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THE MAGAZINE FOR AEROSPACE PROFESSIONALS IN AFRICA

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STABILITY AND PROFITABILITY**

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Rwanda demonstrates the positive way forward

There are few nations in Africa that embody the spirit of cooperation and change more than Rwanda.

In March, the country's capital played host to more than 500 aerospace professionals and government representatives from more than 50 countries, when the Aviation Africa summit came to the continent for the first time.

The delegates were met by Rwanda's president, Paul Kagame, who went beyond the usual diplomatic niceties in an opening address with an impassioned plea for Africa to grasp the opportunity facing the continent and embrace the idea of greater liberalisation.

By liberalising African airspace, the president said that, beyond benefits to the aviation sector, it would also have a positive impact in ventures that rely on the vibrancy of the sector.

"When our skies are closed, it is harder to make air transport safer, more reliable, and more affordable. The growth of the mega-businesses, which depend on a vibrant aviation sector, is also considerably slowed, hurting all of us," he said.

Rwanda's Air Force Chief of Staff, Brigadier-General Charles Karamba, also demonstrated his country's pragmatic approach, when he said that greater acceptance of shared airspace with civil operators would benefit Africa.

"While we must always remember that national



security is a number one priority, we must recognise that we all share the same sky."

The two-day event – organised by a sister organisation of *African Aerospace* – allowed for full open debate. There was less grumbling about

outside elements that hold Africa back, and far more about innovative ideas, greater collaboration between civil aviation authorities and governments, and a clear direction for the industry as it moves forward.

There was cause for celebration, too, with the news that 2016 accident figures showed zero fatal accidents (excluding terror-related events) for African airlines for the first time.

Rwanda is showing the way with its innovative approach to the use of remote piloted vehicles; its plan for a green field new international airport; the investment in a modern fleet for its airline; and a regulator that is adopting modern techniques and international cooperation for airspace management – and has separated itself from operations such as airport management in order to focus on what it does best, regulating.

The number of delegates that expressed their delight in visiting Rwanda and acknowledging the progress made is testimony that the epithet of 'Remarkable Rwanda' is well deserved.

Safe landings

Alan Peaford, Editor-in-Chief

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African Aerospace magazine is published in partnership with AFRAA



African Aerospace magazine is published with the support of AFBAA



African Aerospace magazine is published with the support of CAASA

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Falcon team hits the heights

Dassault's Falcon fleet has been flying high over Africa for more than half a century – but now staff from the French company have climbed to 19,341 feet over Africa without a plane.

The team mounted an assault on Mount Kilimanjaro and successfully flew the company's flag from Africa's highest point.



Uganda plans 2nd International Airport

Uganda is set to have a second international airport – Kabaale International – thanks to a joint venture between UK-based Colas and local company SBC Uganda, which is set to spearhead the construction process.

Tony Kavuma, project coordinator at the ministry of works, said that a substantial amount of land has already been procured and an environmental impact assessment has been completed.

The airport project is expected to facilitate the movement of materials and manpower for the development of the oil sector in the Alberine region. The airport will also benefit tourism and agriculture.

New airports for Ghana

Ghana is to open new domestic airports at Ho and Wa, as part of the Government's plan to ensure each of the country's 10 regions has an airport.

Work on the \$25 million Ho Airport began in September 2015. When completed, it will have a

1,900-metre runway and a terminal building capable of handling 150,000 passengers a year.

The facilities at Wa have undergone rehabilitation, with the addition of a terminal building, a new runway and the installation of perimeter fencing, at a total cost of \$1.5 million. The renovated airport will be temporary until a new permanent location can be found.

Senegal upgrades gunships

Senegal has upgraded its pair of Russian-supplied Mil Mi-24P Hind-F helicopter gunships with a new Israeli high-definition electro-optical (EO) system. The low-weight, fully gyro-stabilised, nose-mounted 29kg DSP-HD system was developed by Israel's Controp Precision Technologies, and includes a thermal imaging device, a

high-definition (HD) daylight camera, a daylight spotter channel, an automatic target tracker and an eye-safe laser rangefinder and laser pointer.

SAA signs new TotalCare order

South African Airways has signed a new TotalCare service order for Trent 700 engines that power five Airbus A330 aircraft

entering service. The aircraft are in addition to six A330s the airline already operates – all powered by the Trent 700 with TotalCare.

ExecuJet launches Cape Town charter

ExecuJet Africa has received its first charter helicopter, a VIP-configured Bell 407 helicopter, now available for charter from its Cape Town FBO facility.

It will offer commercial helicopter charters for various scenic flights to surrounding vineyards and other tourist attractions.

Azman awards MRO contract

Nigeria's Azman Air has selected VD Gulf to perform maintenance work on one of its Boeing 737CLs.

The work includes a heavy C-check, major modifications and accomplishment of airworthiness directives and service bulletins work. Several components will also be repaired, including additional work on the aircraft's engines.



Ethiopian Academy graduates 184

Ethiopian Airlines Aviation Academy (EAA), an International Civil Aviation Organization (ICAO) Trainair Plus member and International Air Transport Association (IATA) authorised global training centre, graduated 184 aviation professionals at the academy's commercial and cabin crew training building in February.

Among the total graduates, 145 were women. Group chief executive officer, Tewolde GebreMariam, gave out diplomas and

achievement awards to top-performing graduates.

He said: "Education is the greatest equaliser in our highly integrated world today and, for this reason, we are putting great emphasis in training young Ethiopians and our African brothers and sisters in order to enable them develop the required global standard qualification to fly successful African airlines."

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Sudan in Saudi reflecting deal

Sudanese President, Omar al Bashir, signed several cooperation agreements with King Salman of Saudi Arabia during a brief visit to Riyadh.

Sources in the Sudanese Ministry of Transport have said that, among the agreements, was a pledge from the Saudi General Authority of Civil Aviation to restructure SAR22.5 million riyals (\$6 million) worth of debt. In addition, provisions for fleet renewal at Sudan Airways were also made.

A report indicates Saudi Arabia may equip the stricken Sudanese national carrier with 14 aircraft, including three B777s, three A320-200s, six Embraer Regional Jets, and two A330-200s.

Lakestar applies for ASL

Malawi's Lakestar Express has applied to the Malawian Ministry of Transport and Public Works for an Air Services Licence (ASL), which would grant it rights to serve both domestic and international routes.

Namibia has the space...

Airbus Defence and Space and the Namibian University of Science and Technology (NUST) have signed an agreement to set up a virtual space data centre in Windhoek for the creation of a geo-intelligence database for monitoring and growing key sectors of the Namibian economy.

The centre will receive and analyse imagery from a constellation of Airbus satellites to be set in orbit in order to enable the creation of the geo-intelligence database. However, no time-line was given for the establishment of the centre.



Chinese fighter-trainers for Sudan

The Guizhou Aircraft Industries Corporation of China (GAIC) is to deliver six FTC-2000 two-seater, advanced fighter-trainer aircraft to the Sudanese Air Force (SAF) under the terms of a deal signed early in 2015.

GAIC director, Wang Wenfei, said the FTC-2000 ordered by Sudan is the export version of the supersonic JL-9 trainer, which is used widely by the Chinese Air Force and Navy.

Apart from Sudan, other African countries, including Nigeria, have expressed interest in acquiring the FTC-2000.

Like many other African air forces, the SAF

already operates several Chinese-made aircraft, such as the Chengdu F-7 interceptor/strike fighter and Karakorum K8 light attack/trainer jets.

Sudan is the first foreign buyer of the FTC-2000, which is primarily used as a basic and advanced pilot trainer aircraft.

To support the secondary combat role, the FTC-2000 is fitted with five hardpoints to carry fuel tanks, and a 23mm cannon.

The trainer variant is powered by a single Guizhou Liyang WP-13 turbojet engine for a top speed of Mach 1.5. The engine is equipped with an after-burner.

New boss for Air Madagascar

The board of Air Madagascar has appointed Hery Nirina Rakotomalala as CEO. He replaces Gilles Filiatreault, who resigned in January. Rakotomalala was previously COO and is also a training captain and a B737-800 captain. He joined Air Madagascar in 1997.

Goldstar go-ahead

New Ghanaian airline, Goldstar Air, has received an air carrier certificate from the Ghana Civil Aviation Authority to operate scheduled and non-scheduled flights to 11 international destinations.

Goldstar CEO, Eric Bannerman, said: "We will be the third airline in Ghana to fly directly to the US after Delta and South African Airways and the second to fly directly to the UK after British Airways."



MOMook signs with Algiers Aviation Training School

Intelligent business and training management software developer, MOMook, has signed a two-year contract with the Algiers Aviation Training School (ATS).

"All our tasks are carried out manually, so we don't have any digital tools that would allow us to pass on the knowledge to pilot students effectively and in an innovative way," said ATS CEO Abdelmadjid Fechkeur.

"Integration of MOMook's training management software is an essential development step in our learning environment. It will allow us to ease the scheduling, examinations and general training procedures. We plan to import all ATS' data and start using the software. I believe this change will allow us to work in a smart and cost-effective way."

Airways adds to African reach

French flight training school, Airways College, is planning to expand its reach in Africa. The school signed a contract with Air Cote d'Ivoire in 2015 to train its cadets, with the first cohort completing the theoretical part of their training in Yamoussoukro, Ivory Coast, before continuing with the in-flight training in France.

Following the successful international trial, Airways College put in place a partnership with Institut National Polytechnique Félix Houphouët-Boigny (INPHB) in Yamoussoukro at the beginning of this year.

Airline chief on fraud charges

The founder of a Kenyan start-up, Baracuda Airways, has been arrested on allegations of fraud, according to local media.

John Majiwa has been charged with scamming more than 40 investors out of almost \$2 million.

The Kenyan Flying Squad said Majiwa used the names of prominent Kenyans to scam investors by claiming Deputy President William Ruto, and Ngina Kenyatta, the former first lady, were shareholders. He was one of four arrested and has been released on bail.

US plan for Air Austral

Air Austral has applied to the US Department of Transportation for exemption authority and a foreign air carrier permit ahead of plans to start commercial flights to the US. The application states the Indian Ocean-based carrier plans to use its fleet of B777s and B787s to operate charter flights to the US "ferrying persons, property, and mail".



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Solenta buys Fastjet stake

South African ACMI/charter specialist, Solenta Aviation, is acquiring a 28% stake in Fastjet and its Fastjet Zimbabwe sister carrier.

Initially, the wet-leased aircraft will be ERJ-145s. Fastjet will have the right to replace these aircraft with EMB-190s/195s or ATR72-600s, subject to what it says is a “fair and reasonable adjustment” to the hourly rate.

“This will give the company the opportunity to sub-lease its current A-319s, saving further costs and provide the company with the flexibility to grow its capacity in-line with demand as existing routes develop and new routes are set up,” said Fastjet.

Daallo leases Fokker

Daallo Airlines has wet-leased a Fokker 50 from Kenyan ACMI/charter specialist Fanjet Express. The aircraft is currently deployed on the Djibouti-based carrier’s internal Somali flights, as well as select international services to Djibouti and Kenya.

Airlink confirms E-Jets plan

Airlink has acquired three EMB-170s and two EMB-190s from ECC Leasing, a wholly owned unit of Embraer. The first aircraft is due for delivery during the first half of this year.

“This is the beginning of the implementation of a well-planned growth and modernisation strategy that includes replacing our current fleet of ARJ-85s over the next three years,” said Airlink CEO Rodger Foste.

“The strategy calls for a total of 13 E-Jets, and we are in the process of sourcing the balance of the fleet requirement – an additional eight E190s – from the market.”



ABET trains ATNS adult employees

ABET, the general conceptual foundation towards lifelong learning and development, says it has ‘empowered’ ATNS adult employees with the skills and knowledge to make a difference in their social and work environments.

ATNS is responsible for the efficient running of South Africa’s air traffic control systems and has aligned itself with the national skills development strategy and the human resource development strategy for South Africa, where the company has dedicated itself to ensuring improved universal access to quality basic education and schooling (up to Grade 12).

ATNS CEO, Thabani Mthiyane, said: “The Government’s policy for ABET must be understood within the overarching goal of building a just and equitable system, which provides good quality education and training to adult learners throughout the country.”



Lucky Cheong has been appointed as the new CEO.

Rwanda merges air transport and tourism

Rwanda has merged all of its air transport, logistics, tourism services and products under a single umbrella organisation called the Aviation Travel and Logistics Holding Ltd (ATL)

The reform of the aviation sector was conducted as one of the key milestones to improve financial performance, sustainability and growth of the sector, gearing towards the creation of a regional aviation hub, airport city and a competitive national airline, according to a statement from ATL.

ATL is comprised of five subsidiaries: RwandAir (the national airline), Airports Company Rwanda Ltd-ACR (the airport management company to emerge from the ongoing reform of Rwanda Civil Aviation Authority-RCAA), Akagera Aviation Ltd (the general aviation and training company), Rwanda Tours & Events Ltd-RTE (as the flagship of the tourism sector) and Rwanda Links Logistics Ltd-RLL (a new cargo and freight handling company).

Singaporean Lucky Cheong has been appointed as the new CEO and South Korean, Seong-Soo Kang, as the chief operating officer.

Tunisia gets broadcast benefit

Arabsat and ONT have announced the signing of an agreement to launch a Tunisian broadcast platform on Arabsat Badr-4 at 26°E.

This platform operation will start by the end of June

and will allow Tunisian and regional broadcasters to have a direct access from Tunis to the growing 26°E neighbourhood, with a coverage encompassing the Middle East, north Africa and western Europe.

Malian’s IATA safety boost

Following a six-month audit, IATA has officially certified the Malian airport assistance company, ASAM-SA, with its safety audit for ground operations (ISAGO). The two-year certification gives ASAM-SA an opportunity to attract new airlines to Bamako Airport.

“ISAGO certifies the quality of our services on ASAM-SA’s core business: airport assistance. This solid background will enable us to broaden our activities to training and line maintenance,” said Dominique Dreuil, managing director of ASAM-SA.

Commercial RPAS approval

Kenya will soon be flying drones after it approved the policy procedures and regulations for remotely piloted aircraft systems (RPAS). The proposed regulations require commercial drone owners to have security clearance from the ministry of defence and have trained pilots.

Non-military use of drones had been restricted in Kenya due to lack of a legal framework. The Kenya Revenue Authority has so far confiscated hundreds of drones, imported before the approval of the regulations.

Syphax moving back into action

Tunisia’s Syphax Airlines is moving towards resuming commercial operations after a restructuring programme, submitted to the Tunisian judicial authorities, was recently approved.

Older Otters migrate from Seychelles

Air Seychelles has ended DHC-6-300 Twin Otter operations following the disposal of its last two airframes of the type. The Seychellois national carrier continues to operate four DHC-6-400s on shuttles between Mahé and Praslin Island, as well as charter flights to other islands.

A timely milestone

Airports Company South Africa has achieved an historic milestone, with three of its international gateways being ranked among the 10 most punctual airports in the world. According to OAG Aviation Worldwide, OR Tambo International Airport achieved eighth place in the large airport category, Cape Town International Airport was ranked sixth in the medium airport category, while King Shaka International Airport came 10th in the small airport category.

Privatisation drive begins

The Botswana Government has begun the process of privatising loss-making national carrier Air Botswana. The Ministry of Transport & Communications said it was looking for suitable entities, companies, consortiums, or service providers capable of offering efficient and reliable air services to the needs of Botswana's business and tourism sectors through Air Botswana.

Gulfstream G280 speed record

The Gulfstream G280 aircraft set another speed record in Africa in February, flying from Windhoek, Namibia, in the southern part of the continent, to Dakar, Senegal, on the west coast. The flight took 7 hours and 38 minutes.

Houari to head Africa for Airbus

Airbus has appointed Mikail Houari as its new president for Africa and the Middle East region.

Houari, who previously served as deputy president for the region, brings more than 25 years of experience within the industry at a global level.

In his new role, he will lead the team to drive operations and future business across the region.



Lockheed Martin rolls out freighter

Lockheed Martin introduced the latest member of the C-130J Super Hercules family, the LM-100J commercial freighter, with a roll out ceremony for the employees who designed and built the aircraft at the company's aeronautics facility. The next stop for the Super Hercules is the flight line, where it will prepare for its first flight this spring.

"The LM-100J programme has exceeded all

expectations in moving from an idea to a reality," said George Shultz, vice president and general manager, air mobility & maritime missions at Lockheed Martin.

"The Federal Aviation Administration has been an essential partner in this aircraft's production and we look forward to continuing to work together as we move into the LM-100J's critical flight-test phase."

St Helena issues second RFP

The Government of St Helena has issued a second request for proposals (RFP) for the provision of scheduled passenger services to the British Overseas Territory located in the southern Atlantic Ocean.

Ivory to add first Falcon 900

Ivory Jet Services is to add a maiden Dassault Aviation Falcon 900 to its fleet. Customer relations manager, Arafo Abdourazack Barkad,

said the Djibouti-based business charter specialist already uses a Falcon 50 and a Falcon 7X to carry out VIP charters, as well as medevac services.

Express delivery

Tunisia's Express Air Cargo began commercial operations with a B737-300 on February 25. The carrier is getting a second aircraft and will operate to Cologne/Bonn, Milan Orio al Serio, Malta, Casablanca International, Algiers, and Dubai World Central.

MRO deal for Etihad

Etihad Airways Engineering has signed an agreement with Kenya Airways to perform mandatory checks on its Boeing 787-8 fleet. This is part of an integration programme for the newest additions to the airline's fleet.

EgyptAir first

EgyptAir has celebrated the delivery of its first Next-Generation B737-800, among the nine-aircraft ordered.

Star performance

Astral Aviation won the African All Cargo Carrier of the Year at the International Awards for Excellence in Air Cargo, which took place on the eve of the Air Cargo Africa 2017 biennial event in Johannesburg, South Africa.

Omni alliance

Omni Helicopters International and Omni Blu Aviation have announced a strategic alliance to launch, promote, and develop Omni Helicopters Nigeria (OHN).

The joint venture, which is crafted to meet the more demanding standards in offshore aviation, as well as local content requirements in Nigeria, aims to create a solid source of safe and reliable service for the Nigerian oil and gas market, one of the world's most developed with around 60 helicopters in use.

Satcom security

Airbus Defence and Space is delivering satellite communications systems for EU military training missions in Somalia (EUTM Somalia), as well as for the EU capacity-building mission (EUCAP) Sahel Niger, and EUCAP Sahel Mali civilian missions.

These missions aim to support the efforts of the respective governments to strengthen their stability and to respond to the security issues faced by their populations.



Diamond sparkles with more trainers for Ethiopian

Ethiopian Airlines has expanded its training fleet with five new Diamond DA40 NG aircraft. The airline now operates 18 trainers from Diamond Aircraft, 16 single-engine DA40s and two DA42 twins, as well as two Diamond Aircraft simulators.

Ethiopian is currently implementing a 15-year strategic plan called 'Vision 2025', which targets it becoming the leading aviation group across the whole of Africa. The selection of modern training aircraft is part of that goal.

Equipped with Austro Engine AE300 turbocharged jet-fuel engines, Diamond planes are perfectly suited for the African market because of the scarcity of Avgas.



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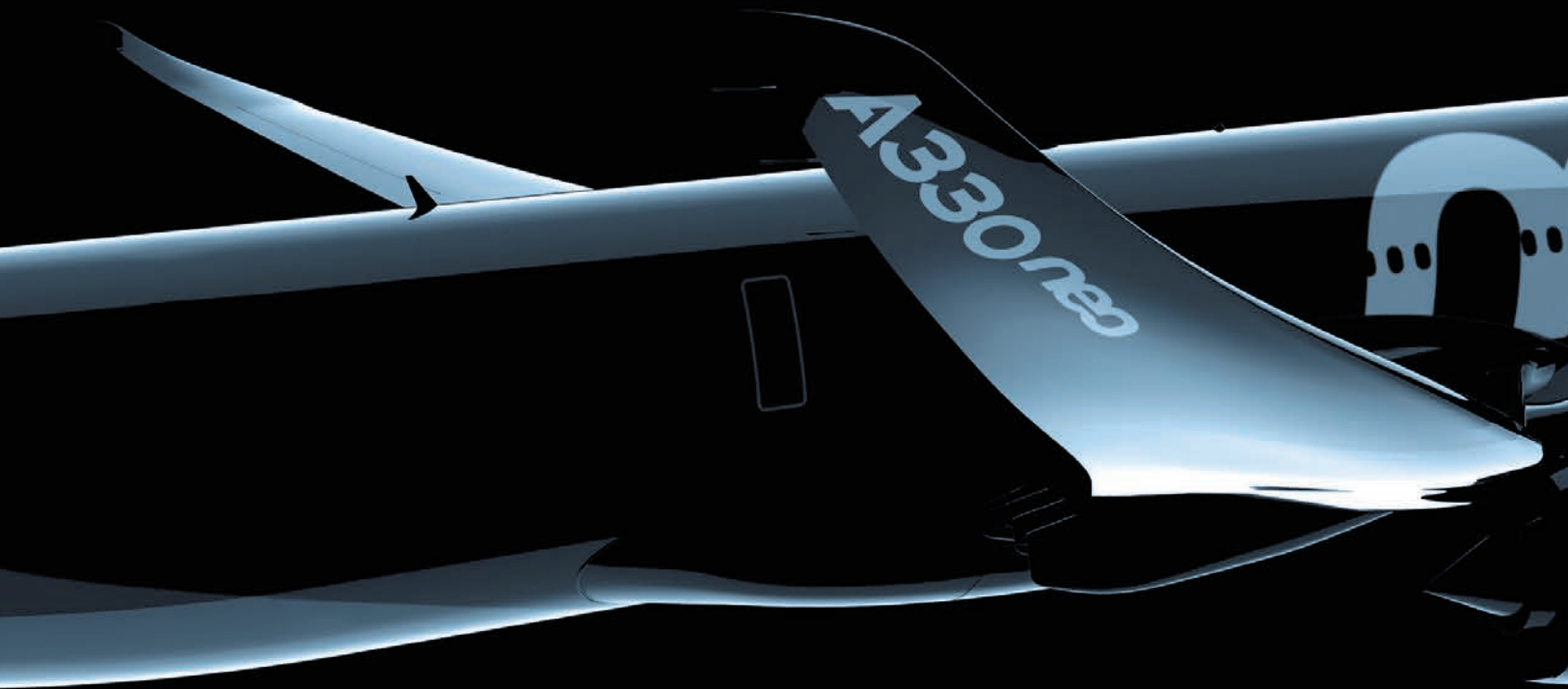
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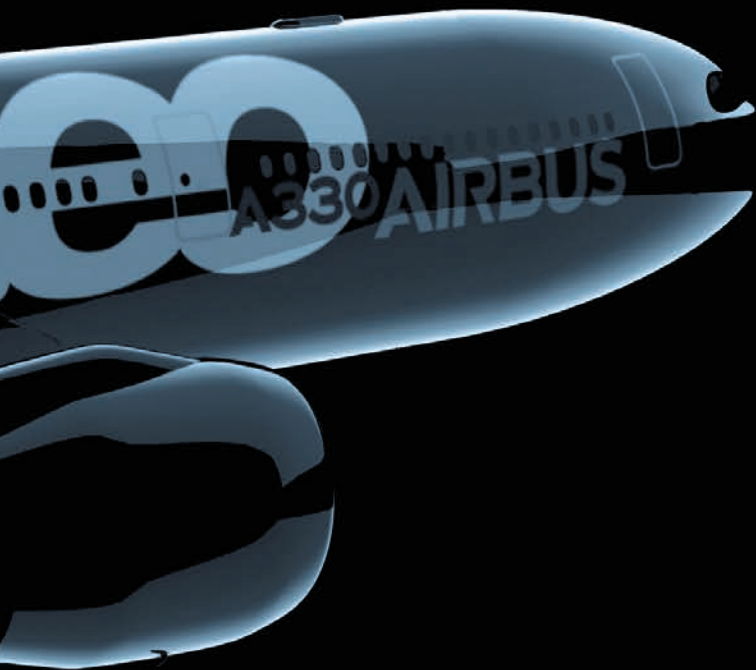
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**“You can’t just sit
around and watch
it burn; you need
to put out the fire,
so that’s exactly
what we did.”**

AARON MUNETSI



*South African Airways' (SAA) financial state has come under close scrutiny over the last few years, along with its revolving door of CEOs. SAA acting general manager commercial Aaron Munetsi is an exception; he has been with the airline for just over 21 years. Munetsi spoke with **Victoria Moores** about SAA's recent turbulence and future prospects.*

SAA's BURNING AMBITION...

In late 2013, South African Airways (SAA) unveiled its 12-year, four-phase turnaround plan, known as its long-term turnaround strategy (LTTS). This plan aimed to get SAA's high costs and debts under control, improve yields, stabilise the airline and rationalise its fleet and operations. But after a number of leadership changes and a battle to prove its status as a going concern, the airline was forced to roll out an urgent 90-day push which ran to March 2015.

Munetsi said SAA could not focus on the long-term, when it was effectively perched on a burning platform. "You can't just sit around and watch it burn; you need to put out the fire, so that's exactly what we did. External factors were more significant than anything else."

SAA already had a cost containment programme underway and was beginning to engrain cost control into its culture, but any gains the airline achieved internally were being rapidly offset by external conditions. In Munetsi's words, life became really difficult for SAA.

■ COMPETITIVE CLIMATE

"I think two things were significant. The first is that while we were doing all this [LTTS] planning, the world economy did a wobble. Then there was the depreciation of the South African Rand and the commodity collapse. Some of our source markets became less vibrant. The demand that we forecasted also took a knock. There was nothing we could do about it; that's just the way economies work."

Against this background of diminishing demand, competition also intensified as SAA's rivals decided to retrench back to their home market. "While this was happening, our competitors also found it hard to compete between other markets and they felt they could

come onto the continent and be able to sustainably grow their footprint, which meant there was more competition for us, so it was an ease in demand - plus increased competition."

■ STRATEGIC CHANGES

Network changes, including the axing of SAA's direct Beijing and Mumbai services, saved R440 million (\$33.6 million). A further R290 million in savings came from fleet changes, while the renegotiation of over 150 supplier contracts added another R425 million to the total.

"From a network point of view, we went back to base zero. We looked at each and every one of our operations to see how the network could be rebuilt, so it can achieve what it's meant to achieve: the feed of our network into our hub," Munetsi said.

SAA has since shifted its focus to its core African markets, which generate the majority of its revenue, and is using this traffic to increase utilisation and load factors. This will be a focal point of the airline's strategy for the mid-term, over the next one to three years.

"We are in a position to be much stronger in our African operations," Munetsi said. Specifically, this strategy involves using any under-used traffic rights to add frequencies and make better use of capacity. "If capacity is not utilised, let's utilise it."

The first of the targets is adjacent markets, where SAA is looking to combine traffic and frequencies. For example, SAA was serving Douala in Cameroon from Johannesburg with one aircraft and Libreville in Gabon with another, but it has now negotiated fifth freedom traffic rights to combine these services. The route now operates as a Johannesburg-Libreville-Douala-Libreville-Johannesburg rotation, using

just one aircraft to serve three markets.

Another focus area is what Munetsi describes as "transformational markets," where SAA has never operated. This involves seeking out fifth freedom long-haul opportunities in countries that do not have their own airline, such as Ghana and Uganda. For example, instead of just operating Johannesburg-Accra, SAA would operate from Johannesburg to Accra and then be the designated carrier from Accra to destinations like London, New York, or Washington DC.

"We are talking to other markets in Africa. We are talking to Zimbabwe about Harare-London, to Zambia about Lusaka-London and to Uganda about Entebbe-London. It's been very well received. The Ghanaian Government has been exceptionally supportive and the Government of Uganda has approached us, asking what they need to do to fast-track the process. The Zimbabwean Government is cooperating with us very well and the same with Zambia. We overfly most of these markets from Johannesburg, so it makes sense for us to drop in capacity as we go."

The bottom line is that SAA is trying to carry more passengers with greater density and higher yield, making existing capacity more profitable. The aim is also for labour to become more productive and, while SAA is not planning any compulsory redundancies, it is cutting down staff numbers through voluntary departures.

"We are now at the stage of optimising staff levels, so doing more with less staff, without affecting morale," Munetsi said. Around 300 people have already left the company on a voluntary basis, although SAA is still a huge employer with just under 9,000 staff.

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■ LIQUIDITY/FINANCES

Questions have been raised about the state of SAA's finances and ability to continue as a going concern, but Munetsi defended the company's track record.

"We actually have a very profitable network, with year-on-year increases in revenue and passengers. We have a very sustainable cargo operation, which does exceptionally well, and our technical base is world-renowned. The only challenge is, because we are 100% state-owned, we haven't had much capital injection. We do our own financial arrangements with banks and we have never been in the situation where we have been unable to meet our credit requirements. We still have operating debts, but we have not defaulted on any."

There has also been an increasing trend among lenders to seek government-backed guarantees from state-owned companies. "It creates a chicken and egg situation, where we need a guarantee," Munetsi said, but he stressed that a guarantee is a guarantee – it's not funding. Equally, SAA is not profitable, but it is aiming to turn this around to breakeven by 2021 and hit profitability thereafter.

■ HOLDING COMPANY

As part of this turnaround strategy, the Government is keen to bring its three state-owned airlines together – along with other functions like technical, training and cargo – within a holding company to make them more stable and efficient.

At the moment, SAA is parent to low-cost carrier Mango, but regional airline South African Express (SAX) is a different business entity – although it shares branding with SAA. The rough plan is to create a group CEO, with each airline subsidiary's CEO reporting to them.

"The Government is reassessing the effectiveness of our structure. They want us to merge with their other airline assets, like SAA and SAX. It is just logical that two airlines that are 100%-owned by the same government would have definite economies of scale. SAX is a completely separate company. We have no line of sight on what happens at SAX."

Things are already developing. SAX has already moved into a part of SAA's building that used to be leased out to other companies. The two companies are also cooperating on back-office systems.

Low-cost carrier Mango is a wholly-owned subsidiary of SAA, but it has its own CEO and management board. "Mango is part of the whole process. I'm sure we will keep Mango, because it serves a purpose and affects our business model."

■ EQUITY PARTNER

The Government is also pushing ahead with its quest for a strategic equity partner for its airlines. During the 90-day plan, SAA strengthened its partnership with Etihad Airways, which dates back to 2013, although



relations are now understood to be not as strong and sources close to the situation have previously indicated that Etihad is not interested in taking an equity stake in SAA.

Beyond this, partnership talks are understood to be underway with a few companies showing interest, but negotiations are not advanced and none have reached a conclusion yet. Currently foreign ownership of South African airlines is capped at 25%, although this could potentially be increased to 49%

Munetsi said he is not involved with these strategic partner talks, as they are handled at shareholder level, and he is not aware of the timeframes for a potential deal.

Closer to home, several major African carriers, including Ethiopian Airlines, Kenya Airways and SAA, have previously spoken on conference panels about the potential for greater cooperation.

Munetsi agrees that "there is room and scope for that" and the emphasis should be on doing more within Africa before looking outside the continent. But he believes the three airlines all have different businesses and that there is "more to be done" in terms of the basics like liberalisation before doing anything else.

For the time being, SAA is keeping its sights firmly on its own business and has no plans to form equity partnerships with regional airlines either. "We don't see ourselves going out of our way to go and establish new regional airlines," he said, but SAA is keen to extend its network and would be open to codeshares and new route opportunities.

■ FLEET

Instead, SAA is looking to improve its own game, focusing on the basics, upping its service levels, competitiveness, profitability – and ultimately sustainability.

SAA currently operates a fleet of 59 aircraft, comprising 13 Airbus A340s, 11 A330s, 20 A320s, six Boeing 737-800s and nine A319s.

The whole fleet operates in a dual-class configuration and SAA has no immediate aircraft acquisition plans, according to Munetsi.

Under SAA's strategic plan, it will refurbish its aircraft interiors and upgrade its product with WiFi, modernised inflight entertainment (IFE) and a revamped configuration, which could see SAA introduce first class – although this is only under study.

Munetsi said that the focus for the long-haul fleet will be IFE, because people want to rest and be entertained, while on the mid-haul fleet - for routes around four to five hours' duration – the focus will be on WiFi.

■ MANAGEMENT

But why does SAA keep losing CEOs? "It's just the nature of the beast," Munetsi said. "And of the operating environment. No doubt about it, it's a tough job, but I think it's a fun job."

Currently the search is underway for yet another CEO. Will Munetsi be applying? "No way! I'm too old for that now," he said, letting out a characteristic hearty laugh.

Munetsi has held positions with SAA in Dubai, Ethiopia, Ghana, Kenya, Nigeria, Senegal and Tanzania. He worked in business development, checking out countries before the airline launched there. Having lived in so many African countries, he would make a great person to travel with across the continent. He also has a great sense of humour, which helps.

"I was the 'go to guy.' I would go into the market and do on the ground in-situ analysis, establishing contacts and relationships when they wanted to see if SAA could operate there. Once one was established, stable and up and running, then the next project would come along."

