

AIR POWER IN 21 ST CENTURY AFRICA

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SCOPE

The aim of this paper is to investigate the application, vulnerabilities, challenges and doctrine of air power in the context of the African security landscape of the early 21 st Century and the asymmetries it may entail.

In the past air power doctrine has been dominated by technological considerations. The emergent threats to security, however, require the accommodation of non-technological “soft” issues in the way air power is envisaged and applied. Only then will air power realise its full potential in contributing to regional, continental and global security.

SECURITY CHALLENGES IN A CHANGING WORLD

Issues that currently dominate the international security agenda include:

- International terrorism.
- The proliferation of weapons of mass destruction.
- Instability in regions characterised by weak or failing/failed states.
- Non-military threats to security, including environmental issues such as the effects of global warming.

The overall trend is that of the declining prominence of inter-state conflict and conventional warfare, increasing emphasis on the management and resolution of intra-state conflict and non-military threats to security, although some observers foresee the possibility of resource wars (particularly about energy resources and water) on the distant horizon.

THE AFRICAN SECURITY LANDSCAPE

In the post-colonial, post-Cold War era Africa has been characterised by the absence of any external military threat, relatively rare instances of inter-state armed conflict, severe socio-economic need, continued vulnerability to political instability, intra-state conflict, non-state or sub-state military and para-military threats and the threat of deprivation resulting from environmental conditions.

Lodge¹ categorised African armed conflict on the basis of the causes or instigators of conflict, as follows:

- Ethnic competition for control of the state.
- Regional or secessionist rebellions.
- Continuation of liberation conflicts
- Fundamentalist religious opposition to the secular authority.
- Warfare arising from state degeneration or state collapse.

- Border disputes.
- Protracted conflict within politicised militaries.

While some of these causative factors have declined, others appear to be gaining in intensity. The underlying causes of conflict are nevertheless very difficult to eradicate and it is highly likely that for the foreseeable future conflict in Africa will remain predominantly intra-state. This will be accompanied by para-military and non-military threats of criminal or natural origin, which will exacerbate the overall threat to human security on the continent.

ASYMMETRY IN THREATS TO AFRICAN SECURITY

Definition of Asymmetry

Asymmetry is not unique to either Africa or to 21 st Century conflict. It is a timeless feature of war/conflict but has been given prominence by the nature of security threats in the contemporary world, also in Africa.

Asymmetry has been variously defined or described as “unanticipated or non-traditional approaches to circumvent or undermine an adversary's strengths while exploiting his vulnerabilities through unexpected technologies or innovative means”² and “unconventional warfare that seeks to drive the military dimension into the civil dimension to offset Western superiority in high technology”³. Metz and Johnson⁴ describe the concept comprehensively:

“...asymmetry is acting, organizing, and thinking *differently* than opponents in order to maximize one's own advantages, exploit an opponent's weaknesses, attain the initiative, or gain greater freedom of action. It can be *political-strategic, military-strategic, operational*, or a *combination* of these. It can entail different *methods, technologies, values, organizations, time perspectives*, or some *combination* of these. It can be *short-term* or *long-term*. It can be *deliberate* or *by default*. It can be *discrete* or pursued in *conjunction with* symmetric approaches. It can have both *psychological* and *physical* dimensions.”

Like terrain and weather it is one of the factors to be taken into account in planning and executing military operations. It does not, however, define the role and functions of the military.

Conditions Promoting Asymmetry in African Conflict

A number of factors inherent in the security situation in Africa pre-dispose conflict toward asymmetric manifestations. Colonial legacies, ethnic divisions, poor governance and weak state institutions spur challenges to state authority by rebels/warlords/separatists i.e. by non- or sub-state entities vying for power and control over resources and territory or fighting for some level of political power and autonomy. There is also the possibility that the War on Terror could increase polarisation and conflict, and precipitate an upsurge in extremism, in areas where there are already significant religious tensions and/or a history of religious conflict.

Terrain in many conflict areas in Africa provide safe havens for belligerents and funding from illicit minerals gives access to lethal weaponry and enables protracted low-intensity conflict. In addition, large numbers of the population may be displaced by conflict and natural phenomena and may be in need of humanitarian aid to survive, often in large informal settlements and refugee camps. This provides a haven and source of recruitment – sometimes forced - for rebels.

