

# African Airpower: a concept

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## ABSTRACT

The development of an African Airpower Concept starts by identifying the current operating environment and limitations. After these realities are identified, we lay out airpower requirements and cooperative strategies needed to address the current threats. The concept outlines broad strategic principles common across Africa that could be incorporated into tailored regional strategies. This concept draws on work done over the past decade by the US Air Force and especially US Africa Command, its air component (African Air Forces) and Air University in partnering with African air forces to develop capacity, capabilities and cooperation. Several African air forces and regional organizations have taken a number of initiatives during the 2010s that reflect some of the Concept's recommendations.

**Keywords:** Strategy, Airpower, Cooperation.

## RESUMO

*O desenvolvimento de um conceito de poder aéreo africano começa pela identificação do ambiente operacional atual e das limitações. Depois que essas realidades forem identificadas, traçamos os requisitos do poder aéreo e as estratégias cooperativas necessárias para enfrentar as ameaças atuais. O conceito descreve princípios estratégicos gerais comuns em toda a África que podem ser incorporados em estratégias regionais personalizadas. Este conceito baseia-se no trabalho realizado na última década pela Força Aérea dos EUA e especialmente pelo Comando da África dos EUA, seu componente aéreo (Forças Aéreas Africanas) e a Universidade Aérea em parceria com as forças aéreas africanas para desenvolver capacidade, capacidades e cooperação. Várias forças aéreas africanas e organizações regionais tomaram*

*uma série de iniciativas durante a década de 2010 que refletem algumas das recomendações do Conceito.*

**Palavras-chave:** África. Estratégia, Poder Aéreo, Cooperação.

## RESUMEN

*El desarrollo de un concepto de poder aéreo africano comienza con la identificación del entorno operativo y las limitaciones actuales. Una vez identificadas estas realidades, describimos los requisitos del poderío aéreo y las estrategias de cooperación necesarias para abordar las amenazas actuales. El concepto describe principios estratégicos generales comunes en África que pueden incorporarse en estrategias regionales personalizadas. Este concepto se basa en el trabajo realizado en la última década por la Fuerza Aérea de EE. UU. Y especialmente por el Comando Africano de EE. UU., Su componente aéreo (Fuerzas Aéreas Africanas) y la Universidad del Aire en asociación con las fuerzas aéreas africanas para desarrollar capacidad, capacidades y cooperación. Varias fuerzas aéreas africanas y organizaciones regionales tomaron una serie de iniciativas durante la década de 2010 que reflejan algunas de las recomendaciones del Concepto.*

**Palabras clave:** África. Estrategia, poder aéreo, cooperación.

## 1 THE CURRENT OPERATING ENVIRONMENT

The current operating environment in Africa has changed markedly in the last couple of decades. With a couple of notable exceptions, the threat of Cold War-inspired state-on-state conflict has receded. While civil wars continue in some regions, traditional threats have

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been replaced by the explosion of transnational groups that do not confine their activities to one country. Some of these transnational organizations threaten national and regional economies to include poaching, illegal fishing and mining. While not usually an existential threat to national security, these groups are crippling already weak economies and governments.

The greater threat emanates from Islamist violent extremist organizations (VEO) seeking to carve out operating locations within regions, particularly in Northwest and East Africa. The most notable examples are Al-Qaeda in the Islamic Maghreb (AQIM) and Boko Haram in Northwest Africa and Al-Shabaab in East Africa. These well-financed groups have found room to operate in lightly governed spaces and have had success in threatening many countries in Africa. Because they move freely across lightly patrolled borders, no single state can address this threat. These groups have become very proficient in exploiting the gaps between nations to strike and then cross borders to safe havens. This threat demands regional solutions.

While this threat right now is most acute in Northwest and East Africa, it is possible that violent transnational organizations will move south based upon increasingly fragile states. For this reason, it also makes sense for militaries, including air forces, in southern and central Africa to train and organize to meet this threat and actively seek to assist the other regions of Africa. By assisting their neighboring regions, these militaries can both slow the movement of these groups and prepare for potential future challenges. There are also various separatist movements and ethnic and sectarian tensions across Africa that surface. While these situations demand political answers, African militaries, including air forces, require training and equipment to enforce and keep the peace when these threats bubble to the surface. Ethnic group competition will continue to cause flare ups of violence that may call for military intervention. In particular, outbreaks of violence have occurred following hotly contested elections.