Munetsi is used to setting things up, dealing with change and moving on. This is the aim for SAA today; to get things going, make them stable and move on. Sometimes one man acts as a nice metaphor for the airline as a whole.

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UTC Time 14 April 2016 23:36:30
Take-off Time 15 April 2016 14:04:10
ETA 15 April 2016 14:52:00
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Inati Ntshanga: "We need a successful SAA. We have to work to make sure they are a success."



Family fortunes...

*South African Express (SAX) and South African Airways (SAA) may be separate companies, but their corporate identities and destinies are closely intertwined. As **Victoria Moores** found out, both companies are battling a stagnant market and reputation issues, which will be hard to overcome.*

"If South African Airways is sick, it is very difficult for us not to catch the flu. We need a successful SAA. We have to work to make sure they are a success."

Those were the words of SAX CEO, Inati Ntshanga, who has led the regional airline for the past seven years.

There is definitely a bug doing the rounds of the South African market – triggering several airline demises – and SAX's big brother, SAA, was not in the best health before the downturn, blighted by management instability.

While the commodity crisis has not really affected SAX, the Rand has dropped in value, there is no major growth in the South African market, and competition is stiff.

"The competition is here today, gone tomorrow," Ntshanga said. "But we ended up with a huge price war. It's not sustainable as we're not building new passengers."

In 2015, SAX carried 10,000 passengers. But this dropped to just 6,700 in 2016. New entrants are not stimulating the market, despite fierce price competition, so the airlines are fighting to

attract the same passengers for less money.

On top of the sluggish market, SAX has watched on as SAA has suffered leadership and financial turmoil over the last few years, with a revolving door of CEOs hampering its long-term turnaround strategy (LTTS). Just to cap off an already pretty dire situation, SAX has had its own reputational worries to contend with.

"At the end of April 2016, we had our air operator's certificate (AOC) suspended. That was very painful, but we were able to remove the suspension after 42 hours," Ntshanga said.



There were two major triggers for the grounding, according to Ntshanga. Firstly, SAX failed to respond quickly enough to the findings of a Civil Aviation Authority audit seven days earlier. SAX had the documents it needed, but the airline did not respond satisfactorily to the CAA.

Then there was an incident where an SAX aircraft had a pressurisation

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problem, restricting it to a lower altitude. When the crew could not comply with an air traffic control (ATC) instruction to climb, ATC reported the problem to the CAA and SAX was slammed for not reporting it directly.

“At midnight [on the night of April 29-30, 2016], I received a message that the AOC has been suspended,” Ntshanga said. This was the Friday night. Meetings were held the next morning, but the airline remained grounded until 17.00 on the Sunday.

“We were back in service on Sunday evening, but we lost our status as the only airline in Africa that had never been grounded after 22 years,” Ntshanga lamented. “It was a lack of communication. It was mainly paperwork-related. It wasn’t great. We have learned since then. It has caused reputation issues, so management is working to rebuild passenger confidence. It shouldn’t have happened. I still maintain that.”

On top of the airline’s safety reputation, its financial stability – in terms of its ability to continue as a going concern – has also come under the spotlight.

“We have never defaulted on our aircraft payments, or anything like that, and we have never had to rely on the government guarantee. The government has never had to step in. We have enough money to run the business. We started from zero and have never been capitalised by any shareholder. We continue to exist purely on revenues from passengers, whereas if we were privately owned, we could have access to shareholder loans. This is one thing which is misunderstood.”

Meanwhile, Ntshanga said it has become “fashionable” for banks to require Rand-for-Rand government guarantees from state-owned companies, whereas this is not expected of privately-owned companies. SAX missed the deadline for one of these government guarantee applications, which caused problems, and the financing trend means it has had to double its guarantees from R539 million (\$41.7m) to R1.106 billion.



SAX also had to do a fairly substantial asset value re-evaluation in 2011, which caused people to question its finances. However, Ntshanga is planning to reduce the guarantee figure every year over the next five years and he defended the airline’s financial performance.

“The airline is going steady. So far, we have moved from a huge loss to a breakeven profit. If you take the revenue minus the costs, our operation is profitable. Last time we posted our finances, we had a R14.5 million (\$1.1m) operating profit, but a net loss of R132 million



“The airline is going steady. So far, we have moved from a huge loss to a breakeven profit.”

INATI NTSHANGA

(\$10.2m). This was because of depreciation and write-offs.”

But Ntshanga acknowledges that trading conditions are tough and he has been working to restructure the airline’s operations to suit market conditions as part of a 20-year plan.

“We’re looking at what we should be

doing over the next 20 years to sustain ourselves and what we’ve learned over the last 20.”

Part of this involves a more detailed five-year strategy, which looks at SAX’s cooperation with SAA and the Star Alliance, as well as its own network, feeder flights and fleet. It also stretches to technical expertise and SAX’s role as a training ground for its sister companies. Finances and joint ventures are also covered.

In real terms, this has led to SAX cutting six routes that made up 13% of its available seat kilometres (ASKs) and withdrawing two Bombardier Q400s and two CRJ700s from its fleet. This downsizing has helped bring down the airline’s fuel costs, airport fees and taxes.

Lower fuel prices have also helped, but the weaker Rand has minimised this benefit. While fuel dropped from \$99 to \$35-40 per barrel, Ntshanga said SAX felt only 36% of this 66% reduction. Only 18% of this was from lower prices; the remainder came from SAX’s downscaled operations.

Other cost savings have come from a revamp of the airline’s on-board catering to a basic snack, which has halved this cost from R60 million (\$4.6m) to R30 million. SAX also got a 38% saving by renegotiating its maintenance agreements. “All of the documents that I am seeing tell me that our costs are moving down,” Ntshanga said.

However, these cost cuts will not extend to redundancies. “There are not going to be any retrenchments, but we will allow for natural

attrition,” Ntshanga said. In November 2014, SAX employed 1,188 staff and this figure narrowed to 1,006 by September 2016.

Despite the cuts, SAX is preparing to invest for its future. The airline is closing in on a lease deal for 20 aircraft for delivery over the next five years, as it seeks to upsize to 90-seat jets from its current fleet of 50- to 70-seaters. “We are trying to move away from smaller aircraft to bigger aircraft,” Ntshanga said. “We are in advanced discussions with lessors.”

SAX currently operates a fleet of 20 aircraft, comprising eight Bombardier CRJ200s, two CRJ700s and 10 Q400s. “We want to have a common fleet by 2022,” Ntshanga said. “As the current leases expire, we will replace them with 90-seat aircraft.”

While SA Express is considering COMAC, the Mitsubishi MRJ90 and the Sukhoi Superjet 100 (SSJ100), Ntshanga said the CRJ900 and Embraer E190 are the strongest contenders. He would consider E190-E2s, but this would depend on timing.



The company’s corporate structures are also coming under review and a “big name” consultant is being brought in to look at optimisation. “We want to have a holding so that all the other airlines [SAA, SAX and Mango] report to the holding company. We would like to see a single board working together on operations and strategy.”

While SAX is a separate company to SAA, the two airlines’ branding is closely aligned and any network moves are a necessary compromise between the two businesses. “What can we do, arm wrestle? I wish we could,” Ntshanga said.

“We are an incubator for training. We serve as the training ground, but that costs money. We want a father who will treat all his kids equally, with no favourites. We want to be able to go to our father and say ‘if we are training for everybody, can everyone please chip in’.”



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Buy your airline ticket along with your weekly groceries? South African low-cost carrier (LCC) Mango continues to go down the supermarket route as it faces up to challenging economic conditions. Alan Dron reports.

Mango faces up to a super market challenge

Supermarket shopping is one of the reasons that Mango lays claim to being South Africa's most innovative airline.

It is, it says, the only airline in the world to accept store charge cards for payments either online or through its call centre; it was the first in South Africa to offer booking and payment facilities via its mobile app; and the only African airline to offer on-board Wi-Fi.

"When Mango was conceptualised, the whole idea that we tried to build the airline around was to have the broadest distribution system in the market," explained acting CEO, Nick Vlok.

Mango's bright orange fleet took to the skies in November 2006 and, just over a decade later, around 9% of its tickets are still sold through two grocery store chains. "They were already selling sports tickets, etc, through their cash counters and we thought it's a very convenient place and what's the difference between a concert ticket and an airline ticket? Why not sell tickets through that business?"

However, Mango will need to use all of its proven innovation skills to get through what Vlok describes as the "quite challenging" current state of the marketplace.

Airlines worldwide over the past year have complained about rapidly growing capacity in their markets leading to depressed yields and have increasingly struggled to fill seats.

In Mango's case, Vlok said: "I don't think it's a matter of over-capacity, there's just a lack of demand at the moment.

If you look at South Africa generally, all economic activity is down at the moment. The Government says growth will be less than 1% [this year]."

The effect of lower demand, of course, is the same as excess capacity: fewer passengers.

"For 2017, the outlook is really flat," he admitted. "You really have to be smart at the moment if you're going to be successful."

In Mango's case, being really smart over the next year or so will mean matching supply and demand as closely as possible.

One advantage it possesses, says the company, is the lowest cost base of any South African carrier. Its fleet of 10 Boeing 737-800s, which operate in a single-class, 186-seat configuration, are deployed almost wholly on domestic routes. The exception is a single sector to Zanzibar and that situation is unlikely to change in the near future, said Vlok: "We're quite happy with what we're doing at the moment."

However, he plans to increase frequencies on four of the airline's domestic routes in April.

□□□□□

All Mango's aircraft are on operating leases, which start to run out from 2020 onwards, "So we've got a little bit of time to sit back and take stock, from a fleet planning perspective, of what we should be operating from 2020." That could be new aircraft, or newer examples of the same model.

Mango's main competitors are FlySafair and Kulula. Full-service carriers such as Mango's parent, South African Airways, and Comair do not heavily intersect with Mango's market.

As with European LCCs, Mango has noticed more business suits in the check-in queues as increasing numbers of business travellers try to reduce their expenses. Vlok would like to encourage that trend. He reckons that around 40% of his passengers are business travellers and 60% leisure, with those ratios being reversed at the full-service airlines.

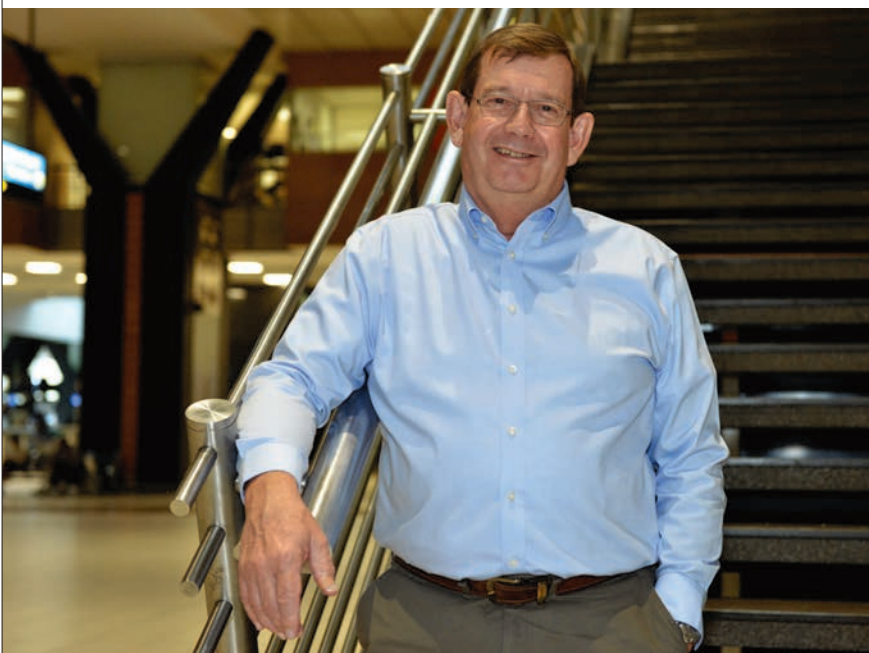
Like all airlines, Mango constantly assesses the marketplace. Vlok believes that, at present, opportunities in Africa are limited.

Those opportunities would increase if the Yamoussoukro Declaration was implemented, but so far, any such implementation of the deregulation document has been highly selective: "Everyone cheers and claps their hands and says 'Let's do it next year', but practical implementation has been slow.

"I foresee opportunities will arise; LCCs are a bit better equipped to compete in an environment where fares are more competitive than they are right now."

"I don't think it's a matter of over-capacity, there's just a lack of demand at the moment."

NICK VLOK





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Une journée de promotion des investissements touristiques et aériens au Sénégal a été organisée en automne dernier à Paris. Vincent Chappard, présent à cet événement, nous passe en revue les projets majeurs du Sénégal en matière de transport aérien.

Les fondations du Sénégal reposent sur trois piliers

Le développement du tourisme et du transport aérien est au cœur des nouveaux projets d'investissement privé au Sénégal. Avec une croissance économique dynamique proche de 6,5 % en 2016, le Sénégal offre un environnement institutionnel, naturel et démocratique particulièrement favorable.

Le Sénégal émergent cherche à attirer les investissements privés. C'était sous la présidence de Maïmouna Ndoye Seck, ministre du Tourisme et des Transports aériens du Sénégal que les opportunités et les projets contenus dans le Plan Sénégal Emergent (PSE) ont été détaillés.

Trois projets phares du PSE sont à la charge de la ministre : le plan de relance du hub aérien régional, le développement de 3 à 6 zones touristiques intégrées et le plan sectoriel de développement du micro-tourisme.

Cependant le secteur du transport aérien, le projet clé est le plan de relance du hub aérien régional. Le Sénégal souhaite en effet se positionner comme le premier hub aérien d'Afrique de l'Ouest.

« L'Afrique de l'Ouest affiche une croissance forte et soutenue dans le secteur des services. Ce contexte constitue un atout pour le Sénégal qui compte en tirer profit en dynamisant ses services et réaliser son ambition de s'ériger en premier hub multiservices de la région », a affirmé Maïmouna Ndoye Seck.

Cette ambition repose essentiellement sur trois piliers : la finalisation de la construction de l'Aéroport International Blaise Diagne (AIBD) avec la mise en place de son centre de maintenance valorisant son savoir-faire aéronautique et du « cargo village » (sa

plateforme logistique), la réhabilitation des aéroports régionaux et l'existence d'une compagnie aérienne nationale forte.

Si le Sénégal est une porte d'entrée de l'Afrique, l'AIBD bénéficie aussi d'une position stratégique. Il est situé à proximité des grands centres touristiques comme la station balnéaire de Saly Portudal et des nouvelles zones touristiques intégrées haut de gamme à Mbodiène, Joal Finio et Pointe Sarène (la nouvelle marina de la région). De ce fait, il jouera un rôle moteur dans le développement de ce levier majeur de l'économie nationale.



Placé au cœur des périmètres de production maraîchère et halieutique, l'aéroport AIBD facilitera également l'exportation des produits issus de ces activités et par conséquent favorisera la création d'emplois et de richesses.

Air Sénégal SA en approche

La bonne santé du transport aérien au Sénégal passera par la relance de sa compagnie aérienne nationale selon Maïmouna Ndoye Seck. Il y a eu nombreuses tentatives des autorités sénégalaises pour bâtir une compagnie aérienne nationale stable et pérenne. La compagnie aérienne nationale reste un pilier du PSE.

Sénégal Airlines a mis un terme à ses opérations en juillet 2016 après avoir traversée de fortes turbulences (dette importante, des conflits sociaux avec des arriérés de salaires et une exploitation chaotique de son réseau).

Les autorités sénégalaises étaient pourtant entrées fin 2015 dans une politique de relance et de restructuration de Sénégal Airlines. Elles

avaient l'option de la liquider et d'en recréer une autre mais « le chef de l'Etat Macky Sall avait estimé que le Sénégal ne doit pas être un cimetière de compagnie aérienne ».

« Nous avons une compagnie - Sénégal Airlines - que nous avons cherché à relancer. Face aux difficultés et au passif très lourd de la compagnie, nous avons opté pour la création d'une nouvelle compagnie », a précisé Maïmouna Ndoye Seck. « Nous voulons éviter les décisions de prestige et hâtives qui ne nous permettent pas d'anticiper sur le coût de notre décision. La compagnie aérienne Air Sénégal SA a été créée avec un capital de 40 milliards de francs CFA que nous comptons porter à 100 milliards avec l'arrivée de partenaires potentiels. Nous avons lancé une étude de marché avec l'aide d'un cabinet international. Celle-ci nous a montré que notre conviction de faire de la compagnie aérienne nationale un outil de développement économique est une décision fondée. Les résultats de cette étude montrent que nous avons des routes avec un fort potentiel tant domestiques que régionales mais également à l'international. Les pays limitrophes sont le marché naturel du Sénégal, ces pays n'ont pas de compagnies aériennes solides. D'autres routes intra-africaines sont également intéressantes mais nécessitent un accord du gouvernement ou des accords à nouer avec d'autres compagnies ».

La nouvelle compagnie nationale Air Sénégal SA est donc en gestation. Les autorités sénégalaises sont aussi « à la recherche de partenaires qui veulent accompagner le Sénégal dans sa vision de développement sans toutefois subir les désidératas des partenaires potentiels ».

Lors d'une rencontre entre le roi du Maroc



Maïmouna Ndoye Seck, ministre du Tourisme et des Transports aériens du Sénégal.

Senegal's Minister for Tourism and Air Transport Maïmouna Ndoye Seck.

SUMMARY

SENEGAL'S FOUNDATIONS BUILT ON THREE PILLARS

Boosting Senegalese commercial air transport and tourism were the prime agenda items at a recent Paris conference.

With annual economic growth of around 6.5%, Senegal aims to attract private investment to support the launch of its emergent Senegal plan (PSE), according to Minister for Tourism Maïmouna Ndoye Seck.

She said: "West Africa is experiencing strong and sustained growth in the services sector and this is an asset for us, which we hope to benefit from by boosting our services and realising our ambition to become the first multi-service tourist and business hub in the region."

She said that this ambition rests on three pillars: the completion of the long-awaited Blaise Diagne International Airport (AIBD) along with its MRO centre and cargo village; the development and re-opening of regional airports; and the regeneration of a strong national airline.

AIBD, she explained, has a strong strategic position as it is close to the major tourist centres like the seaside resort of Saly Portudal, the new high-end integrated tourist areas in Mbodiène and Joal Finio, and the new marina of Pointe Sarène.



The growing good health of commercial air transport will undoubtedly depend on the relaunch of a national airline, as, in the recent past, there have been numerous unsuccessful attempts by the Senegalese authorities to build a stable and sustainable national airline, culminating in Senegal Airlines' virtual collapse last summer.

Minister Seck told the conference: "We have a company – Senegal Airlines – that we sought to revive. But, faced with many difficulties and the very heavy liability of the company, we opted for the creation of a new airline."

"The new airline, Air Sénégal SA, has been created with capital of 40 billion CFA francs (\$65 million), which we expect to increase to 100 billion with the arrival of commercial partners."

"We commissioned a major study and this demonstrated that we have excellent routes with high potential, both domestic and regional, and also internationally. Our neighbouring countries form a natural market for us and these nations do not have strong airlines. Other inter-African routes are also interesting but require government agreement or agreements," she concluded.

« L'Afrique de l'Ouest affiche une croissance forte et soutenue dans le secteur des services. »

MAÏMOUNA NDOYE SECK

Mohamed VI et Macky Sall en novembre dernier, le Maroc et le Sénégal ont choisi d'accélérer les discussions entre RAM et Air Sénégal SA afin de mettre en place un partenariat dans les domaines opérationnels, techniques et d'accord commerciaux. Ce nouveau partenariat « devrait tenir compte des intérêts réciproques en capitalisant sur les expériences antérieures et en tirant les enseignements ».

Une première collaboration a pourtant été actée entre RAM et Air Sénégal International en 2000. Des tensions étaient vite apparues entre les deux parties en particulier autour de la gouvernance et de la gestion de la compagnie. Rappelons qu'en février 2016, il y avait également des échanges entre le président turc, Recep Tayyip Erdogan et son homologue sénégalais, Macky Sall, pour travailler sur un partenariat stratégique entre Turkish Airlines et Sénégal Airlines (aujourd'hui Air Sénégal SA).

Selon les autorités sénégalaises, la nouvelle compagnie Air Sénégal SA va démarrer ses activités cette année. La décision a été prise par le président Macky Sall a été actée le 10 janvier dernier lors d'une réunion qui s'est tenue au Palais de la République. L'étude sur la mise en œuvre de la compagnie est dans une phase opérationnelle, La nouvelle compagnie aérienne sera dotée d'un capital de 70 millions d'euros. Après Air Sénégal international et Sénégal Airlines, le Sénégal se lance une nouvelle fois dans la mise en place d'une compagnie aérienne nationale.

Il reste encore du chemin à parcourir avant le décollage du secteur aérien au Sénégal. La mise en service du nouvel aéroport AIBD, l'apport de financements privés et la capacité à nouer de nouveaux partenariats devraient permettre au pays de devenir un véritable acteur dans le domaine du transport aérien et du tourisme en Afrique de l'Ouest.



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Airline Business Models and Competitive Strategies - Virtual Simulation Program	08 - 12 May
Management of Training	08 - 12 May
Managing Air Cargo Operations	15 - 18 May
Air Transport Economics	22 - 26 May
Aviation Cyber Security	29 - 31 May

June

Airport Terminal Planning and Design	05 - 09 June
Understanding NDC Architecture	06 - 07 June
Train the Trainer - Advanced	12 - 14 June
Airline Social Media Strategy	19 - 21 June
Airport Services - Passenger Handling	19 - 23 June

July

Dangerous Goods Regulations (DGR) - Initial - Category 6	03 - 07 July
Airport Marketing & Corporate Communication Strategies	03 - 07 July
Passenger Fares and Ticketing - Basic	10 - 14 July
Security Management Systems - SeMS	10 - 14 July
Instructional Techniques	24 - 28 July

August

Cargo Revenue and Yield Management	07 - 10 August
International Negotiation Skills	07 - 11 August
Professional Skills for DGR Instructor - Categories 1,2,3,6	14 - 18 August
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Airport Slots and Coordination	11 - 13 September
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October

Route Forecasting and Development	02 - 05 October
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Airport Security Operations Optimization	16 - 20 October
Air Transportation Management	23 - 27 October
Training Needs Assessments	25 - 27 October

November

Special Fare and Ticketing- Intermediate	13 - 17 November
Instructional Techniques for DGR Categories 4,5,7,8,9,10,11,12	13 - 17 November
Network, Fleet and Schedule Planning	27 Nov - 1 Dec

December

Baggage Handling Services and Systems	04 - 08 December
Cargo Skills and Procedures	04 - 08 December
Human Factors in Aviation	11 - 15 December
Crew Resource Management for Instructors	11 - 13 December
Passenger Proration - Advanced	18 - 22 December





CONGO-GO-GO!

«Congo Airways s'apprête à monter et à monter » – Page 32

Democratic Republic of Congo (DRC) national carrier Congo Airways is progressing with its expansion plans and is seeking an equity investor, despite hitting challenges with its regional expansion. Victoria Moores reports.

Kinshasa-based Congo Airways launched operations in October 2015, filling a gap left after the liquidation of Lignes Aériennes Congolaises (LAC) in September 2014.

The airline, which is directly and indirectly state-owned, started operations with two ex-Alitalia Airbus A320s manufactured in 2007 and 2008. These aircraft were initially deployed on domestic routes from Kinshasa to Goma, Lubumbashi, Kindu and Kisangani within the DRC.

In May 2016, a pair of six-year-old ex-Air Nuigini Bombardier Q400s joined the fleet. They both entered service in June 2016, but within just a few days one of the two aircraft was struck by a third-party ground-handling vehicle overnight.

"It suffered very severe structural damage, right next to the cockpit," Congo Airways deputy CEO, Jerome Maillet, said, speaking at Aviation Africa in Kigali, Rwanda. He added that the incident was totally beyond the airline's control. "It took four-and-a-half months to get it back and close to \$1 million to repair."

Despite the setback, Congo Airways exceeded its targets for 2016 and now serves 10 domestic destinations, after adding – in sequential order – Kananga, Mbuji Mayi, Mbandaka, Bunia and Kalemie. At the time of going to print, Congo Airways was about to launch services to Gemena and Bukavu.

By early 2017, A320 load factors were up

around 80%, despite the airline adding 15% more capacity after local rival FlyCAA cut back some of its services and switched from narrow-body to all-Fokker 50 operations.

"On our trunk routes, on the A320, we are definitely breaking even," Maillet said. "On the Q400, we need to build synergies and hours, so we are still losing a bit of money. Our network is generating cash and we are cash-positive at operating level."

□□□□□

In 2016, the start-up carried 210,000 passengers, which was more than forecast. This figure is expected to grow to 360,000 in 2017, increasing to one million within five years of launch.

Congo Airways' turnover hit \$40 million in 2016 and will nearly double this year to \$70 million – \$3 million more than its initial projections, which were revised just two months into the year.

By year five, turnover is expected to swell to \$350 million, based on a fleet of six to eight narrow-bodies and two to three wide-bodies – which will be used to start intercontinental services by summer 2020. "We have started discussions with Airbus and Boeing to get new aircraft for these routes," Maillet said.

Congo Airways has set ambitious targets and is



“We have had to delay and delay and delay our regional flights and I want to grow.”

JEROME MAILLET

aiming for a compound annual growth rate of 75%, a 12-15% return on equity and profitability by year four. However, during its first year, Congo Airways has had its fair share of setbacks beyond the Q400 damage, including delays to its regional launch and a change of CEO.

“Initially, we wanted to start regional operations by the fourth quarter of 2016,” Maillet said. However, the International Civil Aviation Organization (ICAO) needs to audit the local civil aviation authority (CAA) before Congo Airways can launch regional operations. This audit has been postponed since July 2016 and is now not expected to happen before May 2017.

“We have had to delay and delay and delay our regional flights and I want to grow,” Maillet said, showing his frustration at yet another external setback. “We now hope to start regional flights by the second quarter of 2017, by summer, but I am reluctant to give timelines because it may not happen. Our five-year plan is about two quarters behind schedule because of the delay in authorisation to fly outside our country. It was meant to happen last December, but now it won’t happen before June or July.”

Once it finally gets the green light, Congo Airways is planning to expand its network to include Bujumbura in Burundi, Johannesburg in South

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Africa, Luanda in Angola, Douala in Cameroon, Entebbe in Uganda, Libreville in Gabon and Nairobi in Kenya.

However, even with the regional delay, Congo Airways is accelerating its fleet plan. The airline wanted to take a third A320 on dry lease from the fourth quarter of 2017, but instead a wet-leased A320 will join the fleet in mid-April, several months ahead of schedule.

"We have now been operating 16-17 months and we are experiencing high demand and heavy loads. We are taking the wet lease to cope with demand, because we can't secure a dry lease that rapidly. We would need to organise a dry lease nine to 12 months in advance, so, unless someone defaults on their lease, we can't get hold of an aircraft."

In May 2016, Congo Airways hired a new CEO, who performed a detailed review of the company's cost structures. This led to an 8% reduction in headcount, although this mainly affected lower-paid support staff, such as drivers, and, therefore, only delivered a 1.5% cost saving.

A more substantial \$1.5 million dollar saving came from a pay scale review, which was led by the new CEO personally taking a 17% pay cut. Board salaries were also substantially reduced and there was a company-wide pay restructure.

"There are no small savings; every decimal counts. If we want to grow, we couldn't take the former pay scales," Maillet said. "We are managed like a privately-owned company. I think we are one of the best-managed airlines in the region. We don't have any government interference whatsoever. We have copied the Ethiopian Airlines model."

Ethiopian Airlines has been active in seeking

out partnership with regional airlines and it has expressed interest in investing in an airline in either Congo Brazzaville – where local airline ECAir is currently grounded – or the DRC, which could present an opportunity for Congo Airways.

"Our five-year plan calls for growing our equity," Maillet said. "In the period to year three, we still need several tranches of funding. We are on track, but we need to make sure that the next part of that financing comes in due time. We could slow down our plans to lower our investment requirements, but quicker growth will require more funding."

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At Congo Airways' launch, the Government said it would be willing to open the airline's capital after one year. Maillet confirmed that there was potential for a long-term minority strategic investor to come into the business, with a stake of 15-20% on offer. The exact minority shareholding could be flexible, but the partner must share the DRC's vision to create a large airline and major player in central Africa.

"It's not just the money, although that's part of it. If we attract someone like Ethiopian Airlines, they would do their due diligence, which would give us recognition. They would be looking for good governance; they don't want a company that wastes money. It would also give us networking opportunities, for lobbying and suppliers, and access to knowledge – when it comes to speaking with lessors and manufacturers, these guys have done it more than 100 times.

"The finance is a small fraction in the equation. It would unlock debt financing and lower our cost of capital. So, there are five major benefits beyond cash. It would be truly game-changing to have a sophisticated investor. We need to bring in an investor mind-set, focused on return on investment and profitability."

With this future in mind, Congo Airways is planning to create several 100% owned subsidiary companies, specialising in areas such as ground-handling, security and maintenance. These companies will perform third-party work and the structure will give clear accountability and visibility over the performance of these divisions.

If the strategic partner takes longer than expected to secure, Congo Airways can always tap funding from its \$75 million fleet, which it owns outright with no debt. "At the moment, they [the aircraft] are not giving us a good return on equity invested; we need to leverage them to boost our return. That is a reserve of money that we will need either later this year, or next year. We could also go to our existing shareholders, or open up to a strategic investor during the course of this year," said Maillet.

Beyond this, Congo Airways is hoping to set up potential interline or codeshare talks with Asky, Ethiopian Airlines, Kenya Airways and South African Airways (SAA). The fledgling carrier is also planning on branching out into cargo operations from 2018.

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Ahead of this, Congo Airways is in talks with Kenyan freight operator, Astral Aviation, and Ethiopian Airlines over possible joint cargo flights from 2017.

On the maintenance side, Congo Airways is planning to do its own technical work, but this is still "two-and-a-half years, maybe more" down the line.

For the time being, Maillet is happy with the airline's progress. Congo Airways is an advanced operation, he said, with e-payments, a mobile app, payment agreements with several banks and a frequent flyer programme set to go live later in 2017.

On the operational side, Congo Airways has benefitted from free International Air Transport Association (IATA)-backed training and has recently introduced iPad-based electronic flight bags, although the local CAA lacks the capability to certify the technology.

The airline's operational credentials are also supported by it securing contracts to fly western embassy staff, when no local operator was previously approved to do so. Several fuel companies are also flying with the airline, after performing their own stringent audits.

In the short term, the airline's immediate future expansion rests in the hands of the DRC CAA and ICAO.

External knocks were the theme for Congo Airways in 2016; maybe 2017 will be a year of external boosts.

SOMMAIRE

CONGO S'APPRÊTE À MONTER ET À MONTER

Congo Airways poursuit sa croissance en s'appuyant sur ses plans de développement. Elle cherche des investisseurs malgré les difficultés auxquelles est confrontée son expansion régionale. Des détails avec Victoria Moores.

Congo Airways a lancé ses opérations en octobre 2015 après la liquidation de la compagnie de LAC en septembre 2014. Elle a démarré avec deux A320 sur des lignes domestiques. Deux Q400 ont rejoint la flotte en mai 2016. Un de ces deux avions a cependant subi des dommages structurels à la suite d'un choc avec un véhicule de manutention quelques jours après sa mise en service.

Congo Airways a aujourd'hui dépassé ses objectifs pour 2016 et dessert maintenant 10 destinations domestiques. La compagnie est en passe de lancer des routes vers Gemena et Bukavu.

« Nos routes principales avec l'A320 sont en train de décoller et nous devons trouver encore des synergies pour nos Q400 », a déclaré Jérôme Maillet à Aviation Africa 2017. « Nous perdons encore de l'argent mais notre réseau génère des liquidités. »

La compagnie a transporté 210 000 passagers en 2016. 360 000 sont prévus en 2017 avec le cap du million en 2020. Elle souhaitait lancer ses opérations régionales au quatrième trimestre de 2016. Cependant, l'OACI doit auditer la CAA avant que Congo Airways puisse démarrer ce type d'opération. Cet audit a été reporté depuis juillet

2016 et ne devrait pas intervenir avant mai 2017.

« Nous espérons débiter nos vols régionaux d'ici cet été », affirme Jérôme Maillet.

Une fois le feu vert obtenu, Congo Airways prévoit d'étendre son réseau vers Bujumbura, Johannesburg, Luanda, Douala, Entebbe, Libreville et Nairobi. Malgré ce retard régional, elle veut accélérer la consolidation de sa flotte d'avions.

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Ethiopian Airlines également exprimé son intérêt pour investir dans une compagnie aérienne du Congo Brazzaville ou de RDC. Cela peut présenter une opportunité pour Congo Airways. Elle espère également établir des discussions pour la mise en place d'accords de codeshare avec Asky, Ethiopian Airlines, Kenya Airways et SAA. La compagnie est également en pourparlers avec Astral Aviation et Ethiopian Airlines dans le domaine du fret.

Jérôme Maillet se dit satisfait des progrès de Congo Airways. Il espère lancer rapidement son réseau régional. Cette décision reste entre les mains de la CAA de la RDC et de l'OACI.

