

South African Military Logistics: A Holistic Perspective

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Abstract

During peacetime, the South African military has experienced cyclical neglect to the detriment of its ability and readiness to conduct and sustain expeditionary operations. Since the South African democratic transition, this pattern of neglect manifested again, which left the military largely unprepared for interventions and expanding involvement in peace operations in Africa since the late 1990s. The aim of the study on which this article reports, was to provide a contextual understanding of logistics as a strategic variable for the South African military, with specific reference to logistics related to expeditionary operations. Within this context, logistics is considered an important indicator of the functionality of a defence organisation. In the post-1994 period in South Africa, various dichotomies emerged between the political ideals of the ruling party pertaining to foreign policy, economics and development on the one hand, and the limitations that government placed on the South African National Defence Force in terms of its roles, funding and deployment, on the other. The paradigmatic tension between the design principles of the logistic system of the defence force and the predominant political thinking in government is discussed. Within the military context, the influence of leadership, old paradigms and legacy equipment on logistics and finances receives attention. The restructuring of the defence force in the late 1990s and the disruptive influence thereof on procurement systems and generic logistic functions, is covered. It is argued that the military has not undergone the necessary doctrinal innovation or reforms to promote efficiency, accountability and effectiveness within the domain of logistics for expeditionary operations.

Keywords: South African National Defence Force, Logistics, Expeditionary Operations, Peace Operations, Doctrine, Defence Procurement, Restructuring, Deloitte & Touche

Introduction

The article was not written by logisticians for logisticians. Rather it is an outside-in holistic perspective that explores South African military logistics from a strategic and top-down perspective. The article therefore aims at providing contextual understanding of logistics as a strategic variable for the South African military, with specific reference to logistics related to expeditionary operations. Although Department of Defence (DOD) annual reports and strategic business plans over the last two decades have confirmed serious logistics problems in the South African National Defence Force (SANDF), the breadth and depth thereof are often not sufficiently covered. From both an inside and an outside perspective, there seems to be consensus on the observable logistic problems in

the SANDF, which hamper expeditionary operations, but there is often no clarity on the origin of these problems, the higher-order limitations, or how to address these challenges.

Defence policymakers in South Africa are well aware of the importance of expeditionary logistics. Ideally, deployed SANDF units should have ‘joint and expeditionary sustainment capabilities that support the full spectrum of conflict, consistent with the joint operational concept’,¹ which implies the existence of a ‘single, integrated, responsive, end-to-end distribution system, capable of interfacing with inter-agency and multinational capabilities’.² As with other relatively young democracies after the Cold War, the achievement of such an ideal was hampered by legacy political and military thinking, and misconstrued assumptions about the role of society to fund the perceived needs of the armed forces.³ Insufficient military reforms and innovation since the SANDF became involved in peace operations, has inhibited the retention and enhancement of the expeditionary capabilities of the SANDF and its ability to support such operations logistically within a rapidly changing battlespace. The SANDF remained largely fixated on viewing peace operations as a secondary function to be performed through the collateral utility of its conventional ‘Growth-Core Force Design’, as specified in the 1999 White Paper on South African Participation in International Peace Missions.⁴ The extent of SANDF peace operations and foreign military commitments however quickly outstripped its initial assumptions for a limited external role. For over two decades (2005–2025), the DOD has acknowledged that the SANDF is facing significant logistic shortcomings with the maintenance and repair of vehicles, equipment and facilities, as well as limited skills and experience of logistic personnel.⁵

The article commences with a discussion of the concept of logistics and the importance of resources in the formation of military power and logistic capacity to sustain expeditionary operations. In the second part, the enduring role of the South African military in expeditionary operations since its inception is explained, but also the tension this created with localised military roles and logistic systems that came under increasing pressure since democratisation, especially during unilateral and intervention operations. The third part of the article presents a discussion of the influence of legacy political thinking and doctrine on a military, and the importance of logistics as an indicator of the functionality of a defence organisation. Here, the tension between centralised and decentralised approaches is discussed with reference to South African (SA) political and military transformation since 1994. The fourth part covers the influence of centralised approaches in the SANDF with reference to leadership, decision-making, logistics and finances. The fifth section considers the influence of legacy paradigms and systems from the Bush War era on SANDF capability development and logistics. The sixth section explains the detrimental influence of the restructuring of the SANDF during the late 1990s on its logistic capabilities. The seventh part discusses the logistic difficulties experienced during expeditionary operations within the context of joint operations doctrine and planning, decreasing funding, as well as procurement challenges. The penultimate section covers Project Thusano and the influence of Cuban technical projects, among others on the serviceability of SANDF vehicles. The last part pays attention to the lack of logistic reforms and accountability management in the SANDF.

Logistics Matter: An Old Refrain!

Logistics is the oldest and most complex managerial aspect of war.⁶ Logistics, i.e. the management of military means and resources, is an essential, critical, and very tangible reality of anything military. Militaries exist because of logistics, and can act strategically only if their logistics allows them to do so. There is no strategy or tactics without logistics. As Martin noted in a pragmatic way in a recent publication, ‘if you only get one thing right as a leader, opt for a correct strategy before anything else ... once you have worked on the strategy, you must always base your plans on sound logistics’.⁷ It is logistics that eventually makes the tactical and strategical possibilities possible; it is truly the art and science of military organisations and operations.

Kress defines logistics as, ‘a complex mix of physical entities, processes, and rules – a system – governed by mostly abstract concepts and principles, aimed at physically supporting military operations’.⁸ This definition highlights the fact that logistics is an integral part of the nature of military organisations as physical entities and, as such, is an essential, perhaps the most critical, part of a force development strategy – that dimension of strategy that has as its purpose the development of military institutions as an instrument of strategy. Force development, Drew and Snow remind us, concerns resources for getting the job done:

- The quantity of resources required;
- The kind of resources that are necessary; and
- The way these resources are moulded and shaped into a force structure with the potential to act as an instrument of strategy.⁹

The availability and moulding of raw resources into a tangible instrument of military power is therefore the first and most fundamental reality pertaining to military logistics.¹⁰ Resources are the first key ingredient to the practice of strategic effect by means of force development. The basic resources that are required for force development are well known, and are the critical raw materials needed for the manufacturing of military hardware, and their sophistication will have a defining effect on the eventual quality of armed forces – a sophisticated industrial base, a skilled population, technological sophistication, and economic refinement. The manipulation of these resources, taking advantage of its material strengths and offsetting the weaknesses, define the quality of the military organisation and the forces that are developed to shape the art of “the possible” in force employment outcomes. Very often, force employment decisions are made primarily to ensure access to these resources as an intermediate step on the pathway to strategic effect.