Manifestations of Asymmetry

In these conditions asymmetry may manifests in many forms, including:

- Political/military aim. Governments will usually seek to maintain control over and the unity of states within colonial borders. Rebels and/or warlords may seek the autonomy of a part of a country or its resources.
- Method. State militaries may be conventionally organised, trained and equipped. Rebel forces may be highly irregular, using guerrilla doctrine and tactics, with no clear lines of battle, often intermingling with the local civilian population.
- Technology and Support. State militaries will usually be quantitatively and qualitatively more technologically advanced than rebel forces and conflict may involve disparate forces with distinct technological inequalities. Formal militaries may be highly dependent on external support and logistics, while rebels (and some defence forces) have the ability to live off the land for long periods.
- Will. This involves perceptions of survival or vital interests and will differ significantly between truly democratic governments, power elites monopolising power for personal benefit, rebels motivated by egalitarian ideals, minorities (especially ruling minorities) who feel threatened by majorities and political and/or religious extremists. It also involves the willingness to accept casualties and to die for a cause.
- Normative standards. Parties to a conflict may vary from forces adhering to strict standards of respect for human rights to those who hold scant regard for the rights and/or lives of others. This has resulted in the appalling brutality, even genocide that has characterised conflict in parts of Africa and in a willingness to engage in terrorism that may result in large-scale and indiscriminate loss of life.
- Patience. In contrast with the Western (especially US) preference for the quick resolution of conflict, African conflict is usually protracted, sometimes lasting decades without reaching a conclusive resolution.

Such asymmetries must be factored into the planning of military capabilities and execution of operations, but should also be taken into account in the broad context of conflict management and resolution.

DEVELOPMENTS IN AFRICAN SECURITY MANAGEMENT

Africa has a long history of commitment to collective security management, dating back to the founding of the Organisation of African Unity in 1963. This commitment was recently strengthened and confirmed by the transformation of the OAU into the African Union and in the establishment of specific AU structures to deal with conflict and security issues on the continent.

There has also been a concerted effort by African governments to strengthen institutions and improve the quality of governance down to local level. This has resulted inter alia in increasing multi-national cooperation, manifesting in the formation of the AU Peace and Security Council, the AU Stand-by Force, regional arrangements including SADC Protocol on Politics, Defence and Security Cooperation and SADC Mutual Defence Pact.

Governments have expressed their willingness to contribute to peace missions and there are currently a number of multi-national UN operations in African conflict zones, involving contingents from both African and foreign military forces.

While the needs are considerable and arguably exceed Africa's indigenous capabilities, it is evident that collective security management is taken seriously by the continent's leaders. If

Africa is to create a reasonable level of security for its people and play its rightful role in the international community, this commitment cannot be neglected.

SOUTH AFRICAN SECURITY POLICY

One of the central principles of South Africa's emerging national security policy is that the best way of ensuring own security is to promote safe environment in region, on continent and globally. The principles of defence in a democracy contained in White paper on Defence 1996 reflect this and it is reiterated in our defence posture as elaborated in Defence Review 1998, which states that:

- National security shall be sought primarily through efforts to meet the political, economic, social and cultural rights and needs of South Africa's people, and through efforts to promote and maintain regional security.
- South Africa shall pursue peaceful relations with other states. It will seek a high level of political, economic and military cooperation with Southern African states in particular.

South Africa is therefore intensively involved in conflict management and resolution in Africa in collaboration with our African partners, primarily through SADC and the AU. The SANDF is intensively involved in several peace missions, including Burundi, DRC, to the point where our current commitment is at more than double the level envisaged in the Defence Review of 1998 and is expected to remain at least that level indefinitely.

SOUTH AFRICA'S DEFENCE STRATEGY

The Defence Review of 1998 sets out the principal strategies to be employed in exercising the right and responsibility to ensure the protection of the state and its people against external military threats. These strategies are:

- Political, economic and military cooperation with other states.
- The prevention, management and resolution of conflict through non-violent means.
- The deployment of Defence Force as measure of last resort.