Most African militaries, including air forces, are not organized or equipped to maximize effectiveness within a challenging operating environment against violent extremist organizations, transnational actors and criminal enterprises. Instead, they have been organized and oriented in much the same way that the militaries of their former European colonial masters were - to fight interstate wars. Also, they have been frequently called upon to act in a policing function in order to quell domestic unrest or engage in peacekeeping operations abroad. Therefore, they do not possess the

requisite capabilities, organization, and training to meet the rising challenges.

No African country has the resources to build the air force capacity and develop the capabilities to meet these challenges on its own. Regional cooperation is not a luxury, but a requirement. The demand for intelligence, surveillance and reconnaissance (ISR) and mobility to meet the biggest regional threats within this environment exceeds the fleet capacity of all African air forces. Only by partnering can African air forces provide the air capabilities needed to support effective joint military operations against these groups. While African militaries have made significant strides in increasing regional cooperation, it has mostly been on an ad hoc basis relying on coalitions of the willing. Regional countries formalizing more cooperation mechanisms would improve overall military effectiveness. The need for cooperative air strategies, due to the high cost and technical difficulty of maintaining air force capabilities, is even higher than for the other military services.

## 2 REGIONAL AIRPOWER COLLABORATION

Various regional communities are already in place that include security and military functions that can meet the need for collaborative airpower approaches. The most active ones are:

- SADC Southern African Development Community
- ECOWAS Economic Community Of West African States
- EAC East African Community
- IGAD Intergovernmental Authority on Development (Eastern Africa)
- CEEAC Economic Community of Central African States (ECCAS)

In addition, there are four active regional brigades of the African Standby Force: West, Eastern, Southern, and Central. The Southern region has been most active in developing airpower cooperation. Thus, there could be four regional airpower strategies developed for Africa. For example, ECOWAS could oversee the development of an airpower strategy for West Africa using the concepts laid out here. North Africa lacks a functioning regional organization, but Morocco, Algeria, Tunisia and Mauritania could consult with West African countries to maximize synergies between the two, since the threat environment is similar between these countries with VEOs actively moving back and forth between the two regions. The goal could be for regional strategies to eventually merge into a single strategy, although this is

likely a longer term prospect. The East African Standby Brigade planning element could oversee the development of an East African airpower strategy. With South African leadership, SADC could oversee the development of a South-Central Africa airpower strategy in conjunction with the weaker CEEAC that focuses on developing the appropriate force structure and capabilities, while supporting both West and East Africa in developing their airpower capabilities.

There are not clear dividing lines between the challenges facing the various regions. The same pirates that threaten countries off the West African coast also threaten the economic interests of Central African states. There is active cooperation between various VEOs that reach into every region in Africa, even affecting Southern Africa. Criminal enterprises, such as wildlife poaching, also operate across regions. Because of these issues, there is a need for all regional strategies to be synched as much as possible through the African Union.

### 3 AFRICAN AIR FORCES TODAY

While African air forces have made significant strides in recent years, they still face a number of key challenges. While most air forces in Africa are a separate branch of their militaries (with some exceptions), they are small and underfunded. Air force personnel numbers are typically less than 10% of the country's overall military force numbers. Heads of government and legislators have many other budgeting priorities that relegate the development of air forces towards the bottom of their lists. Also, nearly every African military is dominated by armies and gendarmeries. Command structures are almost always dominated by army commanders, many of whom have not grasped what air forces can bring to security operations and are reluctant to advocate for investments in unproven capabilities.

The typical African air force is operating outdated equipment that is often barely functional. With few exceptions, they struggle to maintain disparate fleets of operational aircraft. While the fleets may look reasonably good on paper, the majority of aircraft are frequently grounded due to insufficient maintenance or lack of spare parts. There are training shortfalls across nearly all key support areas, including for pilots, aircraft and vehicle maintenance, supply chain management, safety, doctrine development, air traffic control, and intelligence analysis. As with procuring assets, few countries have the resources to develop training schools to adequately train airmen in all these areas.