Ferris explains the intricacies in the making and formation of military power as the dichotomy of the material endowments of the state – geography, demography, and the economy – against the administrative or bureaucratic capacity and the political structure and will of the state. It would be possible to express this as an equation: military power equals material factors multiplied by bureaucratic capacity multiplied by political will. The material capacity of the state defines the military potential of the state; bureaucratic

competence and political will and structure define how much of that potential will eventually be harvested in the creation of concrete military capability. To quote Ferris, in aligning these three variables, resolve often outweighs wealth. Military capability, from a logistical perspective, is a concrete quality rooted in the resources a state taps for strategic purposes, as against those it might, but does not.¹¹ In short, the role of political will and bureaucratic capacity should not be underestimated in the military logistical process underpinning force development.

The second dimension of logistics ‘aimed at physically supporting military operations’¹² refers to the art of “the possible” by means of force employment. Any discussion of the logistics of force employment ought to begin with the basic argument that only forces that are in existence, prepared, and available, can be employed. Force employment or the ‘use of forces in a broad, national sense’,¹³ is informed by the nature of the threat agenda and revolves around two basic questions:

- Where will forces be employed, and
- Against whom will they be employed?

The answers to these basic questions have profound logistical implications. The employment of forces ought to be informed by or rooted in the logistical capacity to project, support, and sustain forces in time and space within a theatre of operations. Against whom the forces will be employed is underpinned by the logistical capacity to provide armed forces with the right logistical mix in support of combat and combat support elements to ensure tactical, operational, and strategic effectiveness in a theatre of operations.

A third critical reality pertaining to logistics and that should be harvested from Kress’ definition, is the interplay between the ‘complex mix of physical entities, processes, and rules’,¹⁴ that he describes as a system that is governed ‘by mostly abstract concepts and principles’.¹⁵ In short, logistics is made possible by means of both logistical hardware and software, the development and existence of military hardware, and the doctrinal ability to supply and sustain this hardware on operations. It is the software of logistical doctrine that makes possible the training and preparation of logisticians to ensure the effective management of logistics by means of operational procedures.

Eventually the military logistical system reaches its apex with the ability to get everything the soldier needs into their hands,¹⁶ ‘to support military operations and sustain the troops who take part in it’¹⁷ by means of its ability to:

- Facilitate movement and fire;
- Treat and evacuate casualties;
- Deploy and position human resources; and
- Supply the troops with food and other personal needs.¹⁸

Martin narrows the logistical needs of a military in operations down to four basic elements that the logistical system ought to transport to the front line for operations: ammunition, fuel, spare parts, and food and water.¹⁹ In supplying these four basic elements within the operational zone, military logistics must be managed by means of four critical guidelines, namely militaries ought to:

- Position their logistics as close as possible to the point of consumption;
- Predict their consumption within certain parameters;
- Move their logistics to where it is needed; and
- Make provision for a reverse feedback or flow of logistics to be able to recover both personnel and equipment from the area of operations.²⁰

In writing about operational logistics, Kress makes the point that armed forces have three options in the management of their logistics.²¹ The most primitive approach is for armed forces to obtain their logistics from the field of battle; alternatively, from within the direct operational zone they are operating in. An alternative is for the troops or the force to carry their logistics with them into operations. Both these two approaches are historical in nature, and have a tensive and dividing effect on the forces involved, which places a limitation on the sustainment of operations over time. The modern approach is to have the logistics shipped to the area of operations. The fighting elements then have to withdraw their supplies from depots that are as far forward to the front as possible. This is often the case where the battlelines are static and the fighting more attritional in nature. Alternatively, the fighting forces are being supplied by pushing logistics forward based on expected consumption. In the armed forces of the developing world, especially in Africa, it is not uncommon to have a combination of these three logistical options as a means to supply their forces.

Several critical developments on the modern battlefield are shaping contemporary military logistics.²² The first is the existential growth in the scale of operations due, in part, to developments in the range, complexity, diversity, and geographical reach of the weapon systems. Increasingly, the logistical supply chain is required to supply an extensive range of logistical items, over a broad area of operations, and at a high tempo. Obviously, technological progress also benefits the optimised management of military logistics. The developments in the scale of war however also imply that modern military logistics is much more vulnerable than in the past, and exposed to precision destruction over long distances.

The development of precision weaponry in the 1990s is the second critical development. These new precision technologies enabled more precise targeting from afar, mostly by means of airpower. It led, however, to a debate as to how precision technologies ought to be incorporated into existing combined arms manoeuvre operations.²³ The employment of precision weaponry is dependent on the availability of precision intelligence and precision logistics. Precision logistics in turn necessitates the detailed and precision management of logistics from the factory to the front in terms of the handling of highly sophisticated weapon systems.

Lastly, the dronification of war, i.e. the increased use of drones and unmanned aerial vehicles in military operations, affects military logistics in a profound manner as vividly demonstrated in the ongoing war in Ukraine.²⁴ This raises the question about what the effect of the dronification of war is and what it will be in future, especially with the proliferation of drone technology in land, maritime and air warfare in the latter war.²⁵ Bordering on speculation, it is possible to argue that the future might perhaps see fewer personnel in the area of operations, a greater reliance on technology, and growth in data management and analysis because of the large volumes of data that are generated through on-board sensors, cameras, and communication systems. Logisticians have to take responsibility of advanced data storage, processing, and analytics capabilities to handle the advanced influx of information generated by drone missions. The unique operational requirements of drones may also require modifications to existing military infrastructure to accommodate their unique operational requirements. This could involve the construction of new runways, hangars, communication facilities, and storage depots tailored specifically for drone operations. Together and as part of the growth in scale, the dronification of war means that logistics in depth has become exposed and vulnerable to attack over long distances by drones.²⁶

Looking from the Outside: Contextual Realities Underpinning South African Military Logistics

Historically, the SA military had to fulfil three critical roles. The military had to serve as a deterrent against external threats. At the same time, though, the military was invariably, and since the creation of the SA military in 1912, required to conduct expeditionary operations, mostly into Africa. The most important and sustained involvement of the SA military, however, has always been in the domestic security domain.²⁷ In a strange and somewhat ironic way, the SA military has habitually been very reluctant to deploy inside the country, and has never been fully orientated, equipped, and prepared for domestic military operations, with the 1980s and early 1990s perhaps exceptions in this regard. Logistically, the roles of deterrence, expeditionary operations, and domestic deployments are divergent in their requirements. Deterrence necessitates the maintenance of comprehensive strategic reserves. The logistical needs for expeditionary operations place the emphasis on an agile logistical projection capability. Domestic deployments have consistently relied on the decentralised prepositioning of logistics for the rapid projection of force. Domestically, the need for the logistical maintenance of strategic reserves, an agile ability to project logistics internationally – predominantly into Africa – and the need for the decentralised prepositioning of logistics domestically have placed a heavy and carefully calibrated demand on the management of logistics by the SA military.

