Journal of Central and Eastern European African Studies

A Review of: "South African Armoured Vehicles: A History of Innovation and Excellence" by Dr Dewald Venter[1]

Mmaphuti Felicia Langa[2]

The cold war meant that Africa would become a prime location for proxy wars between the East and the West. Due to the rise in liberation movements for independence backed by Eastern Bloc Communist countries such as Cuba and the Soviet Union, Sothern Africa saw one of the most intense wars fought on the continent. During this time, however, South Africa was subjected to international sanctions due to its Apartheid policies, which segregated people based on race. Thus, due to the Apartheid policies, South Africa was cut off from major sources of arms systems in 1977. Over the following years, the country became involved in the war in Angola and South West Africa. Since the available equipment was ill-suited to the local, hot, dry, and dusty climate and the threat of landmines, the South African government began researching and developing their own innovative weapon systems. This resulted in the designs of some of the most robust armoured vehicles produced anywhere in the world at that time. This further influenced development in multiple fields of the designs and production of armoured vehicles. Presently, the lineage of some of the vehicles are seen on many of the battlefields around the world, especially countries riddled by landmines and improvised explosive devices.

South African Armoured Vehicles provides a detailed 13 chapters description of the armoured vehicles by detailing the armour development, design features such as endurance and logistics, vehicle layout, protection, fire control system, mobility, and the operational history. These detailed descriptions are meant to help the reader understand the difference between the vehicles as well as why there was a need to upgrade the vehicles from time to time. This is an excellent book that provides both introductory and in-depth analysis of the SA military vehicles as well as giving an illustration of over 100 authentic photographs and more than two dozen custom-drawn colour profiles of the armoured vehicles. This is an amazingly detailed read and an indispensable source of reference for anyone who is interested in the historical development of the SA military vehicles.

In this book, the author begins by describing the Eland armoured car that was used by the SA military. It replaced the British built Ferret armoured car which was not suitable for the likely conflict SA would become involved in. Based on the shortcomings of the Ferret, SA

[1] Dewald Venter. South African Armoured Vehicles. A History of Innovation and Excellence. Helion & Company Limited: Warwick, England. 2020. ISBN: 9781913336257

[2] Junior researcher at Africa Research Institute, Óbuda University, Budapest, Hungary; mmaphutifelicia@gmail.com.

acquired a more modern lightweight, lightly armoured, well-built, and long-range reconnaissance vehicle. Thus, SA acquired the rights to manufacture the AML-60 and 90. The Eland was improved to make it more suitable for African terrain, but it was removed from the frontline services in the late 1980s when its indigenously produced replacement, the Rooikat 76 armoured car began to enter service. The shortcomings of the Eland made it have limited suitability for military use. Thus, it was not entirely discarded but relegated to the task of escorting convoys, conducting joint patrols, guarding strategic installations, manning roadblocks, and conducting search and destroy operations in SWA. Elands retired from service in 1994.

In the second chapter the author describes the military vehicle that was used by the army from 1995, replacing the Eland. The Buffel, which was mass-produced in SA, was designed to be mobile and provide protection against anti-tank mines, small arms fire, and shrapnel. It was phased out of the frontline service during the late 1980s and relegated to internal security use until its replacement by the Mamba APC in 1995. The first Buffels were deployed operationally in 1978 and some 2,985 vehicles would be built over a period of 17 years. The shortcomings of the Buffel vehicle were that the high ground clearance and narrow width made it top heavy causing problems for inexperienced drivers who would roll over if they turned too sharply while at speed or on uneven or wet, slippery terrain. The vehicle was replaced in 1995 by Mamba MPV after serving for 17 years.

Chapter Three describes the Ratel ICV vehicle, which adopted its Afrikaans name from the SA honey badger. The vehicle was used by the SA military during the 70s and 80s, as the foreign imported armoured troop vehicles were not up to the task against modern threats and challenges found in SA battlespace, hence the need for a highly manoeuvrable, ultra-reliable, and easy-to-maintain ICV. The Ratel family of vehicles allowed the South African Defence Force (SADF) the mobility needed from 1976 onwards as the SA border war escalated and cross border operations became more frequent and more complex. It was the best vehicle ever made for ultra-mobile African bush warfare. It would undertake missions over ragged and variable terrain with little logistical support. It was designed for speed and mobility at the expense of armour and regarded by most military analysts as the grandfather of all subsequent ICV designs.