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We lead the Aviation Industry in Africa

Faced with intolerable challenges in its home market, Libya's Afriqiyah Airways is defying the odds to stay airborne and even set up a new subsidiary in Malta.

Martin Rivers talked to chairman Abubaker Elfortia.

Flying in the face of division

When Libya's globally-recognised Government of National Accord (GNA) was signed into existence in December 2015, the United Nations hailed its "clear plan for rebuilding a strong, united and peaceful Libya" after five years of unrest split the country down the middle with two competing governments.

The 12 months that followed saw the Misrata brigades, a band of militias loyal to the GNA, drive Daesh from its strongholds in Libya – liberating thousands from the ultra-hardline terrorists and securing a key victory for the fledgling government.

But, beyond that all-important military success, there are few reasons to look back on 2016 as an encouraging year for Libya.

Hopes for unity have unravelled in the face of continued opposition from power-brokers in the east of the country, who flexed their muscles this summer by voting against the GNA's mandate and seizing oil terminals. One western group responded by seizing premises in Tripoli and trying to restore executive powers to Khalifa Al-Ghwell, the former prime minister.

The reality is that today's Libya is a deeply

divided country – as it has been since the overthrow of Muammar Gaddafi in 2011 – with power spread thinly between myriad armed groups, who shift allegiances regularly and show no deference to the democratic process.

For the country's two state-owned carriers, Libyan Airlines and Afriqiyah Airways, survival comes at a cost. Their shared home base, Tripoli International Airport, was all but destroyed in 2014 when western Islamists drove the then UN-backed government from power.



More recently, both parastatals have been targeted by militiamen apparently eager to settle scores: Fathi Al-Shatti, the chairman of Libyan Airlines, was held by kidnappers for 47 days last year; while one of Afriqiyah's A330s has been impounded by gunmen operating with impunity at Tripoli's surrogate gateway, Mitiga International Airport.

With few Libyans splashing out on air travel, and still fewer foreigners willing to visit the country, Afriqiyah is now deploying just six of the 16 aircraft under its ownership.

"There are still difficulties. It's no easier," chairman Abubaker Elfortia told me during the annual meeting of the Arab Air Carriers' Organisation (AACO) in Casablanca in November. "Why? Because the government is not completely formed – we don't have ministers yet – and this is not helping at all. And the other thing which is affecting Afriqiyah and the airlines is the cost of hard currency."

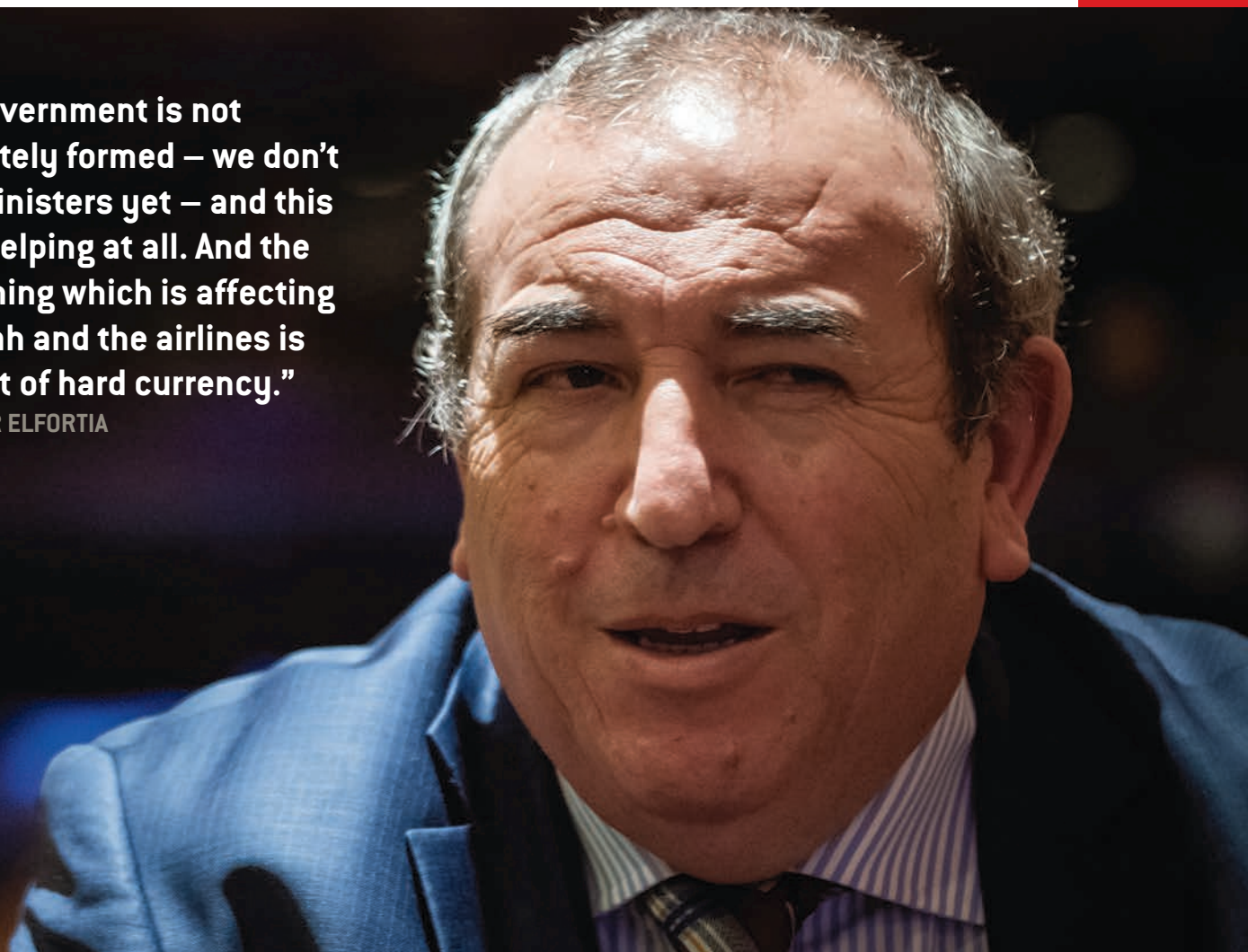
The Mitiga-based carrier currently flies to four domestic points (Misrata and Zintan in the west, Bayda in the east, and Sebha in the south west) plus six regional destinations (Alexandria in Egypt, Amman in Jordan, Istanbul in Turkey, Khartoum in Sudan, and Tunis and Sfax in Tunisia). It also operates west African charter flights to Accra in Ghana, and Niamey in Niger.

Elfortia insisted that Afriqiyah is welcomed in all corners of the country, irrespective of tribal allegiances. "The political [situation] has no effect [on our domestic network]," he said, highlighting plans to begin serving Kufrah in the south east. "We are flying all the time from west to east to south, regardless of any political situation."

Nonetheless, the fragmented state of the fleet speaks volumes about the airline's day-to-day

“The government is not completely formed – we don’t have ministers yet – and this is not helping at all. And the other thing which is affecting Afriqiyah and the airlines is the cost of hard currency.”

ABUBAKER ELFORTIA



troubles. Alongside its six operational units – three Airbus A320s, two A319s and one A300F – Afriqiyah has five aircraft in storage, most of which are damaged (two A330-200s, two A320s and one A319); two A320s leased out to Lithuania’s Small Planet Airlines; and one A330-300 leased out to Turkish Airlines.

It also owns the A330-300 blockaded by militiamen in Mitiga, plus the infamously extravagant A340 that Gaddafi acquired as a private jet for use on his diplomatic trips.

With one damaged A330-200 (5A-ONP) now undergoing repairs in Hamburg, and the A340 sitting on the tarmac of Perpignan Airport in southern France, almost one-third of the fleet is currently stationed outside of Libya.

There is also no guarantee that the damaged A320-family jets will be returned to service. “[We have to decide] if it is feasible to fix them or not,” Elfortia said, adding that engineers are still inspecting the aircraft – more than two years after they were riddled with bullets during the Islamist assault on Tripoli. Three additional planes were destroyed by aerial bombardments in 2011 and 2014 (one A300, one A320 and one A330-200).

Asked about the A330-300 impounded in

Mitiga, the chairman admitted that some stakeholders in the country object to the strategy of leasing out metal to foreign operators. Afriqiyah managed to transfer one of its wide-bodies to Turkish Airlines in 2015 under an eight-year lease (5A-ONQ / TC-JOM), but attempts to relocate the second unit (5A-ONR / TC-JON) were unsuccessful.



“The contract was for the two aircraft, and the other one has been stopped from going,” Elfortia said, confirming that vehicles are being used to physically block the plane. “Of course, leasing the aircraft is the proper solution for the time being. The A330 is a big aircraft. It’s supposed to be operated for long distances. And what makes it even more urgent now is the need for hard currency, which the airline needs [in order] to keep operating.”

Dismissing calls by some parties for the wide-body to be deployed within Afriqiyah’s network, he stressed: “There’s no embassies in Libya! Really you cannot fly [it]. There’s no routes that are suitable for it.”

An order for 10 next-generation A350-900s, meanwhile, remains active with Airbus, though deliveries are inconceivable in the current climate.

On the narrow-body side, the two A320s placed with Small Planet are the same units that Afriqiyah deployed under an Irish flag of convenience in 2014 to bypass the EU’s blacklisting of Libyan carriers. Those aircraft have been re-registered with a Lithuanian licence (LY-ONJ and LY-ONL) and are now being flown by the charter and wet-lease specialist within Europe. “Because they are Europe-registered they are easy to lease out,” Elfortia said, describing the income they generate as “compensation” for low activity within Libya.

While there are no plans for Small Planet to operate the aircraft between Europe and Libya – as Ireland’s Air Contractors did, briefly, in 2014 – they may help build connectivity in a more roundabout way.

Afriqiyah last year set up a subsidiary airline, PanAfriqiyah, in the nearby Mediterranean island of Malta, appointing former Air Malta boss Louis Giordimaina as a non-executive director. Though

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One of Afriqiyah's A330-200s (5A-ONP) awaiting repair work in Hamburg.

PICTURE: DIRK GROTHE

CONTINUED FROM PAGE 35

he was cautious about discussing the business model, Elfortia made clear that the subsidiary – which is seeking a European air operator’s certificate (AOC) – would take over responsibility for its parent’s long-held hub aspirations.

“Our model as Afriqiyah Airways is to bring passengers from Europe and have the hub and then distribute them to Africa,” he explained, recalling the company’s glory days before the Arab Spring, when it served 18 destinations in Africa and eight in Europe. “We see that our model is being disturbed due to the recent trouble, so really we are changing the hub from Tripoli to Malta. We are focused on starting [PanAfriqiyah] with two aircraft, and in three years we should have about six aircraft.

“We will be leasing. If the situation in Libya stays the same way as it is now, and we still have the two aircraft registered outside with Small Planet, we could start with them.”



Elfortia denied that the subsidiary is an attempt to get around the EU ban, which Brussels imposed in 2012 amid concerns about Libya’s post-war oversight capabilities. To the contrary, he said, Afriqiyah wants to restore its north-to-south hub in a stable environment, while also enhancing training opportunities for staff. “The target is to upgrade Afriqiyah and the employees of Afriqiyah,” he reiterated. “This means that they can come and do on-the-job training in Malta.” Long-term, the subsidiary may even “deploy wide-bodies for flying from Malta across the Atlantic”.

Whatever the strategic motivation, it seems inevitable that PanAfriqiyah will include Libyan points in its African network – thereby improving the experience of Libyans, who must presently self-connect to Europe over hubs in Tunisia and Turkey.

There are no foreign airlines serving Libya today. Although several carriers restored flights

LIBYAN AIRLINES BOSS IS FREED

A rare glimmer of hope emerged from Libya at the time of writing, with news that Fathi Al-Shatti, the chairman and chief executive of Libyan Airlines, has been freed after 47 days in captivity.

Saad Bukhatwa, a spokesman for the flag-carrier, confirmed that Al-Shatti was released on 7 December and “he is very well”.

The airline boss, who was also formerly the director of Tripoli International Airport, had reportedly been kidnapped by armed men on his way home from work on 20 October. Bukhatwa told *African Aerospace* that a ransom was paid in order to secure his release.

Asked about the situation in late November, Abubaker Elfortia, chairman of sister carrier Afriqiyah Airways, said there were no suspects in the kidnapping and no ransom demands had been made public.



“We believe he’s safe, but if they [the kidnapers] make contact it will be [with] his family,” Elfortia remarked. Abdul Wahab Teffaha, the secretary general of the Arab Air Carriers’ Organisation (AACO), also drew attention to the plot, calling for Al-Shatti to be released during his opening address at the group’s annual meeting in Casablanca. Two days after the abduction, the flag-carrier had released a statement vowing to gradually shut down operations if its chairman was not freed. Elfortia confirmed that efforts were made by employees to end the kidnapping, but he said that flights ultimately continued as normal.

Libyan Airlines was rocked by internal divisions last year, when former chairman, Khaled Taynaz, reportedly objected to decisions taken by his successor, Ahmed Elkedairi. It is not clear whether Al-Shatti’s appointment during the summer ended the dispute, but according to *The Libya Herald* the airline “has been effectively split into two parallel organisations” since the civil war escalated in 2014.

after the overthrow of Gaddafi – among them British Airways, Lufthansa, Alitalia, Turkish Airlines, Qatar Airways and Etihad – all withdrew due to security concerns.

In October, Elfortia’s outward-looking investment strategy also saw Afriqiyah acquire 20% of the Aviation Training Centre of Tunisia (ATCT). The chairman said the move would cut costs at the airline by allowing its pilots to obtain European-standard simulator training without travelling to Germany. It should further provide a new revenue stream for the cash-strapped company.



Turning to the stalled merger between Afriqiyah and Libyan Airlines – which had been nearing completion around the end of Gaddafi’s rule – Elfortia said consolidation remains the “target” but is not considered an immediate priority. “At the moment, to merge the two airlines means we are merging the problems of the two airlines,” he explained, pointing to staffing issues at the sister carrier. “Merging definitely is coming, but it will not be very soon. First of all we have to have a government, because this needs government support and it’s a government decision ... It will not be before three years.”

With “cultural” differences hampering efforts to form “a true alliance”, the chairman said joint network planning should be the first step. “We fly to the same destinations,” he noted. “We are trying now to organise more – at least to have our flights to the one destination on separate days.”

Eighteen months ago, when *Arabian Aerospace* reported from the burned-out shell of Tripoli International Airport, officials spoke hopefully about the prospects for reconstruction and a long-overdue return to stability. Neither has come to pass.

“There is nothing going on there yet, to be honest. There is no repair work,” Elfortia said of the once-bustling gateway. Admitting that his company can no longer even provide safe passage for journalists, he repeated: “Everything needs the government, and the government is not there yet.”

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**SOUTH AFRICAN AIRWAYS
TECHNICAL**

Mauritania Airlines International is plotting slow, steady growth in a bid to avoid the fate of its predecessors.

Martin Rivers and Vincent Chappard talk to *Mohamed Radhy Ould Bennabi*, chief executive of the third airline to fly Mauritania's flag in a decade.

THIRD TIME LUCKY?

«La troisième tentative sera-t-elle la bonne ? » – Page 40

When Mauritania Airlines International was established in December 2010, it marked the third attempt at a flag-carrier in a decade by the Islamic Republic.

Just three years previously, Mauritania Airways, a joint venture with Tunisair, had been set up with the same aim of providing connectivity for the little-known west African nation. Its rapid fall from grace followed the slow demise of Air Mauritanie, the country's historic flag-carrier, which cooperated with pan-regional carrier Air Afrique for most of its four decades in the skies.

That financial headwinds grounded both predecessors is hardly surprising when one considers Mauritania's vital statistics. With an agriculture-focused economy and a small, conservative population that typically eschews overseas travel, the country suffers from weak demand on both the inbound and outbound sectors.

Mauritania Airlines International is the only carrier in the country, accounting for all of the 248,000 passengers who flew with locally registered operators in 2015.

But, with just seven foreign airlines serving capital city Nouakchott on a scheduled basis – Air Algérie, Air Côte d'Ivoire, Air France, Binter Canaria, Royal Air Maroc, Tunisair and Turkish Airlines – the Government is determined to make a success of its flag-carrier, leveraging the company for economic development and improved bilateral relations.

Winning Mauritania's removal from the

European Union's Air Safety List in December 2012 was a watershed moment for the sector. Predecessor Mauritania Airways had ceased operations just one month after it was banned from EU skies amid accusations of "persisting deficiencies" in its operations and maintenance.

Air Mauritanie had also been banned by the UK Government prior to the introduction of a Europe-wide blacklist.

"We've invested a lot. We've improved a lot," Mohamed Radhy Ould Bennabi, the new flag-carrier's chief executive, told *African Aerospace*. "Everyone, including the civil aviation [authority], did their best to get out of this blacklist. But all this is behind us. We are now a member of IATA [the International Air Transport Association] and we are IOSA [IATA operational safety audit] certified."



The removal of EU restrictions allowed Mauritania Airlines International to begin serving Las Palmas in the Canary Islands, a Spanish territory located off the north-western coast of Africa, in May 2013. Flights from Nouakchott are now operated four-times weekly with a stop in Nouadhibou, Mauritania's second largest city. Another link to Paris followed in December of the same year, but was suspended in February 2015 for "commercial reasons".

As of the beginning of 2017, the overseas route network also includes Abidjan in the Ivory

Coast, Bamako in Mali, Casablanca in Morocco, Conakry in Guinea, Dakar in Senegal, and Tunis in Tunisia. Other international routes that have been trialled and suspended include Algiers in Algeria, Banjul in Gambia, Brazzaville and Pointe-Noire in the Republic of Congo, and Cotonou in Benin.

On the domestic front, triangle flights are currently operated between the two main cities and Zouérat in the north.

The flag-carrier serves its network with a fleet of two Boeing 737-500s, one 737-700, one 737-800 (newly-delivered in November) and one Embraer ERJ 145. Mauritanian president, Mohamed Ould Abdel Aziz, has announced that one 737 MAX will also arrive in Nouakchott later this year.

"Above all, we want to renew our fleet," said Bennabi, who formerly headed up SOMAGAZ, Mauritania's state-owned gas company. "The 737-500s will be withdrawn from the fleet. Not necessarily with the arrival of the 737 MAX – they can still fly for a while – but our strategy is to get them out of the fleet. And we would like to strengthen our fleet further. We are thinking about other types of aircraft. We need aircraft adapted to our needs."

He confirmed that Brazzaville flights could be re-launched as soon as this year, along with a brand new route to Jeddah in Saudi Arabia.

Paris may also return to the network, strengthened by the improved performance of the MAX and greater connectivity through the



“We’ve invested a lot. We’ve improved a lot. Everyone, including the civil aviation authority, did their best to get out of this blacklist. But all this is behind us. We are now a member of IATA and we are IOSA certified.”

MOHAMED RADHY OULD BENNAHI

Nouakchott hub. “We believe that conditions have changed and, by relying on our network in Africa, we think it can be re-opened under better conditions,” Bennahi said of the suspended route.

Mauritania Airlines International presently accounts for 55% of flight frequencies and 40% of seating capacity across all markets in the country, making it the largest operator by both metrics. When looking at available seat kilometres (ASKs), however, it falls into third place behind Turkish Airlines and Air France. That reflects the relatively lengthy flight times on the Nouakchott-Istanbul and Nouakchott-Paris routes, as well as Air France’s deployment of wide-bodies.

Asked what would make the latest incarnation of Mauritania’s flag-carrier more successful than its forebears, Bennahi emphasised the importance of fleet optimisation and the need to “trust partners and passengers”.

“These two main axes will help the company improve itself while seeking efficiency,” he said, acknowledging strong competitive headwinds from both Africa and Europe.

“I can confirm that the company’s financial situation has improved compared to last year. We are approaching break-even. And this improvement has been achieved through two things: firstly, through the efforts we are making concerning our operation, which means that we have more passengers. Second, through the fall in oil prices.”

The opening of Nouakchott-

Continued
on Page 40

CONTINUED FROM PAGE 39

Oumtounsy International Airport last June should also help things along. The new gateway, located to the north of the capital, is capable of handling two million passengers a year. It comprises two runways, four jetways, a 320,000sqft passenger terminal, a freight terminal, and a VIP reception area.

“The airport offers more prospects at several levels, especially in working conditions,” Bennahi said, acknowledging the poor state of the now-decommissioned gateway. “We believe that other destinations will develop, bringing more activity to the company.”



Bilateral restrictions pose little obstacle for Mauritania Airlines International, he continued, owing to widespread compliance with the principles of the 1999 Yamoussoukro Decision (YD) in west Africa. “This is not difficult given the agreements that exist with the states,” Bennahi insisted, referring to the multinational treaty that was designed to liberalise cross-border flying on the continent. “Traditionally, Mauritanian airlines have operated in these countries, so access is not that difficult.”

His remarks concord with the upbeat assessment of René Decurey, the chief executive of Air Côte d’Ivoire, who recently told *African Aerospace* that “all the governments stick to” YD in the sub-region.

However, other airlines have complained that the liberalisation agreement exists on paper only.

In late 2014, for example, Habiba Laklalech, deputy chief executive of Royal Air Maroc,



PICTURE: ADOLFO BENTO DE URQUIA

accused the Mauritania Government of deliberately curtailing access to the country. “We used to have [a weekly allocation of] 14 flights,” she said of the Casablanca-Nouakchott route. “Then the state reduced them to 11, to nine, to seven and now five.”

Royal Air Maroc has, subsequently, been allowed to deploy freighters once weekly on the city pair. But its dwindling presence in the passenger market comes as Mauritania Airlines International ramps up activity, now serving Casablanca three times weekly from the capital and twice weekly from Nouadhibou. Outbound services were also previously operated from Zouérat.

While concerns about protectionism will do little to boost confidence in the flag-carrier, the

problem is far from unique to Mauritania. Indeed, Royal Air Maroc has itself been accused of restrictive practices, reportedly lobbying the Rabat government not to grant Air Arabia Maroc access to west African destinations.

After just six years of operations, it is too early to know whether Mauritania’s third attempt at a flag-carrier will secure a better legacy than its predecessors.

However, whereas Mauritania Airways was dependent on Tunisian investors, and Air Mauritanie spent its final years courting a Moroccan bailout, the new flag-carrier is going it alone as a locally funded entity. For better or for worse, success now hinges on the dedication and resourcefulness of home-grown Mauritanian expertise.

SOMMAIRE

LA TROISIÈME TENTATIVE SERA-T-ELLE LA BONNE ?

Mauritania Airlines International planifie une croissance lente et régulière.

Martin Rivers et Vincent Chappard ont échangé avec **Mohamed Radhy Ould Bennabi**, DG de la nouvelle compagnie aérienne nationale de la Mauritanie.

Lorsque Mauritania Airlines International a été créée en décembre 2010, ce fut la troisième tentative de mettre sur pied une compagnie aérienne nationale en Mauritanie (après Mauritania Airways et Air Mauritanie).

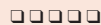
Avec une économie axée sur l’agriculture et une population modeste et conservatrice, le pays dispose d’une faible demande de voyages à l’étranger.

Mauritania Airlines International est le porte-drapeau de la Mauritanie et les autorités du pays sont déterminées à assurer sa croissance via le développement économique et de meilleures relations avec les pays de la région. Sept compagnies aériennes étrangères desservent aujourd’hui la capitale Nouakchott (Air Algérie, Air Côte d’Ivoire, Air France, Binter Canaria, Royal Air Maroc, Tunisair et Turkish Airlines).

Le retrait de la Mauritanie de la liste de sûreté de l’UE en décembre 2012 fut une étape cruciale dans le secteur du transport aérien.

« Nous avons investi et nous nous sommes

beaucoup améliorés », affirme Mohamed Radhy Ould Bennahi, le nouveau DG de la compagnie. « Tout le monde a fait de son mieux pour sortir de cette liste, c’est maintenant derrière nous. Nous sommes maintenant membre de l’IATA et certifiés IOSA. »



La sortie de la liste a permis à Mauritania Airlines International d’ouvrir une route vers Las Palmas en mai 2013. La destination Paris a été lancée en décembre 2013 puis, suspendue en février 2015 pour des « raisons commerciales ». Début 2017, le réseau intègre Abidjan, Bamako, Casablanca, Conakry, Dakar et Tunis. D’autres routes ont été lancées (Alger, Banjul, Brazzaville, Pointe-Noire et Cotonou) puis arrêtées. Des vols domestiques sont actuellement opérés vers Zouérat. La compagnie nationale dispose d’une flotte d’avions composée de deux B737-500, d’un B737-700, d’un B737-800 et d’un ERJ-145. Le président

mauritanien, Mohamed Ould Abdel Aziz, a annoncé la livraison d’un B737 MAX au cours de l’année.

« Nous voulons avant tout renouveler notre flotte », souligne Mohamed Radhy Ould Bennahi. « Les B737-500 seront retirés de la flotte. Nous pensons à d’autres types d’avions adaptés à nos besoins. »

Mauritania Airlines International pourrait relancer des vols vers Brazzaville et démarrer une liaison vers Djeddah. Paris pourrait également réintégrer le réseau avec le nouveau B737 MAX.

Selon Mohamed Radhy Ould Bennahi la situation financière de la compagnie s’est améliorée et tend vers la rentabilité. « Cette amélioration est la résultante de deux facteurs : les efforts sur l’exploitation du réseau avec davantage de passagers et la baisse du prix du kérosène. »

L’ouverture de l’aéroport international de Nouakchott-Oumtounsy est également un élément déterminant. Il est capable de traiter deux millions de passagers par an.

Après seulement six ans d’opération, il est encore trop tôt pour dire si la compagnie nationale mauritanienne aura un meilleur avenir que ses prédécesseurs. Son succès repose désormais sur le dévouement et l’expertise des Mauritanien.

GIANT STRIDES MADE IN ENTEBBE AIRPORT EXPANSION AND UPGRADE



UGANDA CIVIL AVIATION AUTHORITY (CAA)

commenced the implementation programme for upgrade and expansion of Entebbe International Airport in line with the 20-year National Aviation Master Plan (2014-2033). A number of development projects have been completed and others are ongoing as follows:

Automation of the Aeronautical Information Management System

CAA has completed automation of the Aeronautical Information Management processes at Entebbe International Airport, which has enabled automated management of flight plans, notices to airmen (NOTAM) and electronic Aeronautical Information Publications (eAIPs). This has led to efficiency and timely provision of accurate aeronautical information, reduction in costs incurred by air operators in updating AIPs, reduction in human errors, and Ubiquitous Flight preparation.

Baggage Handling System:

A new Baggage Handling System (BHS) has been installed at USD 4.8 million. It supports 24-hour continuous operations, provides for easy maintenance and parts replacement and is able to handle between 1200-1800 bags per hour (compared to the old, which handled 500-700 bags per hour). It also has an extra 6 check-in counters, automated with enhanced security capabilities.

Landside expansion of the Passenger Terminal:

While current capacity of the terminal building is for 410 arriving and 360 departing passengers, the Master Plan projects 930 arriving passengers and 820 departing passengers during peak hours, by 2033. The expansion is critical in providing for the growth and ensuring a good customer experience.

The on-going landside expansion to create new Arrivals and Departure blocks seeks to provide more room and comfort for service users, especially passengers.

Cargo Centre

Works for the new Cargo Centre commenced smoothly and 98 percent of the earthworks have been completed.

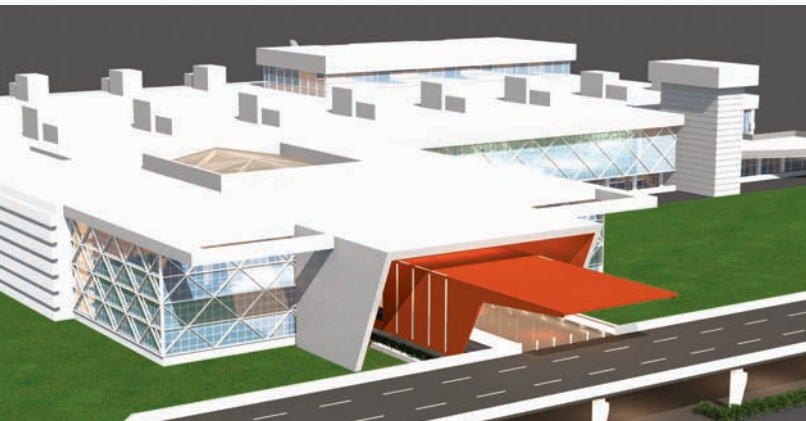
The 100,000 tones capacity Cargo Centre will be a self-contained facility with a Parking Apron, landside and airside access roads, cooling facilities, a Freight Forwarders Parlor and ancillary business outlets. It is part of the US Dollars 200 million loan to Uganda by China through the Exim Bank of China. Part of the loan will be used to re-surface the Runways, Taxiways and strengthen and expand the Aprons under the same contractor, China Construction Communications Company (CCCC).

KOICA Projects

The Government of South Korea extended a Grant worth US Dollars 9.5 million for improvement of Air Navigation Services and automation of Entebbe Airport.

The project is to deliver the following;

- A Computerized Maintenance Management System (CMMS) and Airport Operational database (AODB) system
- Implementation of Air Traffic Services Message Handling System (AMHS)
- Improvement of Flight Procedures efficiency through Air Traffic Management
- Capacity building including training of Ugandans in Korea, dispatch of Korean experts to Uganda and provision of education equipment.



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Air Cairo is betting big on a turnaround in fortunes for Egypt's long-suffering tourism industry. Martin Rivers talks to chairman and chief executive Yasser el Ramly.

Why Air Cairo is rolling the dice...

News that EgyptAir is scaling back its fleet renewal programme frankly surprised no-one when it was confirmed by Sherif Fathy, the country's transport minister, in December.

Fathy had repeatedly warned that the flag-carrier faces troubling headwinds, telling *Arabian Aerospace* as long ago as November 2015 that he was re-evaluating plans for dozens of aircraft orders.

At the time, his main concern was the bombing of Metrojet Flight 9268 shortly after take-off from Sharm el Sheikh Airport – an attack that claimed 224 mostly Russian lives, and prompted several countries to ground routes to the Red Sea resort. Coming on the heels of the 2011 popular revolution and the 2013 military coup, the terror atrocity signalled a new low for Egypt's reeling aviation sector.

Hopes of a swift recovery in 2016 were dashed by a triumvirate of further disasters and security scares. In March, an unstable man with a fake suicide-bomb belt hijacked EgyptAir Flight 181; in May, 66 people died in the still-unexplained crash of EgyptAir Flight 804; and in September, another troubled passenger tried to storm the cockpit of Flight 462, which was operated by EgyptAir's short-haul subsidiary, Air Cairo.

Even as its parent knuckles down for a drawn-out period of uncertainty, however, Air Cairo is pressing on with ambitious plans to nearly triple in size – placing all bets on the still-reeling European market.

Yasser el Ramly, its chairman and chief executive, admits that the strategy is high-risk.

While several governments have softened their travel advisories for Egypt, Russia still bans all flights to the country and Britain still advises against flying into Sharm el Sheikh Airport. Nonetheless, Ramly believes the tide is slowly turning for Egyptian tourism, and he is positioning Air Cairo at the front of the queue to benefit from gradual normalisation.

"The demand, of course, was affected after the



crash of the Russian aircraft. The first half of the year [2016] was very tough from January to June," he said during an interview at the annual meeting of the Arab Air Carriers' Organisation in Casablanca in November. "But, still, we operate around 30 weekly flights to Europe with good loads, even 75% load factor."



Confirming that the airline is sticking by plans to deploy 20 aircraft by the end of the decade – up from seven at the time of writing – he repeated the oft-versed claim in Egypt that tourism slumps do not last forever.

"The recent difficulties postponed our plan by two aircraft," the chief executive continued. "We were supposed to be 10 [aircraft] by the beginning of 2017; instead it will be only eight. But I think by this coming summer we will have 10 or 11 aircraft."

Air Cairo launched operations in 1997 as a charter specialist, before diversifying with low-cost scheduled flying when EgyptAir became its majority shareholder in 2003. The airline presently deploys Airbus A320s – all but one of which are configured in an economy-only layout.

Despite the brand name, Cairo plays only an

incidental role in the business model. Just one of Air Cairo's aircraft – the unit with a business class cabin – is based in the capital. The other six are spread liberally between cities on the Mediterranean coast (Alexandria); the Red Sea (Sharm el Sheikh, Hurghada and Marsa Alam); and the Nile River (Asyut, Sohag and Luxor).

"Our flights out of Cairo are less than 5% of the total operation," Ramly said. "We concentrate on the secondary airports. Even for the Gulf and Middle East we don't fly from Cairo a lot... So, for us, the competition is coming from the low-fare carriers in the Gulf and Egypt."

Air Cairo's strategic shift towards low-cost scheduled operations came at a time when EgyptAir was trying to capitalise on the growing popularity of self-booked travel around the world – particularly in Europe. For years, management split their attention between legacy charter partners and independent travellers. But, with tour operators now fleeing the country en masse, Ramly finally seems ready to turn his back on package holidays.