Moreover, Africa as a strategic landscape and domain has placed – without exception – a heavy demand on logistics, and this is also increasingly the case for the domestic deployments of the SA military. The most critical variable has been the limited, disconnected, and often poorly maintained infrastructure that made the projection of logistics over long distances via road and rail highly frictional or difficult. These factors are compounded by the challenging geography that often impedes the quick and agile

projection of military logistics to the point of consumption. Those who have never been to Africa are often surprised by the extensive distances over which logistical supply is done in Africa. From a cultural, and perhaps quite sensitive perspective, logistics are also often impeded by a culture of deconstruction and vandalism that is especially acute in the current SA strategic landscape,²⁸ as demonstrated with attacks on commercial vehicles within the context of labour disputes over foreign truck drivers.²⁹

From a historical and logistical perspective, South Africa has a pattern of peacetime neglect of its armed forces.³⁰ It happened in the 1920s and 1930s in the era after the First World War; it happened in the 1950s after the Second World War; and it is the case in the period of relative peace in the aftermath of the Cold War. Moreover, SA military logistics have predominantly been based on a continental strategy with the Army as the primary actor in the logistical drama. From a legacy perspective, the SA military logistical system – in doctrine and equipment – relies extensively on the SA military experiences in Southern Africa in the 1970s and 1980s.

Since 1994, SA military logistics has been profoundly influenced by variables in the SA society in general and within the SA military. From a broad societal perspective, South Africa already had to face the realities of network and systems disintegration and, in some instances, also failure.³¹ This specifically concerns the SA rail, road and air transport networks as well as the electricity, water and sewage systems, which cannot meet the needs of the private sector to enable sufficient economic growth. This is tied to a process of bureaucratic ineptitude and deindustrialisation in society in general, which also deeply affects the armaments industry and other state-owned enterprises (SOEs), and the support of the latter industry and SOEs to the SA military in South Africa specifically. Following the underfunding of the military and the lack of government support to promote products, the SA defence industry, with recognised expertise especially in landward solutions, has shrunk from 3 000 companies employing 130 000 personnel in 1990, to 120 companies with only 12 500 employees in 2017.³² This has compelled several companies to focus predominantly on export markets without government support. Defence research and development funding has also declined,³³ which has a negative influence on maintaining expertise to address future military technology and capability needs.³⁴ Even basic commodities are affected by a declining industry. This includes the hollowing out of Denel as an SOE.³⁵ At times, for instance, shortages in ammunition and propellant occur due to limited local manufacturing,³⁶ accidents at munitions factories, and arguably, various export orders.³⁷

From the inside, the SA military has gained valuable experience through force projection operations into Africa and domestic military deployments. At the same time, however, the military was exposed to institutional erosion and degeneration of its corporate logistical memory, specifically concerning an in-depth and operational understanding of the military logistical doctrine. This is often tied to the neglect of the logistical management of strategic risk and the absence of comprehensive and detailed contingency planning for scenarios that may unfold within the society and the region.

Historically, the SA way of war often implies that South Africa deploys alone or as the lead nation, except in United Nations (UN) and/or African Union (AU) missions. The SA military is therefore seldom employed as part of a higher-order coalition or alliance in expeditionary operations. The peace mission deployments into Africa the last number of years are, perhaps, an exception to this rule. Although the SA military preferred in recent years to deploy within a multinational context for purposes of legitimacy, as was the case with recent deployments to Mozambique and the Democratic Republic of the Congo (DRC), the de facto reality is that the SA military operates mostly by relying on its own support systems. That means that they are mostly reliant on their own logistical system from South Africa during unilateral operations (e.g. Burundi in 2001),³⁸ and especially during intervention operations, such as Operation Boleas in Lesotho (1998),³⁹ the Central African Republic in 2013,⁴⁰ as well as the 2023 deployment to the DRC as lead-nation for the Southern African Development Community (SADC) Mission in the DRC (SAMIDRC).⁴¹

Institutionally, the SA military is an interesting blend of the British regimental system, the experiences and practical approach to war of the Boer commandos, and the irregularity of African war.⁴² In addition, and from a doctrinal perspective, the nature of African conflict and of African geography⁴³ have always had a profound influence on the SA way of war and its logistical supply system. It is a way of war that places a high emphasis on mobility, independent manoeuvre, delaying battles (*vertragingsevegte*), and the avoidance of the occupation of geographical features and destruction of infrastructure, such as towns and cities.⁴⁴ Historically, the importance of intelligence, the agile projection of power, and strategic reach were key building blocks of the SA military doctrine. This provided South Africans with freedom of action to fight on their own terms in foreign territory.⁴⁵ South African equipment and firepower were designed specifically for agility and reach in the hot and dry conditions of savanna-type terrain. At the same time, the SA way of war often lacks a clear operational design underpinned by comprehensive operational planning and design processes driven by realistic and achievable operational objectives. South African operational preparation then often suffers from a clear outline of the military end state, a description of what success will look like.

South African Military Logistics and Contemporary Political Realities

According to Young, logistics is an important indicator of the functionality of a defence organisation, and the political thinking, concepts and military doctrine that inform and drive logistic systems become embedded within organisations, and are difficult to change.⁴⁶ Whereas Western logistic concepts and systems are optimised and decentralised for expeditionary operations to enable commanders to plan and execute missions successfully, Marxist-inspired systems assume that ‘society and the economy exist to provide the necessities to the armed forces to protect the country, party and revolution’.⁴⁷ In dysfunctional defence organisations, logistics is centralised, while procurement is not necessarily optimised for operations or to empower commanders for mission success, but rather to achieve broad developmental or nationalist goals.⁴⁸ Centralised logistic systems

cannot meet the demands of fast-changing conditions or the actual requirements of commanders at the front in expeditionary operations. Since democratisation in 1994, SA governance, society and consequently also the armed forces have undergone significant political and organisational changes that have influenced military logistics and operational effectiveness.