Another problem is that resources are often poorly invested. When an African country does invest

a significant amount of money into an airframe, it is frequently the wrong airframe to meet the country's requirements. For some countries, expensive fighter aircraft require the lion's share of resources and provide little value for the operational missions needed. They are a huge financial drain, crowding out money needed to accomplish required missions such as ISR, air mobility, and close air support. Poorly conceived investments can cripple an air force for generations. African air forces also struggle from the "fleet of ones" challenge. Many have a very small number of several aircraft types. This creates an almost impossible challenge for air force leaders. Multiple airframes require multiple specialists, multiple supply chains, multiple maintenance crews, and multiple pilots with multiple skill sets. In a resource constrained environment, this situation is untenable. It is far more complicated and expensive to manage and operate a widely disparate fleet. An air force with fewer airframes saves significant resources in training, maintenance, and sustainment costs and gets a much better return on the investment. African militaries could seek to build larger squadrons of less aircraft types that can accomplish multiple missions. In most cases, an air force would be best served operating no more than a few platforms with enough of each aircraft to maximize training and supply efficiencies.

Another key challenge for today's air forces is the lack of regional interoperability. Where common platforms or systems exist, it is usually accidental as opposed to being part of a deliberate strategy. The African Union or regional blocs could develop a corporate body to identify regional requirements and recommend acquisition strategies that seek to improve interoperability across the region. Several countries working together to develop common equipment and capabilities will create much greater overall capability, through interoperability, than the same countries can create working individually at close to the same overall cost.

Another challenge is the lack of aviation infrastructure within the vast African continent. Many air forces have few operating locations they can use, limiting the effectiveness and coverage of air assets. Often they have to share facilities with civilian airlines. When facing nimble VEOs and transnational criminal groups, air mobility is a key enabler. But, fixed-wing mobility cannot be effective without operating sites and to where aircraft can deliver forces and equipment.

A less talked about challenge is retention. Few African air forces have service commitments. In many countries, the minute an airman is adequately trained in key aerospace disciplines, he becomes extremely marketable to the civilian aerospace industry and

separates from the service. Thus, air forces are left with inadequate number of motivated airmen, many of whom are doing admirable work with insufficient training. The result is inevitable; largely grounded fleets, poor flight safety records, and poor reputations within the defense structure.

#### 4 AFRICAN AIR FORCE REQUIREMENTS

With this operating environment in mind, African air forces need to be primarily equipped to accomplish three things; conduct intelligence, surveillance and reconnaissance; provide air mobility to ground forces; and provide a strike capability. African militaries are and will remain land-centric. But air forces provide force multiplying effects to the ground fight and require support and resources.

##### 4.1 Intelligence, Surveillance and Reconnaissance (ISR)

One of the greatest advantages of VEOs and transnational criminal groups is their ability to hide from African militaries; blending in with populations and crossing freely over porous borders. Further complicating this issue is that of poorly defined and commonly understood international borders which, in some cases, results in “no fly zones” ranging from 100-150 kilometers along entire international borders. Because of their propensity to hide and disperse, it is critical for regional militaries to have the capability to quickly find, fix, and track targets. This is why ISR is the most important capability air forces bring to security operations. There is a shortfall of ISR capacity and sharing mechanisms to meet the challenges and threats. ISR platforms require patrol long borders and find enemies within the state and crossing borders. While many African air forces recognize this challenge and are moving improve this capacity, there will be a shortfall of indigenous ISR in Africa for the foreseeable future.

ISR is a system of systems that goes well beyond the platform. Acquiring the platform is an important step, but the platform is valueless without the hardware and software needed to analyze the information and deliver it to the right decision makers in a timely manner. Even where fledgling ISR capacity now exists, insufficient PEDS architecture frequently prevents it from reaching operational commanders in time to act upon it. Every air force in Africa could improve their ISR system of systems capacity. African countries could also be developing intelligence sharing agreements to the maximum extent possible. ISR gathered by one country

is frequently valuable to its neighbors but rarely shared. Finally, effective ISR operations that deliver actionable information will quickly convince even the most dubious ground commanders of the value of an air force.