These strategies clearly go beyond the defence of the country and its people against an enemy at the gates and can equally be extended to South Africa's commitment to creating a safe environment and the extension of general security by peaceful means.

This intent is reflected in the three military strategic objectives set by the SANDF Military Strategy, encapsulating the role and functions of SANDF as contained in the Constitution. These are:

- (Self) Defence against aggression.
- Promotion of security (regional, continental and global).
- Supporting the people of South Africa (in practice, primarily through support to other government departments).

In terms of international law and the UN Charter South Africa has an inherent right to self defence against aggression and the self-defence function is undeniably and irrevocably a key component of the SANDF's mandate. However, the demands of evolving global and continental security landscape and our national security policy have resulted in increased emphasis on promotion of security and the ubiquitous needs of support to the people.

Budgetary constraints and the continued needs of defence transformation have created a certain tension between the requirements to maintain basic (but currently declining) self-defence capabilities while simultaneously satisfying the requirements of the so-called "secondary" functions. In addition, certain emerging security threats lie in a grey area between the military, the police and other departments. The responsibility for the management of such threats is in some cases unclear. There is thus an urgent need to address the balance between the diverse needs and to assign resources accordingly.

APPLICATIONS OF AIR POWER IN AFRICA

Evolution of Air Power Theory

The first application of air power was in battlefield surveillance and reconnaissance, initially with tethered balloons. However, as soon as the benefits of this became apparent, attempts were made to deny an opponent the use of the air by ground fire and by arming aircraft. Soon the concept of air superiority was born and since then the focus of air power has been FIRSTLY on securing air superiority.

Air theorists have also lent heavy emphasis to the strategic use of air power and as early as 1893, ten years before the first heavier-than-air flight by the Wright brothers, Major J.D. Fullerton of the Royal Engineers foresaw a "revolution in the art of war" and concluded that "...the chief work will be done in the air, and the arrival of the aerial fleet over the enemy's capital will probably conclude the campaign". This unrealistic and somewhat naïve view of air power as the decisive and almost autonomous guarantor of victory was perpetuated in the theories of Douhet and Mitchell and continue to the present day.

Commenting on air power in Korea, Air Chief Marshall Sir John Slessor observed that "...[t]he idea that superior air power can in some way substitute for hard slogging and professional skill on the ground in this sort of war is beguiling but illusory;all this is cold comfort for anyone who hopes that air power will provide some kind of short cut to victory".⁵ Slessor's words have proven true in many wars since but In the minds of many the air power role hierarchy remains air superiority, strategic bombing, followed by tactical support to ground forces, with the emphasis on the delivery of firepower at the expense of the other functions of command and control, reconnaissance/surveillance and mobility.

Technology has been a major driver of air power theory and it has been said that "...the effects of technology and the actions of practitioners have from the beginning played greater roles than have ideas..... One might conclude, with some distress, that technology itself may be today's primary air power theorist; that invention may, for the moment, be the mother of application."⁶

The question is whether this role hierarchy and functional emphasis, driven by technology, is appropriate in the emerging security environment, particularly in Africa. Will we come up with a balanced view of air power, or will we continue believing in a technological *deus ex machina*?

Air Power and Defence Against Aggression

Since conflict and war have since time immemorial been a part of human affairs and are likely to remain so indefinitely, defence against aggression will always remain key military function. However, inter-state conflict has been rare in Africa and the risk of future inter-state conflict is considered to be relatively low, particularly in the light of collective security measures and the strengthening of regional and continental structures.

However, defence against aggression does not imply only defence against external military threats. Intra-state conflict involves aggression against the state and its people by internal sub-state or non-state groupings, whether operating within the borders of a country or from sanctuaries beyond its borders.

Irrespective of the inter- or intra-state nature of aggression, all four of the air power functions – command and control, firepower (both air-air and air-ground), surveillance/reconnaissance and mobility – may find application. However, in past inter-state conflicts the air superiority capability of the belligerents and their application has been limited. Internal threats have

generally lacked air assets and could contest the free use of the air only by the use of ground-based weapons, usually no more than MANPADS and light anti-aircraft guns. The emphasis has thus been on the mobility, surveillance, fire-support and command and control functions, the provision of mobility and fire-support arguably being the most prominent functions.