"Eighty-five per cent of our operations now are scheduled flights. It could move to 90% this coming summer," he confirmed.

"We want to introduce a new strategy in the Egyptian market, to make our scheduled flights

“We would like for all the markets we serve to be all-year-round, so that customers can always find an aeroplane to spend a nice holiday in Egypt.”

YASSER EL RAMLY

available to many customers, not only for the tour operators and the people who have a programme with the hotel. We would like for all the markets we serve to be all-year-round, so that customers can always find an aeroplane to spend a nice holiday in Egypt.”

Although charter contracts will continue to be signed for the foreseeable future, their main purpose will be to add capacity on pre-existing routes during the high season.

With Air Cairo, thus, becoming a traditional scheduled operator, management are opening up to distribution channels that were previously considered superfluous. Last June, they completed the transition to Amadeus’ Altéa reservation and inventory systems – an upgrade that paves the way for future interline and codeshare agreements with other carriers.

“We want to sell [tickets] on any distribution system to market ourselves for regular flights to Sharm el Sheikh and Hurghada and other tourist airports,” Ramly affirmed. “One of the reasons that we moved to the Amadeus system is because we would like to have cooperation with some of the private airlines in Egypt and the Middle East, and in Europe as well. We have already signed an interline agreement with EgyptAir and we are ready to take this step with airlines in Europe and the Gulf.”

The chief executive added that business class may be offered on some new aircraft – potentially up to 25% of the fleet – but declined to repeat earlier claims about moving from a low-cost to a full-service business model. “Actually, we are low-fare,” he said, opting for the ambiguous hybrid term that is favoured by both categories of airlines.

Air Cairo already provides a free checked luggage allowance and free on-board meals to all customers.



As of December 2016, the airline’s scheduled network comprises 11 destinations in Europe (Belgrade, Billund, Bratislava, Budapest, Copenhagen, Dusseldorf, Hannover, Munich, Oslo, Prague and Stuttgart); eight in the Middle East (Amman, Doha, Hofuf, Jeddah, Kuwait, Qassim, Riyadh and Yanbu); and Tbilisi in the Caucasus. Charter flights are, meanwhile, operated to Armenia, Austria, Germany, Poland and Russia.

New scheduled routes to Warsaw and Katowice were being lined up as this article went to press, while Linz and Vienna are also in the pipeline for early 2017. Asked about other prospective markets, Ramly said that Bucharest,

Dubai, Kazakhstan and one additional point in Germany are under evaluation – along with a resumption of flights to Baku.

The expansion will coincide with the introduction of a new aircraft livery, though management have decided not to adopt a brand-name more reflective of the network.

“We studied [whether we should] change our company name,” Ramly admitted, referring to the airline’s limited presence in Cairo. It currently serves just three scheduled routes from the capital: Hofuf, Jeddah and Yanbu. “But we found that we built it up over the years, so we will keep it. Even though it’s Air Cairo, Cairo is Egypt.”

With Russian President Vladimir Putin pledging to restore flights to Egypt in the near future – ending more than a year of diplomatic pressure over airport security – Ramly is not alone in predicting an imminent tourism recovery. Colliers International, a commercial real estate firm, says that hotel revenues are already rising across Egypt, buoyed by the return of German charter operators last autumn.

However, having dropped from 14.7 million in 2010 to 9.3 million in 2015, visitor numbers have a long way to climb before the crisis is over. If 2017 becomes another disappointing year, Air Cairo’s gamble will have been a costly mistake.

Oneworld eyes up African opportunity

Oneworld CEO Rob Gurney has acknowledged Africa as "an area of opportunity" for the alliance, which lacks a local African partner beyond British Airways' (BA) South African franchise carrier Comair.

"We're not completely absent there," Gurney said, noting the Comair link. "What we lack is one of the major African carriers, with the potential customer franchise that goes with that. But, just because we don't have a carrier domiciled there, doesn't mean we don't have a presence. In fact, arguably, we've got a very strong presence there."

He declined to confirm or deny whether any new African members were under consideration, as these talks would be commercially sensitive. However, he said: "We have had some conversations with potential partners in Africa, but they are pretty formative."

□□□□□

Gurney joined Oneworld last August and is currently working on ways to simplify the alliance-joining process – as well as processes for existing members – and create more business value from the partnership.

Any would-be members could be brought over from other alliances, or be currently unaligned.

"I don't think it's an either/or situation," he said. "We don't have an agenda to lure airlines away from other alliances. Our agenda is that we are open to talking with anyone about potential partnership opportunities."

■ Madagascar choisit son partenaire stratégique

Le board d'Air Madagascar a pris la décision de recommander à l'Etat malgache, Air Austral comme «preferred bidder».

Les Cabinets IOS Partners et TroyAvi ont remis leur rapport d'évaluation et leurs conclusions techniques suite aux séances de négociation avec Air Austral et Ethiopian Airlines. Le Conseil d'Administration a ainsi invité Air Austral à finaliser avec l'Etat malgache les négociations en vue de la signature au 31 mars 2017 d'un protocole d'accord et au 31 mai 2017 d'un contrat de partenariat stratégique.

■ Madagascar chooses strategic partner

The board of Air Madagascar has decided to recommend to the Malagasy State, Air Austral as preferred bidder. IOS Partners and TroyAvi submitted their evaluation report and their technical conclusions following the negotiation sessions with Air Austral and Ethiopian Airlines. The Board of Directors has invited Air Austral to finalise negotiations with the Malagasy State with a view to sign a MOU by 31 March 2017 and by 31 May a strategic partnership agreement.

La révolution low

La compagnie low-cost française French Blue va lancer une route vers l'île de La Réunion le 16 juin 2017. A l'instar de Norwegian Airlines, Air Asia X, XL Airways, ces compagnies low-cost opérant des vols long-courriers commencent à bouleverser l'industrie du transport aérien. Un reportage de Vincent Chappard.

L'émergence et la réussite des compagnies low-cost comme EasyJet, Ryanair, Air Asia ou encore Fastjet est en train de s'étendre aux vols long-courriers. Ce phénomène gagne graduellement l'océan Indien et l'Afrique.

« C'est une tendance irréversible comme dans le low-cost dans le court/moyen-courrier arrivé il y a 15 ans », a déclaré à la presse, Marc Rochet, président de French Blue et du pôle aérien du groupe Dubreuil.

La nouvelle compagnie French Blue (sœur d'Air Caraïbes

du groupe Dubreuil) desservira l'île de La Réunion à partir de juin 2017. « Nous avons la capacité de faire croître le trafic avec des offres tarifaires compétitives. Cette croissance est tirée par la clientèle familles-loisirs et French Blue apportera une formule de prix qui convient bien à leur attente. » Cette route sera desservie dans un premier temps par un A330-300 puis par le premier A350 dès sa livraison en août.

Elle aura quatre concurrents sur ce marché déjà en saturation : Air France, Air Austral, Corsair et XL Airways.

Comment pratiquer des prix aussi bas sur des long-courriers ?

Selon les spécialistes du secteur, il n'y a pas d'autres solutions que de partir d'une feuille blanche. Cela ne marche pas à partir d'une compagnie existante et en baissant les coûts. Cette réduction des coûts se fait essentiellement par l'exploitation d'avions neufs (moins gourmands en kérosène), la densification (mettre le plus de sièges dans l'avion) tout en préservant le confort, une réduction drastique des coûts de structure

(escales, maintenance, réservation sur Internet, masse salariale) et des services payants (repas, divertissement en vol). Les compagnies misent également sur la capacité de leurs avions à accueillir du fret pour équilibrer financièrement leur activité low-cost.

La stratégie de développement de French Blue vise à concurrencer Norwegian Airlines et XL Airways.



Corsair v/s l'Alliance Vanilles

Corsair est un acteur majeur vers l'Afrique (Sénégal et Côte d'Ivoire) et l'océan Indien (Maurice, La Réunion, Mayotte, Madagascar). Corsair a opéré le 24 janvier dernier son premier vol régional entre La Réunion et Mayotte.

Elle se positionne ainsi sur les vols régionaux en concurrence directe avec les compagnies de l'Alliance Vanilles. Selon Pascal de Izaguirre, son PDG, cette nouvelle route régionale proposera une véritable alternative pour se déplacer au sein de l'océan Indien à des tarifs extrêmement compétitifs et une dynamique des échanges au sein des îles Vanilles. Corsair prévoit d'ouvrir des routes La Réunion/Madagascar et La Réunion/Maurice.

Selon son porte-parole, Norwegian est l'une des compagnies connaissant une croissance les plus rapides au monde avec plus de 250 avions en commande. Nous explorons continuellement de nouvelles opportunités. Nous opérons aujourd'hui des routes vers le Maroc et estimons que l'Afrique présente un fort potentiel. La compagnie a identifié quatre routes "rentables" vers l'Afrique (Maurice, le Kenya et l'Afrique du Sud selon nos informations).

Selon Luc Bereni, directeur commercial d'XL Airways, la compagnie tiens à être présents sur tous les marchés volumineux, principalement en long-courrier. Après s'être fortement développée sur l'Atlantique (USA et Caraïbes), XL AIRWAYS, qui exploite aussi des lignes régulières vers l'Océan Indien (La Réunion et Mayotte) regarde naturellement en direction d'autres régions du monde, l'Afrique et l'Asie en font partie.

Il est désormais inconcevable pour de nombreux acteurs du transport aérien de manquer le virage du low-cost « long-courrier ». Il faudra s'attendre, comme dans toute industrie qui émerge, à des difficultés pour des acteurs qui n'arriveront pas à tenir ou à prendre en compte ce marché.

De son côté, le consommateur est toujours prêt à voyager moins cher et en low-cost.

cost en marche



SUMMARY

FRENCH BLUE JOINS LOW-COST REVOLUTION

French low-cost airline, French Blue, will launch a route to the Indian Ocean island of Reunion in June this year.

By introducing long-haul flights, international low-cost airlines like Norwegian Airlines, Air Asia X, and XL Airways, are already changing the mainstream industry's business model. And, following the success of domestic and regional low-cost airlines the low-cost, long-haul phenomenon is moving across the Indian Ocean and into Africa.

French Blue's Paris to Reunion flight starts with a one-way fare of €249 (\$264) and the route will be flown by an A330-300 before the airline's first A350 is delivered in August. The company intends to fly on to Mauritius as early as spring 2018.

French Blue's development strategy aims to compete with Norwegian Airlines, which is already looking at new opportunities in Africa to join its existing route to Morocco, including the popular destinations of Mauritius, Kenya and South Africa.

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Increasing terrorist threats have led to a massive increase in special mission aircraft in Africa.

Alan Warnes looks at the latest situation.

EYE SPY IN AFRICA

The need for ‘eyes in the sky’ – or intelligence surveillance and reconnaissance (ISR) aircraft – has never been greater. As one insider recently said: “Africa is the hot market for ISR right now.”

For countries with limited resources and finances for this role, there is no need for an expensive ‘all singing-all dancing system’, that so many western air forces operate. Today, there are several airborne non-traditional ISR (NTISR) options out there, which are relatively cheap, and can do the job.

Many African countries are now looking at how to solve biting issues, not just on terrorism but human and drug trafficking, poaching and smuggling.

There are several ways to fulfil their requirements. The foreign military sales (FMS) route via the US Government – as many central African countries are using – is one. Buying from the European market, which Morocco and sometimes, Algeria, prefers is another. Or governments can contract companies to upgrade existing platforms, as Nigeria has.

Alternatively, governments can rent an

AFRICOM’S HUGE TASK

The USA’s African Command (AFRICOM) is one of six Defense Department geographic combatant commands. It is responsible to the Secretary of Defense for military relations with African nations, the African Union and African regional security organisations.

With responsibility for all US Department of Defense operations, exercises and security cooperation on the African continent, its island nations, and surrounding waters, it is kept very busy.

Initial operations began on October 1, 2007, and it officially became an independent command on October 1, 2008.

aerospace company specialising in ISR, like Luxembourg-based CAE Aviation. The company’s role in this work over Libya was highlighted last October, when its American-registered Merlin crashed on departure from Luqa Airport in Malta, with the loss of all five personnel on board. The aircraft was being used by the French Government, according to one source, to “track illegal human and drug

trafficking in Libya”. CAE is just one of many companies carrying out such work over the war-ravaged country.

Having civilian businesses running ISR roles on behalf of a government has many advantages. With three-yearly contracts often on offer, it keeps a tight grip on the budget and, at the same time, the civilian aircraft can blend into the background. Most military aircraft don’t.

Airborne surveillance is a dark art but, to carry it out efficiently, you need good and expensive systems. A high definition camera, full-motion video recorder integrated with a mapping system/datalink is a minimum requirement. With these technologies, aircraft such as a Beech 350ER King Air, Cessna 208 Caravan or Diamond DA42s, can track people and vehicles for hours.

With an infrared capability, you can continue surveillance through the night. Integrate signals intelligence/electronic intelligence (SIGINT/ELINT) systems, then mobile phones and e-mails, and the internet can be monitored.

But, the more you put in, the heavier the load and the bigger the platform. That’s why the Cessna 208 Caravan has been such a popular

SPECIAL MISSIONS

This unmarked Beech 300 seen at Ougadougou in Burkino Faso, was modified by Commuter Air (CA). The big antenna on the roof houses a broadband satellite transmitter, which sends video beyond line of sight (VIASAT). The pod underneath is a CA Catpass pod, with infra-red camera and either a radar or SIGINT processor.

FAR LEFT: The USAF deploys the Pilatus PC-12 designated as the U-28A to Africa. Four are seen here on the ramp at Djibouti.

BELOW: A Merlin registered to Worldwide Aircraft Services of Springfield, Illinois sits on the ramp at Niamey, Niger. Fitted with an EO/IR turret it would have been used for surveillance work over Mali.

PICTURE: BENOIT DENET



platform in FMS contracts to central African states.

■ HORN OF AFRICA

The US military's African command (AFRICOM) works with partner-nations in Africa to help defeat violent extremist organisations. At the same time, it hopes to increase security and stability throughout the region, which the USA now realises is in its best interests, too.

From the outset, AFRICOM started using US Special Operations Command (USSOCOM) Pilatus PC-12 Spectres (U-28) in Africa. Civilian registered, they look innocuous. However, once in the air and in the area of ops, a very expensive forward-looking infrared (FLIR) turret, mounted on a plinth, is lowered down through a hatch in the floor.

Four have been regularly deployed to AFRICOM's combined joint task force (CJTF) – Horn of Africa (HOA) main base at Camp Lemonnier in Djibouti since 2009, although one crashed, with the tragic loss of all four crew on board in February 2012.

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The facility is AFRICOM's primary African base and CJTF-HOA is responsible for a 2.4-million-square-mile combined joint operating area in east Africa. The area of operations includes Burundi, Djibouti, Ethiopia, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Seychelles, Tanzania and Uganda. It also has an area of interest that takes in Chad, Comoros, Egypt, Madagascar, Mauritius, Mozambique, Sudan, South Sudan and Yemen.

■ SAHEL REGION

As terrorism has spread throughout Africa's Sahel region, AFRICOM has taken a keener interest in the area, situated between the Sahara to the north and the Sudan's savanna.

It stretches through northern Senegal, southern Mauritania, central Mali, northern Burkina Faso, the extreme south of Algeria, Niger, northern Nigeria, central Chad, central and southern Sudan, northern South Sudan, Eritrea, Cameroon, Central African Republic and north of Ethiopia.

In recent years, particularly in the wake of the Mali coup d'état in March 2012, the US has been assisting in broader regional security and stability in numerous ways.

Terrorist organisations like Al Qaeda in the Islamic Maghreb (AQIM), along with many of its affiliates, moved into Mali after rebels displaced the government. Jihadi militia, now concentrated in the vast northern wilderness, carry out deadly attacks against Malian, French and the United Nations multidimensional integrated stabilisation mission in Mali (MINUSMA) forces.

A lack of training of the local forces in the

southern and central regions of Mali has also led to security problems there too, but AFRICOM, with the French military, is trying to resolve this.

French Harfang and Reaper unmanned air vehicles (UAVs) have been fulfilling the bulk of the ISR work since Operation Serval (now Barkhane) was launched in January 2013. They operate from Niamey Airport in Niger, where the French military have a major facility.

In late December, the AFRICOM commander, General Thomas D Waldhauser, paid a visit to Mali's President Ibrahim Boubacar Keita to discuss the country's security needs. We still await news of the outcome.

■ CARAVAN SALES

The US has been very active over the past three years assisting its African allies with NTISR assets, with the focus being on the slow-moving Cessna 208 Caravan.

It's a relatively cheap and stable platform, which means the operator in the back can move the plinth-mounted camera turrets without too much air turbulence, and its high wings provide an uncluttered view of the ground. However, as one source recently told me: "It has one engine and, while that may be okay for African or Middle East nations, it wouldn't be okay for a western company or air force." He added: "The US is holding these countries to ransom – use what they supply and get the training or have nothing."

In September 2014, Kenya, Mauritania, and Niger were the subjects of a \$13.7 million FMS contract for three ISR Cessna 208B Grand Caravan EXs. At the same time, a \$31 million FMS contract was awarded to L3 Systems to

produce, modify and integrate them with ISR capabilities. A total of \$45 million seems a lot of money for three aircraft, which have a \$4-4.5 million price tag each, including the ISR upgrade. It seems there were more aircraft in the deal than the three announced.

The Cessna Grand Caravan EX is a relatively new variation on the Cessna Caravan, having received certification in January 2013. It has a more powerful PT6 engine, delivering 867shp instead of the basic 675shp, and features more modern avionics.

The Mauritanian Air Force aircraft had been delivered by September 1, 2015 when it was shown off at an event to promote the aircraft's capabilities.

Two Grand Caravan EXs were handed over to the Uganda Peoples Defence Air Force on March 16, 2015, in a deal reportedly worth \$15 million. Both were delivered through Las Palmas, Grand Canaries on delivery on February 18, 2015 and purchased to support the Ugandan contingent battling al Shabaab militants in Somalia.

Meanwhile, another pair, this time for the Niger Air Force, routed through Las Palmas on August 28, 2015 on delivery. A local news release on October 28, 2015, covering the first female Niger Air Force pilot, revealed that Lieutenant Ouma Laouali would 'fly the Cessna 208 ISR Combat Caravan'. According to the British Broadcasting Corporation (BBC), which made the report, the two aircraft and training package was part of a \$24 million security cooperation deal.

Two years earlier, in July 2013, the Niger Air Force at Niamey officially took delivery of two new Cessna 208 Caravans (and 10 Toyota

SOMMAIRE

DES YEUX DANS LE CIEL AFRICAIN

L'augmentation des menaces terroristes a entraîné un recours accru d'avions pour des missions spéciales en Afrique. Une enquête d'Alan Warnes.

La nécessité d'avoir « des yeux dans le ciel » ou des avions de surveillance et de reconnaissance (ISR) n'a jamais été aussi importante. L'Afrique est un marché porteur.

Pour les pays dont les ressources sont limitées, il n'est pas nécessaire de disposer d'un système avancé pour faire de la surveillance. Il existe aujourd'hui plusieurs options qui sont relativement bon marché et efficaces. De nombreux pays africains envisagent de recourir à l'ISR pour résoudre des problèmes comme le terrorisme, les trafics, le braconnage et la contrebande.

Il existe diverses façons de procéder. La première est la FMS via le gouvernement des États-Unis. Beaucoup de pays d'Afrique centrale l'utilisent. La

seconde est d'aller sur le marché européen. Les gouvernements peuvent aussi contracter des entreprises pour améliorer leurs avions, comme le Nigeria.

Autre alternative, les gouvernements peuvent choisir la location via des sociétés spécialisées dans l'ISR. Leurs prestations présentent de nombreux avantages.

Le Cessna 208 Caravan est un avion très apprécié pour des missions de surveillance en particulier pour les contrats FMS dans les pays d'Afrique centrale.

■ LA CORNE DE L'AFRIQUE

L'AFRICOM (Commandement des États-Unis pour l'Afrique) travaille avec beaucoup de pays en Afrique

pour lutter contre des organisations extrémistes. Il s'agit d'augmenter la sécurité et la stabilité dans la région. Les États-Unis le font aussi dans leur intérêt.

Depuis son lancement, l'AFRICOM opère le Pilatus PC-12. Elle est responsable d'une zone couvrant 2,4 millions de kilomètres carrés en Afrique de l'Est. Elle a également des intérêts au Tchad, aux Comores, en Egypte, à Madagascar, à Maurice, au Mozambique, au Soudan, au Sud-Soudan et au Yémen.

■ RÉGION DU SAHEL

Alors que le terrorisme s'est répandu sur toute la région sahélienne, l'AFRICOM s'y intéresse davantage. Suite au coup d'état au Mali en mars 2012, les États-Unis ont contribué à renforcer la sécurité et la stabilité de la région.

■ LE CESSNA 208 CARAVAN

Les États-Unis ont été très actifs en aidant ses alliés africains à travers des missions NTISR (Non-Traditional Intelligence, Surveillance and Reconnaissance) en utilisant le Cessna 208 Caravan.

trucks). The \$11 million package covered the initial costs of the aircraft and related expenses, including maintenance and pilot training. According to the US, “the aircraft enhance the cargo movement capabilities for Nigerian forces”. There was no mention that these were being used as ISR aircraft.

In May 2016, two contracts were awarded by the US Air Force Life Cycle Management Center, based at Wright Patterson AFB, Ohio, for the conversion of Cessna 208B Grand Caravan EX aircraft into ISR for four FMS customers. The countries involved are Cameroon (2), Chad (2), Niger (probably 2) and the Philippines (probably 2).

L-3 Communications Corporation in Salt Lake City, Utah, produces the ISR equipment and spares. The deal, worth \$14 million, should be completed by September 30, 2017.

The same date applies to the second contract, worth nearly \$40 million, awarded to North

American Surveillance Systems (NASS) of Titusville, Florida. It covers modification of the aircraft’s body and integration of the ISR capabilities, together with training and field service representative support.

■ CARAVAN ISR SYSTEMS

Northern Florida-based NASS claims to be the global leader in surveillance system integration. After successfully installing an ISR package on a Cessna 208 Caravan, the company was issued a supplemental type certificate (STC) by the Federal Aviation Administration (FAA) in May 2010. Most of the Caravan ISR work goes through the company, which, according to its website, also trains personnel of the military customer. Custom designed for military clients, each system is believed to include a Wescam MX-15 electro-optical/infrared (EO/IR) sensor, NASS side mount, moving map, digital video recorder, microwave downlink system and

While the Cessna 208 Grand Caravan EX is the main platform for FMS sales to Africa, reconfiguring them from transport to ISR role and back can take 30 minutes! The Uganda People’s Air Force took delivery of two aircraft in February 2015.

PICTURE: DENETWORKS



Cet avion est relativement bon marché et efficace. L’EX est une nouvelle variante disposant d’un moteur PT6 plus puissant et d’une avionique plus moderne. Il opère notamment au sein de la Force aérienne mauritanienne, ougandaise et du Niger.

■ LE CESSNA 208 CARAVAN EN MODE ISR

La société NASS, basée au nord de la Floride, se revendique comme le leader mondial de l’intégration des systèmes ISR sur des avions et en particulier le Cessna 208 Caravan. Il semble être relié à une station portable terrestre (GSOC) de type Scorpion L3 qui fait partie de la configuration ISR d’AFRICOM.

■ L’ARMÉE DE L’AFRIQUE DU NORD

La plupart des grands pays du Nord se dotent maintenant d’avions « ISR ». En juillet 2016, Leonardo (ex Finmeccanica) a annoncé une commande de deux Beechcraft King Air 350ER équipé du système ATOS à un pays africain. Il s’agirait de l’Algérie. En Tunisie, l’AFRICOM soutient la formation antiterroriste et accroît la capacité de soutien aérien du pays. L’organisation aide également le pays à installer un système de surveillance le long de sa frontière avec la Libye.

NASS mission console and liquid-crystal display (LCD) monitors. NASS also completed a night vision imaging system (NVIS) cockpit conversion.

“In addition to using the latest surveillance technology, what makes this system unique is the rapid reconfiguration design,” said NASS president Richard McCourt at the time. “This gives the client the ability to remove the surveillance system and convert the aircraft to passenger status within 30 minutes. Reinstallation is equally quick.”

All the ISR Cessna 208s appear to be linked into an L3 Scorpion ground stations operator console (GSOC), which is part of AFRICOM’s baseline ISR configuration.

The US Government sought to justify the sale of the Cessna 208 ISR to Chad with a data-link back in May 2016. It claimed it would “strengthen the capacity of Chad’s military forces to control its borders and continue the interdiction of smugglers aiding Al Qaeda from trafficking arms and contraband across Chad’s northern desert”.

■ NORTH AFRICA’S MILITARY

Most of the major countries in the north are now equipping themselves with ISR platforms for various requirements.

In July 2016, Leonardo announced it had been selected to supply two Beechcraft King Air 350ERs with the airborne tactical observation system (ATOS) to an “African country”. Speculation is that these are for Algeria. Finmeccanica (now Leonardo) had already upgraded one of their aircraft to a maritime patrol aircraft (MPA) variant in 2012.

The Algerian Air Force is thought to operate six reconnaissance-configured Beech King Air 350ERs that were delivered a couple of years ago. They all wear civilian markings and are devoid of any national emblems.

It also has six Beech 1900s, which were delivered with the HISAR system, but weight restricted the performance. However, during 2014, the aircraft were upgraded with a lighter system, and fitted with the L3 Wescam MX-15.

In Tunisia, AFRICOM is supporting counterterrorism training and increasing the country’s aerial support capability, enabling improved counterterrorism, intelligence and border security capabilities. It is also assisting Tunisia in installing an electronic surveillance system along key portions of the border with Libya to help stem the illegal flow of people, arms, and contraband.

As part of a \$20 million FMS package, the US delivered 12 Maule MX-7-180Bs to the Tunisian Air Force, which were handed over at El Aouina Air Base in May 2016. US aerospace company, Integrated Surveillance and Defense (ISD), fitted the equipment at the Maule factory in Moultrie, Georgia.

The system includes a UTC Tase400 FLIR turret, a Viewpoint map system and a Harris radio downlink capability.

ISD is also set to upgrade 10 Tunisian Air Force AB205s with a FLIR Systems Star Safire III and Vislink ISR system. Work on the helicopters is expected to take place in March and continue through to August.

In Libya, most of the work in the troubled state is being carved up by US companies, although Bournemouth-based DO Systems has been seen operating with Diamond DA42MPPs out of Luqa, Malta. Local enthusiasts have noted them flying out on 10-hour missions.

Undoubtedly all the companies are operating with the blessing of their respective governments. Some of the aircraft are military, but operated by contractors.

Morocco, with its own domestic issues in the south west of the country, is believed to be looking to acquire ISR-equipped King Airs, via its own French-based supplier. To date it hasn’t suffered at the hands of jihadi terrorists in the same way as its neighbours. That is likely to be because of its very impressive border surveillance systems.

It seems the days of the traditional military spy plane are over. The wolves are now in sheep’s clothing.



The Wolf packs a punch in the bush

Wolfgang Vormbaum realized a boyhood dream when his C-Wolf aerial utility vehicle (AUV) was displayed at the Africa Aerospace and Defence exhibition (AAD) in Pretoria. Sam Basch reports.

The rugged bush plane being developed by South African company, Vliegmasjien (Afrikaans for flying machine), bears testimony to Wolfgang Vormbaum's boyhood dream of creating a 'people carrier' equally at home in the bush and on water.

Built for African conditions, the C-Wolf boasts high levels of safety, including an anti-stall wing design, a safety cell, and an optional triple parachute ballistic aircraft rescue system.

"It was designed for low stall speed, with the 'canard stall first', an integrated split rudder, low-speed stabiliser and double Fowler flaps," explained managing director Jolien Labuschagne.

The spacious aircraft is perfectly suited for anti-poaching operations, or as an air ambulance. In fact, the M-Wolf Induna is a military variant ideal for maritime surveillance, peacekeeping or intelligence, surveillance, and reconnaissance (ISR) missions.

With a range in excess of 3,500km and the ability to fit long-range day/night equipment, it is suited to military operations. "This is a low-noise-generating aircraft designed for low stall speed, which enhances low-speed loitering and endurance – easily up to 16 hours," stated Labuschagne.

Vliegmasjien envisages the military variant M-Wolf Induna carrying rockets and missiles on hard-points in the high-wing. The spacious interior can accommodate up to seven people and equipment, including optional weather radar.



A composite high-thrust, slow-rotating five-bladed pusher propeller, specially developed by MT Propeller in Germany, enables short take-off and landing. Vliegmasjien opted for a South African-developed Adept 320T 3.2 litre V-6 turbocharged engine. The combination of engine and powerplant makes the Wolf compliant with the most stringent European noise control regulations.

"In addition, we opted for a catalytic converter to remove any remaining CO₂ from the engine," Labuschagne added. "The Adept 320T already has the lowest lead, nitrous oxide and carbon dioxide emission levels in the general aviation industry."

Vormbaum considered numerous design iterations

before opting for the high wing, T-tail pusher propeller layout with canards and pontoons.

The fuselage bottom derived from a speedboat hull design, whereas the pontoons were based on jet ski technology. As the pontoons are designed to be load-bearing structures, they could carry external cargo or be fitted with cannons/machineguns for the military role, Vliegmasjien said.

Having outsourced initial composite work, Vliegmasjien's aim is to maximise local content in the design and build of the C-Wolf. Most of the manufacturing is done in-house, with relatively few imported items, notably instrumentation, which includes a colour-display glass cockpit.



The company involved several entities in the C-Wolf's development, including South Africa's Council for Scientific and Industrial Research (CSIR), and expert individuals, to meet airworthiness standards.

According to Labuschagne, the aircraft is largely constructed of glass-fibre, carbon and Kevlar composites. The Kevlar fuselage components improve damage tolerance, which is further enhanced with the use of a sacrificial strip under the fuselage to minimise damage in a wheels-up landing.

Designed as a rugged bush plane with the potential for military applications, the C-Wolf/M-Wolf is suited to rough landing strips. Besides the wide tricycle undercarriage sporting large tyres, its electrical system ensures the landing gear extends and retracts in five seconds. Steel disc brakes, reverse thrust and air brake enable a quick stop.

Luggage is innovatively stored in the tail boom and pontoons. The aircraft boasts pavilion seating, a sunroof, wraparound windows and a huge interior, all of which contribute to a pleasurable flight experience.

Vliegmasjien has received keen interest for the C-Wolf pleasure craft from civilian users from the Caribbean to the Gulf states. And enquiries have, likewise, been received from military and security customers, who view the M-Wolf Induna as a viable option.



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A Botswana C-130 is part of a growing transporter fleet. The Defence Force is focusing on adding to its fleet capabilities with well trained crews.



TIGER BARES ITS TEETH

For decades, Botswana has avoided social division and corruption, and has been widely praised as an “African tiger”, with a successful economy, an 85% literacy rate, and a government rated 35th out of 176 countries in Transparency International’s latest clean government rankings.

But, with reduced commodity prices hitting the nation’s mining industry hard, and with increasing foreign debt, growth has slowed, threatening ambitious plans to re-equip and revitalise the Botswana Defence Force and its small, but highly regarded, Air Wing.

The wing was formed in 1977 and was initially equipped with Britten-Norman Defenders. These were subsequently joined by Cessna 152 and Scottish Aviation Bulldog trainers, Britten-Norman Trislanders, Short Skyvans, and Eurocopter AS350BA Ecureuil helicopters. Later additions included CASA C-212 Aviocars, CASA CN-235Ms and, in 1988, nine ex-Kuwaiti BAE Systems Strikemasters, which formed a combat element.

In 1996-97 the Strikemasters (which were augmented by some ex-Kenyan aircraft during their service) were replaced by 18 ex-Canadian CF-116 Freedom Fighters (13 single-seater CF-5As and five two-seat CF-5B trainers) ordered in 1996 and 2000. Training is provided by five PC-7 Mk II trainers, ordered in 2013, to replace long-serving Pilatus PC-7s that had been in service since 1990.



A single C-130B Hercules was acquired in 2001, and has since been augmented by two further aircraft. The transport arm also includes two CN235s and a single Do 328 aircraft delivered in 2009-2010.

The rotary wing element includes the survivors of 10 AS350/AS550 Fenecs and six Bell 412s.

More recent acquisitions include 14 Bat Hawk surveillance aircraft, delivered by Micro Aviation of South Africa, to be used by the BDF for border security, the Botswana Police Services, and the department of wildlife and parks for anti-poaching duties.

On September 14 2016, Botswana received a single Airbus Helicopters EC225LP Super Puma II+ helicopter; a second-

Even in the face of the economic slowdown, the Botswana Defence Force Air Wing has ambitious re-equipment plans.

Jon Lake
reports.

hand example previously operated by the Spanish National Police Corps special operations group. The helicopter was returned to Airbus Helicopters in 2013 in part payment for a new batch of Spanish police EC135s. It was delivered to Botswana on board an Antonov Airlines Antonov An-124 transport aircraft, after undergoing overhaul.