##### 4.2 Air Mobility

The second greatest air capability need in Africa is air mobility. Peace enforcement operations in Mali, Somalia and elsewhere have highlighted the vast distances even within regions in Africa and the critical importance of air mobility to bridge them. These operations have underscored the acute shortage of air mobility capacity on the continent, both to move forces rapidly into place and to sustain those forces. The only region with sufficient lift capacity is North Africa. The shortfall of air mobility capability has also hampered regional responses to humanitarian crises and in providing disaster relief.

African air forces require investment in additional light and medium fixed and rotary wing lift capacity. This is a substantial challenge due to the cost of air mobility. Even where capacity does exist, it frequently sits on the sideline due to ineffective funding mechanisms to pay for the use and maintenance of that lift capability.

The problem is twofold; countries or regional organizations require develop considerably more lift capability and the African Union and the various regional blocs require flexible and effective funding mechanisms to ensure full utilization of regional and continental airlift capability. The current lift capabilities are a fraction of what is needed to support the African Standby Force and the regional brigades in deploying and sustainment. The persistence of regional conflicts have also highlighted the need for regional organizations to utilize the airlift that does exist on the continent. The standby brigades do not have the air mobility support backing them up to move them into place, which will force them to sit on the sidelines while regional organizations search for the airlift to move them. At best, they will respond late to emerging crises, allowing them to escalate before they are in place to respond.

African Air Forces require partnering opportunities to better develop and utilize air mobility capability. This could take any of a number of forms. While a shared squadron of mobility aircraft is likely a bridge too far at this stage, sharing agreements between countries would be beneficial. If regional countries commit to buying common airframes, they could also form temporary and larger squadrons of those aircraft to meet regional crises. This has happened on an ad hoc basis where common airframes exist, such as where countries have pooled Mi-17 assets. Smaller countries could potentially buy flight

hours from larger countries that have the capacity to make bigger airlift investments. There are many potential options for increasing airlift cooperation.

Each region could start by identifying the airlift requirement to meet a large regional security challenge, such as the situations in Mali and Somalia. Those two contingencies serve as excellent markers for likely regional airlift requirements and could be used as case studies to identify overall regional airlift requirements. Once that total airlift requirement is identified, the countries of the region, through the regional military block or through the African Union, could develop a specific strategy that makes sense within the region, taking into account regional factors such as overall resources, sovereignty concerns, language challenges, and any number of other factors. Regional organizations could look at all potential collaborative solutions, to include potentially leasing civilian aircraft or developing a partnership with civilian carriers. While there are many potential solutions, the determined solution needs to be realistic within the regional context.

### 4.3 Light Attack

There is a significant lack of light attack capability on the continent that can provide close air support or attack a limited number of targets. A small fixed or rotary wing aircraft armed with some type of attack capability, whether that be a gun or surface to ground missiles constitutes a light attack capability. VEOs do not have sophisticated IADS systems and are unlikely to develop sophisticated air defense systems for some time to come. The right answer to targeting these groups is not sophisticated, hyper-expensive, and very hard to maintain and fly fighter aircraft. Investments in fighter aircraft with little utility to meet the current threat crowd out money needed to develop the right type of strike capability. A relatively cheap and slow flying aircraft with manageable flight hour costs is likely to be more effective against VEO targets than a Su-30 or an F-5 at a fraction of the cost with less threat of collateral damage.

Light attack capability could be developed that meets the current and likely future threat. African air forces require easy to maintain and operate light attack aircraft with acceptable flight hour costs. If an attack capability can be paired with an ISR capability on a common platform, the utility increases even further. This pairing of ISR and strike functions on an airframe significantly accelerates the kill chain, allowing an aircraft to target a VEO almost immediately after finding it.