It would take a major inter-African confrontation and a massive re-allocation of resources to substantially change this pattern – both unlikely in the evolving security landscape. Substantial major power intervention in Africa could, of course, alter the picture virtually overnight. However, would such intervention be aggressive, and if so, why? If it did happen, African countries would in any event be unable to meet the threat symmetrically and the only option would be to adopt highly asymmetric defences, including guerrilla tactics and a willingness to sacrifice and engage in protracted conflict, to turn it into a battle of wills and endurance, rather than a contest in force and technology. Such a scenario is rather unlikely.

In Africa, the emphasis in air power has thus not been so much on air superiority as on the supportive roles of providing mobility, surveillance and fire-support. This is unlikely to change and, if anything, the changing security environment exerts pressure away from strengthening of conventional capabilities, to point where maintenance of even basic capabilities is challenged.

Air Power and the Promotion of Security

The promotion of security may involve a wide variety of activities, from defence co-operation within regional and continental structures, military cooperation with other countries, participation in peace missions, international search and rescue, international humanitarian assistance and disaster relief and the provision of assistance in maritime law enforcement.

Air power can play an important and indispensable role in many areas. Mobility – whether for VIP transport and shuttle diplomacy, strategic, theatre and tactical lift (including fixed wing and helicopter) for the deployment, recovery, supply/sustainment of military forces or civilian agencies and the distribution of relief supplies, etc. – is clearly vital.

Peace missions, humanitarian operations and disaster relief will require surveillance/reconnaissance capability - visual, multi-sensor, manned, unmanned - to detect/monitor belligerents and displaced people, to monitor environmental conditions and to direct rescue and relief activities. Airborne Command and Control could be very useful in many situations, providing a birds-eye view and unconstrained communications.

The firepower role could be required during peace support operations, in a protective/defensive capacity for ground forces, convoys and fixed assets during peacekeeping, but potentially including fire-support during peace enforcement. Except in the unlikely event of a peace enforcement intervention in inter-state conflict, the use of the air will be uncontested by air-to-air capability. However, the ubiquitous danger of MANPADS to helicopters, transport aircraft and even light fighters in conflict areas makes self-protection measures and equipment essential.

While the emphasis will thus be on the provision of mobility and surveillance/reconnaissance, with a limited protective firepower role, it is evident that air power can provide important if not critical capabilities to the promotion of security. This has not been fully explored, much less fully developed, but if the SANDF is to support the national commitment to promoting security fully, air power has a key role to play.

Air Power and Supporting the People

Supporting the People involves a number of activities such as cooperation with the SAPS, borderline control, maritime support, disaster relief, search-and-rescue and the maintenance of essential services. While quoted in context of services internal to South Africa in SANDF planning, the concept could be generalised or applied elsewhere in Africa. In general, the provision of such services would, however, be a domestic matter for the country concerned. The exceptions are where trans-national issues are at stake and where assistance may be required in providing a particular capability.

While the topic may seem out of place in context of a conference dealing with air power in asymmetric conflict, several emerging security threats, particularly those with trans-national security implications, should nevertheless be considered.

Non- or para-military threats with potentially far-reaching security implications for Africa include:

- International terrorism. Apart from the direct and indirect effects of attacks against domestic and foreign assets in Africa, the use of Africa as a base of operations could precipitate direct foreign intervention. This could have far-reaching consequences in terms of African collective security management and defence.
- Piracy. The flow of goods and oil through the Red Sea, the Gulf of Guinea and around the Cape of Good Hope are critical to the African and global economy. The increase in piracy could thus have serious consequences but African navies have very limited capabilities. Air power could augment those capabilities considerably.
- Cross-border crime. This includes smuggling (especially of weapons, precious goods and drugs, particularly by air), cattle-rustling and poaching, each of which could have considerable economic impact (commerce, agriculture, tourism) and are/may be conducted by heavily armed gangs.
- Fisheries and other offshore asset protection. Fish, offshore oil, diamonds and potentially other minerals constitute important natural resources and a source of wealth for Africa. Illegal fishing and the sabotage or plundering of oil or mining installations are risks that must increasingly be managed. Naval capabilities in this regard are limited and can be augmented by air power.
- Displacement and uncontrolled migration of people. The large-scale displacement of people, pressured by conflict or drought, constitutes immediate human tragedy and a long-term threat to security. Air power can assist in the monitoring of displacement and in the delivery of humanitarian aid.
- Natural disasters and environmental degradation. Floods, droughts and other natural phenomena pose an immediate threat to security. Deforestation, agricultural malpractice and the effects of global warming pose longer-term threats. Air power can provide the means of both delivering immediate relief and of monitoring the extent and development of such phenomena, thus providing key data for security management.

