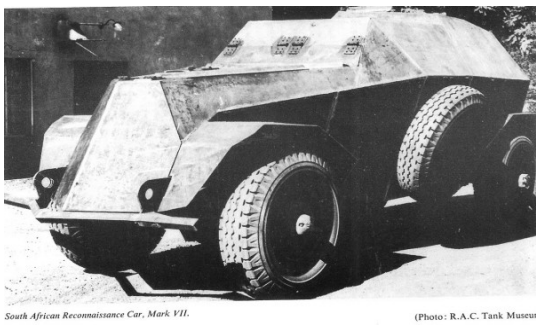
(Union of South Africa) Republic of South Africa

Background: Dutch traders landed at the southern tip of modern day South Africa in 1652 and established a stopover point on the spice route between the Netherlands and the Far East, founding the city of Cape Town. After the British seized the Cape of Good Hope area in 1806, many of the Dutch settlers (the Boers) trekked north to found their own republics. The discovery of diamonds (1867) and gold (1886) spurred wealth and immigration and intensified the subjugation of the native inhabitants. The Boers resisted British encroachments but were defeated in the Boer War (1899-1902); however, the British and the Afrikaners, as the Boers became known, ruled together beginning in 1910 under the Union of South Africa, which became a republic in 1961. In 1948, the National Party had been voted into power and instituted a policy of apartheid - the separate development of the races - which favored the white minority. The African National Congress (ANC) led the opposition to apartheid. Internal protests and insurgency, as well as boycotts by some Western nations and institutions, led to the regime's eventual willingness to negotiate a peaceful transition to majority rule. The first multi-racial elections in 1994 brought an end to apartheid and ushered in majority rule under an ANC-led government. South Africa since then has struggled to address apartheid-era imbalances in decent housing, education, and health care. In January 2011, South Africa assumed a nonpermanent seat on the UN Security Council for the 2011-12 term.

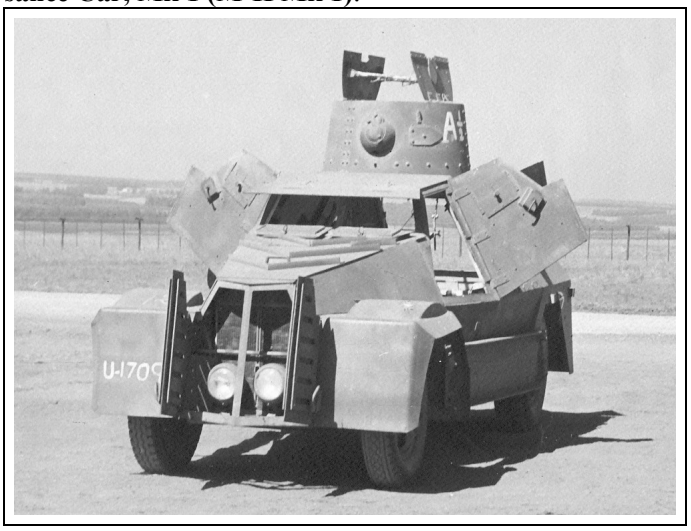
Location: Africa, at the southern tip of the continent. Area: total: 1,219,090 sq km, land: 1,214,470 sq km, water: 4,620 sq km. Area-comparative: slightly less than twice the size of Texas. Land boundaries: total: 4,862 km. Border countries: Botswana 1,840 km, Lesotho 909 km, Mozambique 491 km, Namibia 967 km, Swaziland 430 km, Zimbabwe 225 km. Coastline: 2,798 km. Climate: mostly semiarid; subtropical along east coast; sunny days, cool nights. Terrain: vast interior plateau rimmed by rugged hills and narrow coastal plain. Elevation: lowest point: Atlantic Ocean 0 m, highest point: Njesuthi 3,408 m. Natural resources: gold, chromium, antimony, coal, iron ore, manganese, nickel, phosphates, tin, rare earth elements, uranium, gem diamonds, platinum, copper, vanadium, salt, natural gas. Land use: arable land: 12.1%. Natural hazards: prolonged droughts, volcanism: the volcano forming Marion Island in the Prince Edward Islands, which last erupted in 2004, is South Africa's only active volcano. Geography note: South Africa completely surrounds Lesotho and almost completely surrounds Swaziland. Military branches: South African National Defense Force (SANDF): South African Army, South African Navy (SAN), South African Air Force (SAAF), Joint Operations Command, Military Intelligence, South African Military Health Services (2009). Military spending: 1.7% of GDP (2006). Military note: with the end of apartheid and the establishment of majority rule, former military, black homelands forces, and ex-opposition forces were integrated into the South African National Defense Force (SANDF); as of 2003 the integration process was considered complete. (*Adapted from CIA Factbook 2010*).