The policy of the African National Congress (ANC) and its tripartite alliance partners to correct the injustices of apartheid through a National Democratic Revolution (NDR) became government policy in April 1994, with a strengthened socialist focus in 2007.⁴⁹ The NDR had to transform the SA state and economy, through central planning, into a non-racial and classless society in which wealth would be shared.⁵⁰ Government expected the DOD to contribute towards national development in terms of reducing inequality, unemployment and poverty, which competed with the fulfilment of the constitutional role of the SANDF.⁵¹ The ANC considered state intervention in the economy a necessity, and SOEs as the ‘vanguard of the developmental state’ in South Africa.⁵² The retention of and continued government bailouts for underperforming SOEs, such as Transnet, South African Airways and Denel, especially since 2009, demonstrates the ANC policy to retain central government control over key logistic sectors. There is, however, a great need for privatisation and the removal of SOE monopolies, particularly to improve logistic infrastructure in order to facilitate increased exports and economic growth.⁵³ According to Cawthra, security decision-making under the Mbeki administration, including decisions on external military operations, had become increasingly centralised within the presidency,⁵⁴ instead of arguably allowing decentralised planning and coordination between departments to help shape political objectives with consideration for limited means, especially military resources for peacekeeping commitments. This occurred despite the establishment and role of the National Office for the Coordination of Peace Missions (NOCPM) within the Department of Foreign Affairs (DFA)⁵⁵ in 1999,⁵⁶ since the DFA was responsible for coordinating and overseeing peace missions ‘at a national and international level’,⁵⁷ in consultation with the DOD. Resultantly, in 2003, Alden and Le Pere raised concerns about the limited capacity of the SANDF relative to the ambitious SA foreign policy.⁵⁸ One of the unanswered questions is why Parliament allowed the SANDF to be deployed in peace operations beyond the set limit of one battalion group as specified in the 1998 *Defence Review*⁵⁹ and the 1999 White Paper on South African Participation in International Peace Missions.⁶⁰

The constitutional role of Parliament to exercise oversight over external operations was insufficiently performed.⁶¹ The Joint Standing Committee on Defence (JSCD) often considered deployment letters on an ad hoc basis, and with frequent delays with reference to the deployment dates. The JSCD, for example, did not debate deployment letters in 2004, 2009, 2010 or 2012.⁶² Following external interventions with significant battle losses in Lesotho (September 1998) and the Central African Republic (March 2013), the JSCD only held one review meeting, with narrow scope for debate, after each of these operations. This lack of parliamentary oversight regarding SANDF operations was indicative of the executive authority eroding the oversight role of the legislature: ‘the notion of executive

dominance is central to the negative trajectory of oversight'.⁶³ Through the executive authority, the ruling party exercised centralised control over the economy and military affairs, which undermined pluralism, parliamentary oversight and interdepartmental cooperation on external deployments.

Since 1994, the ANC, as ruling party, furthermore allowed the continuation of its communist revolutionary culture and the use of informal Umkhonto we Sizwe (MK) structures to circumvent the SANDF chain of command,⁶⁴ as well as formal DOD decision-making bodies and processes, to make strategic decisions. In doing so, the ANC established a de facto subjective civil–military relations (CMR) system within the DOD, which undermined the *de jure* objective CMR model⁶⁵ prescribed in the Constitution,⁶⁶ and the SANDF Code of Conduct.⁶⁷ Such a revolutionary culture stands diametrically opposed to the principles of liberal democracy, especially since communist ideology is based on the ‘the principle of absolute, unpredictable, and unaccountable power by the party’.⁶⁸ Consequently, former MK leaders in the SANDF became embroiled in ruling party politics, which blurred the lines between party and state.⁶⁹ This undermined the professional independence of the military profession, the ability of officers to advise politicians honestly on external operations, as well as transparency and accountability regarding strategic decisions and resource management. The ANC thus allowed centralised decision-making in the executive and informal party structures in the SANDF to have a dominant influence on military affairs, instead of allowing professional experts to inform decisions.

The SANDF Leadership and Centralised Logistics

Centralised decision-making manifested not only within the executive, but also in the SANDF, especially under the “new guard” comprising mostly former MK members. For example, the Defence Staff Council (DSC) tended to postpone strategic decisions, which prevented decentralised decision-making and mission command in particular.⁷⁰ Instead of making tough strategic decisions, the DSC thus had the inclination to become involved in the centralised micro-management of mundane logistic matters, which should have been delegated to lower-level decision-makers.⁷¹ This tendency created a culture of indecision and of shifting decision-making further up the chain of command, which produces unresponsive outcomes, or strategy by default instead of design. This indecision and upward buck-passing reflect lip service to the principle of mission-command, distrust in subordinates, and the disempowerment of commanders.

Before 1994, neither MK nor South African Defence Force (SADF) members were exposed to decentralised budgeting, balancing budgets, transparency or public accountability in a democracy, since they were used to push-logistic systems, and war-funding models from the Cold War era.⁷² The SANDF thus received a centralised logistic procurement⁷³ and financial system from the SADF. Former MK members also operated under a centralised logistic system during the liberation struggle against apartheid,⁷⁴ and did not understand why the SANDF had to spend so much on maintenance, since their training was based on Cold War era Russian doctrine, which preferred the replacement of equipment rather than continuous and intensive maintenance. Both former SADF and former MK members

thus functioned in centralised logistic systems during the Cold War period, and lacked the mindset and experience of managing a peace-time military in a democracy, where the SANDF leadership had to justify the defence budget relative to other national priorities. The leadership of the SANDF had unrealistic expectations that government and Treasury had to meet the budget requirements of the military, instead of proactively engaging stakeholders about the proper funding of defence, and adjusting military strategy according to allocated funding. Resultantly, the SANDF has been politically ineffective to obtain the required funding and resources to fulfil the constitutional mandate of the SANDF.

