Dutch company Direct Maintenance (DM), which has bases in Entebbe, Lusaka, Zanzibar, Dar es Salaam, Nairobi and Mombasa.

Risto Mäeots, chief executive of Magnetic MRO, said: “It is clear to us that this region deserves a strong local independent MRO business.”

BENEFITS FROM PAN-AFRICAN OUTLOOK

African aviation is prone to frequent change, according to AJW group sales director, Hafsa Abdulsalam. It means companies such as AJW, with a “continental” footprint developed over many years, need to help industry keep its accumulated knowledge current. This leads to, what Abdulsalam calls, “co-creation of solutions”.

AJW is an independent specialist in the global management of commercial and business aircraft spares, supporting airlines, MROs and original equipment manufacturers (OEMs) with the supply, exchange, repair and lease of airframe and engine components.

“We try to understand how a customer’s operation works, how we fit into that equation and how we can enhance their own requirements or targets,” said Abdulsalam. “If an airline asks for contractual support and we know from experience that it would not work for them, we will say so and suggest an alternative. Then we’ll work with them to deliver to their requirements.”

The single African air transport market (SAATM) accord should bring new opportunities for business and investment on the continent, she said.

“In the first instance, SAATM means the level of collaboration and cooperation between airlines and countries will be enhanced due to the prospect for

increased capacity. We could start seeing airlines pulling together to forecast parts requirement. Then we can also start conversations with chief executives on how we can bring a regional bias to supporting them. It will enable AJW to invest more because the risk is lower.”

A pan-Africa outlook, championed by the likes of Ethiopian Airlines, is “strategically important” for AJW, “so we’ll have those conversations from a component supply side”.

Abdulsalam is seeing a new drive by African airlines to develop their own MRO capabilities, starting with basic fast-moving parts. “They’re building in-house capability for their own fleets and to be positioned to provide services for airlines flying in-country, while training engineers as well to increase local resource capacity for A-checks locally,” she said.

“That’s where I’ve seen renewed vigour, and I hope it does go somewhere. I’ve heard it a few times before, given the fact that it’s a lot of money to invest in the infrastructure.

“Being African and having worked with different airlines globally, I’ve had the chance to see how different business models work in context. So, for us, being able to share that with airlines and governments, is ‘giving back’.”



Hafsa Abdulsalam: Optimistic that the SAATM will bring new business and investment to Africa.

Hadi Akoum:
"The potential in
Africa is huge."

AIRBUS LEADS THE WAY INTO AFRICAN MARKET

The days have gone when African airlines were forced to struggle with aging aircraft. Kaleyesus Bekele has been finding out more from Airbus.

In the past, with some notable exceptions, many African carriers used to operate rickety aircraft that were prone to accidents and incidents.

Operators were wary of the price of new aircraft. However, operating an aging fleet could be more expensive as the aircraft created higher fuel and maintenance costs.

This has changed considerably in recent years. Today, African carriers, both private and state-owned, are acquiring modern jet and turboprop aircraft, which are fuel-efficient and offer comfort to passengers.

This has prompted the leading global aircraft manufacturers to explore the African market, with Airbus very much to the fore.



At the Airbus innovation days on May 21-22 in Toulouse, France, Christian Scherer, chief commercial officer, confirmed that the company is looking at potential markets in Africa for its new jetliners.

Scherer said Airbus has the single-aisle A220 and A320 jetliners to offer for the east African market. "We have the A220 for Kenya Airways, which has a very good performance in hot environments," he noted.

According to Scherer, Airbus has started talks with Nigerian airlines. "Nigeria is a significant market. We have several discussions in Nigeria going on for A220 and A320 family prospects. The economic characteristics of Nigeria make it very promising growth market for us. We have a team in Nigeria right now," he said.

Nigeria, Ghana, Zambia, and Uganda are among the list of countries in the process of relaunching their defunct national carriers.

SOMMAIRE

AIRBUS CONSOLIDE SA PRÉSENCE EN AFRIQUE

L'avionneur européen Airbus étudie ainsi son potentiel pour l'A220 et l'A320neo, en particulier en Afrique de l'Est. « L'A220 dispose de très bonnes performances. Plusieurs pays africains devraient évaluer ces avions. Nous avons entamé des négociations avec des compagnies aériennes nigérianes », affirme son directeur commercial, Christian Scherer.