Chapter four describes the Casspir MPV vehicle, which was considered the father of all the modern enclosed V-shaped monocoque-hulled MRAP vehicles. It was widely used as the vehicle of choice for demining, including removal of anti-personnel and anti-tank landmines and in humanitarian and peacekeeping operations by the UN around the globe. It was designed primarily as a mine-resistant APC which could operate in some of the most hostile terrain in the world. Several characteristics which have led to its success include: it is of a 4x4 design coupled with differential lock and uses 4 large run-flat tyres designed to resist the effects of diffusion when punctured. The Casspir configuration was designed for the African battlespace and characterised by its versatility and cross-country capability. It requires less maintenance than their counterparts. It formed an integral part of motorised operations by

the former SADF during the border war, where it was used extensively by the 101st Battalion. It has become the face of the UN peacekeeping forces in mine-riddled conflict zones in Africa. Its primary role was in counterinsurgency missions while protecting its users from landmine blasts. It left a 35-year legacy. It was disbanded in 1991 when SWA gained its independence as Namibia.

Chapter five describes the G6 vehicle that was named after the indigenous African Rhinoceros animal. It is 3-arle, 6 wheeled self-propelled howitzer which forms the backbone of the SABDF artillery arm, who can field 43 vehicles characterised by its six massive 21:00x25 wheels, fast set up time, bush breaking ability, and versatility as a howitzer platform. It is equipped with 2 fuel tanks on either side of the mid-section of the hull with a combined capacity of 700 litres. It is manned by a crew of 6 people, consisting of the commander, layer, breech operator, loader, ammunition handler, and driver. The G6 has only ever been used operationally during the SA border war and subsequently proved its combat capability. It was first fielded in 1987. It is characterised by its impressive fire range, mobility, speed, accuracy, and endurance. It remains at the front of the pack when compared to other wheeled and tracked self-propelled howitzer vehicles.

Chapter six describes the Bateleur FV2, which took its name from a mid-sized eagle native to the open Savannah and woodlands of Sub-Saharan Africa. Planned in 1983 to replace its smaller predecessor the Visarend FV1, its role was to provide the SADF with first strike capabilities in support of its artillery philosophy. The Visarend was not robust enough for the demand placed on it by the rough terrain and offered no protection against the ever-present threat of landmines. Thus, a more suitable vehicle in the form of the Bateleur was introduced that had improved mobility, protection, and increased payload. The Bateleur is only in service with the SADF and 4 of the 25 Bateleurs produced are in presentation storage. The primary purpose of the vehicle is to destroy HVT and HIT, which included counter battery sticks against enemy artillery and air defence emplacements. It offers more reliability and requires less maintenance than a tracked vehicle. It was built according to similar military vehicles which place emphasis on longer-range fire, speed, mobility, flexibility, and simple logistics.

Chapter seven describes the Oliphant MK1A MBT with an Afrikaans name from the African elephant. It is the heaviest military vehicle in the SADF and post-Apartheid South African National Defence Force (SANDF). It is popularly referred to as a *Moemsie*. It was officially introduced in 1978 and features tactical radio communication which allows for reliable command and control. Improved fittings were done on the vehicle to improve its protective frame to protect against vegetation while bundu bashing. It was meant to have a facelift in the form of the MK1B.

Chapter eight describes the Oliphant MK1B, which is a rebuild of the Oliphant MK1A. it was adopted for the African battlespace and based on the lessons learnt from the SA border war. Unlike the MK1A, which was an upgrade from the Centurion MK5 and MK7 hulls, the MK1B was a complete rebuild and left a legacy, features, and outer look of the Centurion MBT. Its

development commenced soon after the MK1 went into production in 1981. Its design was meant to improve on the shortcomings of the MK1A which were exposed during the SA border war, such as inadequate armour, poor mobility, improved firepower, and taxing maintenance requirements. It was a leap forward in protection, mobility, and firepower over its predecessor, the MK1A, however, it had limitations such as poor power-to-weight ratios, the failure of the main gun system to exceed the performance of the MK1A, logistical shortcomings of parts and maintenance manuals exasperate the MK1B, and the desired fight ability improvement was not achieved. These shortcomings motivated the SANDF to look for further improvements, which led to the Oliphant MK2 that made use of many technologies developed in the TTD.