South African Reconnaissance Car, Mark VII. (Photo: R.A.C. Tank Museu

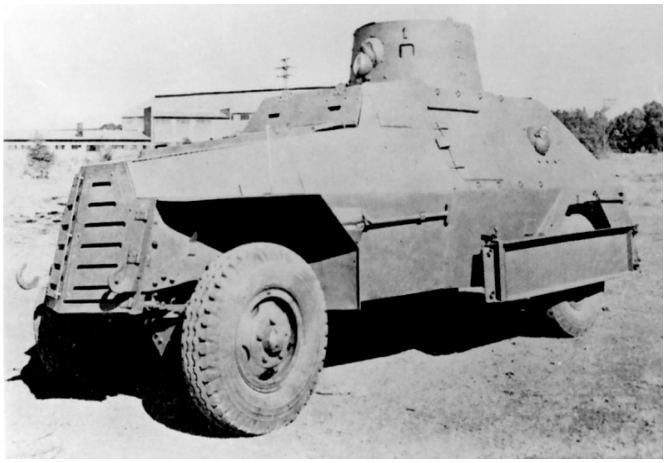
1922 Carr, Pers, Armd, 4x2. Trk, Armd, Imp, Leyland.

1940 Vehicle, Reconnaissance. South African Reconnaissance Car, Mk 1 (M-H Mk 1).



Remarks:: The first of the South African Reconnaissance Cars was introduced in 1940 and was based on a standard Ford of Canada V8 3-ton truck chassis. A two wheel drive vehicle, only 113 Mark 1s were completed, the later part of the construction run having a welded hull rather than riveted. The Mark 1was only used by South Africa and then only for training and internal security. Even though an improved version, the Mark 2 was ready for production, a lack of parts meant that assembly of the Mark 1 continued until November of 1940.
Vehicle Data: Length, 192 in (4877 mm). Width, 78 in (1981 mm). Height, 93 in (2362 mm). Wheel Base, 134 in (3404 mm). Wheel Tread, 58 in (1473 mm) Front, 57 in (1448 mm) Rear. Drive, 4x2. Armor, .24 to .47 in (6 to 12 mm). *Armament*: (2) .303 Vickers LMG. Elevation & traverse, manual. *Capacity*: Fuel, 46 gals (174 liters) gasoline. Crew, 4. *Engine*: Front mounted, water-cooled, gasoline, Ford V8. *Transmission*: Manual with 4-fwd and 1-rev gear. *Suspension System*: Leaf spring. Wheels Steerable, front pair. No of wheels, 4. *General Data*: Elec Voltage, 6 Volt. *Performance*: Speed/Land, 45 mph (72 km/h). Range, 200 mi (322 km). *Usage*: Only used by South African forces. *Manufacturer*: South African Railway and ISCOR (South African Steel Works).

1941 Vehicle, Reconnaissance. SA Recce Car, Mk 2 (Marmon-Herrington Mk 2).

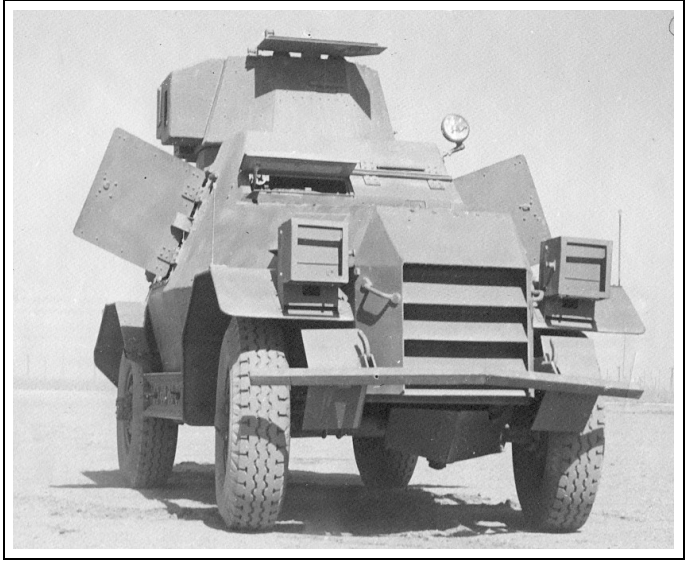


Remarks: The SA Recce Car Mk II actually covered two slightly different vehicles, the MFF (Mobile Field Force) most of which were used by South African units and the ME (Middle East) mostly used by British and Commonwealth units and to a limited extent exported to friendly countries in Asia. The main difference was in armament and fitting of weapons. The ME had an additional fixture on the front of the turret, which could hold a Boys anti-tank rifle and a .303 BREN. The Vickers ball mounting on the hull was also re-

placed with a port that would accept a BREN. Along with the Mk 3, the Mk 2 is the most common South African vehicle seen in photos of the North African campaigns. 549 MFF and 338 ME Mk 2s were completed for a total of 887. As the vehicles became obsolete and new vehicles appeared, several chassis were converted to carry heavier weapons, most captured from the Germans and Italians.