Plusieurs pays africains (Nigeria, Ghana, Zambie et Ouganda) souhaitent relancer leurs compagnies nationales. Le Rwanda, l'Ouganda, le Sénégal et la Tanzanie ont récemment acquis des avions neufs d'Airbus. Air Tanzania est la première compagnie africaine à acquérir l'A220. Ethiopian Airlines exploite aujourd'hui 12 A350-900. 14 avions sont

aussi en commande. Air Mauritius est la première compagnie au monde à exploiter à la fois l'A350 et l'A330NEO.

« Le potentiel en Afrique est grand », souligne Hadi Akoum, directeur des ventes d'Airbus pour l'Afrique subsaharienne et l'océan Indien.

« Les pays africains ont compris les avantages d'opérer de nouveaux avions. »

Le financement des avions reste l'un des plus grands défis et l'ECA peut soutenir les achats d'avions en Afrique.

Airbus a reçu à ce jour 279 commandes d'avions commerciaux émanant de compagnies africaines. 240 avions sont aujourd'hui en service auprès de 37 opérateurs. ■



Rwanda, Uganda, Senegal, and Tanzania recently acquired Airbus aircraft. RwandAir and start-up, Uganda Airlines, acquired A330s, while Air Senegal became the first carrier in Africa to operate A330neo.

Air Tanzania was the first carrier in the continent to acquire the new twin-engine A220 jet in February 2019.

Ethiopian Airlines, which is the launch customer for the A350 in Africa, is operating 12 A350-900s and has 14 more on order. Air Mauritius, which also operates the A350, recently took delivery of its first A330-900neo.

"The potential in Africa is huge," said Hadi Akoum, Airbus vice president, sales for sub-Saharan Africa & the Indian Ocean islands. "African countries have realised the advantage of operating new aircraft," he added.



Akoum noted that Airbus aircraft are equipped with advanced technologies and have less fuel burn. "If you look at our A320, A350 and A330 aircraft they can be maintained faster and cheaper. Our aircraft have performed remarkably at high and hot airports in Africa. The A350 and A330 demonstrated brilliant take-off capability at Addis Ababa, Nairobi, Kigali and Johannesburg airports."

Akoum said that Airbus wanted to support African airlines interested in developing their aviation industries. "We are working with many African airlines. We are also working with African governments. We are not really focusing on the market share but we rather want to help countries relaunch their national carriers in an efficient manner," he said.

To date, Airbus had received 279 commercial aircraft orders from African airlines. Of these, 240 are presently in service with 37 operators. ■



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Flying high: An Algerian AgustaWestland AW101 in search-and-rescue mode.

Algerians assemble new plant deal with Leonardo

Africa is about to get a new helicopter assembly plant following a deal between Algeria and European manufacturer Leonardo. Alan Dron reports.

By 2021, helicopters are scheduled to be rolling off the assembly line at a new facility at Ain Arnat, in Sétif province, some 200km east of Algiers.

Work is now being pushed ahead on the factory, which is the result of an agreement in March between the country's Ministry of National Defence and Italy-based Leonardo. The deal has been under consideration for some time, with an initial memorandum of understanding (MoU) having been signed in August 2016.

According to reports at that time, the Algerian defence ministry envisaged assembling three types of light and medium helicopters for a range of duties, including personnel transport, cargo, medical evacuation and surveillance.

As well as assembly, Leonardo said at the time that the joint company would provide after-sales services, including repair and overhaul, training and the development of high-tech capabilities in the field of aeronautical materials.

Under the agreement, the ministry will hold a controlling 51% of the joint venture (JV), with Leonardo taking the remaining 49%. According to the partners: "The JV supports Algeria's plan to play a significant role in the industrial aeronautical sector."

The new plant will assemble, sell and support several models of helicopter from Leonardo's range, primarily to meet Algeria's national requirements, but also for export. Additionally, the JV will provide end-users with technical support, maintenance and training services.

Leonardo said: "The new agreement is a major achievement in the solid collaboration with Algeria that we have strengthened in recent years. This result demonstrates the company's reliability as a partner and its capability to meet demanding requirements and deliver high-quality, advanced products."

Many aspects of the collaboration remain shrouded in mystery. The company responded to most of a series of questions from *African Aerospace* with: "Additional details cannot be provided."