Chapter nine describes the Oliphant MK2, which was developed for the African battlespace based on the lessons learnt from the SA border war. It was designed and produced at a time when SA was no longer subject to international embargoes. It was set at a backdrop of a relatively stable SA, the need for large numbers of new MBTs was put aside in favour of more agile and air transportable vehicles for peacekeeping missions in Africa under the umbrella of the UN and AU. Due to lack of funds, the SANDF decided to upgrade the existing MK1Bs which were on hand to the desired specification sought by the SAAC. OMC was tasked with improving on the shortcomings of the Oliphant MK1B leading to the Oliphant MK2. Thus, the MK2 addresses the shortcomings initially found in the MK1B to make the tank fightable by incorporating the hunter-killer capability. The MK2 is a leap forward in protection, mobility, and firepower, and is currently the pinnacle of tank technology in SA. The role of the MBTs is essentially to act as a deterrent to outside aggressors. MBTs are expensive to operate and maintain, and as they are often only deployed during times of war, they make the justification for funding them very difficult to the general public.

Chapter ten describes the Tank Technology Demonstrator, which was a locally built prototype MBT as a result of years of technological development in SA. It served as a testbed for the modern technologies of the time in the areas of firepower, mobility, and survivability. It was completed in 1992 and embodied the most sophisticated technologies, technical expertise, and manufacturing capabilities available to SA in the mid-1990s.

Chapter eleven describes the Rooikat armoured car, which takes its Afrikaans name from the African caracal, a type of wild cat. It is fast and nimble and was used by the SADF and its successor, the SANDF. It is completely indigenous military vehicle, adopted for the Southern African battlespace. The development of the Rooikat was one of the SADF's most ambitious undertakings. Full production of the Rooikat began in June 1990 and lasted until 2000. It was designed with an emphasis on mobility, firepower, and protection. Its tasks were combat, reconnaissance, seek and destroy operations, combat support, anti-armour, and anti-guerrilla operations. During peacekeeping operations, the Rooikat can be used to monitor ceasefires, protect key points, escort convoys, act as deterrent, used for reconnaissance and crowd control. It is considered one of the most versatile weapons systems produced by SA and is in use by the SAAC.

Chapter twelve describes the Mamba APC, which was described as one of the several SA MPV vehicles which inspired the modern enclosed V-shaped MRAP vehicles used by western armies today. It is widely used as a vehicle of choice for humanitarian and peacekeeping operations by the UN and in intensity conflict operations. The Mamba MK2 and MK3 are designed as all-terrain, all-weather MPVs which can operate in urban and rural areas for long range patrols and transportation of personnel. The Mamba's success is due to several features such as it not having a body and the frame sitting on the wheels off the ground with a V-shaped armoured underbelly which helps disperse and deflect mine blast energy away from the hull, thereby reducing the potential damage. Designed as an officially designated light armoured vehicle by the SADF, it can protect its occupants against a single TM-57 mine blast under the hull or two TM-57's under any wheel. The Mamba series of APCs are arguably the trendsetters for the myriad of MPVs used today.

Chapter thirteen describes the Badger infantry combat vehicle which adopts its name from its predecessor, the Ratel. It is well named as it has modern armament, enhanced protection, and vastly impressive mobility over its predecessor. It is designed and produced at a time when SA as a fully-fledged democracy is undertaking more peacekeeping responsibilities on the African continent. The design, development, and production of the Badger were undertaken due to the need for more modern ICV to replace the Ratel. The Badger is characterised by 8 big wheels, mobility, bush-breaking ability, and versatility as a weapons platform. It is one of the best protected vehicles of its class in the world.

I found the book to be very interesting, intriguing, and informative for anyone who is interested in gaining knowledge about the historical background of SA armoured cars. The book provides detailed and descriptive information about each armoured car that was either manufactured in SA or imported by the SA military for use in the military operations. I liked and enjoyed reading the book as someone who has no knowledge about the SA armoured cars and their designs. I have always seen these cars in SA, either being displayed in museums and town parks, and I had always been curious about how they were designed and how they operated. This book has extensively answered the questions I had about these cars. I would strongly recommend this book for anyone who is interested in knowing more about the SA armoured vehicles, including their use in the wars such as the SA border war that SA was involved in.