While this African Airpower Concept seeks to minimize mention of specific platforms, the ideal platform solution could be easy to maintain and operate, be able to quickly carry out strikes, and be able to loiter over the target area. Many of the same assets that make ideal ISR, trainer, and light mobility platforms can also be configured as solid light attack options.

In sum, ISR, mobility and light attack aircraft are the three operational capabilities that individual African countries and regional blocs require. While support capabilities needed to ensure these capabilities are operational, support capabilities (doctrine development, command and control, sustainment, maintenance, etc.) are ultimately required to serve these three core air capabilities.

### 4.4 Joint Integration

“If one wishes to go quickly, go alone. If one wishes to go far, go together” (an African proverb). While ISR, mobility and light attack aircraft are critical to supporting effective ground operations, integration with the army and other services is just as important. At the same time, ground operations require the inclusion of air planners in order to take advantage of the force multipliers that air capabilities bring. Air forces also bring key capabilities to maritime operations and need to be incorporated into air-maritime operations. Air force ISR can enable maritime forces to better counter piracy and illegal fishing.

National and regional military strategies require joint integration. While regional cooperation is critical to winning the counter-VEO fight, joint cooperation is just as important. Services need to exercise together, plan together, and operate together. African air force senior leaders oftentimes experience resistance from their Army colleagues. Joint Ops such as these could address head-on both service interests and power relationship factors.

Air force leadership is required in the planning of all operations. In the counter-VEO fight, land forces will do much of the heavy lifting. But they cannot reach maximum effectiveness without significant Air Force support. This is particularly acute in Africa with the large distances and poor-to-non-existent roads. Indeed, many road systems depicted on maps are in actuality trails that often require ground transport to download cargo onto pack animals (and vice-versa) over significant distances. Air Forces are force multipliers that significantly increase the lethality of ground forces. But, Air Force planners require understand ground force goals, be integrated into the planning process, and have the right capabilities available. Too often in Africa, Air Forces are an afterthought. That needs to change to meet the current threat environment.

#### 4.5 Support Capabilities

The above capabilities do not happen in a vacuum. An effective Air force requires doctrine to understand what capabilities it needs, why it needs them, what kind of support is required to maintain them, and what it can do with those capabilities. The greatest current shortfall across Africa is logistics and sustainment expertise and facilities. Other support focus areas are intelligence analysis, professionalization, airfield security, and flight safety.

It is often said that amateurs study tactics while professionals study logistics. This idea is important when developing African air forces. Leaders that take account of logistics and sustainment support are more likely to develop successful air forces than those that do not. Effectively maintaining the fleet is arguably the greatest challenge facing any Air Chief. This requires logistics planning, trained technicians, and a reliable supply chain. A brand new aircraft will turn into a static display in a few years if a country has not put enough emphasis on this area or if the number of assets in the inventory outstrips the resources the air force can apply towards maintenance and sustainment. As a country increases the number of platforms it is operating, this challenge increases many times over. Each aircraft requires its own sustainment expertise and chain.

### 5 A COLLABORATIVE APPROACH TO AIRPOWER

With the current challenges acknowledged and the key air requirements identified, this article pinpoints the key principles to develop regional airpower strategies. The challenges cannot be overcome by any country acting alone and require a collaborative approach. Some of the potential collaborative solutions to overcoming these challenges are to develop regional training centers, shared acquisition strategies, shared intelligence, and a focus on developing the right capabilities to meet the three capabilities identified above; ISR, air mobility, and limited strike.

One idea that African air chiefs and US AFRICOM and its air component (African Air Forces) have discussed over the past decade is forming consortiums within regions. Under this construct, several nations share a common squadron of aircraft. Each nation buys flight hours by contributing a certain share of the overall cost. This is what countries in Europe did with the Heavy Airlift Wing in Papua, Hungary. While effective, these consortiums require a significant amount of trust between nations and a funding commitment by all the countries

participating in the consortium and aided by external donors. They also require a large initial investment and an organization that can manage the overall program.

For Africa, small scale consortiums focusing on tactical lift or ISR have merit. These types of consortiums require several steps over several years to operationalize. In the interim, Air Forces could increase cooperation with the assets already in their inventories while seeking to develop more commonality between platforms and systems. One of the first steps is to stand up regional training centers that allow effective training across all countries in the region.