It could not, for example, say what type of helicopters would be assembled at Ain Arnat, or whether it would

supply managers and technicians to help the plant get under way. Neither could it say whether Algeria would actually produce components for the helicopters, or merely assemble them.

However, the new assembly line will be in addition to the Italian company's existing assembly lines in Italy and the UK, rather than replacing them.

The project will undoubtedly provide valuable skilled jobs for Algerians and boost the technical capabilities of the Algerian aerospace sector, helping it follow the growing success of aerospace suppliers in Morocco and Tunisia, which have used their proximity to Europe and common use of the French language to increasingly produce components for companies such as Airbus.



Algeria has proved to be a good market for Leonardo over the past decade. Products flying under Algerian colours – both in the armed forces and for several police and paramilitary organisations – include an estimated 24 AW109 search-and-rescue (SAR)/utility helicopters, 11 AW139 medium-lift SAR/utility models and eight AW119 training helicopters, as well as seven AW101 helicopters that operate in both the SAR and VIP transport roles. Additionally, the Algerian Naval Forces operate 10 AW Super Lynx Mk130 and Mk140 in the SAR and armed roles, respectively.

Algeria supports a large military establishment; its defence expenditure, as recorded by the Stockholm International Peace Research Institute (SIPRI) 2018 Yearbook, was \$9.6 billion, which placed it 25th in terms of the world's largest spenders on defence.

The north African nation has made several significant arms purchases in recent years (notably from its long-term weapons supplier, Russia) and so the prospects for orders for the new assembly plant are reasonable, especially if the prospect of a 'Made in Africa' product tempts other nations on the continent. ■

The Embraer Airline Business Seminar Africa 2019, held in Mauritius at the beginning of April, kept all its promises. The Brazilian manufacturer, which has recently partnered with Boeing, sees Africa as a market with a “huge potential”.

Anuradha Deenanaray reports.



EMBRAER TARGETS THE HUGE OPPORTUNITY IN AFRICA

The African aviation and air transport market, which is among the fastest growing, “presents significant opportunities for airlines to deliver the connectivity that the whole continent needs”, according to Arjan Meijer, chief commercial officer, Embraer Commercial Aviation.

“Aircraft, however, must be right-sized to develop those routes profitably; more than 90% of intra-African flights depart with fewer than 150 passengers. And more than 70% of markets are served with less than one flight per day.”

According to Raul Villaron, VP Middle East & Africa, by redefining the traditional concept of regional aircraft, Embraer offers Africa the “ideal aircraft” to face the connectivity problem while meeting the growing demand in this expanding market.

As engines and avionics are becoming more sophisticated and complex, maintenance, repair and overhaul (MRO) is a big challenge. During the past years, Embraer has been strengthening its support in Africa (new training facilities in South Africa) and the Middle East. Last April, it signed a pool programme agreement with Air Botswana to support a wide range of repairable components for its E170s.

The seminar enabled airline specialists and aviation experts to share ideas, experiences, strengthen their network and improve their business in a competitive environment.

SOMMAIRE

EMBRAER VISE «L'ÉNORME POTENTIEL» DE L'AFRIQUE

Ce séminaire a permis aux spécialistes des compagnies aériennes et aux experts de l'aviation d'échanger des idées et des expériences, de renforcer leur réseau et d'améliorer leurs activités dans un environnement concurrentiel.

Comme le secteur du transport aérien est capitalistique, Volker Muenster, VP Marketing de NAC, estime que les compagnies africaines devraient envisager la location pour renouveler et moderniser leur flotte. Selon Marc Abraham d'Investec, un bon équilibre entre le leasing et l'achat peut être intéressant pour leur croissance.

Concernant l'avenir des compagnies à bas coûts dans l'écosystème du transport aérien, Ogaga Udjo, représentant Comair et Kulula, a

montré comment l'efficacité et la cohérence étaient des éléments déterminants d'une stratégie centrée sur le client pour exploiter une marque.

Les intervenants sur les compagnies insulaires ont souligné qu'il faut considérer les spécificités de ces économies et les défis auxquels elles sont confrontées dont l'accès aérien/ciel ouvert, la connectivité/le marché, la fluctuation du prix du pétrole et l'investissement.

Parmi les autres sujets à l'agenda, l'innovation et la technologie les attentes des passagers, les stratégies de développement, la qualité des services, la sécurité, la coopération et le partenariat. ■

Airline business is a very capital-intensive industry and, therefore, companies need to respond efficiently to growing demand through aircraft acquisition. In Asia Pacific, 43% of aircraft are leased against 40% in Europe and only 23% in Africa.

