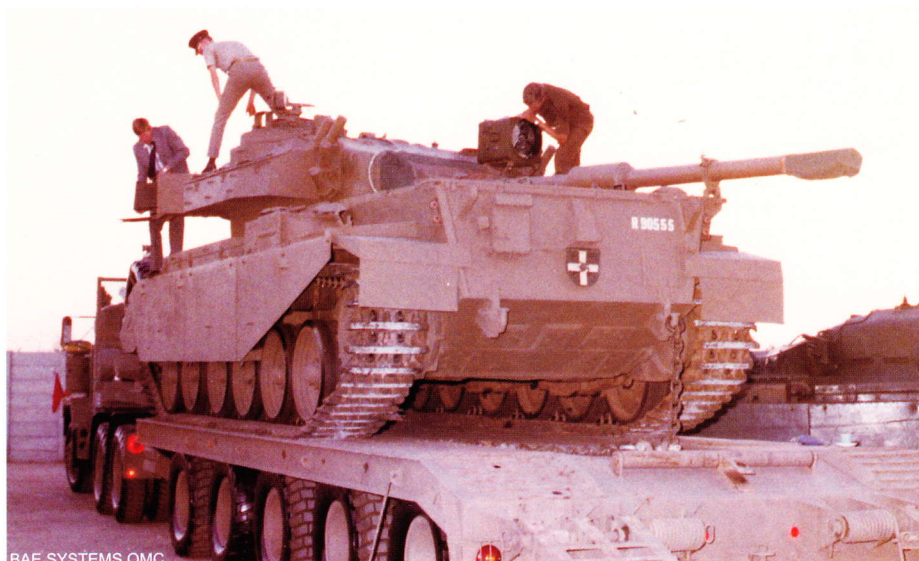


DEVELOPMENT OF THE ELEPHANT TANK ELEPHANT MK 1



BAE SYSTEMS OMC
The rear-end of an Elephant Mk 1A tank - on a Mack-hauled trailer - equipped with a white-light searchlight that could be activated in tandem with the barrel.

The Seventies were exiting years for those who were involved with the development of a tank which would cater properly to the needs of the South African Army. With projects Semels and Skokiaan completed, the start of Elephant-development was at hand.

The substantial build-up of armour in neighbouring countries had by the mid-1970s reached a point where the Eland armoured car was clearly not equal to the task any more. T-34, T-54 and T-55 tanks were deployed in huge numbers in Angola and elsewhere, whilst the Centurion was by this time obsolete and not capable of countering such later-technology fighting vehicles.

At the end of Operation Savannah in

1975 it was decided that South Africa could not continue without an up-to-date tank force. 'Elephant' (or 'Olifant' in Afrikaans) was the project name allocated to the upgrading of 250 Centurions which would be capable of joining battle with the T-55.

Unfortunately, as we already know, there were just 103 Centurion tanks available locally for this purpose, so an earnest search was launched to find countries which were looking to rid themselves of surplus Centurions. Before long Centurions began arriving from all corners of the globe - namely from countries such as Jordan and India. Centurion Mk 7s were also acquired in this way.

The standard tank ordinance of the West at that stage was the ubiquitous 105mm L7 gun, which would also be

manufactured by Lyttelton Engineering Works (LIW) as the GT-3. The existing grenade launchers would be replaced with 81mm smoke grenade launchers.