The threats listed above are not primarily a military matter. In some cases they manifest a para-military character that clearly exceeds the capabilities of police forces and other government departments and thus militates in favour of military involvement, although mandates in this regard may be unclear. However, the cumulative effect of these threats on the security of Africa and its people could be devastating. It would therefore be extremely shortsighted to dismiss the issue as a non-military matter.

AIR POWER DOCTRINE IN THE EMERGING SECURITY ENVIRONMENT

Asymmetric Challenges to Air Power

As discussed earlier most of the threats currently dominating the security agenda are by definition asymmetric. This poses particular challenges to air power – challenges that will have to be overcome if air power is to fulfil its potential in countering such threats. Some of the more obvious issues are:

- Careful attention will have to be given to the aim of every operation – to the socio-political end-state that is to be achieved – and to how military means can best be used to achieve or promote that effect, linking the tactical, operational and strategic levels, so that actions at the tactical level do not undermine the strategic aim.
- The require coherence of planning and action can only be achieved if the conflict/threat dynamics are thoroughly understood at every level. The complexity of the situation thus requires the fusion of multi-source, multi-sensor information into a comprehensive intelligence picture.
- Adjustments may have to be made to force designs/structures and capabilities to accommodate “secondary tasks”.
- Adjustments to doctrine may be required to accommodate the requirements of emerging threats.
- Airmen and support personnel will have to be trained to cope with the demands of deployment in various roles. The deployment/training cycle will have to be adapted accordingly, cycling between:
 - o PSO training
 - o Away deployment on PSO’s (“Promote Security”)
 - o Conventional training
 - o Home deployment (“Support the People”)
- Deployment to remote areas means accommodating the high cost of strategic lift within limited budgets and ensuring the integrity of long and vulnerable support/supply lines.
- Lack of effective air traffic control makes it almost impossible to secure the airspace. The detection, identification, tracking and interception of illegal flights imply extensive and expensive air defence systems, again within limited budgets.
- The detection and identification of hostile forces on ground may be problematical due to terrain, vegetation and intermingling with the local population and legitimate traffic.
- The scarcity of high-value targets makes the economics of using expensive, advanced aircraft and weapons questionable. Less advanced but affordable platforms and weapons may be preferable.
- Action against air and ground targets will inevitably be limited under restrictive ROE. Planners and aircrew will have to operate within those parameters.
- Terrain, vegetation and concentrations of population may favour asymmetric action by hostile forces.
- Bases and infrastructure may be vulnerable to various forms of asymmetric attack, discussed below.
- The ubiquitous MANPADS make aircraft self-protection essential.

- Support during remote deployments may be hampered by the bureaucracy of procurement processes and dependence on external contractors. Flexible, rapid response systems will have to be devised.
- Compatibility between multi-national forces will be crucial.

VULNERABILITIES OF AIR POWER TO ASYMMETRY

The use of air power against hostile forces of the kind implied by the emerging threats to security is in itself a manifestation of technological asymmetry. Opposing forces will inevitably employ asymmetric tactics in an attempt to overcome the technological advantage bestowed by air power, or at least to limit its effect.

Tactics that could be used include the following:

Against Aircraft:

- Shoulder launched missiles against aircraft in the landing pattern and in contact areas.
- Mortar/rocket attacks on aircraft flight line, especially at night.
- Infiltration of the local support contingent to sabotage aircraft, aviation fuel, oxygen, etc.

Against personnel:

- Infiltration of locally recruited staff to poison water and food of aircrew and support personnel.
- The use of suicide bombers against air- and ground crew, living quarters, command centres or other infrastructure.