All Botswana Defence Force Air Wing squadrons are referred to using a Z prefix. The main base at Thebephatshwa, near Molepolole, accommodates Z1, with BN-2A Islanders; Z7, with PC-7 Mk IIs; and Z10, with C212-300s, C-130Bs and CN235M-100s.

The base also hosts the AS350BA and Bell 412SPs of Z21, and the AS350B3s of Z23, as well as the CF-5A/D Freedom Fighters of Z28.

The airfield at Maun is used as a forward operating location for fighters, transports and helicopters.



Sir Seretse Khama International Airport at Gaborone is home to the VIP flight, which has a Gulfstream G-IV, a Beriev Be-200 and a Bell 412EP. The O-2As of Z3 and BN-2s of Z12 are based at Francistown.

The Botswana Defence Force is believed to operate Elbit Systems Silver Arrow and Elbit Hermes 450 UAVs, though their assignment and basing remains unknown.

During an appearance before the parliamentary public accounts committee, BDF commander Lieutenant General Gaolathe Galebotswe, revealed it had approached multiple possible manufacturers in Russia, the US, China and Sweden with the aim of acquiring a modern fighter to replace the CF-5. President Ian Khama visited South Korea in October 2015, and reportedly had discussions with KAI about the T-50 Golden Eagle.

Galebotswe said that the BDF had studied the F-16, and unspecified Russian MiGs and undisclosed Chinese options, before opting for the Saab Gripen on the basis of its ease of maintenance and cost-effectiveness.

Botswana’s air defence system is also to be upgraded via the introduction of MBDA Mistral and VL Mica air defence systems.

BAT HAWKS TAKE ON A LETHAL QUALITY

South African light aircraft manufacturer, Micro Aviation South Africa, has been contracted to arm six of the 14 Bat Hawk light aircraft it sold to the three arms of the Botswana Justice, Defence and Security Ministry in June last year.

The six aircraft belong to the Botswana Defence Force (BDF).

Four others belong to the Botswana Police Service (BPS) air wing, while the remainder were allocated to the Department of Wildlife and National Parks, where they have been deployed to perform anti-poaching surveillance roles.

Micro Aviation SA director, Andrew Pappas, said the six aircraft would be fitted with two FN MINIMI 5.6mm Mk3 light machine guns – with one gun placed on either side of the cockpit. Both guns can be fired by the pilot, who can re-load ammunition while in flight.

According to the company, Botswana will be the first to fly armed versions of the Bat Hawk, which is also known as the 'Bush Plane'.

More than 144 Bat Hawks have been sold since 2014, when the South African Civil Aviation Authority approved the aircraft.

Other Bat Hawk operators include South African National Parks, parks and wildlife authorities in Mozambique and Tanzania, and regional private game sanctuaries and wildlife trusts.



According to performance ratings from its users, the 'Bush Plane' has out-performed some helicopter variants by lowering the cost of airborne surveillance operations. Built in Nelspruit, South Africa, the Bat Hawk is a light sport aircraft (LSA) that can land and take off within short laps on rugged terrain and unpaved runways.

It is powered by a single, Australian-made CAMIT 125HP engine in tractor configuration. Alternatively, it can be powered using a Rotax 100HP engine.

Its main features include strut-braced high-wings,

two seats in side-by-side, full dual-control configuration, an open cockpit and a fixed tri-cycle landing gear. The crew is protected from the weather by an aerodynamic fibreglass pod and a large, wrap-around windshield.

Due to its slow forward cruising speed, relative silence and stealth characteristics, the Bat Hawk is best suited for game surveillance. The aircraft can also be used for fence checking and stock mustering, aerial topdressing, spraying and water-point monitoring on farms.



"Botswana's Leaders in modern aviation solutions"

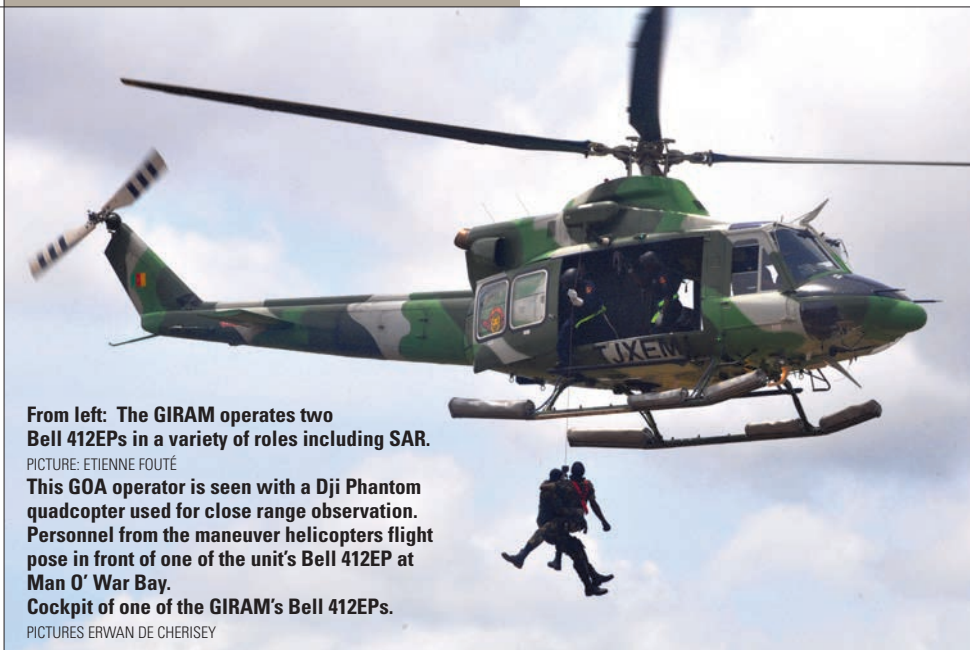
Advanced Global Limited (AGL) is currently the only Botswana based solutions company specialising in aviation management and services. In late 2013, AGL established the very first commercial pilot training school (IAS - Aviation Academy) to be approved by the Civil Aviation Authority of Botswana-

na (CAAB). The school grew to be the only pilot training school in Southern Africa to be recognised directly by ICAO, under the TRAINAIR Plus program.

2015 saw AGL become the proud owners of an aircraft charter company (Air Shakawe Charters), which carries out scenics, transfers and charters in the popular Okavango Delta in Northern Region of Botswana. As the year 2017 would not want to be the odd one out, AGL just recently established the first "green field certified"

aircraft maintenance organisation (Aero Maintenance Centre). This makes us the only Botswana based company able to serve your aviation needs of; Training, Maintenance and Charter. Give us a call today!





From left: The GIRAM operates two Bell 412EPs in a variety of roles including SAR.

PICTURE: ETIENNE FOUTÉ

This GOA operator is seen with a *Dji Phantom* quadcopter used for close range observation. Personnel from the maneuver helicopters flight pose in front of one of the unit's Bell 412EP at Man O' War Bay.

Cockpit of one of the GIRAM's Bell 412EPs.

PICTURES ERWAN DE CHERISEY



FIGHTING TERROR

Erwan de Cherisey takes a close look at Cameroon's rapid intervention aviation force.

Since 2013, when a spate of kidnappings took place in its Far North region, Cameroon has had to deal with a spill over of the Boko Haram-led insurgency, which started in Nigeria in 2011. In March 2014, Boko Haram moved against the Cameroonian military for the first time, ambushing an army patrol and killing one of its soldiers.

The Cameroonian Defence Forces (CDF) stepped up its counterinsurgency efforts and as the situation grew increasingly difficult in the Far North, Cameroon's President, Paul Biya, announced his country would wage all-out war against the jihadists. This decision was followed by a major build-up of troops to support the newly launched Operation Emergence 4. Among the forces deployed were soldiers from the elite Bataillons d'Intervention Rapide (BIR: Rapid Intervention Battalions), a 7,000-strong high-readiness component of the CDF, created in 2001 with Israeli assistance. It functions as a separate force within the CDF, with its own line of command going all the way back to the presidency, and its own budget.

On August 1, 2014, the BIR launched its own anti-terrorist effort known as Operation Alpha, which currently mobilizes over 2500 men, mostly from the BIR although a number of detachment from various Army units are also attached to it. Commanded by Colonel Joseph Nouma, Operation Alpha has its headquarters in

Maroua and while it coordinates its efforts with Operation Emergence 4, it is fully autonomous in the conduct of its operations. Among the BIR units that provide support to Operation Alpha are the Groupement d'Intervention Rapide Aériomobile (GIRAM: Rapid Intervention Airmobile Group), which is currently commanded by Lieutenant-Colonel Moïse Tjock, and the Groupement d'Observation Aérienne (GOA: Air Observation Group).



Following the handover by Nigeria to Cameroon of the Bakassi Peninsula territory, the BIR Delta was created in 2009 as a coastal patrol and security force with a capability for in land operations as well. At the time of its inception, the Bakassi Freedom Fighters (BFF), a separatist armed group, which indulged in piracy and threatened shipping lines and oil exploitation within Cameroonian waters, represented the main security threat in Bakassi. The BIR Delta's activities highlighted a need for a dedicated air support capability that could provide the necessary air surveillance and mobility capacities to effectively conduct its missions. As a result, the BIR command placed an order in 2009 for three Bell 412EP helicopters. The first two aircraft—Bell 412EPs TJ-XEM and TJ-XSA—were delivered to the newly formed GIRAM in

February 2010, allowing it to be stood up and to begin operations shortly thereafter. The pilots and support personnel for the new aircraft had been selected among Cameroonian Air Force personnel and had been put through an intensive commando training course at the BIR's instruction centre at Man O' War Bay, near Limbé in South-West Cameroon, before being sent to Bell Helicopters' Training Centre in Fort Worth, Texas.

On November 22, 2010, Bell 412 TJ-XSA crashed with the loss of all people onboard, including Colonel Abraham Avi Sirvan, the Israeli technical advisor to the Cameroonian Presidency responsible for the BIR, except for one survivor. The aircraft was not replaced, but the subsequent delivery of the third Bell 412EP—TJ-XRI—allowed the GIRAM to reach its full operational capability for tactical missions. The two Bell 412EPs are both based at Man O' War Bay, the BIR's largest base, which is also the GIRAM headquarters. They are operated by the maneuver helicopters flight, whose main mission comprises search and rescue (SAR), medical evacuation (MEDEVAC), transport and command support, air patrols and training support to ground units. The Bell 412EPs carry out frequent maritime surveillance patrols in support of the Force BIR Côte (FBC: Coastal BIR Force), a coast guard component of the BIR, which comprises the BIR Delta and is tasked with maritime security and counter-piracy duties, as well as providing security to Cameroon's offshore oil exploitation facilities. The aircraft are also deployed inland in support of different BIR operations, most notably the yearly Peace at



FROM THE SKY

Bouba Ndjidda anti-poaching operation, which takes place in the National Park of Bouba Ndjidda during the dry season and is currently underway. A single Bell 412EP is usually deployed at Garoua's Air Base 301 to provide air support to the BIR troops patrolling in the park. As its commanding officer, Commander Takouchop Wembe explained, the flight had accumulated more than 3,000 flight hours by early March 2017. Its Bell 412EPs are fitted with emergency flotation systems, a rescue winch with a 600lbs capability, and can be armed with side-mounted machine guns if required. While they can be used for night flying, they lack night vision goggles.



All Bell 412 aircrew undertake visual flight rules (VFR) and instrument flight rules (IFR) training on a second-generation simulator at Bell Helicopters' Training Academy in Fort Worth, where they return yearly for recurrent training.

The beginning of the campaign against Boko Haram highlighted a need for additional intelligence-gathering capabilities to support Operation Alpha. Initially, the Cameroonian external intelligence agency helped fill the void by providing small unmanned air vehicles (UAVs). However, the BIR soon decided it needed to field its own drones and surveillance aircraft and, thus, in 2014, orders were placed for Israeli-made Aeronautics Orbiter IIs mini UAVs, Dji Phantom quadcopters, as well as for a single Cessna 208 EX Grand Caravan Special

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LA BATAILLE CONTRE LA TERREUR DEPUIS LE CIEL

Depuis le mois de mars 2014, les Forces de Défense Camerounaises (FDC) combattent Boko Haram dans l'Extrême Nord du Cameroun. Dans le cadre de cette campagne anti-terroriste, les Bataillons d'Intervention Rapide (BIR) ont lancé, en août 2014, l'Opération Alpha dont le quartier général (QG) est à Maroua.

Plus de 2000 soldats des BIR y participent et peuvent compter sur le soutien du Groupement d'Intervention Rapide Aériomobile (GIRAM) et du Groupement d'Observation Aérienne (GOA), les deux unités d'aviation des BIR.

Créé en 2010 avec la réception de deux hélicoptères Bell 412EP, le GIRAM a son QG à Man O' War Bay, qui accueille également l'escadrille d'hélicoptères de manœuvre et ses deux Bell 412EP.



Celle-ci est chargée de conduire des missions de sauvetage, d'évacuation sanitaire, de transport, de soutien au commandement, de surveillance et d'appui à l'entraînement.

Ses hélicoptères opèrent en liaison avec la Force BIR Côte (FBC) dans le cadre de la protection des installations d'exploitation pétrolière offshore camerounaise et de la lutte contre la piraterie.

Depuis 2015, le GIRAM met en œuvre un Cessna 208EX de surveillance aérienne au sein de son escadrille de liaison et d'observation basée à Maroua.

Aux côtés des drones de surveillance Aeronautics Orbiter II, Dji Phantom et Boeing Insitu ScanEagle du GOA, également installé à Maroua, Le Cessna 208 a réalisé des missions de patrouille et de renseignement.



Le besoin de disposer d'une capacité d'appui feu aérien a poussé les BIR à acquérir deux Mil Mi-24, lesquels ont été livrés en février et avril 2016 et sont opérationnels à Maroua depuis le mois de juin 2016, au sein de l'escadrille de reconnaissance et d'attaque du GIRAM.

Utilisés initialement dans des missions de patrouille et de reconnaissance, ils sont désormais aptes à la conduite d'actions offensives, ayant validé l'emploi de leurs armements lors d'une campagne de tir réelle qui s'est déroulée du 9 au 12 février 2017 à Ngaoundéré et ont été engagés dans l'Opération Thunder II au Nigéria qui a débuté le 26 février.

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Mission Aircraft. The aircraft were delivered in the first half of 2015 with the UAVs being integrated into the newly established GOA and the Cessna 208EX going to the GIRAM's new liaison and observation flight both of which are based at Maroua. A Boeing Insitu ScanEagle system arrived in late 2016.

While the Dji Phantom are operated by BIR infantry units to provide close range reconnaissance and perimeter surveillance, the Orbiter IIs are used for observation and artillery fire adjustment. The ScanEagle has a much longer range and endurance than the Orbiter IIs and is used in persistent surveillance flights, whether in defensive operations inside Cameroon or in support of offensives into Nigeria.

The GIRAM's Cessna 208EX is used in a similar surveillance role to that of the UAVs, but on longer distances and can also be employed in the light transport and liaison role.

As a result of the BIR deployment against Boko Haram, additional air support capabilities were required, which led to the decision to purchase Mil Mi-24 attack helicopters in 2014. Two former Slovak Air Force Mi-24Vs were thus purchased in Poland with the procurement

contract covering their overhaul and modernization by the Wojskowe Zakłady Lotnicze Nr 1 (WZL-1: Military Aviation Works N°1) and the training of BIR pilots, maintenance technicians and support personnel. While their delivery had initially been planned for 2015, delays in their overhaul resulted in the first example, TJ-XRT (Mamba 02), only arriving in Cameroon in February 2016. The helicopter was reassembled at Douala's Air Base 201, where it performed its acceptance flights before being joined by its sister aircraft, TJ-XRP (Mamba 01), in April 2016.

The Mi-24s were inducted into the GIRAM's newly formed reconnaissance & attack flight based at Maroua, where they arrived in June 2016. At first, they were mainly used in armed patrols and reconnaissance flights, as the rainy season limited enemy activity as well as military operations. Starting on December 17, 2016, BIR troops launched Operation Thunder 1 into Nigeria. Over a period of five weeks, Cameroonian forces seized the town of Ngoshé and conducted offensive patrols in the villages around it, taking full control of the area before beginning to hand over to the Nigerian military in late January. Throughout Thunder 1, the Mi-24s

conducted reconnaissance sorties in Nigeria, as well as monitoring the border. Between February 9 and 12, 2017, the Mi-24s deployed to Air Base 302 at Ngaoundéré, in North Cameroon, to conduct a live firing campaign in order to qualify the aircrews and support technicians in the use of the helicopters' weapon systems.

Both Mi-24s fired thousands of 12.7mm rounds with their Yakushev-Borzov Yak-B 12.7mm chin-mounted machine guns, as well as hundreds of rockets from their UB-32 57mm launchers. Each Mi-24 can be armed with four such launchers and cabin-mounted light machine guns can also be installed. While the aircraft are understood to be wired for the use of the AT-6 Spiral (9K114 Shturm) anti-tank missile, the weapon is not believed to be operational yet in Cameroon. For self-protection purposes, the helicopters are fitted with ASO-2V flare and chaff launchers.



The Mi-24s have been committed to Operation Thunder 2, a new offensive launched by BIR forces in Nigeria on February 26, 2017, targeting the area between Kerawa and Dar el Jemal, opposite Kolofata in Cameroon.

The arrival of the Mi-24 is giving the GIRAM an unprecedented level of fire power, as well as offering the BIR a rapid reaction platform to respond in time to Boko Haram infiltrations and ambushes throughout the operational area.

The GOA's UAVs have allowed the BIR to establish an efficient surveillance network, which, together with field and human intelligence, provides Operation Alpha with a highly accurate vision of the tactical situation in areas of operations. Meanwhile, the upcoming beginning of oil exploitation operations in the Bakassi waters is likely to result in a new surge of activity for the FBC, also affecting helicopter operations, which should increase accordingly.



The GIRAM flies two Mi-24V in the air support role from its base of Maroua. Both aircraft have seen action in Nigeria as part of operations Thunder 1 and Thunder 2. PHOTO: ETIENNE FOUTÉ

DEMOCRACY RESTORED IN THE GAMBIA

On January 19, 2017, Senegalese troops crossed the border with The Gambia as part of Operation Restore Democracy, the military part of the Economic Community of West African States' Mission in The Gambia (ECOMIG) aimed at removing President Yahya Jammeh from power and replacing him with his elected successor, President Adama Barrow.

Operation Restore Democracy also mobilised forces from Nigeria and Ghana, with the former participating in the naval blockade against Gambia with the Senegalese Navy and providing a significant portion of the air assets employed by ECOMIG.

Indeed, on January 18, the Nigerian Air Force (NAF) had deployed two Dassault Dornier Alpha Jet light attack jets from Kainji Air Base in Nigeria to Dakar, Senegal, alongside a single AW109LUH helicopter, a Beechcraft King Air intelligence, surveillance & reconnaissance (ISR) aircraft and pair of C-130H Hercules transports. These airlifted 200 NAF support and security personnel, the latter from the NAF Regiment.

With Senegal lacking combat aircraft, the NAF's Alpha Jets were expected to serve as the main strike aircraft for Operation Restore Democracy. While the Hercules were used to airlift additional troops, including special forces, the Alpha Jets flew a reconnaissance sortie on January 19 over The Gambia.

According to the NAF, the jets overflew several points of interest, such as the State House in Banjul (home to President Jammeh), the international airport and the

Denton Bridge, which connects the island of Banjul with the south bank of the Gambia River and is the only crossing point into the city.

While ground forces took up holding positions inside Gambian territory, last-minute negotiations resulted in Jammeh finally accepting the hand-over of power to Barrow. The intervention force thus proceeded into Banjul without the need to open fire. NAFC-130s were used to airlift 205 Ghanaian troops and their vehicles from Tamale in Northern Ghana to The Gambia, while shuttling supplies from Senegal to Gambia alongside Senegalese Air Force's CN235-220 transports.

A single Senegalese Mi-171Sh, whose white United Nations livery had been hastily modified, was deployed to Banjul to provide logistics support to the forces in Gambia, while a recently delivered Senegalese CN235-220 transported President Barrow back to Banjul on January 26.

On February 2, with the situation in The Gambia well under control, the NAF contingent in Dakar flew back to Nigeria. With a new mandate for ECOMIG coming into effect on February 21 and the total strength of the force being cut from several thousand troops to just 500 soldiers, the remaining air assets in Banjul, including the Mi-171Sh, were withdrawn to Senegal.

At present, ECOMIG has no air support assets of its own but can rely on the Senegalese Air Force to provide logistics support, with the NAF's C-130H also being available for airlift duties if required.



Alphas play key role for NAF

Jon Lake
looks at the resurgence of the Alpha Jet for Nigeria's Air Force.

At least two Nigerian Air Force (NAF) Alpha Jets continue to operate out of Niamey-Diori Hamani International Airport in Niger.

Up to four have been based there since early-2013, providing close air support to troops in Mali battling terrorist groups.

Niamey, in the southwest of Niger, is close to the border with Mali. The Alpha Jets serve 206 Wing/97th Special Operations Group, based at NAF Station Port Harcourt in Rivers State.

In May 2013, soon after the Alpha Jets moved into Niamey, one crashed, killing both crew. The jet was understood to have been undertaking a routine, non-combat reconnaissance flight when it crashed near Dargol, in the Tillaberry region, close to the border with Mali and about 37 miles (60km) west of Niamey.

In recent years, the NAF Alpha Jets fleet of around 10 aircraft has been rejuvenated after money was found to overhaul them. In 2015, four examples were purchased from a US company, with three of them delivered through the UK – NAF475, NAF477 and NAF 478. It is unclear when NAF476 was delivered.

Although these aircraft had been sold to Nigeria in a demilitarised configuration, on January 26, 2016 the NAF announced that it had successfully modified the first two to carry weapons.

Previously, they had only been used for training, but they have been weaponised to meet an urgent operational requirement for more strike aircraft to support Operation Lafiya Dole (literally, 'restore peace by all means') counter-insurgency operations against Boko Haram in the northeast of the country.

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LES ALPHA JET NIGÉRIENS OPÉRANT DEPUIS LE NIGER

Au moins deux Alpha Jet de la Force aérienne nigérienne (NAF) continuent d'opérer à partir de l'aéroport international Niamey-Diori Hamani au Niger:

Jusqu'à quatre ont été déployés sur place depuis début 2013, fournissant un appui aérien rapproché aux troupes luttant contre des groupes terroristes au Mali.

Ces avions desservent le groupe spécial des opérations basé à l'installation de Port Harcourt à Rivers State.

La NAF a rajeuni sa flotte d'environ dix Alpha Jet lors des dernières années. En 2015, quatre exemplaires ont été achetés auprès d'une compagnie américaine, dont trois ont été livrés par le biais du UK - NAF475, NAF477 et NAF 478.

Bien que ces avions aient été vendus au

Nigeria avec une configuration démilitarisée, le 26 janvier 2016, la NAF a annoncé qu'il avait réussi à modifier les deux premiers pour transporter des armes. Auparavant, ils n'avaient été utilisés que pour la formation mais ils ont été modifiés pour répondre à une exigence opérationnelle urgente, le soutien à l'opération Lafiya Dole contre le Boko Haram, au nord-est du pays.

Depuis leur retour en service, les Alpha Jet ont été hautement déployés dans des opérations pour contrecarrer ce groupe insurrectionnel.



Although the NAF did not state what weapons have been integrated on to the aircraft, a photograph released of one of them, NAF475, showed what appeared to be a 68mm SNEB rocket pod and 250kg unguided bomb under the port wing.

On January 17, 2017 a NAF fighter, likely to have been an Alpha Jet, attacked and killed 'dozens of people', along the Nigeria-Cameroon border, after the pilot attacked a refugee camp. He apparently mistook the camp, which included several aid workers, for a Boko Haram terrorist hideout.

The Alpha Jets have been very busy since being returned to service, as several have also been involved in counter-insurgency operations against the Boko Haram militant group.

As part of Operation Lafiya Dole, NAF jets deploy to Yola Air Base in Adamawa state, which is the only air base used by fast jets in the country's northeast.

A little-known UN mission in Mali celebrates its fourth anniversary this month. Since the deployment began, the multidimensional integrated stabilisation mission in Mali (MINUSMA) has been working to help stabilise the situation after a Tuareg rebellion in 2012, followed by a jihadist insurgency, led to the French military being called into action. France's Operation Barkhane (originally Serval) continues to battle with jihadi fighters while MINUSMA tries to keep the peace. Alan Warnes reports.

Helicopter woes for MINUSMA

While the Malian armed forces and the French are employed in counter-terrorist missions, the UN tries to go about its work.

But, as the outgoing Danish MINUSMA commander, Major General Michael Lollesgaard, said in one of his farewell speeches in early January: "The UN doesn't have an overall counter-terrorist mandate – but we need to protect ourselves."

MINUSMA comprises more than 45 member countries; some contribute troops and others, like the US, provide funding. Whether that will continue under the new US president is unclear. That could be one crisis.

Right now, a lack of helicopters is another crisis. They play a big part in the MINUSMA operation, assisting with logistical requirements, escort duties and security.

MINUSMA operated 16 military helicopters in mid-2016. However, that number is now looking unlikely to be sustained.

The Indonesian Army has withdrawn its three Mi-17 helicopters, which had been present since the operation started. And this loss has been compounded by the Royal Netherlands Air Force announcing in July that it would withdraw its four AH-64D Apaches and three CH-47Ds. They have been there since May 2014, operating out of Gao to support ground troops. Their departure will leave a big gap in MINUSMA's reconnaissance and intelligence-gathering capabilities.

The Dutch have lost eight peacekeepers during the operation, including both crew of an AH-64D that crashed in March 2015. Four Dutch soldiers have also died in accidents and two were killed in a mortar-firing exercise last July.

Losing the Dutch and Indonesian contingents leaves MINUSMA with three El Salvador Air Force MD500C armed helicopters and three Bangladesh Air Force Mi-171Sh utility helicopters.

"We will definitely have some operational shortfalls once we lose the helicopters," General Lollesgaard said, adding: "The helicopters act as

The mission

MINUSMA was established by UN Security Council resolution 2100 of April 25 2013 to support political processes in Mali and carry out a number of security-related tasks.

By unanimously adopting resolution 2164 of June 25 2014, the Council further decided that the mission should focus on duties, such as ensuring security, stabilisation and protection of civilians; supporting national political dialogue and reconciliation; and assisting the reestablishment of state authority, the rebuilding of the security sector, and the promotion and protection of human rights in that country.

a powerful deterrent against attacks on UN peacekeepers."

The situation has been partly alleviated by the German Government. It announced, on January 11, that it is planning to send four NH90 medium transport helicopters and four Tiger UHT attack helicopters to Mali in the spring for the MINUSMA mission.

The NH90s will be used for transport tasks, including the evacuation of wounded personnel. The Tigers will provide security. They come armed with the Panzerabwehr Raketensystem (PARS) 3 LR fire-and-forget missiles, as well as HOT 3 anti-tank missiles and 70mm (2.75in) air-to-ground rockets in 19-tube Forges de Zeebrugge (FZ) pods.

Unlike France's HAP version, which is also operational in Mali, operating from Gao as part of Operation Barkhane, the UHT has no integrated gun turret. However, a 12.7mm (0.5in) calibre gun pod is fitted when necessary.

The UHT also has a mast-mounted sight, which incorporates second-generation infrared and CCD TV cameras with a range of 11 miles (18km).

Both the NH90 and Tiger were previously used by Germany in Afghanistan. However, the NH90 encountered difficulties in operating in 'hot and high' conditions.

The Ghana Aviation Unit (GHAV) in Bamako has been providing a C295 airlifter since September 2014. GHAV airlifts MINUSMA

personnel and cargo to locations rather than taking it by vehicle. Being less dependent on risk-prone convoys is a priority, particularly travelling through the deserts of northern Mali.

The unit also carries out the important job of medical and casualty evacuation, often flying to remote and inaccessible areas.

In late February 2016, a Royal Norwegian Air Force C-130J and 70 personnel deployed to Mali. When the Norwegian detachment ended, on November 23, Lieutenant Colonel Hans Martin Steiro, who headed the force said: "We transported large amounts of cargo and lots of staff around the country in a relatively short time. To reach some areas in the north, it would have meant going by convoy, which could take up to five or six days, while we only spent hours."

It meant early mornings and late nights and there were a lot of sorties. "We flew about 200 missions for the UN during our stay, which involved transporting more than 550,000kgs and over 15,000 passengers during 800 flight hours. We also have a capability like no other in MINUSMA – we can drop loads by night and day."

On June 20 last year, officials from Belgium, Denmark, Norway, Portugal and Sweden signed a Letter of Intent to establish a two-year long rotation of military transport aircraft, which will run until the end of 2018. The cooperation will provide air transport services based on six-month rotations.

General Lollesgaard was pleased with this innovative way of fulfilling his need to move heavy loads around the country. "It's a good model because, what we see in the United Nations now, with complex operations, is the need for special capabilities that many countries, such as the African countries, do not have. We can now use the capabilities that countries have available. Small countries cannot operate such contributions over a longer period. This rotation model is ideal and means they can now contribute to the UN."

He sees further opportunity to expand this model to other MINUSMA capabilities.



A Royal Netherlands Air Force AH-64D is loaded on to a NATO C-17A. MINUSMA is running short of helicopters, with the Dutch ending its seven-helicopter deployment there soon.

PICTURE: RNETHAF

The Portuguese Air Force deployed a C-130H to Gao in late November to replace the Norwegian Air Force C-130J. The latter returned home after nine months serving MINUSMA.

PICTURE: POAF



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LES HÉLICOPTÈRES, INDISPENSABLES POUR LA MINUSMA

Depuis le début de ses opérations voici quatre ans, la mission MINUSMA s'efforce de stabiliser la situation au Mali. Un reportage d'Alan Warnes.

Alors que les forces armées maliennes et françaises sont engagées dans des missions antiterroristes, l'ONU essaie de poursuivre son travail dans le pays. Selon l'ancien commandant danois de la MINUSMA, le général de division Michael Lolllesgaard, l'ONU n'a pas de mandat de lutte contre le terrorisme, mais l'organisation doit se protéger.

La MINUSMA a été créée pour soutenir les processus politiques au Mali et mener des missions liées à la sécurité. Elle comprend plus de 45 pays membres. Certains membres envoient des troupes et d'autres apportent des fonds comme les États-Unis. Reste à savoir si cela se poursuivra avec le nouveau président américain.

Le manque d'hélicoptères est à ce jour une autre problématique. Ils jouent un rôle déterminant au sein de la MINUSMA, en assurant de la logistique et des missions d'escorte et de sécurité.

La MINUSMA exploitait 16 hélicoptères militaires jusqu'à mi-2016. L'armée indonésienne a retiré ses trois Mi-17. La Royal Netherlands Air Force a aussi annoncé le retrait de ses quatre AH-64D Apaches et trois CH-47D. Ils opéraient à partir de Gao depuis mai 2014 pour soutenir les troupes au sol. Leur départ laissera un grand vide dans les capacités de reconnaissance et de renseignement de la MINUSMA.

Elle devra donc compter sur trois MD500C de la Force aérienne d'El Salvador et trois Mi-171Sh de la Force aérienne du Bangladesh.

« Nous aurons certainement un déficit opérationnel une fois les hélicoptères partis », a déclaré le général Lolllesgaard. « Les hélicoptères agissent comme un puissant moyen de dissuasion par rapport aux attaques contre les Casques bleus de l'ONU ».

Cette situation pourrait cependant s'améliorer. Le gouvernement allemand a annoncé le 11 janvier, l'envoi éventuel au Mali de quatre NH90 et de quatre hélicoptères Tigre UHT.

The Kenya Air Force is aiming to rethink its strategy to meet current threats. Githae Mwaniki reports.

KAF focuses on new strategic needs

The Kenya Air Force (KAF) was created in June 1964 to support the Kenyan Army in protecting the country's territory. The focus was on training, surveillance and transport aircraft.

Most of its equipment was procured from the UK Royal Air Force with the DHC 1 Chipmunk as the trainer, DHC 2 Beaver as light utility aircraft and the DHC 4 Caribou in the transport role.

In 1971, a fighter capacity was brought in with the delivery of the BAC 167 Strikemaster jets. This was followed later by the Hawker Hunter, which met the fighter needs until 1980, when the BAE Hawk fighter jets were added.

A set of Dornier Do28s was procured to serve as transporters in 1977.

However, with the increased threats from neighbouring Mig-17s, Kenya needed to deliver stronger fighter power and, after overcoming acquisition and approval challenges, a \$65 million financing purchase was secured to introduce the first batch of 10 Northrop Grumman F-5Es and two F-5Fs, associated spares and training.

The F-5 met the criteria, as a light tactical fighter, to provide air power for the basic demands of the country's security and threat risks and was delivered at a relatively economical price that saw it replace the Hawker Hunter as the lead fighter.

The Scottish Aviation Bulldog served as the basic trainer with the DHC-5 Buffalo in the transport role over a four-decade period.

KAF currently operates a fighter fleet of 17 F-5Es and four F-5F trainers, with the most recent addition being F-5Es that were procured from the Jordanian Air Force.