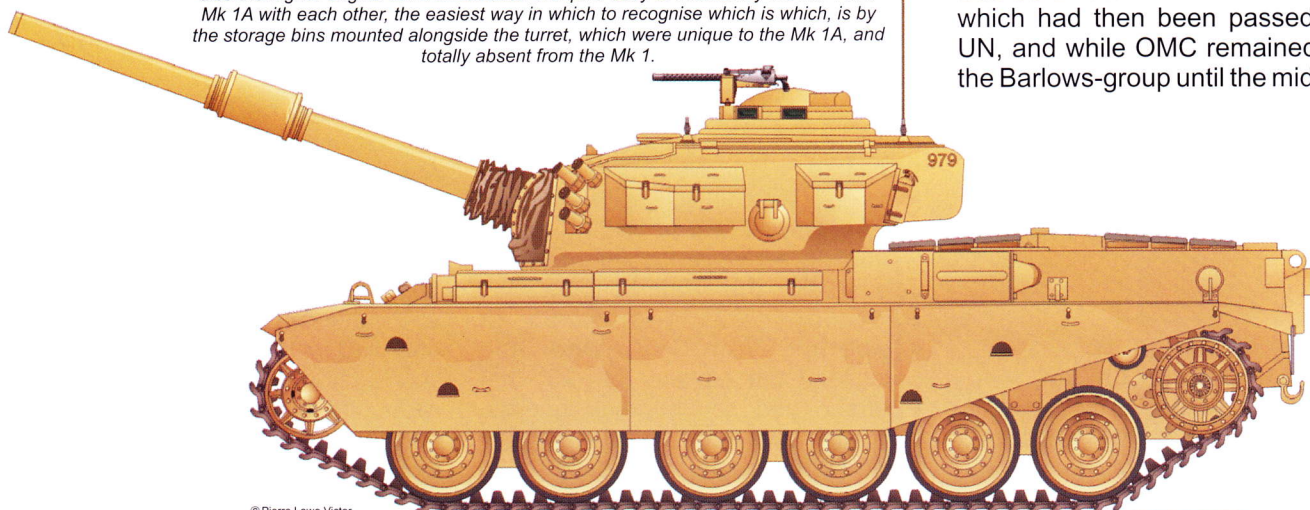
The 105mm GT-3 tank gun was much more effective than was its 84mm predecessor, and the accompanying new ammunition such as fin-stabilized armour-piercing rounds, and HE-AT ammunition, coupled with a modern fire control system, made this new tank a formidable fighting vehicle.

Much needed inputs were received from other countries such as Israel to ultimately bring this tank to life. This was especially true as far as the new propulsion unit(s) were concerned, with the new Continental AVDS-2D engines proving to be the most suitable at that stage. The new Allison CD-850-6D gearbox did not only improve on the tanks capabilities, but was also more reliable.

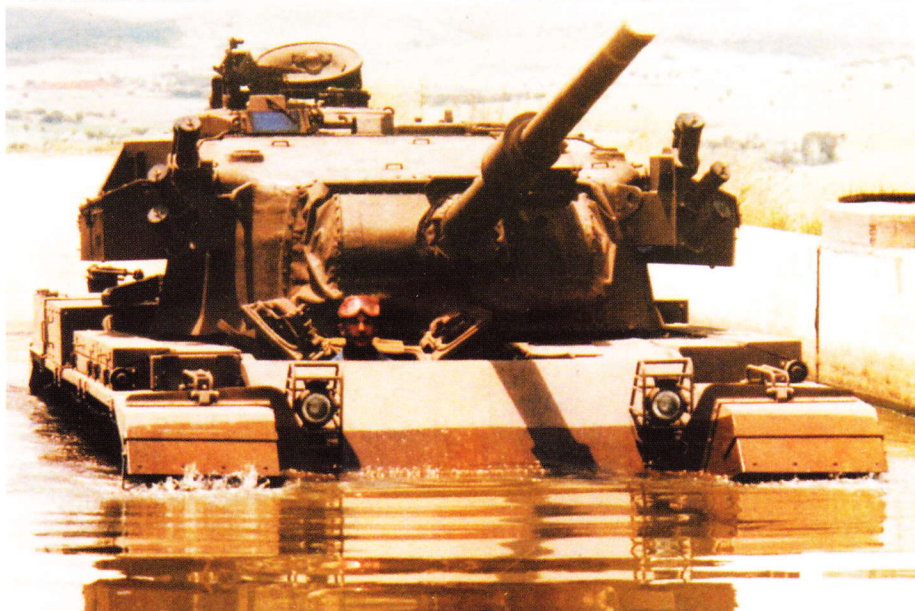
While the new tank could reach a speed of 45 km/h which was 10 km/h faster than the old Centurion to be sure it could not reach the required 50 km/h as was attained with the Skokiaan project. New deck-plates had to be developed to ensure an adequate supply of air to the engine, while the fitting of new air filters and fuel tanks completed the changes.

Barlows Heavy Engineering which would later in 1977 become the Olifant Manufacturing Company (OMC), was the concern which was principally responsible for the manufacture of the new tank, while LIW would supply the main armament. The reason for the change of name was as a result of the arms embargo which had then been passed by the UN, and while OMC remained part of the Barlows-group until the mid-1990s,

Left-hand side view of the Elephant Mk 1: Distinguishing features are the greater-bore barrel and the larger smoke grenade launchers at the front of the turret. Note also the higher engine covers. Because it is quite easy to misidentify the Mk 1 and Mk 1A with each other, the easiest way in which to recognise which is which, is by the storage bins mounted alongside the turret, which were unique to the Mk 1A, and totally absent from the Mk 1.