Volker Muenster, VP marketing – NAC (the largest regional aircraft leaser) said Africa should look into leasing to re-fleet and modernise. He added that, in such a risky business, there's a need to consider the actual cost of equity in a company's analysis.

According to Marc Abraham from Investec, a good balance or mix between leasing and purchase can be interesting for airline growth. African airlines – especially private ones – are turning more and more towards leasing.

The future of limited liability companies (LLCs) in the air transport ecosystem was also addressed through shared experiences and success stories. Ogaga Udjo, head of network planning, scheduling & alliances with Comair and Kulula, showed how efficiency and consistency are important components of a customer-centric strategy to leverage on a brand.

Looking at island operations, panellists pointed out that specifics of island economies needed to be taken into consideration as they had particular challenges regarding air access and open sky, connectivity, oil prices, investment, infrastructure, services and market expectations. Nick Fadugba, CEO of African Aviation Services, said that island states and landlocked countries realised the importance of the weight of aviation in their gross domestic product (GDP).

With more than 200 aircraft flying in Africa and 2,000-plus worldwide (120 airlines in more than 60 countries), the Brazilian manufacturer is the leader in the up-to-150 seats segment, with 29% share of deliveries.

As innovation and technology underpin customer expectations, development strategies and services, there are growing challenges facing industry stakeholders to enhance security. Key elements to embrace sustainable growth are adaptability, efficiency, competitiveness, cooperation and partnership.

Aaron Munetsi, GM, South African Airways, noted: “We are better off working together and not competing with each other. Africa should be the hub.” ■

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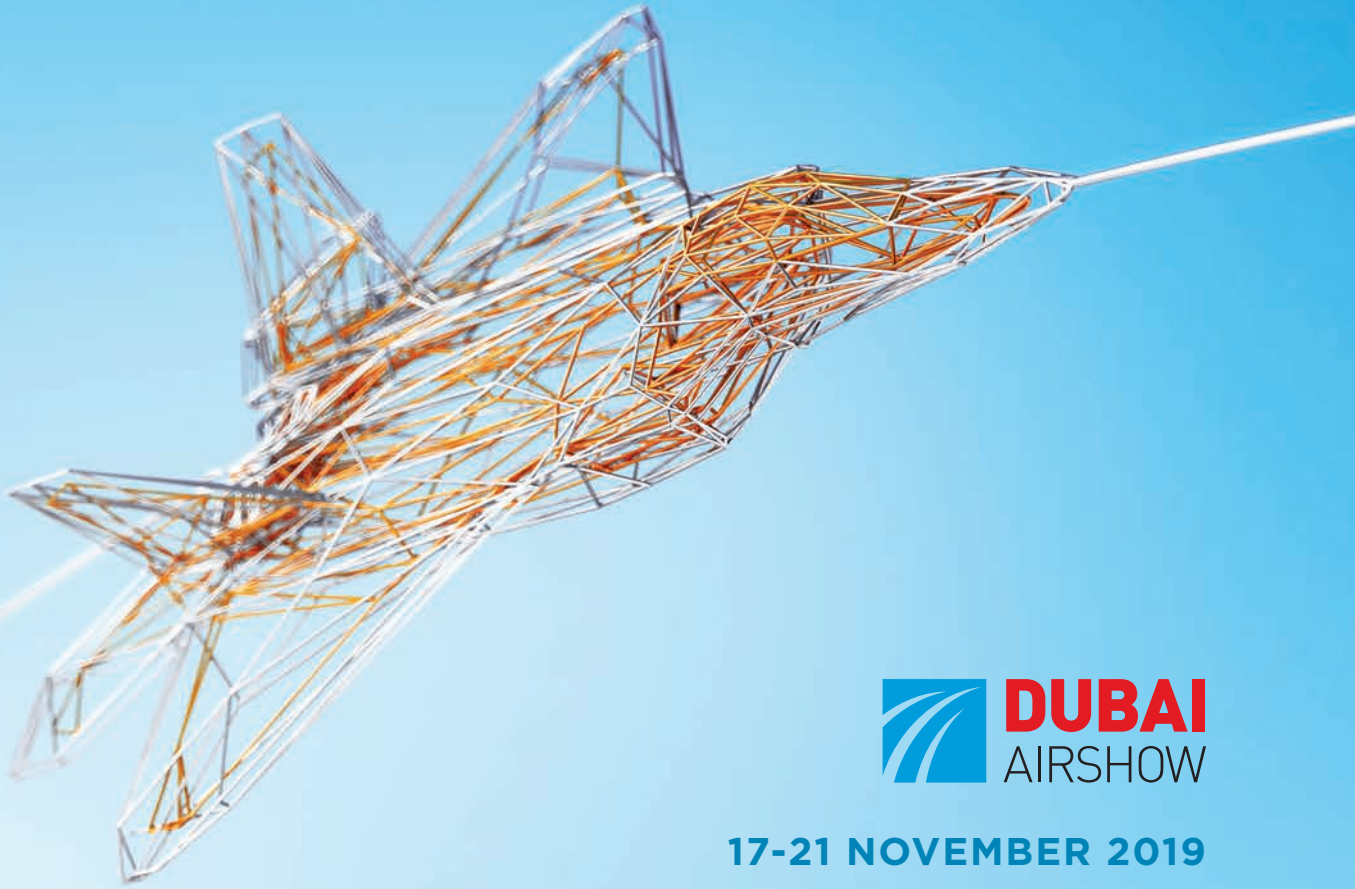
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Le Togo figure parmi les pays les plus performants en matière de sécurité et de sûreté aérienne en Afrique grâce aux efforts déployés par l'Agence Nationale de l'Aviation Civile (ANAC).