After serving 35 years as the primary fighter, the issue of replacing the F-5 has been on the Kenyan Government table, with various options being suggested by military aviation advisors. The French Rafale jets were considered and tested in 2011, including a proposal for the F-16.



Currently, the fleet focus review is on strategic, VIP transport and fighters.

On the lead trainers, the unit acquired a squadron of Grob Aerospace G120s to replace the Scottish Aviation Tucano.

On light transport, some military-configured Cessna Caravan CE208s were acquired and Mil-17 helicopters introduced to gradually assist the Aerospatiale A330 Pumas.

There is a challenge of getting spares for the DHC-5 Buffalo and the fleet was recently grounded. Now there is a technical review under way to determine a replacement for the strategic transporter with the several options being mentioned, including an upgraded version of the C-130 Hercules.

The aeronautical equipment financing challenge is sensitive due to the relatively high amounts involved when set against other competing national needs.

The VIP transporters currently include a set of Bombardier Dash 8 Q-100s, Aerospatiale AS 330 Puma helicopters and the Fokker 70 ER.

The Bombardier Dash 8 fleet is fairly advanced, with an average operational service life of 25 years, while the Puma helicopters have endured an extended service time and have very limited operational service life remaining. The Agusta Westland AW 139 is being considered as a replacement.

The long-range VIP transporter designated for the head of state is currently the Fokker 70ER, which was acquired 22 years ago. It is currently approaching its initial basic service life of 25 years and, even though service extensions can be sought, its replacement requirement is fast approaching.

Most recently, an agreement to acquire a set of 12 Air Tractor AT-802L light attack aircraft was made with the US Government.

The other challenge KAF faces is the loss of skilled personnel.

It has plans for a change in policy to restrict this; the unit aims to re-strategize to reshape its equipment, personnel, and operational policy to deliver its mission with the current threats in the region.

BARGAIN-PRICE PZL SKYTRUCKS SNAPPED UP BY KENYA

PZL Mielec, a subsidiary of Sikorsky Aircraft, together with Safomar of South Africa, is energetically promoting the M28 Skytruck light transport aircraft to African customers – not least to meet the South African Air Force requirement for a maritime surveillance and patrol aircraft to replace its ageing Turbo-Daks.

The M28's ruggedness and ability to use short, unprepared airstrips (of less than 1,000 feet (345 metres) makes it especially useful in Africa, as does its multi-role versatility, which allows it to undertake passenger, VIP, cargo, paratroop, medical, SAR, ISR and maritime patrol missions.

But, in recent months, new-build M28s have not been the only option for potential customers, as the US Air Force's Special Operations Command (AFSOC) is selling off nearly two thirds of its fleet, representing about 11 of the 18 aircraft that it acquired as the C-145A Skytruck/Combat Coyote from 2009.



The M28 Skytruck: especially useful in Africa.

The aircraft were acquired through Sierra Nevada Corporation, which prepared them for their specific special operations role. They were used for infiltration, exfiltration, resupply and other missions, including foreign air force training, especially in Afghanistan, Latin America and Africa.

A number of units used the aircraft, including the 318th and 427th Special Operations Squadron (the

latter operated the type in support of CIA operations, according to some reports).

In 2013, one C-145A Skytruck was fitted with two 0.50-calibre machine guns for unspecified trials.

AFSOC announced that it was retiring 11 aircraft in July 2015, leaving just five in service at Duke Field with the 6th Special Operations Squadron and the 919th Special Operations Maintenance Group (two more were lost in service).

The remaining aircraft are being augmented by the larger Dornier C-146 Wolfhound (Dornier Do 328).

Kenya was one of the nations that requested aircraft through the US Excess Defense Articles (EDA) programme. It asked for six aircraft, but only three were allocated to the east African nation, with pairs of aircraft also going to Costa Rica, Estonia and Nepal.

The aircraft were made available for the bargain price of \$9 million (compared to their original acquisition cost of \$30 million).

A KAF F5 shows off its capability while inset, one of the Chinese-built Harbin Y12 transporters could face replacement.



KAF officers inspect a Bell Huey II at Laikipia Air Base, December 2016.

FIRST SIX KAF HUEYS ARRIVE

The Kenyan Air Force (KAF) has taken delivery of the first six out of eight Bell Huey 11 helicopters that will be used to boost border security and offer logistical support for the war against Somali Islamist militant group Al Shabaab.

The helicopters were donated by the United States, which contracted Bell Helicopters to supply Kenya with the aircraft, spares and accessories in September 2016.

US Ambassador to Kenya, Robert Godec, handed over the aircraft to Kenyan Defence Minister, Rachel Omamao, at an airbase in Laikipia on December 2.

Ambassador Godec said the helicopters would reinforce the KDF's air assault capabilities by supporting the quick deployment of counter-terrorism special forces and reaction teams.

"The helicopters will also provide the KDF with the capacity to deliver much-needed supplies to the front line and to help save the lives of troops with vital medical evacuations," he said.

"Ultimately, they will help the KDF to take a major step forward in the fight against terrorism. The Hueys will bolster the KDF's capacity to combat al-Shabaab, an effort that will bring about a more stable and peaceful east Africa."

Two more aircraft are due for delivery by the end of May 2017.

Based on a US Department of Defense contract awarded to Bell Helicopters in September last year, the company will also deliver five Huey II helicopters to Uganda and five other rotorcraft to a third African country by December 29, 2017.

Thokozile Muwamba becomes Zambia's first female fighter pilot.



ZAMBIA'S FIRST FEMALE 'TOP GUN'

Zambia has joined the small but growing ranks of air forces that employ female fast jet pilots.

At the age of 24, Second Lieutenant Thokozile Muwamba has become Zambia's first female fighter pilot, following the 2015 announcement by Zambian Air Force (ZAF) commander, Lieutenant General Eric Mwaba Chimese, that female pilots would be recruited in order to boost the fight for gender equality.

By this time, however, Muwamba was already well along the road of pilot training, having quit as a first-year student at the Copperbelt University to join the military in 2012, helping establish the ZAF's programme to train female pilots.

Muwamba has joined a select band of female aviators in Africa, including 19-year-old Besa Mumba,

a Jetstream pilot with Proflight Zambia, who last year became Zambia's youngest commercial pilot.

But, while commercial women pilots are becoming more common, female military pilots remain relatively rare.

Ethiopia trained a number of female fighter pilots in the late 1990s, one of whom, Captain Aster Tolossa, became the first female to shoot down an enemy jet fighter in the history of air warfare when she downed an Eritrean MiG-29UB on February 26 1999. Her target was, apparently, flown by her former instructor!

Another female Ethiopian Su-27 pilot, Lieutenant Haymanot Hailemariam, defected to Europe.

The next female fighter pilot in Africa was Major Catherine Labuschagne (call sign 'Siren') of the South

African Air Force, who trained on the Impala and Hawk 120 lead-in fighter trainer, gaining her wings in 2000. She converted to the Atlas Cheetah and, in late 2010, to the Saab JAS39C Gripen, becoming the first woman fighter pilot to fly the Gripen.

Nigeria gained its first female pilot, Flying Officer Blessing Liman, in 2012.

More recently, in October 2015, 28-year-old Lieutenant Ouma Laouali became Niger's first female military pilot, following training in the US.

Laouali is a beneficiary of the US training programme intended to help Niger to fight the Islamist terrorist group, Boko Haram, and she flies one of the two Cessna 208 Caravan intelligence, surveillance, and reconnaissance (ISR) aircraft handed over as part of the same programme.

Angola revitalises helicopter force

The Angolan Air Force is rebuilding its shattered helicopter fleet through a series of acquisitions of new and refurbished helicopters from Italy and Russia.

The new aircraft will replace a disparate collection of rotorcraft, many of which are in storage, or have been grounded due to a lack of maintenance.

Notionally, the helicopter arm includes about 15 Mil Mi-24/25/35 'Hind' attack helicopters and up to 53 Mil Mi-8/17 'Hip' support helicopters. These Russian machines are augmented by about nine Bell 212s, half-a-dozen SA-365M, AS-565AA, and AS-565UA Dauphins and Panthers, 12-20 Alouette IIIs (some of them Romanian-built IAR 316s) and about eight SA342M Gazelles, plus several SA315B Lamas.

The Força Aérea Nacional de Angola (Angolan National Air Force) was originally established on January 21 1976 as the Força Aérea Popular de Angola/Defesa Aérea e Antiaérea (FAPA/DAA), rapidly becoming the largest air force in sub-Saharan Africa, with an inventory that included about 180 fixed-wing combat aircraft and an equal number of helicopters.

With the end of the civil war and the collapse of the apartheid regime in neighbouring South Africa, peace returned to Angola, and its air force reduced in size, losing the eastern European, Russian and Cuban advisors, who had kept it at a peak of operational



Angola orders Russian helicopters including the Mi-8 support helicopters.

efficiency. Serviceability, availability and combat effectiveness declined progressively.

Helicopters equip the two squadrons of the 21st Transportation Helicopter Regiment at Luena Air Base, and the two squadrons of the 22nd Combat Helicopter Regiment at Huambo Air Base.

Russian Helicopters delivered four (or eight, according to some sources) armed Mi-171Sh aircraft to Angola in 2015-2016, as well as spares for the country's existing Mi-17 helicopters. Subsequently, in

late September 2016, the company delivered a batch of refurbished Mi-24P attack helicopters, after what was called "maintenance and complete renovation".

Angola also ordered six AW109E Power helicopters (for \$95.2 million) in 2015, and is soon expected to take delivery of two AW139s. The first was originally built for Atlantic Aviation Nigeria, but was diverted to Angola. It was seen testing in Italy in a red, white and grey search and rescue colour scheme, fitted with a searchlight and electro-optical/infrared turret.

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Jet Scout platform (home page, fly zone and routing).

A new way to Scout web bookings

An innovative new charter sales platform, Jet Scout, has been introduced to the African and Middle East market. Vincent Chappard finds out why it is receiving a positive reaction.

Stefano Costi, managing director of the French-based Jet Scout, sees positive signals emerging from the business aviation industry following the launch of his new platform at the Middle East Business Aviation Association (MEBAA) show in Dubai.

In a very “fragmented market”, the Jet Scout platform provides the business aviation community with improvements in price, timeliness, quality, comfort, security, flexibility and efficiency.

The operational system is the most important aspect of the new charter sales platform, according to its MD.

“We strongly believe that the new system will provide an innovative market approach, not only for the business jet traveller but also for charter operators and charter brokers,” said Costi, who has flown 7,700 hours on business aviation jets.

The user-friendly interface has been thoroughly tested and developed “to serve even the most complex booking scenarios”.

A team of experts studied what Costi described as “the inefficiencies of current marketplaces, apps and websites” before coming up with the system, which, he said, would streamline the industry.

“We know the expectations of the industry and how ‘uberisation’ has revolutionised end users’ bookings. We can serve all the needs of the modern private jet users.”

Jet Scout’s algorithm combines more than 200 parameters to find the optimum offer for the traveller’s journey, while respecting all safety and security regulations. It offers a streamlined search engine running on one unique platform for B2B and B2C use.

After registering and giving fleet details, operators can use their own integrated sales platform and have direct access to new clients.

The ‘white label platform’ opens new perspectives as a sales tool. “We are opening the door and everybody is welcome,” said Costi.

“Operators will enjoy some specific features, such as ad-hoc calculated route distances, custom operational costs, negotiated handling fees for specific airports, rule-based fees and many other customised options,” he said.



The new system offers freedom of choice to the client and is designed to boost charter sales with its rapid confidential search and personalised options. “You have no influence on your clients. They have the total freedom,” said Costi.

The platform also simplifies jet chartering with “a fast and easy booking process”. The public platform is free to end-users and is opened to private jet flyers across the world. Personal assistance is available at every stage.

Costi, who has been in business aviation software design since 1989, said full-time support and video tutorials were available at every step. There’s also a constant update of information and data.

“We are spreading our wings worldwide. We are showcasing our sales platform and meeting software providers,” he said.

Africa is “a very promising market” for the software company. “It is a vibrant continent with more and more people going into and outside. I’m so confident. If we split it into three zones (south, equatorial and north), we can then connect the whole market.”

Many more additional features, currently being beta-tested, will soon be available.

SOMMAIRE

UNE NOUVELLE PLATE-FORME DE WEB BOOKING

Jet Scout, une plate-forme de vente innovante pour les charters, a été introduite sur le marché d’Afrique et du Moyen-Orient.

Vincent Chappard a voulu savoir pourquoi ce produit a un retour positif.

Stefano Costi, DG de la société Jet Scout, a eu « des signaux positifs de l’industrie de l’aviation d’affaires » à son lancement au dernier salon MEBAA à Dubaï.

Sur un marché très fragmenté, Jet Scout offre à la communauté des affaires un meilleur prix et de confort, plus de rapidité, de qualité, de sécurité, de flexibilité et une efficacité accrue.

L’interface conviviale a été soigneusement testée et développée « pour servir même les

scénarios de réservation les plus complexes ».

L’algorithme de Jet Scout combine plus de 200 paramètres pour trouver l’offre optimale pour le trajet du voyageur, dans le respect des règles de sûreté et de sécurité.

Par ailleurs, le white label ouvre de nouvelles perspectives comme outil de vente. Le nouveau système offre la liberté de choix au client.

L’Afrique est « un marché très prometteur » selon Stefano Costi.

Fixed-base operations (FBOs) play a major role in supporting general and business aviation operations. In east Africa, one of the most prominent is Kilimanjaro Aviation Logistics Center (KALC) – an affiliate company of Universal Weather and Aviation. Kaleyesus Bekele visited recently.

KILIMANJARO AIMS FOR PEAK PERFORMANCE

Established in 2008, appropriately in Kilimanjaro, Tanzania, KALC provides local expertise and a continent-wide knowledge base for business aviation operators.

In 2011, the company moved its HQ to Mwanza, Tanzania on the shores of Lake Victoria.

Universal Weather and Aviation owns KALC. Established in 1959, it has been playing a role in spurring business aviation in different markets. A private company based in Houston, Texas, Universal Weather and Aviation generates more than \$1 billion revenue and has 1,000 employees. It handles more than 2,000 international flights per month globally.

“Kilimanjaro Aviation is an African brand of Universal Weather and Aviation,” explained the FBO’s general manager, Stanley Joseph.

Operating business jet flights in Africa can often be challenging, as each of the continent’s 56 countries are bound by subtly different aviation regulations, which can change at any time.

The multilingual KALC team utilises local expertise and a continent-wide network of proven suppliers to provide the correct landing and over-flight permits, clearances, slot management, navigation fees, and permissions, in compliance with all international laws and regulations.

“Our services include, but are not limited to, permits acquisition (over-flight and landing), fuel via our UVair fuel programme, trip support services (TSS), ground support (Universal Aviation) flight planning, aviation technologies, in-flight catering (Air Culinare Worldwide), VVI/private ground transport (Universal Private Transport), concierge services (Air2Ground), and a host of other services based on client requirements,” said Joseph.

KALC is one of the key founders of the African Business Aviation Association (AFBAA). “We strongly believe in supporting the business aviation industry in the region as it plays a big role in our day-to-day lives, as well as those of our stakeholders. We are committed to educating authorities about business aviation,” said Joseph, who added that his company had managed more than 76,000 flights successfully.

He said KALC had diversified its services from one product (handling flight permits) back in 2011 to providing full support services as an operation centre today.

Having a 24/7 multilingual team, KALC has been able to support a diversified client base in the entire region. “This requires dedication from our people. We are proud of our employees,” Joseph said.

Certainly, operating in Africa, where business aviation is not yet well developed, is not an easy task. Securing on-time flight permits in most African countries is, in itself, quite a task.



Joseph said logistics and subtly different aviation regulations in the 56 countries were major challenges.

Political instability is another problem. “The conflict zones in the region pose a safety challenge when it comes to supporting our clients, as do non-regulated locations,” Joseph said.

Further to that, most ground-handling companies are used to servicing airlines and scheduled flights and it can be difficult for them to cope with the VVIP/non-schedule/private flight needs of business aviation.

Joseph strongly believes in educating government authorities about the paramount importance of business aviation. “What needs to be done is build on what is good now and educate the authorities about business aviation. We are actively involved with the AFBAA platform to educate governments on the essence of business aviation.”

Kilimanjaro Aviation is constantly expanding in Africa. “We have the mind-set that we need to support our clients’ needs in the region. We are currently providing supervisory services in the region; what we are striving to do more is efficiently support our clients – physically be present and provide a helping hand directly,” said Joseph.

“This is in line with our quest to provide world class services to our clients and by being physically present wherever our clients operate.”

KALC’s client base includes multi-national corporations, government and military clients, private operators, charter and fractional operators.

Stanley Joseph: “What we are striving to do more is efficiently support our clients – physically be present and provide a helping hand directly.”



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Helicopters and light jets have been used recently to fight African armyworms and locusts in Zambia and other countries in southern Africa. Humphrey Nkonde reports.

WAR ON THE DEADLY HOARDS

African armyworms and several species of locusts have been damaging food crops, such as maize, sorghum, sugarcane and millet, for centuries.

However, some scientists claim that severe attacks now are partly the result of climate change.

An estimated 124,000 hectares of maize was damaged in Zambia during the 2016/17 farming season, representing about 10% of the 1.4 million hectares of cereal crop under cultivation.

Lusaka, Copperbelt, Central, Luapula and Eastern were five of the 10 Zambia provinces where the armyworms struck.

Zimbabwe and Malawi, which have experienced droughts in recent years, were not spared from attacks either.

Malawi imported 100,000 metric tonnes of maize from Zambia last year to mitigate the impact of drought.

Zambia's President, Edgar Lungu, ordered the Zambia Air Force (ZAF) to join Ministry of Agriculture and Disaster Management and mitigation unit officials to spray and distribute chemicals to control armyworms.



ZAF military personnel used jets to spray several points throughout the country to control the vegetation-devouring pests.

Meanwhile, there was an outbreak of red locusts in Kafue Flats, south of Lusaka, where South African company, Illovo, has a huge investment in sugar plantations at Nakambala.

The Zambian Government released funds to the International Red Locust Control Organisation for Central and Southern Africa (IRLCO-CSA) to control the outbreak of the locusts.

IRLCO-CSA's forerunner, the International Red Locust Control Services (IRCS), was initiated by the British colonial government in 1949 following a series of devastating locust plagues between 1929 and 1944 that had caused people to die from famine.

Red locust attacks affected the region



Chief pilot John Malawo and IRLCO-CSA director Moses Okhoba.

stretching from Sudan to South Africa, resulting in people and animals dying from famine.

IRCS' initial mandate was to identify locust outbreak areas and to spray, so that swarms of the devastating pests could not migrate to other places. Later its mandate was extended to controlling the African armyworms and quelea birds, which consume wheat as well as rice grains.

Red billed quelea attacked rice fields in Nakuru-Navaisha and Rongai in Kenya among other places during the 2014/15 farming season. Those birds also attacked wheat fields in the same farming season in Zimbabwe's Mashonaland East, Mashonaland Central and Midlands provinces.

Member states of IRLCO-CSA, headquartered in Ndola, Zambia, are Kenya, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe.

IRCS was initially established in Mbala in the northern part of Northern Rhodesia, now Zambia.

It was at Mbala that the British established a military airfield to protect its territory of Northern Rhodesia from invasions by Germans who occupied neighbouring German East Africa, now Tanzania.

The initial location of IRCS in Mbala was ideal because it was close to Tanzania, which has the

highest number of red locust outbreak areas among member states.

However, a decision was reached to relocate the organisation to Ndola's Simon Mwansa Kapwepwe International Airport, which started as a military airfield for the British colonial government in 1938.



Outbreak areas in Tanzania are Wembere Plains, Ikku/Kitavi Plains, the Lake Rukwa area and Malagarasi Basin. Tanzania also has an auxiliary outbreak area in the Bahi Valley.

In Zambia, red locust outbreak areas are in the Kafue Flats, where the pest emerged recently.

Zambia's auxiliary outbreak area is in Lukanga Swamps near Kabwe, the provincial headquarters of Central Province.

Malawi's red locust outbreak areas are the Lake Chilwa/Chiuta Plains, shared with Mozambique, while its auxiliary ones are in the Mptasanjoka Dambo and Ndindi Marshes.

In Mozambique, major breeding grounds are Buzi Gorongosa, while the auxiliary outbreak area is the Dimba Plains.

Another auxiliary locust outbreak area exists



near Simunye Sugar Estate in Swaziland, a non-IRLCO-CSA member state.

Owing to several outbreak areas in Tanzania, IRLCO-CSA airstrips have been established at Masenge, near Wembere Plains, Kaliua, near Malagarasi Basin, and Muze, near Rukwa Plains.

Although IRLCO-CSA offices are in Ndola's industrial area, the hangar in which its planes are kept is at Simon Mwansa Kapwepwe International Airport.

Locust outbreak and auxiliary areas are spatially dispersed in the southern part of Africa, necessitating the use of aircraft for quick response and to cover long distances from Ndola.

Ideally, IRLCO-CSA should have fixed-wing spray aircraft to deliver its scientists and other officials to outbreak areas that have airstrips, like those in Tanzania.

"In March 2010, IRLCO-CSA lost its only operational fixed-wing spray aircraft through a tragic accident, a development that has worsened the organisation's capacity to respond to serious outbreaks," said a recent report.

However, fighting red locusts also

Continued
on Page 70

**More helicopters are needed
argues John Malawo.**



CONTINUED FROM PAGE 69

requires the use of helicopters in swampy or marshlands areas that can't be accessed by motor vehicles or fixed-wing aircraft that require airstrips to land.

Additionally, the helicopters' rotary blades are capable of driving away the pests from the ground, which helps to locate where they are.

IRLCO-CSA chief pilot, major John Malawo, said the 'stumpy' speed of helicopters enables spraying to be done, which cannot be achieved by fast-moving fixed-wing aircraft.

Late last year, IRLCO-CSA deployed its Bell Jet Ranger 206B III helicopter to fight the African migratory locusts that invaded food crops under irrigation in the southern part of Malawi.

IRLCO-CSA director, Moses Okhoba, said there was a need for another helicopter because, at times, spraying is done using hired planes.

There was another outbreak of locusts in Mozambique, but IRLCO-CSA could not fly there because it was in that region where Mozambican National Resistance (RENAMO) rebels were fighting the government.

The cost of controlling locusts in Malawi and Mozambique was estimated at \$2.5 million. However, the value of the crop under irrigation and threat from locusts, including maize and sugarcanes, is \$2 billion.

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Okhoba, an expert from Kenya, said drought could aggravate locust outbreaks because, in times of heavy rain, some of the pests' eggs would be naturally destroyed.

Another problem for IRLCO-CSA is that there is no established maintenance, repair and overhaul (MRO) company to work on both rotary and fixed-wing aircraft.

As the IRLCO-CSA's hangar has not been listed to maintain Bell helicopters or fixed-wing aircraft, it means that South Africa's National Airport Corporation maintains its helicopter.

"Our helicopter can only be worked on in South Africa," chief pilot Malawo explained. "This is because Zambia does not have an established company that can do advanced maintenance works."

It is for this reason that Aerotech Zimbabwe, which is experienced in maintaining Bell 206 series helicopters and other aircraft, has entered into an agreement with Zambia Air Services Training Institute (ZASTI) regarding MRO work.

A taxiway connecting ZASTI to Lusaka's Kenneth Kaunda International Airport runway has been built so that the hangar at the training institute is accessible to aircraft.

Once IRLCO-CSA's helicopter is maintained in Zambia, the cost will be reduced and the aircraft will have more flying hours available.

SOMMAIRE

LA LUTTE POUR LA SÉCURITÉ ALIMENTAIRE

Des hélicoptères et des avions ont récemment été utilisés pour combattre les invasions de chenilles et de criquets en Zambie et dans d'autres pays d'Afrique australe. Un reportage d'Humphrey Nkonde.

Plusieurs espèces de chenilles et de criquets continuent d'endommager les cultures vivrières (maïs, sorgho, cannes à sucre et mil) en Afrique. Selon plusieurs scientifiques ces attaques sont aujourd'hui en partie les conséquences du changement climatique.

On estime que 124 000 hectares de maïs ont été endommagés en Zambie au cours de la campagne agricole 2016/17, ce qui représente environ 10% des cultures céréalières. Le Zimbabwe et le Malawi, qui ont connu des sécheresses ces dernières années, n'ont pas non plus été épargnés par ce type d'attaques. Le Malawi a été contraint d'importer 100 000 tonnes de maïs de la Zambie l'année dernière.

Le président zambien, Edgar Lungu, a ordonné à la Force aérienne de Zambie (ZAF) de s'associer au ministère de l'Agriculture pour pulvériser des produits chimiques et lutter contre ces parasites.

Il y a également eu une épidémie de criquets rouges au sud de Lusaka, où la compagnie sud-africaine Illovo dispose de nombreuses plantations à Nakambala. Le gouvernement zambien a versé des fonds à l'IRLCO-CSA (Organisation internationale de lutte contre le criquet rouge pour l'Afrique) afin de lutter contre l'éclosion de ces insectes. Les États membres de l'IRLCO-CSA, dont le siège est à Ndola (Zambie), sont le Kenya, le Malawi, le Mozambique, la Tanzanie, la Zambie et le Zimbabwe.

□□□□

Les attaques de criquets rouges ont affecté de nombreuses régions allant du Soudan à l'Afrique du Sud, entraînant une réelle famine. Des zones d'éclosion et d'épidémie ont eu lieu en

Tanzanie, en Zambie, au Malawi, au Mozambique et au Swaziland.

L'invasion de criquets nécessite donc l'utilisation d'hélicoptères et d'avions légers pour réagir rapidement et couvrir de longues distances surtout dans les zones marécageuses difficiles

d'accès. De plus, les hélices des hélicoptères sont capables de soulever les parasites du sol, ce qui permet de les localiser où ils se trouvent.

L'IRLCO-CSA dispose d'une base aérienne à l'aéroport international de Simon Mwanza Kapwepwe d'Ndola. En mars 2010, l'organisation a perdu son seul avion opérationnel. En 2016, elle a déployé son hélicoptère Bell Jet Ranger 206B III pour lutter contre les criquets migrateurs qui ont envahi les cultures vivrières dans le sud du Malawi. Selon son directeur, Moses Okhoba, il est nécessaire d'avoir un autre hélicoptère parce que la pulvérisation se fait souvent à l'aide d'avions loués. La sécheresse pourrait aggraver l'invasion des criquets car en période de fortes pluies, certains des œufs des parasites seraient naturellement détruits.

□□□□

L'autre problématique pour IRLCO-CSA est l'absence d'opérateurs MRO pour effectuer la maintenance des avions et des hélicoptères. L'atelier de l'IRLCO-CSA n'est habilité pour assurer la MRO des hélicoptères Bell ou d'avions légers. Cela signifie que c'est l'organisme National Airport Corporation d'Afrique du Sud opère la maintenance de son hélicoptère. Ses opérations sont ainsi limitées dans certains pays. Aerotech Zimbabwe qui a une expertise dans la MRO des hélicoptères Bell 206, a conclu un accord avec la ZASTI (Zambia Air Services Training Institute). Une fois que l'hélicoptère IRLCO-CSA sera maintenu en Zambie, le coût en sera réduit et l'avion pourra accumuler davantage d'heures de vol.

La sécurité alimentaire en Afrique continuera d'être menacée par les sécheresses mais également par les attaques de parasites. Elles deviennent plus féroces en raison du changement climatique. Il est donc impératif que les États membres de l'IRLCO-CSA mobilisent des fonds pour l'acquisition de nouveaux avions ou hélicoptères. Il est crucial de traiter les zones touchées car les insectes sont capables de migrer.

The cost of controlling locusts in Malawi and Mozambique was estimated at \$2.5 million. However, the value of the crop under irrigation and threat from locusts is \$2 billion.

Food security will continue to be threatened by locusts and armyworms, partly because breeding has been aggravated by climate change. It is, therefore, imperative that IRLCO-CSA member

states mobilise funds for the acquisition of both fixed-wing and rotary aircraft. That can be done by member states fulfilling their donations to the IRLCO-CSA, regardless of whether they have outbreak areas or not, because locusts are capable of migrating.

For instance, due to the war in Mozambique,

landmines that were planted near locust outbreak areas caused problems in terms of access, which resulted in the pests breeding extensively.

In the 1990s, locusts from there migrated to Zimbabwe, settling near President Robert Mugabe's State House, where they devoured green lawns.

And, once IRLCO-CSA's only Bell helicopter is grounded, it is possible that countries lying south the equator can experience a repeat of the 1929 to 1944 locust plague that caused people to die from famines.

It should also be remembered that food security in southern Africa is not only compromised by pests, but also by droughts and poor farming methods.

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It may not have flashing red lights and a siren, but for some seriously ill patients in west Africa, a white Beechcraft 1900 is the vehicle that means their chance of recovery has taken a sudden turn for the better. Alan Dron reports.

Flying doctors to the rescue

Roughly twice a week, a Beechcraft 1900 twin turboprop taxis out at Monrovia's James Spriggs Payne Airport and roars off into the skies over the Liberian capital. When it returns, some hours later, it will be carrying a seriously ill patient.

The good news for those patients it picks up from countries around west Africa is that, once they are on board, their survival chances – even from life-threatening injuries such as traumatic amputations or severe burns – increase significantly.

Since Aspen Medical International (AMI) started flying medevac flights from Monrovia around 18 months ago, "We've had a 100% survivability rate," said Ethan Bond, AMI's chief operating officer. "If we can get them on the aircraft, their chances soar."

That is because the aircraft – a South African-registered 1900C model – is fitted out to what Bond believes is the highest standard of any medically equipped aircraft in the region. "Anything you would find on a modern US or European ambulance is on board – oxygen, ventilators, a defibrillator, pharmaceuticals – anything you could imagine to keep a patient alive."

There will also be at least a paramedic, frequently accompanied by a doctor if a patient's injuries are known to be severe.



The aircraft and crew are certificated to Part 138, the highest level of aviation medevac standards. "It's a hugely burdensome but ultimately invaluable process," said Bond. "Your aircraft has to be to a certain standard and carry certain types of equipment. It's an aircraft that's built to be an air ambulance, with pressurisation and redundant systems. The pilots, paramedics and maintenance crew have to go through Part 138 training to use all the equipment.

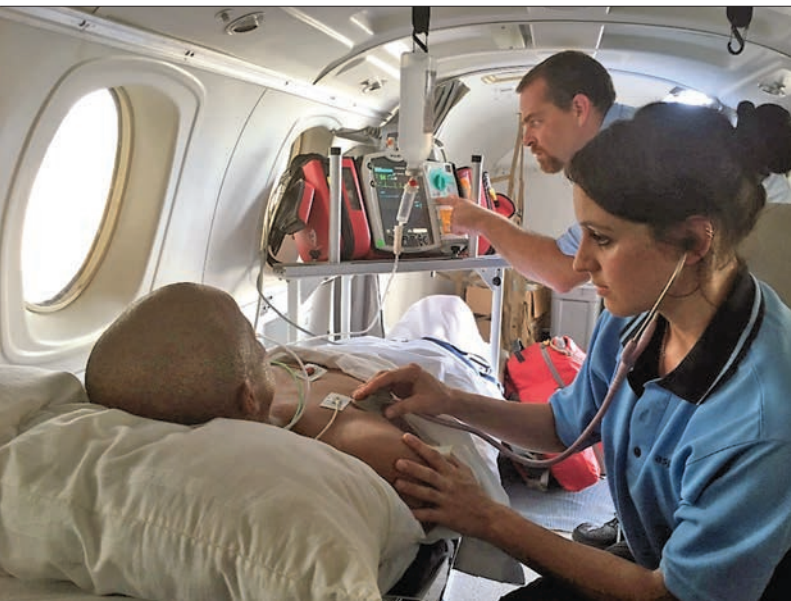
"A lot of time and money goes into equipping and certificating an aircraft to that standard. Every year, we fly in an inspector from South Africa, who puts people through their paces to check they're still up to standard.

"Anyone can charter our aircraft. We have agreements with around 30 insurance and assistance companies."

Those companies started to sign up with AMI once they realised the level of on-board facilities: "It's not a case of throwing somebody on a stretcher into the back of a Piper," said Bond.

Many of the insurance and assistance companies are from Europe or even further afield. AMI has taken people as far as China, although for a journey of that length, a jet was chartered. However, AMI's aircraft frequently operates into west African capitals such as Accra or Dakar "where there are some fantastic medical facilities and, of course, they're much closer than having to ship someone back to Europe".

AMI, a US-based company that established a clinic in Monrovia around



two-and-a-half years ago, can make recommendations as to where it flies a patient. But, ultimately, it is the insurance or assistance company that decides the final destination.

“In addition, we have access to other people’s aircraft. If ours doesn’t have the ‘legs’ or is being used for something else, we can bring in another aircraft at very short notice,” explained Bond.

The Beechcraft “can get into reasonably rough strips – that’s one of the reasons we bought it,” said Bond. However, conditions at some locations can create problems, he added. “Those corrugated strips do mess up equipment, so we constantly have to recalibrate it. We’d prefer not to have to do it but, of course, if we have to, we will.”