The Influence of Legacy Paradigms and Systems on SANDF Logistics

The SANDF clings to legacy military concepts of the Bush War era and conventional equipment, especially since its force design, funding and understanding of its primary role revolves around a conventional force for national defence.⁷⁵ From a defence industry perspective, the SANDF strives towards national self-reliance, and the ability to maintain all its equipment in South Africa, particularly for the conventional defence of the Republic of South Africa (RSA). The SANDF maintained this conventional paradigm despite the self-acknowledged implausibility of a conventional threat against the RSA.⁷⁶ This paradigm also inhibited the SANDF to re-design its forces and support systems properly for peace operations, which became a continuous commitment on the African continent, and required logistic support over long external lines of communication, for which the SANDF was not optimised. The logistic system of the SANDF was inherited from the SADF,⁷⁷ and was designed to support forces in northern Namibia and, at most, southern Angola for brief periods, but not for expeditionary operations in tropical Africa. As South Africa became more involved in multinational UN peace operations on the continent, the SANDF became particularly reliant on UN logistics, which was provided in the mission areas. This inhibited urgency and pressure to re-design the logistic system of the SANDF for unilateral expeditionary operations. Military training and field exercises also did not pay sufficient attention to addressing potential logistic challenges for future expeditionary operations. Resultantly, expeditionary operations, such as SA intervention in the Central African Republic in support of the Bozizé regime against Seleka rebels in early 2013, and the recent SADC Mission in the DRC (SAMIDRC) – verified the limitations of the logistic system of the SANDF and the inadequate capacity to sustain expeditionary operations.

The SANDF tended to formulate new peace-time military strategy, without planning for the phasing out of legacy systems.⁷⁸ There has been widespread reluctance to close down capabilities and phase out old systems that have become too costly to maintain. Many generals did not want a negative legacy, for instance for closing capabilities.⁷⁹ Indecision on closing legacy systems aggravated the affordability problems of the SANDF, especially operating funds to sustain operations. By 2010, the shortfall on the SANDF operating budget was R3 billion.⁸⁰

As the “new guard” started to dominate top military positions in the new millennium, the SANDF leadership would intermittently toy with the idea of replacing certain main

equipment with Soviet-made systems, with insufficient consideration of the influence of such change on a logistic system that was designed around Western and particularly North Atlantic Treaty (NATO) standards⁸¹ and engineering philosophies. For example, in 2013, the South African Air Force (SAAF) strongly considered the acquisition of three Russian-made Il-76 medium-transport aircraft to improve its airlift capability. According to Heitman, such an acquisition ‘would mean an overhaul of the logistic system to keep them operational’.⁸² As SANDF service chiefs tried to retain their conventional prime mission equipment with a declining defence budget, the need for new medium-transport aircraft, as well as the actual operational requirements of forces deployed in external missions, especially in the Great Lakes region, did not sufficiently influence defence policy, strategy or capability development for expeditionary operations. Additionally, critical logistic capabilities, such as the obsolete SAMIL family of logistic vehicles, were not replaced.

The SANDF Restructuring Project with Deloitte & Touche

After democratisation, the SANDF initiated a restructuring project with the contracted business expertise of Deloitte & Touche to make the organisation more cost-effective.⁸³ The implementation of this restructuring process, which was based on business management principles, commenced in 1998 and dismantled the functional provincial Command Headquarters system. This restructuring created an inflated support force structure above unit level and had a devastating influence on the logistic functions of SANDF units, particularly generic functions that enabled units to be deployed and sustained in the field. The SA Army, for example, lost control over its technical support units and certain logistic functions to the Chief of Logistics.⁸⁴ At battalion level, personnel structures only make provision for first-line logistic functions, which is inadequate for sustaining forces in the field. The SANDF furthermore lost critical support functions with the establishment of General Support Bases (GSBs), which had to be shared between various units. Unit catering, for example, was outsourced, which reduced the ability of units to deploy field kitchens for exercises and operations. Commanders therefore gradually lost control over logistics as a command function. Positions within the new GSB structures were considered “common posts”, which did not require applicants to have logistic course qualifications or relevant support function experience. Consequently, GSBs were not fully staffed by logistic experts, which contributed to the failure of these support bases.⁸⁵ The logistics mustering, as a specialised field, was subsequently eroded with negative consequences for the functionality and status of the logistics corps. The GSBs were not optimised for the logistic needs of the SANDF and turned out to be more expensive than the former regional Command Headquarters. The SANDF restructuring project with Deloitte & Touche thus fragmented critical logistic functions into separate “silo” structures, which constrained the operational functionality of the defence force.

The centralisation of procurement functions at centralised procurement service centres, and the Logistics Division, disempowered unit commanders to spend their budgets according to force preparation needs. Units distantly situated from Pretoria and other procurement service centres, as well as support bases, consequently experience significant procurement delays.⁸⁶ The extended timelines involved in the procurement process in general, especially

tender processes, new contracts and registration of new service providers, aggravate delays.⁸⁷ Centralised procurement furthermore creates bottlenecks with the processing of authorisations to spend funds above certain amounts, which also makes it practically difficult to spend larger budgets or additional funding for the SANDF. This problem is aggravated by the lack of logistic specialists and bureaucratic capacity to expedite the spending of funds according to plans. This includes a shortage of full-time logistics codification experts.^{88,89} In late October 2016, Brig. Gen. Edward Mulaudzi (Director: Procurement Management), explained to the Portfolio Committee on Defence and Military Veterans, that the SANDF faced serious logistic skills challenges, especially the retention of procurement skills, ‘The biggest challenge in the DoD was the skills gap, which had resulted in irregular expenditure.’⁹⁰

Since the 1998 restructuring process, a disconnect exists between logistic functions and command-and-control structures.⁹¹ Due to incompatible systems and procurement processes, staff officers from Joint Operations had to spend an inordinate amount of time to coordinate sustainment between the various SANDF services and divisions for operations.⁹² Moreover, while commanders right down to unit-level have to receive their delegated authority, responsibility and accountability for procurement and resource management from the Secretary for Defence,⁹³ commanders simultaneously still report to the military chain of command in the SANDF.⁹⁴ These respective setups of indirect and direct reporting lines compromise command-and-control and the integrity of the command line. This inhibits senior commanders from accounting for the performance of their subordinates regarding logistic functions.⁹⁵ It also complicates addressing systematic logistic problems. To make matters worse in terms of compartmentalisation, the SANDF uses different legacy computerised logistic information systems, which are not integrated.