#### 5.1 Regional Training Centers

While easier to establish than a shared consortium of aircraft, developing effective regional training centers is a challenging goal. The development of these key training centers requires an endorsed cooperative strategy and transparency and trust between all participating nations within a regional context. Ideally, a regional training center could be open to students from all participating countries in the region. This will be difficult to achieve initially because most countries are focused on attempting to train only their own air force personnel across the full spectrum of disciplines.

Ideally, regional organizational blocs such as SADC led by South Africa, would broker this. One country could stand up an initial pilot training program and offer a predictable and approved number of slots to every country in the region. Another country could stand up a regional engine maintenance training center. The training centers cannot operate on an ad hoc basis or other countries in the region will not be able to count on the slots they need to train their personnel. Formalized agreements need to be in place. Ideally, countries in the region can share resources to cover the initial stand-up of the school based upon that agreement. If countries are unable to pay for the training, an exchange of training slots between participating countries could also work.

If a country agrees to stand-up a regional training center, it could formalize a document that clearly outlines how many students from each country would be offered slots each year and at what price. Other countries will need to commit to sending a determined number of students to those schools. This creates predictability for both the hosting country and the sending countries and enables the school to be sustainable. What will not work is a country committing to training its own students first and throwing any leftover slots to other interested countries. This will do nothing but perpetuate the status quo.

Establishing regional training centers rises above the level of air force leaders and to that of heads of government and relevant ministries. Air force leaders within a region could develop a plan among themselves and advocate that plan to their civilian and military leaders. Once agreement is reached, the plan can then be finalized in the regional blocs and African Union. Considerable leadership and cooperation will be required to stand up these regional schools.

The first step is to conduct an assessment of all capabilities and schools that exist within the region to see who has what capacity already in place and to determine what opportunities exist. This assessment could reveal the countries that have comparative advantages and the existing training gaps. It makes more sense for a country that already has a relatively mature pilot training program in place to make it a regional school as opposed to a country with very limited pilot training capacity to stand up a regional school. A country with a noncommissioned officer professionalization program in place is the ideal candidate to stand up a regional NCO development school. Nearly every country has the potential to either stand up a regional school or to actively support a neighboring country's standup of a regional training center.

## 5.2 Professional Development Schools

Professional development schools are a separate category of training from the more technically oriented training. As with the technical training, there is a shortage of professional development air force schools on the continent. The schools that exist and those that are created could also become regional training centers, with each one supporting the professionalization requirements of several countries. Ideally, the cadre in the school would also reflect multiple countries.

The greatest professionalization shortfall in African Air Forces is on the enlisted side. While there are limited officer development opportunities, there are next to no enlisted development opportunities. The shortage of professional NCOs significantly hampers training of junior enlisted forces. The lack of professionalization of enlisted forces results in degraded force capabilities.

Each region could seek to have a minimum of five regional professional schools that offers development opportunities to all participating countries in the region; NCO development, SNCO development, junior officer development, field grade officer development, and senior officer development.

All regional training centers could have broadly agreed upon training standards. These training standards could be

developed on consultation with all participating countries from across the region. The proposed training syllabus could be shared with all countries, allowing regional feedback to shape the agreed upon syllabus. This enables the training to meet the needs of each country participating.

## 5.3 Shared Acquisition – Economy of Scale

Air forces that have common platforms are far more effective at operating together. This facilitates operational effectiveness and sharing of parts, resources and training. The regional training centers mentioned above will be much more effective when countries in the region share platforms. Regional countries could develop a process to make shared purchases. This will also allow for reduction in platform cost due to potential bulk purchases and reduction in maintenance contracts since those contracts will be cheaper per aircraft with an increasing number of aircraft.

## 5.4 Multi-Mission Aircraft

The ideal common platform in Africa is a small or medium-sized fixed wing platform that can perform all three primary roles identified as key requirements: ISR, mobility, and light attack. A country can maintain a fleet of a single airframe to yield all the benefits of a larger number of aircraft, while configuring the aircraft differently to perform multiple roles. In addition to the primary roles, a multi-mission aircraft could also be configured for aeromedical evacuation or used as a trainer.