The service in west Africa has been so successful that plans are well-advanced to station aircraft in northern and east Africa. AMI intends to transfer the Beechcraft to east Africa to support the company’s recently opened medical facility in South Sudan. Libya is the site of the planned northern African facility.

To replace the Beechcraft in Monrovia, AMI is considering a Lear Jet or similar executive aircraft: “We’ve decided that having longer legs in west Africa would be a good thing,” he concluded.

SOMMAIRE

SAUVER DES VIES PAR VOIE AÉRIENNE

Pour certains patients gravement malades en Afrique de l’Ouest, un Beechcraft 1900 est synonyme de survie.

Alan Dron nous en dit plus.

Environ deux fois par semaine, un Beechcraft 1900 quitte l’aéroport James Spriggs Payne de Monrovia et revient, quelques heures plus tard, avec un patient dans un état grave.

Aspen Medical International (AMI) a commencé des évacuations médicales (Médevac) voici environ 18 mois. « Nous avons eu un taux de survie de 100% », déclare Ethan Bond, le responsable opérationnel d’AMI.

Il explique que cet avion, le plus équipé médicalement dans la région, est adapté pour ce type d’opération et de terrain.

Le Beechcraft et l’équipage sont certifiés et répondent aux normes les plus élevées en matière d’évacuation.

Les avions d’AMI opèrent fréquemment dans les capitales d’Afrique de l’Ouest comme Accra ou Dakar « où il y a des installations médicales fantastiques ».

Le service sera étendu en Afrique du Nord et de l’Est. Le Beechcraft va soutenir l’installation médicale au Sud-Soudan. La Libye accueillera l’installation nord-africaine.

Le Beechcraft à Monrovia sera remplacé par un Lear Jet ou un avion semblable.

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ALFA AIR MISE SUR LA CÔTE D'IVOIRE

L'opérateur marocain Alfa Air souhaite développer ses activités en Côte d'Ivoire et au Sénégal. **Vincent Chappard** a interrogé **Chakib Lahrichi**, son fondateur et président, sur sa vision du marché de l'aviation d'affaires et ses projets de développement.

Alfa Air est un opérateur charter d'aviation d'affaires basé à Casablanca au Maroc. La compagnie a été créée en 2007 par Chakib Lahrichi. Ses opérations ont progressé de manière régulière avec le dynamisme du marché. Sa flotte compte un bimoteur, 2 Falcon 10, un Jetstream 32 et un Falcon 20. Alfa Air opère du centre de l'Afrique jusqu'au nord de l'Europe.

« Nous avons une forte activité de tourisme au Maroc avec également un tourisme de luxe avec des destinations phares comme Marrakech, les villes du sud, ou la ville impériale de Fez », déclare Chakib Lahrichi.

« Les distances parcourues et le temps passé sur les routes sont importants et par conséquent, les touristes préfèrent prendre l'avion pour relier leurs

destinations et gagnent ainsi un temps précieux. »

Le transport des VIP à la demande ne représente que 40% de l'activité d'Alfa Air. Sa principale activité concerne l'évacuation sanitaire. Elle se fait principalement de l'Afrique vers le Maroc, des villes du Maroc vers le hub de Casablanca et du Maroc vers l'Europe. Alfa Air opère également dans le fret pour des demandes d'urgence.

Le Maroc possède l'un des secteurs aéronautiques et du transport aérien les plus avancés en Afrique. Les aéroports du Maroc ont enregistré, en 2016, un trafic passager record avec 18,2 millions de passagers selon l'ONDA. Le trafic aérien a enregistré une évolution positive concernant le trafic aérien passagers (+3,58%), les mouvements des avions (+1,16%) et le fret (+6,52%). Cinq nouveaux FBO seront déployés à Casablanca Mohammed V,

Marrakech Menara, Rabat-Salé, Agadir et Al Massira Dakhla.

Mais qu'en est-il du marché de l'aviation générale et de l'aviation d'affaires ?

Selon Chakib Lahrichi, ce marché devient de plus en plus étriqué. « Nous subissons un peu les effets de la crise en Europe. Il y a moins de dynamisme économique par rapport à 2013, 2014 et 2015. Le marché au Maroc ne nous permet pas d'exploiter tout le potentiel de notre activité et de nos avions. »

Il faut aller chercher les marchés là où ils se trouvent. « C'est bien de structurer les aéroports pour les grandes compagnies mais il faut également développer le secteur de l'aviation générale, le transport à la demande. »

Alfa Air cherche à assurer et pérenniser son développement et les perspectives d'expansion se trouvent en Afrique même.

« Nous allons nous implanter en Côte d'Ivoire et au Sénégal », soutient Chakib Lahrichi. « Nos avions bénéficient d'une autonomie suffisante pour des distances qui vont du centre de l'Afrique aux pays du Maghreb. »

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ET LE SÉNÉGAL...

Alfa Air a créé une société à Abidjan (Alfa Air Africa) et a entrepris des démarches pour immatriculer un avion à Dakar et un autre à Abidjan. « Les autorités en Côte d'Ivoire et au Sénégal travaillent main dans la main avec les opérateurs d'aviation d'affaires. La plateforme du Sénégal est très intéressante pour l'évacuation sanitaire et le transport VIP. La Côte d'Ivoire dispose davantage de potentiel pour les transports de fonds et miniers. »

Alfa Air n'a pas la prétention d'agir seul. Elle compte sur des protocoles et des partenariats de complémentarité pour se développer sur le continent.

Alfa Air souhaite toutefois garder sa souplesse, son indépendance, son expertise et son ADN : être à l'écoute du marché, répondre quel que soit la demande.

« Nous sommes comme des caméléons, nous nous confondons avec la demande. Il faut naviguer à l'intuition. »

Alfa Air ne sait pas encore ce que lui réserve l'Afrique mais elle maintient le cap et reste optimiste.



Chakib Lahrichi: "La plateforme du Sénégal est très intéressante pour l'évacuation sanitaire et le transport VIP. La Côte d'Ivoire dispose davantage de potentiel pour les transports de fonds et miniers."

SUMMARY

ALFA'S VISION

Moroccan operator Alfa Air is developing its activities in Côte d'Ivoire and Senegal and the operator's founder and president, Chakib Lahrichi, has been explaining his vision for the development of the business aviation marketplace.

The business charter operator, established in 2007, is based in Casablanca. Its operations have grown steadily and its twin-engined fleet includes two jet Dassault Falcon 10s; a Falcon 20 and a turboprop BAe Jetstream 32, all operated from central Africa to northern Europe.

"We have a strong tourism industry in Morocco, including the luxury end of the market, with key destinations like Marrakech, the cities of the south and the imperial city of Fez," explained Lahrichi.

"The distances travelled and the potential extended time spent en route are critical and some tourists, therefore, prefer to fly."

VIP transport represents only 40% of Alfa Air's business. Its main activity is medical evacuation, mainly from Africa to Morocco; from the cities of Morocco to the hub of Casablanca; and from Morocco to Europe.

Alfa Air also operates an ad hoc freight business. It now intends to sustain its development through expanding within Africa.

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Rwanda shows that it's

The first Aviation Africa Summit and exhibition to be held on the African continent took place in Rwanda in February to great acclaim. Andrew Borge reports.

More than 550 delegates, from some 58 countries, packed into the new Kigali National Convention Centre to address the aviation opportunities and challenges facing Africa.

The previous event had been held in Dubai to enable more Africans to attend, due to so many visa restrictions halting opportunities to travel to such events in Africa.

But, an end to such restrictions by Rwanda opened the door to bring the prestigious event to the country's capital.

Summit chairman, Alan Peaford, said: "We brought this event to Rwanda because of its investment in aviation and infrastructure, open visa access and plans for the future aviation growth of Rwanda and Africa. The summit aims to help knock down some of the barriers to future growth in this industry."

An exhibition alongside the conference

boasted 56 exhibitors and sponsors, including Airbus (France), Bombardier (Canada), Nexus (Saudi Arabia), Gulfstream (USA), and Rolls-Royce (UK).

Rwanda's president used the stage to make an impassioned appeal to fellow African leaders to put aside their protectionist policies and help open up the continent's aviation markets.

President Paul Kagame made the case for the liberalisation of African airspace to improve operating conditions for African airlines and ease movement of people across the continent.

He said the liberalisation of African airspace would improve the industry, make it more profitable, affordable and safer.

"Rwanda has stepped up efforts towards the creation of a single African air transport market by fully opening up our skies and working actively with partner states to do the same," Kagame said.

"When our skies are closed, it is harder to make air transport safer, more reliable, and more affordable. The growth of the mega-businesses, which depend on a vibrant aviation sector, is also considerably slowed, hurting all of us."

As countries work to expand regional transportation and digital networks, the president noted that the same ought to be done with air transport to increase tourism, trade and investment.

Kagame also said that beyond eradicating barriers to growth, it was important to build capacity and expertise in various aspects of the industry. This, he said, would build a brand quality of African airlines with reputations of excellent service, comfort, and impeccable safety records, enabling the airlines to compete globally.

The event saw airline leaders debate the opportunities with a clear message that visa restrictions needed to be relaxed to help airlines fulfil their potential. But other issues, such as high fuel prices, airport and other charges, and blocked funds, were also damaging African airline potential.

One constant problem for civil aviation operators has been the dominance of defence forces across African skies. Many countries see



Clockwise from far left: President Paul Kagame takes a close interest in the Bombardier CSeries; Rwanda's Air Chief of Staff Charles Karamba delighted the audience with pragmatism; Airbus' Hadi Akoum urged delegates to think about fuel economy. Above: Abdullah Al-Sayed from Nexus on African opportunities and (left) VIPs from across Africa joined President Kagame on the platform for a group shot.

NEW AFRICAN PILOT PROGRAMME UNVEILED

A new era in the development of Africa's human capital was announced at the Aviation Africa summit, when international aviation training organisation, Airways Aviation, completed an agreement with the African Business Aviation Association (AfBAA) and INTech Investments Africa to bring its foundation school concept to Africa.

Under the agreement, business aviation solutions and regional investments company, INTech, will open and operate a series of Airways Aviation's foundation schools in a bid to support the development and enhance the standards of the aviation training sector on the African continent.

Romy Hawatt, founder of Airways Aviation Group, said: "This partnership with AfBAA and INTech allows us to attract students through our aviation foundation pathway from around the African continent and, via a process of teaching, assessment and screening, deliver the highest standard of training and licensing available for those who are looking to pursue a career as a pilot. The aim is to establish 14 Airways Aviation Foundation Schools over the next five years.

"We have identified a new, rapidly emerging demand for pilot training in Africa and fully recognise the need to recruit African students wishing to train as pilots via our European Aviation Safety Agency training courses."

Founding chairman of AfBAA, Tarek Ragheb, who announced the new venture to the summit said: "There is a mounting challenge in Africa, not just to address the sizable pilot shortage, but to train and recruit quality pilots locally. With our vast experience in this sector, we can support African aviation with global insights tailored to regional markets, reducing the economic outlay of recruiting from overseas."

Once their training is complete, graduates from the foundation schools, who wish to continue their career as airline pilots, will have the option of joining one of the Airways Aviation airline pilot training programmes in either Australia or Europe.

summit special

huge restrictions on permits or airspace availability due to the control by defence ministries.

Rwanda's Air Force Chief of Staff, Brigadier-General Charles Karamba, got an ovation when he talked about the need to recognise that airspace should be shared – but also that civil operations needed to understand that national security was always a priority.

With zero fatal accidents reported in 2016, Africa's safety record has improved dramatically but airlines and safety specialists agreed that it remains a focus.

Speakers from the leadership of organisations such as ICAO, IATA, AFRAA, AfBAA and ACI agreed that significant progress is being made and that Africa's aviation industry is making giant steps towards more efficient operations.

In a lively debate about the new carbon offset and reduction scheme for international aviation (CORSIA) emissions standards set for the industry by ICAO, Hadi Akoum, the Airbus vice president for Africa and the Indian Ocean, called on airlines to focus on fuel. "The airframe is about 18% of operation costs, while fuel is between 30 and 60%. The aircraft may cost millions but fuel costs billions. Focus on where you can make a difference," he said.

Another key element throughout the two-day event was the development of Africa's human capital.

For the Rwandan president, there is a direct link between the industry and meaningful careers for Africans. "We want to see many young Rwandans and Africans pursuing careers in aviation, as pilots, engineers, designers, or business analysts," he said.

Host sponsor, Abdullah Al-Sayed, founder and chairman of Saudi Arabia's Nexus Flight Operations Services, which has its African HQ in Rwanda, pointed out that airlines collaboration would boost the continent's aviation sector. "The air transport industry provides significant economic benefits, playing a major role in the economic transformation of Africa," he said.

The event was organised by Times Aerospace in conjunction with Rwandan Civil Aviation Authority. Speaking at the close of the event the RCAA director general, Colonel Silas Udehemuka, said that the next edition of the event would include a static aircraft display. "This has been important for Rwanda but also Africa as a whole," he said.



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The vision for the new terminal at Kasane.



BOTSWANA TERMINAL TAKES NEXT STEP TOWARDS 2020 VISION

The Government of Botswana says the construction of a temporary terminal building at Maun International Airport will be completed in May this year, although the rest of the infrastructure expansion project is due to be completed in 2020.

Oscar Nkala reports.

Addressing the recent Botswana Aviation ‘Pitso’ (conference) in the Okavango Delta resort town of Maun, Transport and Communications Permanent Secretary, Neil Fitt, said work on a permanent new and larger airport terminal building would begin as soon as the Government had let the tender.

The new structure will replace the present one, which is small and lacks seats, as well as public amenities.

According to the project masterplan, the terminal building is the last of a three-phased Civil Aviation Authority of Botswana (CAAB) expansion project, which began with airside works in April 2009.

In 2012, work began on the second phase, which entailed the extension of runways. According to Fitt, work on the temporary terminal building has started. It is designed to accommodate peak volumes of up to 470 scheduled passengers and 170 unscheduled passengers.

Work on a new airport control tower and technical services wing were completed in May last year.

When complete, the expanded terminal building will include separate counters for non-scheduled charter flights, which are more frequent with tourists flying between Maun and several far-flung Okavango Delta resorts.

The existing terminal building would be renovated to accommodate a VIP area, more management offices and retail shops.

Meanwhile, the company contracted for the expansion of the terminal building at Kasane International Airport in the Chobe Enclave says the project will be completed by the end of May this year, exactly one year after the passage of the first due date.

In a statement, AECOM project manager, Jaco Theron, said they would beat the May 2017 completion deadline despite frequent challenges associated with working on a complicated building plan that needed imported raw materials, as well as delays in the delivery of materials due to the remoteness of the site.

The project entails the construction of a new 10,000sqm climate-controlled building.

“Sourcing aggregates posed a particular challenge for the

contractor, with some aggregates having to be imported from neighbouring Namibia, and some trucked in from Francistown, about 500km away,” explained Theron.

“In addition, the existing terminal building had to remain functional throughout the construction. Also, it had to be encompassed into the new building without demolishing any of the existing structure.”

The CAAB said the new terminal building was designed to cater for the future growth of the airport by boosting its passenger-handling capacity in order to accommodate higher frequencies of international flights.

To date, the contractor has extended the runway from 2,120 metres x 30 metres to a 3,000m x 45m, wider-surfaced facility.

Additionally, a new apron has been built to accommodate three large aircraft and several, smaller non-scheduled flights.



Although Kasane predominantly serves domestic flights, it has the potential to develop into a regional tourism route centre due to its proximity to airports and prime tourism destinations in Namibia, Zambia, Zimbabwe and Angola.

The drive for the completion of Botswana airport expansion projects comes amid a flurry of similar upgrading projects across southern Africa.

In November 2016, Zimbabwe completed the expansion of Victoria Falls International Airport to accommodate higher passenger volumes and big-bodied aircraft. In December, the China Railway Construction Corporation Limited (CRCC) started expansion and modernisation works on the Maria Mambo Café Airport in Cabinda region.

Major works include the extension of the runway to 3,400 metres x 60 metres, which allows Boeing 777 aircraft to land, the construction of a new 19,000sqm terminal building to accommodate 900 passengers at peak times, and the building of a new aircraft hangar, which will accommodate larger-bodied aircraft like the Boeing 737 and Boeing 777.

Keys to unlocking the door in Africa

The Modern Airport Africa 2017 conference, held recently in Nairobi, aimed to address airport infrastructural challenges with the theme of 'unlocking Africa's aviation potential'. Githae Mwaniki reports.

In a unique aviation forum, organised by IQPC, key industry players addressed Africa's airport infrastructural challenges.

Gilbert Kibe, director general, Kenya Civil Aviation Authority (KCAA), set the stage for the conference by outlining the scope of the Kenyan civil aviation industry. He said key players included the KCAA, Kenya Airports Authority (KAA), the country's ministry of transport, air operators and auxiliary service providers. He said that, with three major international airports in Kenya, there were currently more than 875 commercial flights per day into and out of the country.

The Kenyan aviation industry was worth more than Ksh.59 billion (\$9.7 million), representing 1.1% of the country's GDP and generating more than 55,000 jobs directly, while supporting 142,000 jobs indirectly through tourism.



He outlined how the sector was regulated via Kenya's national transport policy, International Civil Aviation Organization (ICAO) annexes, the Civil Aviation Act and various bilateral and multilateral air service agreements. He reiterated the need to have adequate airport infrastructure and for the KCAA to ensure Kenya achieved international compliance standards and had a vibrant, competitive civil aviation market with effective air transport provision.

Said Athman, tourism secretary, said the air transport market in Kenya grew by 2% in 2016 against a global average reduction. He pointed out that one in every 11 jobs in Kenya were in the tourism and travel market. Athman said most of the tourists coming into the country used air transport, thus the tourism and aviation industries in Kenya were dependent on each other. He added that low cost carriers (LCCs) in the country had significantly reduced the cost of travel, leading to an increase in passenger numbers.

The Ministry of Tourism was marketing



'Destination Kenya', with Kenyan airports being a key segment of this brand.

Athman outlined the initiatives his ministry was taking, including completion of the national tourism blueprint, construction of a cruise ship terminal, adoption of a common regional marketing policy, rebate of \$.30 per passenger arrival to the country, provision of e-visas in various major languages and reduction of park entry fees.

Irungu Nyakera, principal secretary at the Ministry of Transport, opened the conference by explaining how the Kenyan Government had prioritised the development of infrastructure over the last three years, confirming that this has supported the GDP growth of 5.6% that was witnessed in 2016.

Nyakera outlined how tourism provided more than 70% of the market for the aviation industry, in addition to supporting shipments of horticulture out of the country and enabling foreign direct investment to the country.

He said Jomo Kenyatta International Airport

(JKIA) acted as a hub for the region by facilitating the movement of more than 6.5 million passengers and the transport of over 250 million tonnes of cargo per year, with growth projections of 12% per year.

He emphasised that the modernisation of terminals 1A, 1B, 1C, 1D and 1E, and the new arrivals terminal at JKIA, had significantly contributed to the growth, adding that the cancellation of the Greenfield Terminal was necessary to focus on the short and mid-term needs of the airport and the redrafting of an airport master plan.

He said the Kenyan Government, through KAA, was focusing on the rehabilitation of airstrips across the country, development of new airports in Mandera and Isiolo, and the expansion of Malindi and Kisumu airports.

He added that Kenya recently attained a 78% mark in terms of compliance to ICAO's standard recommended practices, with key investment in modern navigation facilities and recognition of the East African School of Aviation as one of the



LEFT: Gilbert Kibe, director general, Kenya Civil Aviation Authority (KCAA), set the stage for the conference by outlining the scope of the Kenyan civil aviation industry.

FAR LEFT: VIPs gather for the official ribbon cutting ceremony.

16 regional centres of excellence in aviation training, as significant achievements of effective implementation of the national transport policy.

Sanjev Ghadia, CEO, Astral Aviation, discussed having adequate airport infrastructure to handle cargo storage and facilitate its transport.

He said Ghana had developed a cargo terminal as a public private partnership that had facilitated growth of airfreight into Accra.

He also discussed the challenges posed by service provider monopolies, as in Luanda, Angola.

He said there was a need for effective consultation between airport authorities and airport users, in addition to the need of investing in cargo-handling equipment, creation of dedicated parking slots for cargo aircraft, and the separation of cargo terminals with special sections to handle high-value cargoes.

He also called for a reduction of taxes and charges on air cargo, development of free cargo zones and the creation of special economic zones

as some of the areas on which airport authorities should deliver.

Ghadia also made a presentation of the proposed upgrade of airstrips in the Maasai Mara Game Reserve and discussed the role of the private sector in the creation of drone ports and the development of private airfields into commercial opportunities.

Gershon Adzadi, head of ICT for the Ghana Airports Company, outlined initiatives to meet passenger expectations. These included the flight information display mobile app, which was developed to provide key information to passengers, including detained flight information, baggage pick-up location, and airport directions among others.

Rob Van Eekeren, director, Safe Runway GmbH, showcased the cost benefits of runway excursions mitigation by outlining the benefits of installation of runway grooves to address aircraft landing overruns.

Cyclone Technologies presented the technology of rubber removal from runways.

Stephan Schwolgin, sales manager, Munich Airport, outlined key strategies that it had used to make it one of the best airports in the world.

Schwolgin outlined how the airport handled more than 380,000 take-off and landings as it facilitated transport of 41 million passengers per annum, while directly supporting the jobs of 32,500 employees. He said the success was gained by having a wide revenue base, with aviation contributing 52% of the \$1.33bn annual revenue generated by the airport.

He said the airport partnered with Lufthansa on a 60/40 basis to construct a dedicated terminal, with the second terminal used by all the other airlines, including non-Sky team member airlines. Other features, like an ice skating rink, dedicated airport tours and a brewery within the airport, added additional customers and revenue.



However, with two operational runways, the plan to construct a third was facing opposition due to environmental concerns.

Schwolgin reiterated the importance of its airline marketing team, which works closely with airline operators in the delivery of new routes and traffic growth to the airport. He indicated that concessions, including hotels and breweries, were managed by a subsidiary, in which it had a 75% stake.

Helena Koester, product manager, Smiths Detection, outlined the development of checkpoint security, air cargo screening and hold baggage screening.

She discussed various technologies including X-ray, ion mobilizing spectroscopy and Ramon spectroscopy, cargo inspections detection systems, explosive detection, tracing of chemical, biological threats and nuclear products.

She added that the technologies were used by 42% of the top airports and in more than 1,000 airports across the world, with a focus on inspection of freight, hold baggage, and passenger screening.

Kenya's \$270m Isiolo upgrade can strengthen local business

Githae Mwaniki
takes a look at Kenya's fifth international airport.

Isiolo International Airport was declared ready for business in February following a \$270 million upgrade. It is one of the key 'Vision 2030' infrastructure projects under the Kenyan transport pillar, in which the resort town of Isiolo becomes the centre of the Lamu Port South Sudan Ethiopia Transport Corridor (LAPPSET).

The LAPPSET project includes a road, rail and pipeline to be built from Lamu, on the northern coast, to Isiolo town, strategically located at the centre of Kenya. It will have one transport link to Merrille, Ethiopia, and Juba, South Sudan, thus creating a significant demand for air services into Isiolo.

Kenya's fifth international airport stands at 3,501 feet. It has a 1,400-metre asphalt runway, with a planned upgrade to make it 2,500 metres. The 4,500sqm passenger terminal is capable of handling 125,000 passengers annually.

Prior to the commissioning of the airport, several airlines, air operators and transport logistic firms were already showing interest. The key operational sector load will be for khat freight, which is currently exported in

thousands of tonnes annually from Wilson Airport in Nairobi.

Just 35km from Maua in Meru County, the base of production of khat, it will be viable to use the airport to export the plant to Somalia and other markets, as opposed to transporting it 350km to Nairobi.

The opening of the airport will help relieve khat farmers, who have been suffering since the Netherlands and the United Kingdom both banned the import of the narcotic leaf, citing health concerns.

"The projects will add value to the lives of residents, attract investments, increase competitiveness and the ease of doing business," said LAPPSET director general Silvester Kasuku.

The Northern Construction Company said that the airport project, including the terminal building, car park and administration block, had been completed and handed over early to the aerodrome operator – Kenya Airports Authority (KAA).

The first phase was handed over in February 2016, as the construction firm sought a two-month extension from KAA for work on the third phase, which comprises access roads and apron.



Airlines that have indicated their intention to operate to the airport include East African Safari Air Express, whose operations director, George Kivindyo, indicated that it would market the airport prior to its opening.

Security in and around the Isiolo International Airport has also been beefed up with a team comprising officials of KAA, the Kenyan Civil Aviation Authority (KCAA), the national police service and the county commissioner.

County Commissioner George Ntembeya indicated that, with the airport being a critical security facility, his committee would respond to any emergencies that may arise, adding that the airport was well secured since police had been deployed to guard all entry and exit points and the entire facility.

However, he expressed concern over the surrounding hills, saying they had security implications. He has presented comprehensive security plan proposals for approval by central government to address operational concerns.

The opening of the new facility marks a new era in the development of Kenyan airports, with the operational plan making both logistical and economic sense and the location being factored into the development blueprint of the country and other planned transport networks – road, railway and pipeline transport network from Lamu to Ethiopia and South Sudan.

The airport's operational economic turnaround is expected faster than other airports in the country, like Eldoret and Kisumu, both of which have received major upgrades but are yet to be operationally financially self-sufficient. They are subsidised from the commercially viable airports of JKIA, Wilson and Moi International Airport – Mombasa.



The passenger terminal at Isiolo soon to welcome business visitors.



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China is becoming a vital partner for the development of Africa's transport links and aviation is leading the charge. Alan Peaford reports.

CHINA DEVELOPING ITS PARTNER ROLE IN AFRICA



Xu Bo hands a ceremonial MA 60 key to Congolese transport minister Gilbert Mokoki to celebrate the new MRO joint venture.

Xu Bo, vice-president of the Chinese aerospace giant, AVIC, took to the stage at the Aviation Africa summit in Kigali in February and the conference hall was packed.

An audience of ambassadors, government ministers, airport and airline chiefs, were waiting to hear how the Asian superpower was viewing prospects in Africa.

While, in the main, the west has held back from investment in Africa, China has raised the stakes for the continent with a series of partnerships and infrastructure deals – and the good news from Xu is that the investment is set to continue.

China has become Africa's largest trading partner, with trading value of \$265 billion in 2016 – an increase of 6.5% from the previous 12 months. According to Xu, the country has more than \$30 billion invested in Africa.

A key element of this is the China-Africa Regional Aviation Cooperation Plan, which has been driven by AVIC and has primarily been led by investment in the training and technical support sectors.

“Our plans over the next five years will see us have two regional marketing centres on the continent, as well as the training centre, two maintenance facilities and three spare parts centres,” Xu said.

AVIC is one of China's top 20 companies. The state-owned enterprise, set up in 1979, has more than 100,000 employees and, last year, reported a turnover of \$24 billion. It has been growing its presence across the continent over the past 30 years with some 27 subsidiaries and representative offices. According to Xu, these include Algeria, Ethiopia, South Africa, Egypt, Ghana, Zimbabwe, Kenya, Rwanda, South Sudan, Tanzania, Gambia, Uganda and Gabon.

In March AVIC confirmed its new maintenance centre in Brazzaville for MA60, ARJ21 and Y12 aircraft is ready for business almost a year earlier than expected.

The company has its African headquarters in Nairobi, and its recent flagship infrastructure projects include the Jomo Kenyatta International Airport in Nairobi and

the new 787 hangars for Ethiopian Airlines in Addis Ababa.

Another long-term flagship investment is the South African training academy, AIFA, which is accredited with both the South African Civil Aviation Authority (SACAA) and the CAAC (China) as a Part 141 Air Training Organisation.

“It provides world-class training from modern facilities on a modern fleet of aircraft, state-of-the-art aircraft simulators, and operates from three training bases in South Africa – George Airport on the Garden Route, Oudtshoorn in the Little Karoo, and Beaufort West in the Great Karoo,” Xu said.

The three bases are home to 40 training aircraft and 60 flight instructors.

“AIFA employs more than 150 people. It is a key project to bring through 250 cadets each year and with an annual training capacity of 50,000 flight hours.”

Fifty potential pilots from Congo have been agreed as part of the new joint-venture with the Congolese government. Xu sees the Chinese investment and partnership with Africa as a “win-win situation”.

“Our goal is to help improve Africa's civil aviation activities by enhancing the local aviation infrastructure and to assist our African partners to improve operational and maintenance capabilities. Projects such as the technical support centre in Tanzania see us assist in improving operational and maintenance capabilities, and we are training more aviation experts for sustainable development.”



China plans to train at least 500 aviation personnel from Africa each year, according to Shu Limei, the commercial councillor for Asia and Africa in Guangdong Province.

Speaking at the China-Africa Aviation Forum in China's Zhuhai City, Shu said: “We will help Africa to deal with challenges, such as backward infrastructure and low financing.”

In 2005, the Republic of Congo purchased three MA60 civil aircraft from China, becoming the first African country to fully operate the China-manufactured civil aircraft. They have operated for 10 years, exceeding 6,000 flight hours and 200,000 passengers.

In November 2012, Cameroon purchased one MA60 aircraft, which has since clocked over 1,700 flight hours, 1,200 take-off and landings, with at least 60,000 passengers hauled. It added two more aircraft in 2015 and, since then, AVIC has delivered a total of 14 MA60s to eight African countries.

Several African countries are also believed to have signed sales contracts or memorandums of understanding with AVIC for the new ARJ21 regional jet – the target for AVIC's technical support centre in Tanzania, which will handle repairs and produce accessories facility for the ARJ21.

“Our plans over the next five years will see us have two regional marketing centres on the continent, as well as the training centre, two maintenance facilities and three spare parts centres.”
XU BO

Chinese overtures to the burgeoning African aviation industry are continuing, as Oscar Nkala reports.

China's aviation training can boost its growth in Africa

The Chinese Government has announced that it will this year start training up to 500 African civil aviation personnel in China annually as part of broader efforts to further stimulate growth in the continent's fast-expanding air transport industry.

According to Shu Limei, a commercial counsellor for Africa in the Guangdong Province, the programme marks the implementation phase of the Forum on China-Africa Cooperation (FOCAC) Johannesburg action plan for 2016-2018, an aviation development blueprint adopted in December 2010.

"We wish to help Africa in dealing with challenges such as lack of training opportunities for aviation personnel, poor airport infrastructure and lack of financing for airlines," Limei said.

"Aviation is one of the major areas of cooperation in infrastructure and personnel capacity development between Africa and China."



Apart from growing the African aviation industry, the Chinese training programme seeks to help Beijing consolidate both civilian and military aircraft sales into the African region, while reaping the benefits of the expanding passenger flight volumes each way.

According to recent figures from FOCAC, at least 73.8 million Africans visited China in 2014, up from just 14 million in 2004.

China hopes the training of African aviation professionals will help consolidate the 12 aviation cooperation agreements it has already signed with African countries.

Beijing is also searching for more direct flight opportunities to Africa for Chinese airlines after gaining footholds in Ethiopia, South Africa, Kenya and Mauritius in the past few years.

Due to its growing influence on the regional aviation sector, China has also signed airworthiness contracts with nine African states.

Since 2000, the Aviation Industry Corporation of China (AVIC) has delivered 14 Xian MA-60 turboprop-powered



Zimbabwe is one of the countries using the MA-60.

SOMMAIRE

QUAND PÉKIN COURTISE L'AFRIQUE

Les portes de l'industrie aéronautique africaine en pleine expansion continuent à s'ouvrir à la Chine comme nous le montre Oscar Nkala.

Le gouvernement chinois a annoncé qu'il va former jusqu'à 500 membres du personnel de l'aviation civile africaine en Chine chaque année. L'objectif étant de stimuler davantage la croissance de l'industrie du transport aérien en plein essor sur le continent.

Selon Shu Limei, conseiller commercial pour l'Afrique de la province du Guangdong, le programme marque le démarrage du plan d'action 2016-2018 du forum sur la coopération sino-africaine (FOCAC) de Johannesburg.

« Nous souhaitons aider l'Afrique à faire face aux défis tels que le manque de formation pour le personnel de l'aviation, l'infrastructure aéroportuaire inadéquate et le manque de financement pour les compagnies aériennes », explique-t-il.

Le programme de formation vise également à aider Pékin à consolider ses ventes d'avions civils et militaires en Afrique.

Pékin souhaite également augmenter les opportunités des vols directs vers l'Afrique pour les compagnies aériennes chinoises.

En raison de son influence croissante dans secteur

aérien régional, la Chine a également signé des contrats de navigabilité avec neuf États africains.

Depuis 2000, AVIC a livré 14 MA-60 à huit pays africains. La Zambie, Djibouti et l'Erythrée exploitent également des variantes militaires du MA-60 et au moins sept pays africains ont acquis des variantes militaires et civiles du biréacteur Harbin Y-12.



La Chine espère également commercialiser ses nouveaux modèles d'avions, tels que l'ARJ-21.