Romuald Nguéyap a rencontré son directeur général, Dokissime Gnama Latta.

Le Togo montre la voie en matière de sécurité aérienne



Colonel Dokissime Gnama Latta:
« Au cours de l'audit de 2016, nous avons enregistré une performance de 85.77%, ce qui nous classe premier en Afrique. »

Ce pays est aujourd'hui cité en exemple dans l'aviation civile sur le continent. Pourtant, quand le colonel Dokissime Gnama Latta prit les commandes de l'ANAC en 2002, le Togo affichait un taux de conformité de 26.5% à l'audit USOAP. Depuis, il a connu une progression remarquable.

« Au cours de l'audit de 2016, nous avons enregistré une performance de 85.77%, ce qui nous classe premier en Afrique ; le pays a obtenu 80.85% à l'audit de sûreté ISAP, un chiffre nettement au-dessus de la moyenne de l'OACI qui recommande respectivement 60% en audit USOAP et 65% en audit ISAP », affirme l'ancien pilote de la flotte présidentielle.

SUMMARY

TOGO LEADS THE WAY ON AVIATION SAFETY

Togo – a narrow strip of land between Ghana and Benin – is now cited as one of the most successful countries in Africa for aviation safety and security.

The country's National Civil Aviation Agency (ANAC) is headed by general manager Dokissime Gnama Latta.

When Colonel Latta took over in 2002, Togo had a 26.5% compliance rate in the International Civil Aviation Organization (ICAO) universal safety oversight audit programme (USOAP). Since then, there has been remarkable progress.

"During the 2016 audit, we recorded a performance of 85.77%, which ranks us first in Africa," said Latta.

"The country obtained 80.85% in the internal safety audit

programme (ISAP), a figure well above the ICAO average, which recommends 60% in USOAP audit and 65% in the ISAP audit," said the former presidential fleet pilot.

To achieve these results, ANAC worked to improve the legal and regulatory framework, consolidating the team and training staff.

"I preferred to recruit young people from France, the USA, Singapore, South Korea and Ethiopia, in addition to training 40 young inspectors to support the process of regulating and supervising aviation safety and security," explained Latta.

In December 2018, the agency obtained ISO 9001 (version 2015) certification for the quality management system, becoming the first civil aviation agency in Africa to do so. ■

Pour atteindre ces résultats, l'ANAC s'est attelée à l'amélioration du cadre juridique et réglementaire. Elle a consolidé son équipe et formé son personnel. « J'ai privilégié le recrutement des jeunes que j'ai formés en France, aux États-Unis, à Singapour, en Corée du Sud et en Ethiopie pour certains. Par ailleurs, nous avons formé 40 jeunes inspecteurs pour accompagner le processus de réglementation et de supervision de la sûreté et de la sécurité de l'aviation », explique-t-il.