Against Infrastructure/Support:

- Denial of runways with cheap obstructions.
- Jamming of air traffic control or operational radio frequencies.
- Sabotage of approach and navigation aids.
- Landmines on routes to and from airfields.
- Attacks on overland supply routes, especially aviation fuel deliveries.

AIR POWER DOCTRINE IN THE CHANGING ENVIRONMENT

The changing nature of the security environment and the threats it entails, characterised by asymmetry and various associated challenges and vulnerabilities, must inevitably impact on the way air power is conceptualised and applied.

If past and present air power thinking has largely been a product of a fascination with technology, then the new security environment is precipitating a revision of thinking that is long overdue. Conflict and war are **firstly** about the human psyche. More than 2000 years ago the military philosopher Sun Tzu pointed out the central importance of moral influence and the harmony between people and rulers, and of humanity and justice in formulating victorious policies and making their governments invincible. Mao Zedong reflected this when he said, "[w]eapons are an important factor in war, but not the decisive one, it is man and not materials that counts". It is the mind that wields the sword, not the other way around.

Western military thinking has for centuries been pre-occupied with technology. There is, however, an awakening to the critical importance of the human factor, as evidenced by a recent article in the Air Force Times: "If you don't understand the cultures you are involved in; who makes decisions in these societies; how their infrastructure is designed; the uniqueness in their values and in their taboos – you aren't going to be successful." ⁷

This realisation has found expression in the concept of Effects Based Operations, which is currently enjoying considerable prominence in Western defence thinking. EBO are defined by the US Joint Forces Command as “[o]perations that are planned, executed, assessed, and adapted based on a holistic understanding of the operational environment in order to influence or change a system behavior or capabilities using the integrated application of selected instruments of power to achieve directed policy aims.” The desired effects often lie in the cognitive and socio-political domains and unless military force is used in ways that effect changes at that level, it may exacerbate the complex security issues of the 21 st Century.

This must inevitably influence our view of air power. Some of the changes or required changes in air power thinking are listed in Table 1.

Table 1: Air Power: Traditional and Changing Views

Traditional View of Air Power	Air Power in the Changing Environment
Force-on-force combat operations	Avoidance/absence of force-on-force combat
Clearly defined adversary	Adversaries evasive, difficult to identify
Aim: Destruction/defeat of enemy forces Classical OODA cycle	Aim: Socio-political effect – importance of UNDERSTANDING before Deciding, Acting
Air superiority role primary	Air superiority uncontested or irrelevant
Air power in autonomous or semi-autonomous role	Air power adjunct/support to ground forces or operations
Technology driven	Technology supported
Intelligence: ORBATS and technology	Intelligence: Politics and culture
Clinical, stand-off	Up close and personal
Predominantly a military matter	Close involvement with local population, civilian agencies, NGO's etc
Flexibility/versatility of Air Power	Mental/psychological flexibility of airmen
Training as AIRMEN	Training as Airmen AND soldier-peacekeepers

CONCLUSIONS

Changes in the security landscape over the last decade or two have given increasing prominence to intra- and sub-state threats and conflict and to non-military threats to security, at the expense of traditional views of conventional inter-state warfare. In addition, there is an increasing awareness that the resolution of complex security issues requires a thorough understanding of the dynamics of conflict and the achievement of socio-political change. This has led to a re-evaluation of the role, functions and utility of military power.

While air power theory was in the past dominated by a technological perspective, the challenges of the emerging security environment, with all its potential for asymmetry, require a change in the way we view air power. It is no longer not primarily about air superiority and the destruction of enemy forces, but about the subtleties of creating security, of influencing the way people perceive the world and think and act. And it requires a new kind of airman-soldier – not just a techno-warrior, but a soldier who understands that his role is ultimately to help create security.

Air power truly is a versatile and multi-faceted instrument and it can find many applications in defence against aggression, promoting security and supporting the people. However, if we are to use it to full effect in the complex security environment of the 21 st Century, we

must learn to use it with skill and innovation, looking beyond its technology to the way that technology can best be applied to alleviate or address the causes of conflict and insecurity. This means accommodating both the technological and the human dimensions in air power theory and doctrine.

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