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An Elephant Mk 1 going through a water obstacle-way to determine its ability to ford streams.

it was a wise decision to keep this group's name out of the manufacturing process of such an important weapons system.

Other concerns would be responsible for the optical and radio equipment, and by 1976 the project was in full swing.

The Elephant Mk 1 production line would function up to and including 1983, when the project was terminated with the revelation of the Elephant Mk 1A an improved version of the Mk 1.

The project-officer was Brigadier Phil Schalkwyk, with Brigadier Bill Lewis representing the newly-founded Armscor. A total of 250 Centurions would be rebuilt to Elephant Mk 1's, with the first vehicle making its appearance in 1977 already. The evaluation of the new main gun also took place in 1977, with the comprehensive evaluation of the tank taking place at the Army's Combat School at Lohatla, in 1978.

It was predicted that the Mk 1 would be

able to render effective service until the 1990's. In 1979 South Africa however impounded ten T-55 tanks in the Durban harbour which were destined for Uganda. These tanks were on board the German ship Astro. A proper evaluation of the Elephant could now take place against the real McCoy. During 1980-1982 these two tank types would be pitted the one against the other.

From this certain deficiencies emerged, and the South Africans terminated their Mk 1 project, 18 short of the envisaged total of 250 tanks. These deficiencies were also the reason why the Mk 1 was never really deployed operationally. Opposing forces furthermore started to deploy the T-62 during the 1980's, which rendered the Mk 1 and even the Mk 1A absolutely vulnerable.

The foolish decision not to purchase the (West) German Leopard Mk 1 also emerged during this time but, alas, it was then too late. The arms embargo of course made it impossible to purchase new tanks outright from abroad, while

there was also a financial consideration to this entire aspect namely that six Elephant conversions could be effected for the price of one new tank. For a country that did not really regard the tank as being an important weapons system, conversion was thus certainly a more attractive proposition.

The Elephant Mk 1's were transported by way of Mack tank-transporters, and later by Man transporters.

The new tank also had to be retrievable, therefore Armscor also received an instruction for the development of an Elephant armoured recovery-vehicle that would replace the dated Centurion Mk 2 ARV.

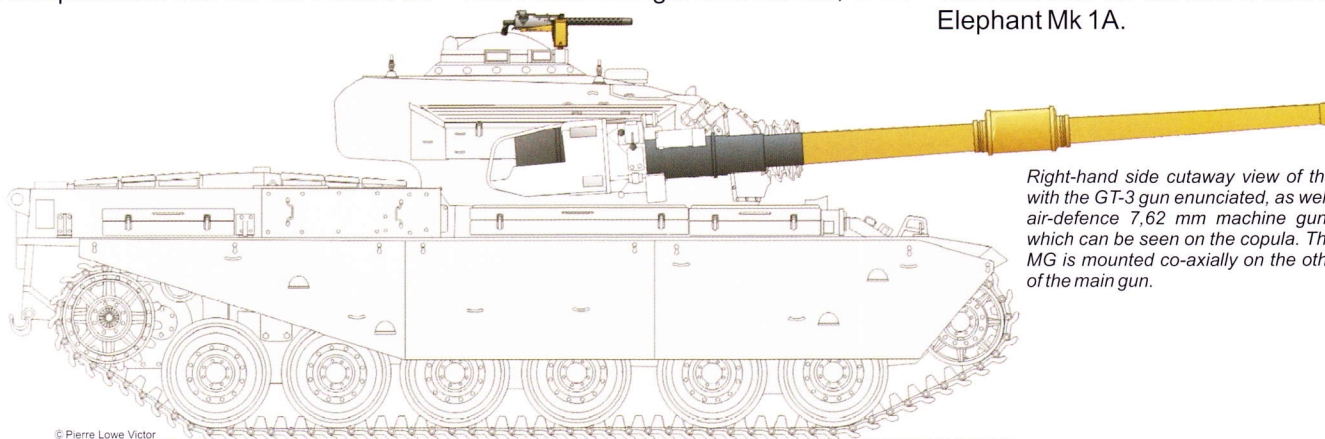
The repair vehicle was a rebuilt Comet which was capable of transporting an entire power-pack.