En décembre 2018, l'institution a obtenu la certification ISO 9001 version 2015 relative au système de gestion de la qualité, devenant ainsi la première Agence de l'aviation civile à décrocher ce certificat en Afrique.



Le régulateur de l'aviation civile togolaise a par ailleurs fait de l'aéroport international Gnassingbé Eyadema de Lomé la vitrine de ses efforts dans ce domaine. Depuis 2014, l'aéroport est détenteur du certificat d'aérodrome OACI. La principale plateforme du Togo dispose aussi de l'agrément IASA catégorie 1 lui permettant de traiter des vols directs vers les États-Unis. Grâce au partenariat avec la compagnie nationale ASKY Airlines, Ethiopian Airlines opère trois vols hebdomadaires vers New York. Quatorze compagnies aériennes desservent actuellement l'aéroport.

L'ANAC prône en outre une approche coordonnée pour un meilleur développement du transport aérien en Afrique. Le Togo a signé des accords aériens avec plus de 40 pays africains selon Gnama Latta.

C'est d'ailleurs à Faure Gnassingbé, Président de la République du Togo que les pairs africains ont donné le mandat de conduire le processus d'implémentation du Marché Unique du Transport Aérien Africain (MUTAA), lancé officiellement le 28 janvier 2018. « Notre mission consiste à convaincre les autres États de rejoindre le MUTAA. Nous avons

commencé avec 11 États en 2017 puis 23 en 2018 et nous sommes actuellement à 28 États signataires. L'objectif du Président est d'avoir 40 États adhérents au MUTAA d'ici 2020 et l'ensemble de tous les États africains à l'horizon 2022-2023 », souligne Gnama Latta.

En juillet dernier, il a reçu la « médaille d'aérodrome », la plus haute distinction de l'Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (ASECNA). ■

Talel Kamel

Marcelle Nethersole *speaks to the Collins Aerospace VP customer and account management, Middle East and Africa.*

1

■ Collins Aerospace was announced last year after a merger between UTAS and Rockwell Collins. What have been the effects of the merger?

Collins Aerospace, a unit of United Technologies Corporation, brought together the industry-leading capabilities of UTC Aerospace Systems and Rockwell Collins.

We are building on the strengths of both organisations to offer a comprehensive portfolio and expertise to solve customers' toughest challenges and to meet the demands of a rapidly evolving global market.

We are about six months into the integration and our top priority remains to be number one with our customers. Customers want us to innovate and that's why we have the ambition at Collins Aerospace to redefine aerospace and, particularly, what is possible in the areas of intelligent aircraft, integrated and optimised aircraft products and services, and advanced defence systems.

Thanks to our talented base of employees in the region, we want also to make sure that our customers have the right support to be successful and, again, we are fully committed to be responsive and bring the best solution to answer their needs.

2

■ What technologies and systems do you supply on the African continent?

Collins Aerospace is one of the largest providers of aerospace systems in Africa.

Our product offerings on both commercial and defence include avionics, interiors systems, and aerospace systems. Our solutions provide customers with improved availability, connectivity, and operational efficiency.

Africa is host to the world's second largest, and youngest population. With the increase in urbanisation, and evolution of the middle class, the continent is positioned for transformational growth. At Collins, we have expanded our footprint from north Africa to sub-Saharan Africa.

Our information management system business has experienced transformational growth and has presence in the busiest airports throughout the continent.

3

■ How much time do you spend on research and development in Africa?

Innovation is at the core of what we do. Collins Aerospace invests \$2.5 billion every year in R&D, which demonstrates our commitment for innovation.

As the demands for an increasingly connected world grow, our engineers are focused on delivering disruptive innovations. Our focus in Africa is to provide a new aviation ecosystem that enables the continent's growth potential by connecting people and goods with markets globally – connecting systems on and off the aircraft to redefine passengers' travel experience.

4

■ What are the challenges you find within the African market?

The challenge in the African market is interwoven with the transformational growth that the continent is undertaking. Africa is poised to have the highest growth in commercial air traffic. Our challenge – and opportunity – is positioning our product offerings to address the demand.

5

■ What is new for Collins Aerospace?

In the coming weeks, you will be hearing more about our announcements around our aftermarket solutions and also innovative products that highlight Collins Aerospace's vision for a more connected, more intelligent and more electric aerospace and defence industry.

6

■ What does a typical day hold for you in your role?