According to Bester, the initial SANDF organisational structures in 1994, was ‘centralised and power oriented’ and the various SANDF services had ‘designed their own logistical functional systems to provide in their specific needs’.⁹⁶ While the Army uses CALMIS (Computer-Aided Logistics Management Information System), the SAAF and Navy, for instance, use OSIS (Operational Support Information System). The SAAF initially used the SLIS (SAAF Logistics Information System), and in the late 1990s, the Navy commenced with a project to have joint usage of the information system of the SAAF, which became known as OSIS.⁹⁷ These systems – particularly CALMIS and OSIS – use different software applications, with different systems, and are therefore not easily compatible.⁹⁸ The use of these different information systems makes it difficult to manage and account for assets,⁹⁹ and during joint operations, locating and sending, for instance critical spare parts to frontline units, can involve unnecessary delays. The lack of integrated logistic systems also complicates audits in a large organisation, such as the SANDF, which often necessitates laborious manual audits.¹⁰⁰ Since 2005, initiatives by national government to integrate financial and logistic systems across departments experienced significant delays, and did not address the challenges with legacy systems experienced by the SANDF. These obsolete systems of the SANDF do not comply with the Government Regulatory Framework, and complicate the planning and control of logistics.

Joint Operations and Expeditionary Logistics

In April 1998, with the establishment of Joint Operations as an operational level headquarters¹⁰¹ in the SANDF, a disconnect emerged between new command doctrine at this level and logistic functions for operations.¹⁰² The involvement of the SANDF in Operation Boleas in September 1998 to prevent a coup in Lesotho, illustrated this disconnect and practical uncertainties about “who is responsible for what” in external operations. The main omission was that an operational level of command, with an operational commander and specialised staff was never established specifically for Operation Boleas, and only a tactical task force commander with limited staff was appointed. The necessary joint planning for logistics and medical support thus did not take place. There were also insufficient support units to sustain the SANDF Rapid Deployment Force in Lesotho. This created sustainment problems for the SANDF, with ad hoc logistic demands that overexerted the supply system.

During the SA intervention in the Central African Republic (CAR), which culminated in the Battle of Bangui in March 2013, the SANDF made similar mistakes by not having appointed an operational level of command, an operational commander or specialised staff. With only a tactical commander deployed in Bangui, and a skeleton special forces headquarters in Pretoria, the planning and providing of reinforcements, logistics, and medical support were problematic. Although this was an intervention operation against rebels, only a medical aid post was deployed with the SANDF contingent,¹⁰³ but no surgical post. During such unilateral or non-UN operations, SANDF medical support was supposed to be upgraded. The request by the tactical commander for Oryx helicopters for casualty evacuation was denied.¹⁰⁴ A surgical team with limited military experience was only flown in with a resupply flight, after serious casualties had already been sustained.¹⁰⁵ A medical evacuation aircraft was later contracted to evacuate the wounded to Pretoria.¹⁰⁶ During this operation, a “push logistic system” was used.¹⁰⁷ There were challenges with planning and arranging resupply flights, as well as the proper loading of priority equipment and supplies to ensure quick offloading, particularly combat vehicles and ammunition.¹⁰⁸ Since the SANDF had mostly focussed on multinational peace missions, it did not formalise or refine its operational level doctrine for expeditionary operations with regular training and the full complement of support functions, such as logistics and medical support, for such operations. Resultantly, the SANDF kept repeating the same mistakes, with dire consequences.

More recent missions have highlighted a dichotomy between established SANDF logistic doctrine and practice during expeditionary operations. In recent external operations, the SANDF did not deploy its second to fourth line of logistic support, or the necessary medical and air support. During the SADC Mission in Mozambique (SAMIM) between June 2021 and July 2024, where the SANDF was deployed from December 2021 to assist the Mozambican government to combat extremist insurgents and restore security in Cabo Delgado Province, the SA contingent lacked sufficient air support.¹⁰⁹ In addition, the serviceability of the SANDF Casspir armoured personnel carriers during the SAMIM mission was extremely low.¹¹⁰ The inability of the SANDF to obtain spare parts for

maintaining vehicles, ships and aircraft has become common knowledge. The above-mentioned dichotomy between doctrine and practice was also clearly exemplified by the poor state of logistics and medical support for SANDF troops as part of the SAMIDRC deployment since December 2023, in order to assist the DRC government to stabilise the eastern DRC, particularly against the M23 rebels.¹¹¹ According to Greeff, the SANDF lacked critical support elements in the DRC, ‘Air support and capability (medically, logistically and combat-speaking) is the crucial missing cog ... Losing troops in combat is always bad but losing troops due to inadequate resources is unacceptable.’¹¹² Since the SANDF lacks logistic reserves, it cannot meet immediate operational requirements, and is therefore compelled to desperately procure commodities and equipment required for external missions. One of the advantages of the establishment of Joint Operations was its ability to procure equipment required for expeditionary operations directly off the shelf. During the 2006 African Union Mission for Security in the Comoros (AMISEC), in which South Africa was the lead nation, the SANDF was, for example, able to procure four-wheel drive vehicles to fulfil mission requirements despite tenuous procurement processes and delays.¹¹³ The ability to purchase off-the-shelf equipment for specific missions can however not compensate for shortages with strategic logistic reserves.

As the SANDF capital budget decreased over the years, a shortage of critical stocks emerged. In DOD annual reports as early as 2004, the Army clearly indicated that its infantry combat readiness, including light infantry capability, was severely affected by ‘constraints on the acquisition of ammunition for main combat equipment’,¹¹⁴ and by 2008, the Army highlighted ammunition shortages as a main force preparation risk.¹¹⁵ Following the underfunding and decline of the SANDF, both the SAMIM and SAMIDRC missions have demonstrated the logistic limitations of the SANDF and the inability of South Africa to sustain two missions simultaneously. These limitations held negative consequences for the achievement of both missions, and raised concerns about the ability of the SANDF to sustain future expeditionary missions.

The SANDF has incurred extensive costs and losses for the ambitious SA foreign policy and involvement in peace missions and capacity-building in Africa since the Mbeki presidency.¹¹⁶ The SANDF had to deploy much of its equipment and personnel to the Great Lakes region with transport aircraft and, at times, by sea,¹¹⁷ without any forward logistic bases near the region. With the low serviceability of medium-transport aircraft in the Air Force, the SANDF has found it increasingly expensive and difficult to move matériel and vehicles to and from theatres of operation.¹¹⁸ The repatriation of armoured personnel carriers is particularly expensive, and not all deployed vehicles can be repatriated economically. The recent debacle in the DRC (SAMIDRC) provides a good case study in this regard.¹¹⁹ Moreover, the SA hosting of SADC Standby Force and the African Capacity for Immediate Response to Crisis (ACIRC) exercises at the SA Army Combat Training Centre in Lohatla also came at great expense to the SANDF in terms of logistic expenditure.¹²⁰

Between 2016 and 2022, the SANDF struggled to find reliable contractors that could deliver fuel for ‘operational support and day-to-day use’ at reasonable prices.¹²¹ In 2016, the SANDF reported that it had ended a contract with KZN Oils, since the latter only provided fuel, but neglected to maintain the SANDF fuel equipment.¹²² In January 2022, a fire at the bulk fuel station of Air Force Base Waterkloof occurred after ‘a component failure in the pipe system caused a fuel leak that was ignited by a spark from the pump wiring’.¹²³ This incident urged the SAAF to increase the frequency of maintaining fuel equipment. After the contract with KZN Oils had ended, the SANDF commenced with agreements with the Central Energy Fund to fulfil its fuel supply as well as equipment and infrastructure maintenance needs.¹²⁴ The SANDF also wanted to improve its capacity to store the necessary fuel reserves in accordance with logistics doctrine.