While this African Airpower Concept attempts to be platform agnostic, the aircraft the US Air Force identified for this role in Afghanistan and Iraq is the C-208 Caravan. US Africa Command and its air component (African Air Forces) have been so impressed by the multi-mission track record in these locations, that it has been championing this aircraft as a multi-mission solution in Africa. A C-208 Caravan, currently being used by Mauritania, Niger, Kenya and other air forces, can be configured for any of number of roles. It is relatively inexpensive and can be fitted with an ISR ball, can perform a light mobility function, and can potentially be fitted to perform a light attack role. There are other fixed-wing and rotary-wing aircraft that can also serve in multi-roles that could be considered in regional acquisition strategy discussions.

Nearly any aircraft can perform multiple missions. But, some are far more suited to the three missions identified as the priority for the counter-VEO fight. Militaries in each region could determine regional requirements and commit to acquiring a common

multi-mission aircraft for most countries within the region. This will improve interoperability and lower overall sustainment and training costs. This is one of the most important airpower concepts. Nearly every other idea, from developing regional training centers to hosting regional exercises, is enabled by having common platforms and systems within the region.

### 5.5 Common equipment/systems

While common platforms help to maximize training and operating efficiencies and are very important, in terms of increasing interoperability, the platform is less important than what is on it. Air forces should view their purchases as a system of systems when seeking to establish interoperability and lower overall costs. It is even more important to develop common communications architectures and ISR systems in improving overall interoperability within a regional context. This requires acquisition strategies for the support architectures that enable the platforms. Communications datalinks that can communicate securely and effectively with one another are a requirement for building interoperability between air forces.

While there are many potential solutions, it is important that countries work towards a common solution. Five air forces using five different communications or ISR sensor systems will never achieve effective interoperability, even if they fly the same aircraft. Each region could seek to establish a regional air operations center (AOC) to command and control regional airpower to meet regional challenges. An AOC will be far less costly and more effective if countries within the region have invested in common systems and platforms. Regional air force leaders could meet regularly to discuss how to improve interoperability. They could develop a regional air force acquisition strategy to present to defense and political leadership.

### 5.6 Intelligence Sharing

Air force ISR assets are key to gathering intelligence. However, the lack of intelligence agreements between countries hampers effective cooperation. In the counter-VEO fight, effective and rapid intelligence sharing is critical. Information starts going stale the moment it is gathered, especially in the counter-VEO fight where the enemy groups are constantly moving and adapting. Information that is not quickly delivered to a unit that can act on it will be worthless. Likewise, information gathered by one country on a VEO that has crossed the border into another country is useless unless shared with

that other country. VEOs are actively exploiting the lack of intelligence sharing between countries by operating in “no man’s lands” on the borders between states.

Regional blocs could seek to broker regional intelligence sharing agreements. Where this is not possible, individual country leaders could aggressively seek to form bilateral and multilateral intelligence sharing agreements with other countries within the region. National leaders need to establish the agreements that allows the timely sharing of that information to maximize its utility.

## 6 EXERCISES

In order to operate effectively cooperate, partner nations require regular combined and joint exercises. While coalition operations are critical, they are also challenging to execute well. If the first time that forces operate together is during a real operation, those forces will struggle, whether it is joint operations or combined operations. Forces that do not train together will not effectively operate together.

Each region could have at least one combined and joint exercise a year, hosted by either the African Union or the regional bloc, which includes all regional air forces. The exercise could include both a desktop war gaming element and a “live” element that includes a live fly between partner nation air forces. These exercises could start with simple scenarios (humanitarian assistance, limited VEO activity, counter-piracy) and move towards more complex scenarios (VEO threatens state). Regional organizations could start with more focus on desktop exercises with the goal of having more live exercises in the future. All three key Air Force capabilities (ISR, air mobility, light attack) could be exercised in each joint/combined exercise. They all bring their own challenges and need to be exercised together. The African Standby Force has started combined and joint exercises on a continental level and Southern Africa on a regional basis, but much more needs to be done.