In my role, I am privileged to work across all of our six strategic business units and aftermarket.

The team and I could go from having meetings with government officials to supporting a regional original equipment manufacturer (OEM) to build a light attack and trainer aircraft using our state-of-the-art avionics systems and more.

We also travel to meet our employees across the region; some of them are working side-by-side with our strategic customers. Getting to know about how they support our customers is enriching.

Last, but not least, interacting with academia is a part that I personally enjoy, thanks to the enthusiasm and the innovation the younger generation are bringing to our industry.

It is an exciting time to be at Collins Aerospace and I look forward to what future has in store for us.



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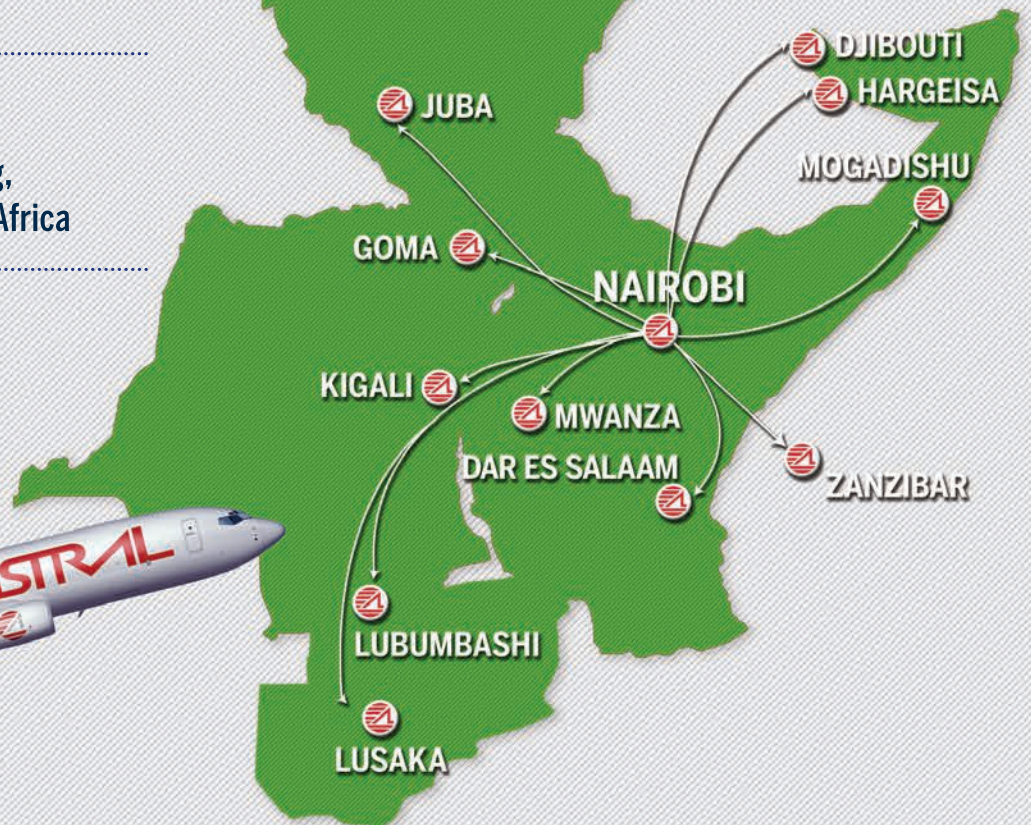
- Nairobi - Europe (London & Liege)
- Nairobi - Juba (South Sudan)
- Nairobi - Entebbe (Uganda)
- Nairobi - Dar-es-salaam (Tanzania)
- Nairobi - Mwanza (Tanzania)
- Nairobi - Mogadishu (Somalia)
- Nairobi - Kigali (Rwanda)
- Nairobi - Djibouti
- Nairobi - Goma (Congo)
- Nairobi - Lubumbashi (Congo)

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FREIGHT FLEET

Fokker 27, DC9F, B727F & B747F



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The A330neo shares many of the same innovations as the groundbreaking A350 XWB, delivering a 25% saving in fuel consumption compared to others in the category. Both aircraft also benefit from a common type rating, which means pilot training costs are significantly lower too. And on top of that, they can be fitted with our beautifully designed Airspace cabins, setting a new benchmark in passenger comfort and wellbeing.

Innovation. We make it fly.