Defence Cooperation with Cuba and Project Thusano

Since democratisation, South Africa has nostalgically close diplomatic relations with countries that supported the ANC during the liberation struggle against apartheid, including pariah states, such as Libya.¹²⁵ In some cases, these relations involved a form of “payback” for assistance received during the Cold War.¹²⁶ Cuba is often hailed by the ANC for ‘a historic victory’ over the SADF in Angola during the Battle of Cuito Cuanavale (August 1987 to July 1988), which ‘resulted in the liberation of Angola and Namibia and paved the way for the negotiations that ultimately brought an end to the apartheid regime in South Africa’.¹²⁷ In 2012, close relations between South Africa and Cuba inspired into a controversial bilateral defence cooperation agreement (Project Thusano) involving, among others, technical services, the training of transport technicians, as well as repair and maintenance work on military vehicles, including SAMIL logistic vehicles.¹²⁸ The total amount spent on the project, which has been extended to January 2025, amounted to more than R2,6 billion.¹²⁹ By 2021, 11 000 military vehicles had reportedly been serviced as part of this project.¹³⁰ Between February and August 2022 alone, SANDF mechanics and Cuban technicians finalised the servicing of 100 Mamba armoured personnel carriers in Bloemfontein, which were delivered and centrally stored at Wallmannsthal near Pretoria.¹³¹

A report by the Auditor-General of South Africa, however, indicated that, from 2016 to 2021, the SANDF did not follow procurement processes with Project Thusano, which involved irregular expenditure to the amount of R1,37 billion during this period.¹³² Irregular expenditure for this project continued into the 2022–2023 financial year.¹³³ The project also involved the overly expensive training of, among others, SA military medical students and engineering students in Cuba.¹³⁴ In most cases, due to poor planning for local accreditation, there are numerous obstacles for these students who studied in Cuba who now want to register with local professional bodies in order to practice in South Africa. Efforts to provide *ex post facto* bridging programmes for these students involve additional expenses, which does not make financial sense, and have resulted in fruitless expenditure in most cases.¹³⁵ In late 2023, with ongoing irregular expenditure and disregard for procurement laws, the report by the Auditor-General on Project Thusano concluded, ‘resources of the department are not used in an economical, efficient and effective way to enable best return on investment for the department and government’.¹³⁶ Instead of

restructuring and rebuilding generic support functions in SANDF units with local expertise in order to become logistically more self-reliant to support external deployments, the SANDF has thus outsourced critical technical training and maintenance contracts to Cuba. The SA political loyalty to apartheid-era benefactors – and Cuba in particular – has thus aggravated the financial woes and qualified audits of the DOD in the logistics domain.

The Lack of Logistic Reforms and Accountability in the SANDF

The SANDF has often been resistant to administrative reforms, austerity measures, aligning budgetary processes with the Public Finance Management Act (PFMA) (No. 1 of 1999), as well as audit regulations.¹³⁷ For example, for decades, the SANDF has been unable to provide a complete asset register, which has contributed to qualified audits of the DOD by the Auditor-General of South Africa.¹³⁸ The SANDF did not fully comply with these directives since the introduction of national austerity measures in 2012. Instead of maintaining key logistic facilities, generals insisted on luxury expenses, such as flying business class,¹³⁹ and procuring expensive sedan vehicles at prices that exceeded the ministerial handbook.¹⁴⁰ A lack of consequence management for non-compliance with supply chain management laws, together with irregular and wasteful expenditure – as well as illegal activities¹⁴¹ in the SANDF – inhibits a culture of cost-saving and accountable procurement.

In 2019, the then Chief of the SANDF, Gen. Solly Shoke and other SANDF generals, argued in a position paper, also presented to President Ramaphosa, that the DOD had to be exempted from procurement legislation, and that SANDF commanders should have the power to procure as ‘they see fit’.¹⁴² The SANDF apparently proposed a unique “Defence Finance Management Act” to replace the PFMA, which Ramaphosa and the Minister of Finance dismissed.¹⁴³ This position paper arguably presented an “alternative view”, namely –

- that the systemic financial and logistic problems of the SANDF are not the fault of the military;
- that the military should receive special or preferential treatment by being allowed to ignore procurement regulations, transparency and accountability; and
- that internal military reforms are not necessary to overcome logistic challenges.

In August 2024, scathing media reports appeared about the luxury benefits that top SANDF generals in Pretoria receive from the military budget in terms of rented housing, house improvements, paid municipal accounts and guards while troops have to endure dilapidated living conditions in unit barracks.¹⁴⁴ This has resulted in resentment among the rank and file, especially while SANDF troops in the SAMIDRC mission were ‘suffering from a lack of equipment, proper accommodation and medical facilities’.¹⁴⁵ Problems with logistics, especially the availability and quality of equipment affected the morale of SANDF soldiers in mission areas negatively.¹⁴⁶ During the SAMIM deployment in Mozambique,

SANDF personnel had to endure poor rations, and during the MONUSCO (United Nations Organization Stabilization Mission the DR Congo), the combat boots of soldiers did not last long in tropical conditions of the DRC.¹⁴⁷ This illustrates a troublesome leadership culture of ignoring the old dictum of cavalry commanders to ‘feed your horses, feed your men, then feed yourself’ with the principle that ‘the officers eat last’.¹⁴⁸ Corruption with SANDF procurement is thus a challenge in the DOD.¹⁴⁹

Conclusion

The aim of this article was to provide a contextual understanding of logistics as a strategic variable for the South African (SA) military, with specific reference to logistics related to expeditionary operations. Logistics involves the art and science of managing resources to achieve the political ends of operations, and forms an integral part of military organisations and force development. The administrative and bureaucratic capacity to manage logistics is part and parcel of the military power of a country and is closely linked to political structures and political will to enable effective force development and building of military capabilities. Logistics is therefore an important indicator of the functionality or dysfunctionality of a military organisation.