En 2014, le gouvernement chinois a installé le premier centre technique régional d'AVIC en Tanzanie. Un deuxième ouvrira ses portes en République du Congo d'ici la fin de 2018.

Par ailleurs, Beijing aidera l'Afrique à établir des réseaux aériens transnationaux pour relier les pays africains et améliorer la coordination des normes sur la sécurité aérienne.

À long terme, la Chine prévoit d'établir une école d'aviation civile sino-africaine en Afrique.

The Zambian L-15 ALT trainer jet acquired from HAIG in 2014.



airliners to eight African countries, including the Republic of the Congo, Zimbabwe, Cameroon, Burundi and Eritrea.

Zambia, Djibouti and Eritrea also operate military variants of the Xian MA-60 and at least seven African countries have also acquired military and civilian variants of the twin-engine Harbin Y-12 turboprop utility aircraft, which is built by Chinese aircraft maker Harbin Aircraft Industry Group (HAIG).

The Chinese Government also hopes to use the expanding aviation relationship with Africa to market new aircraft models, such as the Comac ARJ-21 'Xiangfeng', which is manufactured by the Commercial Aircraft Corporation of China (CACC).

More African countries have expressed interest in the low-cost, twin-engine regional jet, although only the Republic of the Congo has a confirmed order for three.



In 2014, the Chinese Government consolidated its dominance of the African civil aviation market by establishing the first AVIC regional technical centre in Tanzania. Apart from spare parts and accessories, the centre provides after-sales support and maintenance, repair and overhaul (MRO) services for MA-60 and ARJ21 aircraft.

A second AVIC facility that will provide spares, accessories and repairs for MA-60, Y-12 and ARJ-21 aircraft is set to open in the Republic of the Congo by the end of 2018.

According to the (FOCAC) Johannesburg action plan for 2016-2018, Beijing will help Africa establish trans-national aviation networks to link African countries, enhance coordination in aviation safety standards and offer specialised training programmes.

China also wants to help African countries improve their aviation infrastructure, provide support for the operation of joint venture airlines, as well as strengthen human capacity building and technology transfers to African airlines.

In the long-term, China also plans to establish a China-Africa civil aviation school in Africa.

ZAF LOOKS EAST FOR MODERNISATION

The Zambian Air Force (ZAF) is negotiating with the Aviation Industry Corporation of China (AVIC) for the possible acquisition of more advanced fighter and trainer jets, helicopters and heavy-lift transport aircraft, as it forges ahead with a force modernisation exercise. Oscar Nkala reports.

ZAF commander, Lieutenant-General Eric Chimese, has said he hopes to capitalise on cordial business relations with AVIC to acquire "third-generation military jets in air-to-air, ground attack and trainer configuration".

Those relations are based on a military training and cooperation protocol, which was first signed in 1998 and re-affirmed in 2008.

Chimese could not be drawn into disclosing the aircraft models and number of aircraft that he is seeking.

If confirmed, any new order would be a follow-up to six

Hongdu Falcon L-15 supersonic lead-in fighter/trainer jets, which were acquired by ZAF from AVIC subsidiary, Hongdu Aircraft Industry Group (HAIG), for \$100 million in 2014.

Three aircraft were delivered in July 2016 and three more are due for delivery within the first half of 2017.

Chimese said ZAF needed even closer ties with AVIC, which has, to date, provided the bulk of its military aircraft requirements.

He said the force was determined to modernise national air defences and preferred Chinese aircraft, such as the L-15 ALT, because, while relatively advanced, they cost less and were cheap to maintain.

"As the first African country to have acquired the modern L-15 AFT, our pilots have been introduced into the future of military (fighter) aviation that is sensitive to technology, which is ever changing," said Chimese.

"The L-15 AFT represents our entry to the modern military aviation world.

"We need to defend the country from all known and evolving security threats if we are to attract meaningful development and investment."

He said, given the vast size of the country, the air force needed to continuously improve its operational capabilities in order to cover the full length and breath of national airspace. Military collaboration with China provided further opportunities for cooperation in special training programmes, joint operation missions, equipment and technology transfers with the People's Liberation Army (PLA).

China eyes MRO markets

China's largest MRO business is targeting the Middle East and Africa with its growing list of services for the sector. At the recent MRO Middle East event in Dubai, Ameco Beijing was demonstrating the capabilities currently on offer to more than 40 international carriers, as well as 30 domestic customers.

The company, founded in 1989, is a joint venture between Air China (75%) and Germany's Lufthansa Technik (25%). With more than 11,000 employees, Ameco Beijing handles virtually all modern Boeing and Airbus commercial aircraft, overhauls the Boeing 737, 747, 767, 777 and Airbus A340 aircraft types.

Besides aircraft overhauls, the company's service portfolio also includes the overhaul of engine types such as Rolls-Royce RB211, Pratt & Whitney PW4000 and CFM International Aero Engines V2500.

Among other limitations, the ZAF faces a lack of spare parts and accessories for an aging aircraft fleet. Due to the lack of aircraft, the pilots lack sufficient flying hours. While its troop and cargo transportation capabilities improved with the delivery of five Y-12 and two MA-60 transporters in 2006, the ZAF has a very limited combat capability.

The force modernisation programme is aimed at replacing a generally obsolete fleet of Soviet-era, American and British-made aircraft models.

The twin-seat L-15 Falcon jet delivered to Zambia is powered to a climb rate of 150 metres per second and up to 1,715km/h by two Russian-made Ivchenko Progress AL-222K-25F turbofan engines, which are fitted with after-burners.

Four under-wing and two wing-tip hardpoints, which can carry up to 3,000kg weapons payloads, including short-range air-to-air missiles, air-to-ground missiles, bombs and rocket pods, enable the aircraft to perform its secondary light-attack role.

Ethiopia's flightpath

The Ethiopian Civil Aviation Authority (ECAA) was established in 1944, a year before national carrier Ethiopian Airlines. Kaleyesus Bekele looks back over the history of the organisation and talks to its director general about the current challenges and opportunities.

A year after it was established, in 1945, the ECAA set up its own aviation training centre with the help of the International Civil Aviation Organization (ICAO). At that time the centre mainly offered radio communication training courses.

In the same year, the Ethiopian Government, in collaboration with the US airline, Trans World Airline (TWA), established Ethiopian Airlines. Since then, the ECAA has been regulating the national flag-carrier and managing the country's airspace.

The authority built and administered airports until 2003 but, as the aviation sector grew rapidly, the government decided to run airport matters differently and set up Ethiopian Airports Enterprise as an independent institution.

The ECAA basically provides regulatory and air navigation services. It regulates the aviation sector in Ethiopia. It inspects mainly the national flag-carrier, Ethiopian Airlines. It also inspects 13 foreign airlines flying to Addis Ababa, including Lufthansa, Emirates, Turkish, Qatar, Fly Dubai, Kenya Airways, Air Djibouti and Sudan Airways through the safety oversight of foreign aircraft (SAFA).



The authority has issued air operator's certificates (AOCs) for 15 domestic airlines engaged in charter flight services but only seven of them are operational at the moment.

ECAA director general, Wossenyeleh Hunegnaw, said that the authority had made a lot of progress in the past five or six years, adding that, as the air transport sector in the country is growing rapidly, the authority is developing its capability to regulate the sector and meet the growing demand for air navigation services.

"Ethiopian Airlines is growing very fast. It has been expanding its fleet and domestic and international destinations in recent years. More foreign airlines are coming to Addis Ababa so the air traffic is growing significantly every year," Hunegnaw said.

According to the director general, the ECAA invested more than \$10 million and successfully installed radar and automatic dependent



**"We have successfully passed the audit. We are working on the findings."
WOSSENYELEH HUNEGNAW**

surveillance – broadcast (ADS-B) systems seven years ago, which totally transformed the authority's airspace management capability.

"Previously we used a manual procedure. The new flight instruments enabled us to manage the air traffic efficiently."

It used to take the air traffic controllers (ATCs) up to 35 minutes to guide an approaching aircraft to land at Addis Ababa Bole International Airport. Now it takes between five and seven minutes for an aircraft to land or take off.

As a back-up to its radar system, the ECAA has just bought a modern equipment message-handling system (MHS) from Italian company, Leonardo.

The \$2.6 million multilateralization system (M-LAT) should be installed at the end of 2017 or in early 2018.

"The M-LAT can manage the Bole

International approach area at up to 24,000ft and 60 nautical miles distance. If the radar fails, we use the M-LAT as a back up," Hunegnaw said.

The authority also recently installed a new communication console.

Hunegnaw is proud of the aviation training school. "Our school trains ATCs, communication navigation and surveillance (CNS) professionals, radar, radio and navigational aid equipment technicians. It is a member of ICAO's trainer programme. It is an associate member of the trainer plus programme and now we are working hard to become a full member."

According to Hunegnaw, some years ago the ECAA did not have an adequate number of ATCs and technicians. But, in the last few years, the authority has built the capacity of the training school and trained a large number of aviation personnel. "We now have enough ATCs, radar technicians and aircraft inspection engineers. In fact, we have started training ATCs from neighbouring countries like

to safer skies...

Somaliland and Djibouti. We also have requests for training programmes from other countries.”

Hunegnaw said the aviation training school has developed a standard training package (STP) and is being audited by an ICAO-approved validator. “This will enable us to access 100 different courses under the ICAO’s Technical Cooperation Bureau (TCB).”

The ECAA was audited by ICAO in 2015 and scored 65.14, well above the world average.

“The ICAO’s audit is based on your carriers’ operation. Since we have a big national carrier, with 95 international destinations, the ICAO conducted a full audit on us. We have successfully passed the audit. We are working on the findings and we are filling the gaps identified in the audit. Then we will call for the ICAO’s coordinated validation mission to inspect the improvements we made. I am sure we will significantly improve.”

Based on the ICAO recommendation, the

ECAA hired inspector pilots and formed the aircraft accident investigation bureau as an independent body. It had formerly been operating as a department of the authority. “We have made several amendments and improvements based on the ICAO findings,” Hunegnaw said.

In 2014, the US Federal Aviation Administration (FAA) audited the ECAA and granted it category one status.



Ethiopian Airlines is one of the two airlines from sub-Saharan Africa that flies to the US. It serves Washington DC, Los Angeles and New York from its Addis Ababa hub and plans to add more destinations.

The FAA first granted the ECAA category one status in 1998 when Ethiopian first began flying to Washington DC. It was then audited by FAA in 2006 and 2014, maintaining its status each time.

The authority is trying to replicate the success of commercial aviation in the general and business aviation sector.

Hunegnaw said the ECAA is striving to develop the general aviation sector, which is currently in its infancy. “As Ethiopia’s economy is growing, the demand for charter flight service is thriving,” he said.

Currently, there are only seven active private airlines offering charter flight services.

There are three pilot training schools approved by the ECAA – the Ethiopian Aviation Academy, Abyssinian Pilot Training School and East Africa Pilot Training School – operating in the country. There is also one approved cabin crew training school, the National Aviation College.

Hunegnaw said the ECAA is striving to boost private investment in the air transport sector. “A national aviation policy that encourages private investors has been drafted and submitted to the government for endorsement.”

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The growth in African air travel has significantly increased demand for new generation aircraft, especially those linking regional centres.

Sam Basch looked at one, which is taking shape.

SARA aims to be head of the class

South Africa's Denel Group aims to fill a niche in the aviation market. A full-scale mock-up of its Small Regional African Aircraft (SARA) was shown at the Africa Aerospace & Defence exhibition in Pretoria earlier this year.

"We envisage SARA as a cost-effective 21st Century transportation system for Africa, capable of point-to-point travel, employing short take-off and landing operations from small semi-prepared regional runways," explained Victor Xaba, deputy CEO Denel Aerostructures.

Denel's design was inspired by the findings of an international study into future community airliner concepts, notably in the 20-passenger class, and focused on 'green' technologies.

"We opted for a concept that featured a natural laminar airflow fuselage in a pressurised 24-seat dual turboprop-powered aircraft design," said Xaba.

SARA has received support from the South African Government's joint aerospace steering committee (JASC) as a 'national aerospace flagship programme' and as a human capital development programme.

According to Xaba, SARA is currently used to further eight post-graduate studies of PhD and Masters students.

Although Denel leads the programme, an array of the country's aerospace community is involved. This includes universities, several

government departments – notably the trade and industry department's aerospace industry support initiative (AISI) – industry stakeholders and prominent research entities like the Council for Scientific and Industrial Research and the National Research Foundation.

"A market study undertaken by Lufthansa Consulting, co-funded by South Africa's Industrial Development Corporation (IDC) and two government departments, has presented a positive outlook for SARA," said Xaba. "Not only will it deepen the country's industrial base, but also contribute significantly to skills development (some 300 engineering jobs) and development of an aerospace special economic zone.



"The programme would create 2,000 technical jobs over 15 years. Importantly, the study attributes a market for SARA in six developing economic regions of the world and break-even at 200 aircraft within the first 10 years of production."

The twin-engined turboprop, with high-wing design, is envisaged to be pressurised to fly above the weather, with a maximum take-off weight of 8,400kg and a range of 1,500 nautical miles. This would enable a flight from Lusaka with 15 passengers to reach as far as Libreville or Cape Town, or even Antananarivo.



Lufthansa Consulting's study indicated best-in-class capacity and performance, as well as the lowest seat-kilometre costs.

The design shows an oval-shaped cabin cross-section, 24-seat four-abreast (2+2) passenger configuration (a first for this size aircraft) or a full cargo version, or a combination. The high wing leaves the cabin unobstructed with stand-up capacity in the centre aisle.

Xaba explained that the design team opted for a natural laminar airflow fuselage design. By 'fattening' and shortening the fuselage and by moving the maximum diameter forward, total drag is reduced and aerodynamic efficiency significantly increased.

An 18-month feasibility study now leads to a pre-development phase, followed by a five-to-seven-year development phase before a prototype is likely to emerge.

Denel is using the mock-up to consider lean manufacturing concepts, a jiggless assembly process, stress analysis for high density embarking and disembarking, and cockpit and cabin ergonomics. It will further look at provision for three-seater variants – 24, 20 and



12 seats – and permutations for the cargo/combi versions.

Denel is characterising the material properties of an epoxy resin/flax fibre composite laminate in the interior liners of the SARA programme.

In a statement by the trade and industry department's AISI programme, natural fibres are promoted as a substitute for synthetic glass fibres. "Aircraft interiors are one area where natural fibres may be employed in composites, as they offer a good strength-to-weight ratio," it stated.



Natural fibres are already successfully used in the automotive and other commercial applications.

According to Alcino Cardoso, Denel Aerostructures chief engineer, aerospace manufacturers are turning to alternative materials to build lighter aircraft that are reliable and environmentally friendly.

He said flax "shows the greatest promise to be accepted as a structural fibre for aerospace

structures" as flax fibres have inherent safety advantages that make them suitable for aircraft interiors, doors for baggage compartments and cabin floors.

While the aerospace industry has taken an interest in natural fibres, stringent safety, quality and certification requirements will be likely to delay the inclusion of these materials in aircraft structures for some time. However, Cardoso argued that Denel could "activate the natural fibres value chain to break into the lucrative global composites market".

Denel is at pains to stress that SARA is very much aligned with the South African Government's industrial policy action plans as contained in the National Development Plan (NDP).

"Not only has SARA now been designated a 'national aerospace flagship programme', but importantly, independent market studies have validated our belief that it provides a good business case," said Xaba.

"The mock-up represents its evolution from a concept to reality – proving that SARA is, indeed, on the move."

SOMMAIRE

SARA VISE À ÊTRE LE PREMIER DE SA CLASSE

La croissance du trafic aérien en Afrique a considérablement stimulé la demande d'avions de nouvelle génération, en particulier dans le secteur de l'aviation régionale.

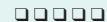
Sam Basch s'est penché sur un projet prometteur.

Le groupe sud-africain Denel cherche à se positionner dans une niche sur le marché d'aviation. La maquette d'un avion régional africain appelé SARA, a été présentée au salon Africa Aerospace & Defence à Pretoria en début d'année.

« Nous envisageons le projet SARA comme un système de transport économique du 21ème siècle pour l'Afrique, capable d'effectuer des routes point à point et d'opérer sur les petites pistes des aéroports régionaux », a expliqué Victor Xaba, directeur opérationnel de Denel Aerostructures.

La genèse du projet fait suite à une étude internationale sur les futurs concepts de routes régionales avec un avion de 20 passagers utilisant les technologies « vertes ».

Le projet SARA a reçu le soutien du JASC. Denel a pris la tête de ce programme qui dispose aujourd'hui d'un réseau, intégrant des universités, plusieurs ministères, des acteurs de l'industrie aéronautique et des organismes de recherche.



Selon Victor Xaba, une étude de marché entreprise par Lufthansa Consulting, a présenté des perspectives positives pour le projet SARA. Le programme créerait 2 000 emplois qualifiés sur 15 ans. L'étude montre également un marché dans six régions du monde qui connaissent un développement économique, pour 200 avions durant les dix premières années de production.

Une motorisation avec deux turbopropulseurs et des ailes hautes sont envisagées. SARA présenterait une masse maximale au décollage de 8 400 kg et un rayon d'actions de 1 500 milles. Ces caractéristiques lui permettraient d'opérer un vol avec 15 passagers de Lusaka jusqu'à Libreville, Cape Town voire Antananarivo.

Une étude de faisabilité de 18 mois pourrait aboutir à une phase de pré-développement puis à une phase de développement de cinq à sept ans avant qu'un prototype ne voit le jour.

Selon Alcino Cardoso, ingénieur en chef de Denel Aerostructures, les avioneurs se tournent vers de nouveaux matériaux pour fabriquer des avions plus légers, fiables et respectueux de l'environnement. Ils sont déjà utilisées avec succès dans des applications automobiles. « Notre industrie aéronautique s'intéresse aux fibres naturelles. Cependant, les exigences en matière de sécurité, de qualité et de certification risquent de retarder leur inclusion dans les structures des avions. Toutefois, Denel pourrait accélérer le développement et l'entrée des fibres naturelles dans le marché mondial lucratif des composites ».

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Alexander de Juniac, CEO of the International Air Transport Association (IATA), discusses the state of the African airline industry with Kaleyesus Bekele.

Airline funds must be unblocked – IATA boss

The foreign currency crunch, stiff competition, high taxes and poor airport infrastructure are just some of the challenges facing the African airline industry. One of the biggest recent problems is that airlines are meeting difficulty in repatriating their funds from certain African countries.

According to IATA, 18 African governments are holding a total of 1.4 billion US dollars in blocked funds. Nigeria has 339 million, Egypt 310 million, Sudan 250 million, Angola 190 million, and Algeria 125 million.

Alexander de Juniac, IATA's new director general and CEO, said: "We are pushing governments to organise the repatriation of airlines' blocked funds."

Juniac said that IATA, in collaboration with member airlines, had been able to reduce the amount of blocked funds in Nigeria and Egypt. He added that IATA continued to work closely on the issue with the governments of Nigeria, Egypt, Angola and Sudan.

"We are organising a coordinated effort with member airlines. We were successful in Nigeria and Egypt," Juniac said.

He also recalled the experience of Venezuela. "The government of Venezuela had refused to release airlines' funds and look what happened there. The airlines gave up and stopped flying to Venezuela. That is a disaster. But I am sure that is not going to happen in Africa because we are working with African governments successfully," he said.



Juniac, who spent his early childhood in Africa, speaks passionately about the continent. He said that African airlines were suffering from external competition coming from Gulf carriers, Turkish Airlines and European carriers. "There are two issues that African airlines should look at – cost and consistent investment in infrastructure," he said.

Many African governments look at airlines as sources of revenue, rather than seeing them as economic enablers. Governments allocate exorbitant taxes and charges that adversely affect the profitability of airlines, which have slim profit margins. "It is not only in Africa, it is everywhere. Governments consider airlines as cash boxes," Juniac said.

He said that IATA was trying to explain to governments that the airline industry was fragile and needed support. "Putting a tax of one dollar or euro per ticket is a severe hit to the profitability of the

Continued
on Page 94



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airline when it earns so little per ticket. So it is difficult.”

Juniac contends that, if governments reduced charges and taxes, they could bring much more prosperity in terms of creating jobs, GDP growth and trade. It would more than compensate for the reduction on charges and taxes.

He argued that lowering charges and taxes and implementing the Yamoussoukro open skies agreement would be favourable for the airline industry. “There will be losers and winners but overall it is good for the industry growth because it will boost passenger traffic.”

He said that there were not enough African airlines serving the inter-African market. “When you speak of competition with big foreign airlines, you are talking about the competition on the intra African market. Air France connects Africa with Paris; Gulf carriers connect Africa with Dubai, Abu Dhabi or Doha; Turkish connects Africa with Istanbul. But these airlines do not fly between African countries.”

In his view, African airlines should focus on serving African countries. “We do not have enough local airlines serving each country from point to point within Africa.”



Regarding infrastructure, Juniac said that African governments should consistently invest in airports. “Look at Kenya; it took many years to renovate the airport (Nairobi Jomo Kenyatta International Airport).

“It was completed a year ago and it is beautiful but it took so long. Kenya Airways is a full service airline with its hub in Nairobi. The quality of your hub is a key factor for the competitiveness of your airline.”

Juniac said that the Gulf states, and countries like Singapore, have understood the importance of developing aviation hubs for their overall economic growth. “Aviation development is a national strategy for those countries. They constantly invest in airport infrastructure that helps their national carriers prosper.”

He advised African governments to embrace aviation development in their national economic growth strategy and invest wisely in airport infrastructure.

Some African governments, such as Nigeria, are contemplating privatising their airports but Juniac said that IATA advises governments to be cautious.

He contends that privatisation has not led to cost-efficient and technologically efficient airport infrastructure. “The experience we had in Australia, Europe and Chile is not convincing. We say we are aware of these facts. Of course, we understand that to run an airport on concession is probably much better than doing it by civil servants. That is for sure. But the problem is that the company takes the concession at the highest rate. That means the cost increases and, at the end of the day, the bill will be sent to the airlines.”

L'entreprise de la liberté

L'industrie aérienne a amélioré sa résilience financière.

« Nous prévoyons donc un atterrissage en douceur et en toute sécurité sur le terrain de la rentabilité pour 2017 », affirme Alexandre de Juniac, le nouveau directeur de l'IATA, que Vincent Chappard a rencontré à Genève.

Selon les chiffres officiels de l'IATA, l'industrie mondiale du transport aérien va générer un bénéfice net de 29,8 milliards de dollars en 2017. Cela malgré des conditions plus difficiles liées à la hausse des coûts du pétrole et d'une croissance mondiale relativement faible.

Après une belle performance en 2016, l'IATA prévoit que 2017 sera la huitième année consécutive de rentabilité globale des compagnies aériennes malgré une baisse des bénéfices. L'effet positif sur la demande associée aux faibles prix du pétrole s'atténuera en 2017, abaissant la croissance du trafic à 5,1 % contre 5,9 % en 2016.

« Ces trois années représentent la meilleure performance de l'histoire de l'industrie, peu importe les nombreuses incertitudes auxquelles nous sommes confrontés. En effet, les risques sont abondants - politiques, économiques et sécuritaires. Et, la maîtrise des coûts reste une bataille de tous les instants dans notre industrie hyper-compétitive », a souligné Alexandre de Juniac lors du Global Media Day en décembre dernier, à Genève.

Selon Brian Pearce, économiste en chef de l'IATA, l'industrie aérienne crée désormais de la valeur pour ses investisseurs. « Heureusement, il y a une reprise de confiance des entreprises et de la croissance économique et nous espérons que cette tendance se poursuivra modérément en 2017. » Surtout face à une incertitude considérable après le Brexit et l'élection du nouveau président américain.

L'industrie est plus résiliente après plusieurs années de restructuration et de réorganisation de ses opérations.

« La connectivité continue d'établir de nouveaux records. Nous prévoyons de transporter près de 4 milliards de voyageurs et 55,7 millions de tonnes de marchandises l'an prochain. Et, près de 1% du PIB mondial est consacré au transport aérien, soit quelque 769

milliards de dollars. Le transport aérien rend le monde plus accessible que jamais et c'est un facilitateur essentiel de l'économie mondiale », a soutenu Alexandre de Juniac.

■ IMPÔTS ET TAXES

« Nous avons également besoin des gouvernements pour innover leur approche envers l'industrie et l'impact des coûts élevés des taxes et des frais. »

Les chiffres de l'IATA montrent que le fardeau fiscal mondial est de 123 milliards de dollars. Plus de 60% des pays mettent en place des barrières aux voyages en raison des exigences de visa. Le nombre de taxes sur les billets dépasse 230.

Et, pourtant les compagnies aériennes livrent environ un tiers des marchandises échangées à l'échelle internationale, en valeur. Ils supportent quelque 2,7 billions de dollars du PIB. Le nombre d'emploi associé à l'aviation est d'environ 69 millions. De plus, la connectivité mondiale favorise la prospérité. Mais les taxes et les impôts ralentissent la demande.

■ INFRASTRUCTURE

« C'est aussi une bataille constante pour que les gouvernements comprennent et répondent aux besoins d'infrastructure de l'industrie. »

4 milliards de voyageurs sont attendus en 2017 et 7,2 milliards en 2035. Cette croissance apportera des avantages économiques nets seulement si le développement de l'infrastructure suit. Selon l'IATA la perte de productivité liée à l'inefficacité des infrastructures représente des coûts directs chiffrés en milliards de dollars.

« Nos demandes sont relativement simples. Les compagnies aériennes ont besoin d'une capacité suffisante. Cette capacité doit être efficace. Et il doit être disponible à des prix abordables. Malheureusement, je crois que nous nous dirigeons vers une crise de l'infrastructure »,



VISION ET PRIORITES D'ALEXANDRE DE JUNIAC

Q : Comment voyez-vous l'IATA en tant que PDG ?

R : Mes impressions n'étaient pas nouvelles car j'étais déjà membre du conseil d'administration de l'IATA. Trois éléments se confirment quand on arrive à l'IATA : premièrement, que c'est une autorité qui est très écoutée et très respectée, à la fois par les organismes internationaux comme l'OACI et les gouvernements. Deuxièmement, la qualité du travail et l'expertise de l'IATA est très bonne. Troisièmement, il y a 1500 personnes qui sont ultra motivées et passionnées.

Q : Quelle est votre vision et quelles sont vos priorités ?

R : L'IATA doit être l'autorité de référence. C'est une autorité qui doit établir et mettre en œuvre les standards. Elle doit être une entité financièrement solide. Elle doit être le dépositaire et l'innovateur des normes mondiales qui facilitent cette entreprise mondiale. L'IATA doit être financièrement solide avec des produits et des services qui ajoutent de la valeur à l'industrie. Je crois fermement que notre performance économique est la clé de la liberté et pour être respecté par nos membres. Ce sont des compagnies privées qui évoluent dans un environnement dur, aussi devons-nous avoir une situation économique saine et solide. Nous devons être réactifs, conduire et préparer la voie pour être un pas en avant des changements qui touchent l'industrie. Nous devons être en première ligne pour aborder des questions délicates comme la sécurité et aussi en termes d'innovation, de nouvelles technologies ou de méthodes de paiement.

Q : Quel est votre avis sur le développement du transport aérien en Afrique ?

R : L'Afrique, c'est clairement un continent qui va se développer très vite. C'est une zone d'expansion formidable, encore « underserved ». Cependant, il y a deux facteurs importants : l'environnement et la sécurité politique. S'il y a un problème, cela fait chuter le trafic. Les infrastructures constituent un autre sujet majeur. Il faut que cela suive. L'IATA pousse les gouvernements, les institutions multilatérales. Il faut que tout le monde s'y mette. Concernant l'Afrique du Nord, c'est l'instabilité qui a engendré une chute du trafic. Je pense à la Tunisie et à l'Égypte. Il faudra attendre que cela se normalise pour retrouver une croissance du trafic. S'il n'y a pas de grosses crises ou de grosses menaces, la croissance devrait reprendre y compris en Afrique du Nord.

souligne M. de Juniac, qui pense que les gouvernements doivent équilibrer efficacement les intérêts publics et privés.

■ SÛRETÉ ET SÉCURITÉ

Le succès de l'aviation mondiale repose sur la sécurité, la sécurité, la durabilité et les normes mondiales. Ce sont les principales priorités d'Alexandre de Juniac et de son équipe.

Gilbert Lopez Meyer, responsable de la sécurité et des opérations aériennes de l'IATA, a précisé que la plupart des régions affichaient des améliorations par rapport à la moyenne quinquennale. L'IATA travaille également en

étroite collaboration avec l'OACI sur le projet intitulé « No countries left behind » pour renforcer la sécurité dans différentes régions du monde.

« Nous aidons l'OACI à faire davantage d'effort en matière de formation, de l'audit de l'IOSA et nous préparons les compagnies aériennes à obtenir la certification IOSA. L'IOSA est le moyen d'améliorer la sûreté. »

■ THE BUSINESS OF FREEDOM

« Pour moi, l'aviation est un business de liberté. » Selon son DG, l'IATA doit ouvrir la voie à la réussite de ce business de liberté et

rappeler aux gouvernements les avantages générés par l'aviation, les politiques et les infrastructures dont l'industrie a besoin pour réussir et l'importance de garder les frontières ouvertes pour le commerce et pour accueillir les gens en développant la compréhension globale.

« Et nous devons défendre ses avantages sociaux et économiques contre les obstacles aux voyages et les visées protectionnistes. »

Fort de son expérience et de sa passion, Alexandre de Juniac veut innover l'industrie aérienne de façon plus rapide et efficace avec le soutien de tous les partenaires. Pour que souffle un vent de liberté, de compréhension mutuelle et de prospérité.

all in a day

PEOPLE / PERSONNES

Tom Kok

Marcelle Nethersole *speaks*
to the director of AviAssist.



1

■ What does AviAssist Foundation do?

We champion aviation safety in Africa and are the only independent, non-profit organisation doing so. We provide expert safety guidance and training courses that are not available in the countries or sub-regions where we work.

The foundation publishes Africa's only aviation safety promotion magazine, *SafetyFocus*, to professionals in 42 African countries.

Most of our other activities take place in east and southern Africa, though we are keen to expand into the DR Congo and Angola.

We have carefully crafted a strong connection between our services and the educational and cultural background of African aviation professionals.

2

■ How do you implement aviation safety in Africa?

AviAssist was set up in 1995 to be a catalyst for safety – in our case the rate of safety improvements in Africa. We ensure that we stay in line with safety standards from organisations such as the International Civil Aviation Organization (ICAO) and International Air Transport Organization (IATA) and industry best practices. We engage with other safety support providers, such as the European Aviation Safety Agency (EASA) to ensure our work complements theirs. Our annual Safety in African Aviation Conference is unique in bringing together both industry and government in a non-conflicting setting. We keenly support the work of regional safety oversight organisations, such as the Civil Aviation Safety and Security Oversight Agency (CASSOA) in east Africa, as a great solution for safety progress.

3

■ What are the main challenges you see in African aviation?

One challenge is access to continuous professional education. Initial qualifications are often really good but access to short professional courses to stay up to date is limited in many places.

We have to be more pragmatic about accessing such training. There is a lot of expertise out there that can assist in pushing safety forwards while we work on Africa-wide certification of courses with the Association of African Aviation Training Organisations.

4

■ What challenges does the AviAssist Foundation face?

We are keen to scale up our activities to meet the growing demand for our services. Professional practising volunteer facilitators from well-respected organisations stock most of our activities. Sometimes it takes quite some effort to find that calibre of volunteers but perseverance pays off. We could do with more marketing and sales expertise to inform the region about our services to drive our programmes to the next level.

The scope of what we do also depends on the support of many loyal partners, such as the Netherlands Ministry of Infrastructure, Kenya Airways, KLM and RwandAir, but also smaller sponsors. We hope Ethiopian Airlines will also join our safety family at some point so we can help them maximise the safety capital at some of their destinations too.

5

■ What do you hope African aviation safety will be like in the next few years?

We have to work hard to sustain the progress made since the 2012 Abuja declaration on aviation safety.

An appreciation of safety standards with new ministers and new members of parliament requires a positive effort from our industry. Sustaining the current rate of progress in a growing industry may also require reform of daily allowance systems.

In-country safety training opportunities are then more likely to be built because the economic incentive to want to train abroad will be gone.

Also, we are keen to drive the non-academic skills in our industry, the 4Cs of 21st Century training: collaboration, communication, creativity and critical thinking. That will equip safety champions better to enlist the aid and support of others for safety – to provide leadership.

6

■ What does a typical working day hold for you?

Almost every day we are working on finding new expert volunteers and define new courses at the request of clients.

Putting together the quarterly *SafetyFocus* magazine takes quite some of my time. We have to find world-class content and advertising sales in order to keep making it available to African aviation professionals in 42 countries for free.

We are very excited building the AviAssist Safety Promotion Centre in Rwanda with the Rwanda Civil Aviation Authority and RwandAir.

It will be developed into one of Africa's leading safety resource centres with plenty of attention for the 4Cs I spoke about.

I also spend an important part of my time in Africa meeting with industry players, large and small, to ensure our programmes meet their demand and we can make business-to-business connections in support of safety.

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