The Mk 1 was thus not the tank that would be used until the 1990's; this honour would go to its follow-on.

All of the 232 Elephant Mk 1's would from 1984 be (re)built to Mk 1A's, although there are no examples of these tanks in existence today.

Truth be told, of the first conversions were the Army's Centurion Mk 3 tanks (Semils), of which no example is in existence today either. The Mk 5 would follow, and today there exists only the tank known as the Skokiaan, in the Museum of Armour at Bloemfontein. The imported tanks would follow later, and there exists two comparable examples of these today, one in Bloemfontein, and the other at the Museum of Military History in Johannesburg. These examples are not however original, and it should be noted that a Mk 5 turret (originally from SA), appears to be mounted on a Mk 7 hull (which was imported for the Elephant project).

The next time we will take a look at the Elephant Mk 1A.



Right-hand side cutaway view of the Mk 1 with the GT-3 gun enunciated, as well as the air-defence 7,62 mm machine gun (MG), which can be seen on the cupola. The other MG is mounted co-axially on the other side of the main gun.

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DATA: ELEPHANT Mk 1

Type: Main battle tank (MBT)
Crew: 4

Weight (loaded) 56 000kg

Power to Weight ratio: 13.39 b.h.p per ton
Bridge classification: 60ton
Shipping-weight: 75ton, 15 cub. ft.

Dimensions

Length
Hull: 24ft. 9.1½ in. (7.56m)
Gun - travelling position: 28ft. 3in. (8.61m)
Height
Copula hatch, vertical: 11ft. 4 in.(3,4546m)
Copula hatch, secured: 9ft. 7¾ in. (2,94m)

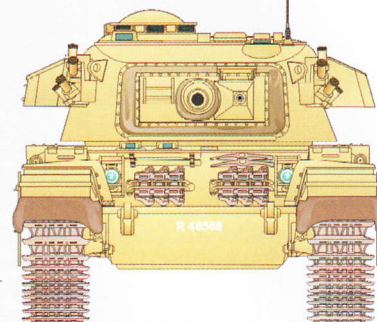
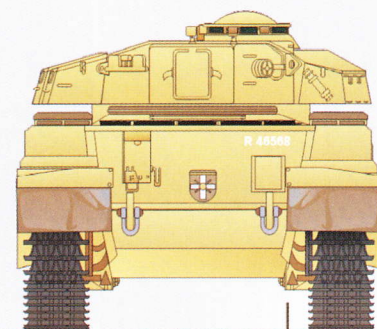
Width
With side-plates fitted: 3.39m

Engine
V-12 turbo-diesel
750hp at 2300 rpm

Maximum road speed: 44 km/h
Fuel capacity: 1 240L
Maximum range:
Road: 500km
Off-road: 240km

Gradient: 60%
Trench: 3.35m
Vertical obstacle: 91,4 cm
Ditch: 1,45 - 2,74 (NV)

Armament:
Main gun: 1 x 105mm L7
Co-axial: 1 x 7,62 mm MG
Anti-aircraft: 1 x 7,62 mm MG



508 mm

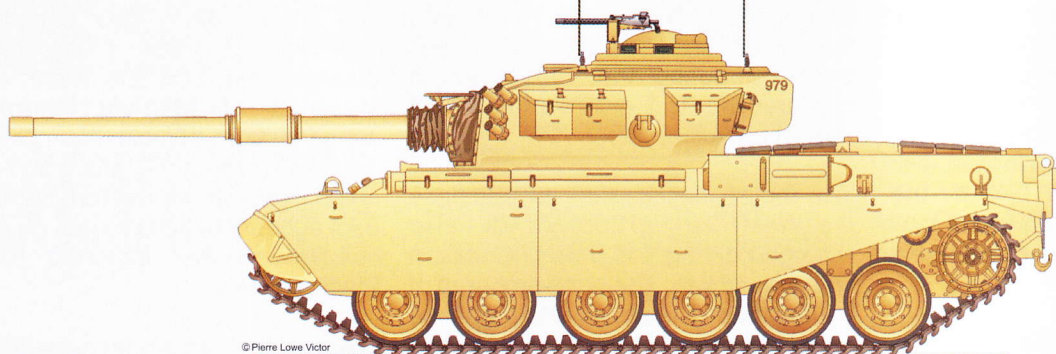
3.276m

3.378m

2.940m

9.829m

7.552m



2.940m

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