The doctrine or “software” of logistics is essential to prepare logisticians to manage resources properly as well as to sustain military personnel and military hardware during operations. Such doctrine is unavoidably influenced by higher-order political thinking and ideology, which determine the adaptability of armed forces for expeditionary operations. Recent developments in warfare are placing high demands on military logistics to provide a broad variety of commodities and support to large areas of operations and the latest weaponry.

Since 1912, expeditionary operations in Africa have been inseparably part of the SA military, which presupposes the ability to project and sustain forces over long distances. The difficult terrain in Africa, as well as limited and often poorly maintained infrastructure, usually complicates force projection and maintaining long supply lines. In peacetime, the SA military has experienced cyclical neglect, particularly after the two world wars and the Cold War. The logistic system of the SANDF is largely predicated on the Western logistic systems and doctrine of the SADF, while the political structures and will derive mainly from the revolutionary Marxist thinking and ideology of the ANC.

Through centralised planning and maintaining control over underperforming SOEs, the ANC wanted to achieve socialist, socio-economic and developmental goals, which together with ambitious foreign policy, inhibited the proper funding of the SANDF to fulfil its constitutional mandate. Overall deindustrialisation, the poor management of SOEs, and the underfunding of the SANDF, have resulted in the shrinking of the defence industry in South Africa. The revolutionary ANC culture and their focus on centralised state control over the economy and defence, prevented the necessary political will and mission command to create a decentralised and responsive logistic system in the SANDF. This resulted in strategic indecision, centralised micro-management of minor issues,

upward buck-passing, distrust in experts and the disempowerment of commanders. The centralised logistic system that the SANDF inherited from the SADF, which was based on a war-funding model and push-logistics, was thus not reformed or optimised for expeditionary operations. Coupled to this, the SANDF leadership has been resistant to austerity measures and failed to provide a complete asset register for audits. Politicians and defence officials also lack the political will to implement consequence management for misconduct regarding procurement and finances.

The focus of the SANDF on retaining a conventional role, force design, equipment and legacy concepts, as well as long-term reliance on UN logistics in several Africa peace missions, has inhibited the phasing out of legacy systems, and the re-designing of the SANDF logistic system for expeditionary operations. The reluctance to phase out legacy systems further reduced operating funds to sustain external SANDF operations properly. This conventional paradigm also prevented the procurement of new medium-transport aircraft and logistic vehicles, which are essential for sustaining forces in peace operations.

The restructuring project of the SANDF in collaboration with Deloitte & Touche, based on business management principles, fragmented and removed critical logistic functions from units and commanders. Part of this restructuring involved the centralisation of procurement functions, which produced delays with tenders and contracts. This restructuring also created a disconnect between the chain of command and delegations for procurement, which complicated accountability for logistic functions. The establishment of expensive GSBs without logistic experts contributed to the failure of these support bases and the erosion of the logistics corps. The lack of logistic experts resultantly reduced the bureaucratic capacity and functionality of the SANDF to spend funds according to procurement processes. Instead of reforming the SANDF logistic system and rebuilding unit support functions, South Africa entered into a controversial defence agreement with Cuba to repair and maintain equipment, which involved extensive irregular expenditure.

Traditionally, the SA military has preferred the agile projection of force and mobile operations. Except for UN or AU missions, the SANDF usually relies on its own logistics during expeditionary operations. Although the SANDF has gained valuable experience in external operations and force projection in Africa, this has not translated into improved or refined operational logistics doctrine, but rather gave rise to an erosion of corporate memory and neglect of doctrine development in this field.

Since the establishment of the Joint Operations headquarters, the SANDF has not applied or refined its doctrine for expeditionary operations in terms of the appointment of operational commanders and specialist staff to plan and control logistics properly. In recent expeditionary operations, the SANDF has not deployed its second to fourth line of logistic support or sufficient medical or air support. This has resulted in repeated logistic challenges and disruptions for troops on the frontlines, especially during high-intensive intervention operations.

The current SA defence budget is making it impossible to sustain SANDF forces in expeditionary operations properly. As the defence budget decreased, the reserve stocks of the SANDF have dwindled to the point where the needs of expeditionary operations cannot be met, which imposes emergency procurement for new operations. This state of affairs requires a serious rethinking of the viability of political ambitions to continue deploying an underfunded SANDF with deep logistic challenges.

The culture of the SANDF top leadership to avoid austerity and enjoy luxury benefits, while deployed troops struggle with insufficient logistic support, low vehicle serviceability, and inappropriate equipment, has a negative influence on the morale of SANDF personnel and impetus to improve the logistics systems of the SANDF. This leadership behaviour makes it difficult for the SANDF to be innovative in order to be better prepared for future expeditionary operations.

Endnotes

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- 70 Interview with Col (ret) BR Janssen, former Senior Staff Officer, Directorate Military Strategy, SANDF, Pretoria, 12 April 2018. Authorisation for all interviews was obtained from the DOD, Defence Intelligence, E Jordaan, reference number: DI/DDS/R/202/3/7, dated 19 May 2017, and ethical clearance for all interviews was obtained from Stellenbosch University, Research Ethics Committee (E Jordaan, project no. 1391), 12 February 2018 and 25 November 2021.
- 71 Interview with Col (ret) BR Janssen.
- 72 Interview with Mr WA du Preez, former Budget Manager of the SA Army, Pretoria, 3 July 2019.
- 73 Procurement in the DOD refers to the process of obtaining 'an approved item, equipment, system, facility of service by purchase or manufacture'. See E Heydenrych, *An Analysis of the Regulation of Defence Procurement in South Africa* (PhD Dissertation, Stellenbosch University, Stellenbosch, 2023), 99, with reference to DOD, *Department of Defence Handbook for the Acquisition of Armaments in the Department of Defence and in Armscor*, Edition 1.2, 1. From a DOD perspective, procurement furthermore refers mainly to Category 2 matériel or standard civilian goods such as food, clothing and stationary (Heydenrych, *An Analysis of the Regulation of Defence Procurement*, 3). Acquisition within the DOD, however, refers to Category 1 goods and services, which includes major weapons systems and munitions, as well as the design and development thereof. Heydenrych proposes the concept of defence procurement to include Category 1 and Category 2 matériel.
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- 75 Interview with Brig Gen (ret) WJ Wagner, former Senior Staff Officer, Directorate Military Strategy, SANDF, Pretoria, 25 June 2018.
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