## 7 FUNDING MECHANISMS

The biggest challenge in developing collaborative approaches to airpower in Africa is to determine how to fund the efforts. When an African country develops airpower, the funding is often a struggle but eventually the money can be secured. However, with collaborative approaches to airpower, the funding is shared and open to discussion and agreement. Because collaborative approaches require sharing of resources, a formalized agreement is necessary. The funding needs to be



brokered between multiple nations. With this in mind, most countries are not in an ideal position to broker collaborative agreements. Ideally, a regional organization will oversee the discussions and agreements.

The primary guiding principle is that funding is proportional and fair. When countries are pooling resources to establish a consortium or a regional training center, each country should contribute a share that reflects the return they are getting on the investment. In the absence of funding agreements, countries can formally or informally agree to trade services, but this is not the ideal. Regional and international governmental organizations are in the best position to determine overall costs and oversee funding mechanisms to ensure the hosting country is not burdened with the majority of the costs. Of course, external donor funding is also required.

## 8 TIMEFRAME

The goals set for in this concept are ambitious, yet necessary. But, this document is a concept article intended to guide regional strategy development. Each regional strategy could establish clear objectives tied to dates. Because of the nature of the operating environment, it is important that each region develop an airpower strategy in place and operationalized as soon as possible. VEOs will not wait while countries develop cooperative strategies. Each strategy could have clearly defined goals tied to dates and funding mechanisms.

A good first step for each region of Africa is to systematically determine what capabilities currently exist and where partnering opportunities can be put into function immediately. This assessment could seek to identify which countries within the region already possess comparative advantages in key air force training areas, such as pilot training, maintenance, and intelligence analysis. Each region could seek to establish a regional maintenance training center. One of the greatest problems facing African air forces is the shortfall in trained maintainers. Three regional training centers of excellence could be established. Each region could identify a process and organization to guide a shared acquisition strategy that focuses on common multi-mission aircraft and supporting systems.

Each region could commit to improving its overall mobility capacity. Whether this involves more country-level investment in airlift capacity or the development of a consortium, the key is for the countries of the region to agree to a solution, determine the appropriate funding mechanism to meet the requirement, and codify it within the regional strategy. Each country could commit to

developing a way ahead for improving its ISR capability with the goal of having new capability in place in a timely fashion. The same applies to the development of a light strike capability.

## 9 CONCLUSION

For the foreseeable future, the greatest threat in Africa is the collection of loosely affiliated VEOs that threaten state and regional security. This is the threat that could be driving air force organization, investment, and training. Civilian and military leaders and Air Chiefs need to routinely review and adjust their national airpower strategies to address this new threat within a regional context, preferably nested under a regional airpower strategy.

African air forces could seek to develop and improve three primary capabilities; ISR, air mobility, and light attack. In addition, countries need to invest in air forces' support capability, particularly in the logistics and sustainment realm. No air force will be able to develop all of the capabilities necessary to support the joint fight against these groups. However, there are a number of steps that can be taken immediately to improve air forces to meet these challenges. Air forces could immediately develop an acquisition plan centered on investing in larger numbers of multi-mission aircraft that can meet multiple requirements. A single aircraft make can form the basis of a fleet and provide nearly all of the needed capabilities.

Regional air chiefs could develop a means to effectively communicate together and establish regional training and acquisition strategies. In order to seek such synergies, US AFRICOM and especially Air Forces Africa have been promoting an association of African air chiefs for more than five years now. Regional strategies will need to be sold through defense leadership to national leadership and through the regional block and African Union.

Significant resource shortfalls will continue to be a reality for national policymakers across Africa. Because of the resource challenges, the paradigm needs to shift from each country attempting to build the capabilities to meet its own defense needs to a regional and collaborative focus that views threats, challenges and solutions in a regional context. Today's challenges are less national than regional. VEOs and criminal enterprises do not confine their activities within the boundaries of a state, and they are happy to exploit seams between states.

In sum, this African Airpower Concept has identified the principles for the development of regional airpower strategies. Today's challenges demand regional and collaborative solutions.

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