Vehicle Data: Weight empty, 13,200 lbs (5993 kg). Length, 192 in (4877 mm). Width, 78 in (1981 mm). Height, 93 in (2362 mm). Wheel Base, 134 in (3404 mm). Wheel Tread, 60 in (1524 mm). Drive, 4x4. Armor, .24 to .47 in (6 to 12 mm). NBC Protection, n/a. *Armament*: (1) .55 cal Boys AT and (1).303 Vickers LMG. Elevation & traverse, manual. Fire Control, optical. Aux wpn, (1) .303 BREN. *Capacity*: Fuel, 46 gals (174 liters) gasoline. Crew, 4. *Engine*: (1) gasoline water-cooled Ford V8 producing 85 hp. Location, front. *Transmission*: Manual with 4-fwd and 1-rev gear and a two speed transfer case. *Suspension System*: Leaf spring. Wheels steerable, front pair. No of wheels, 4. Tire Size, 9.75x18 self-sealing. *General Data*: Elec Voltage, 6 Volt. Radio, as fitted by user. *Performance*: Speed/Land, 50 mph (80.5 km/h). Range, 200 mi (322 km). *Usage*: Used by South African and Commonwealth Forces. *Manufacturer*: South African Railway and ISCOR (South African Steel Works).

1941 Vehicle, Reconnaissance. SA Recce Car, Mk 3 (Marmon-Herrington Mk 3).



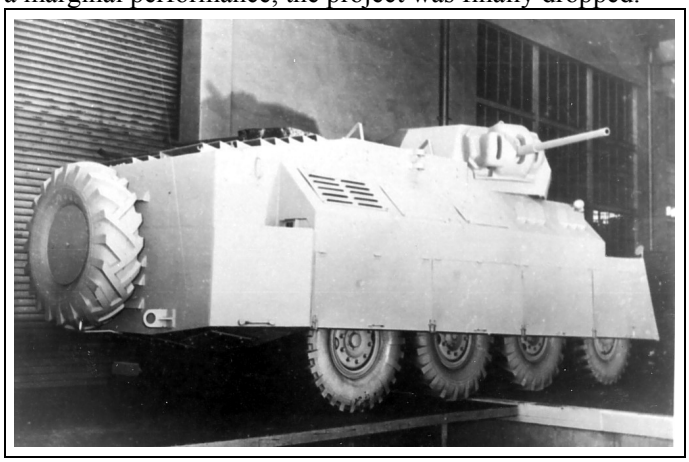
Remarks: Initial planning for the Mark 3 started in late 1940, with quantity production of the Mark 3 beginning in May 1941 and ending in August 1942. Besides an early and late Mark 3, there were two types of each vehicle, the MFF (Mobile Field Force) and the ME (Mediterranean). By the time production ended, 1,780 Mark 3 MFF and 798 Mark 3 ME, with a further 52 vehicles converted to up-gunned cars to supply the Light Aid Detachments in North Africa. Besides improved mechanicals, attention was paid to improving the crew comfort of the cars to improve crew efficiency. The general thickness of the armor plate remained the same at .24 inch (6mm) with all forward facing areas at a full .47 inch (12mm) of protection. While early Mark 3s had an access door on each side of the crew compartment and the spare tire mounted on the rear slope, later versions moved the tire to the left rear side of the vehicle and added a single door to the rear to improve crew safety.

Vehicle Data: Weight loaded, 12,500 lbs (5675 kg). Length, 209 in (5309 mm). Width, 90.5 in (2299 mm). Height, 98.5 in (2502 mm). Ground Clearance, 11 in (279 mm). Wheel Base, 117.5 in (2985 mm). Wheel Tread, 60 in (1524 mm). Drive, 4x4. Armor, .24 to .47 in (6 to 12 mm). *Armament*: (1) .55 cal Boys AT and (1) .303 LMG (either Vickers if an MFF or BREN if an ME) in turret. Elevation, manual. Traverse, manual 360º. Fire Control, optical (1.92 power scope). Aux wpn, (1) .303 BREN. *Capacity*: Fuel, 40 gals (151 liters) gasoline. Crew, 3. *Engine*: (1) front mounted, Ford water-cooled gasoline V8 producing 95 hp (sometimes during refits this was replaced with the earlier 85-hp engine). *Transmission*: Manual with 4-fwd and 1-rev gear and a 2-spd-transfer case. *Suspension System*: Leaf spring. Wheels steerable, front pair. No of wheels, 4. Tire Size, 9.75x18 self-sealing. *General Data*: Elec Voltage, 6 Volt. Radio, as fitted by user. *Performance*: Speed/Land, 55 mph (88.5 km/h). Range, 200 mi (322 km). *Usage*: Used by British and South African forces, as well as British West Africa (60 Mk 3 MFF), Dutch East Indies - Indonesia (49 Mk 3 MFF), Free French Forces in Central Africa (10 Mk 3 MFF) and Free French Forces in North Africa (48 Mk 3 ME), India (255 Mk 3 MFF), Malaya (175 Mk 3 MFF), Mozambique (6 Mk 3 MFF), Rhodesia (24 Mk 3 ME). *Manufacturer*: South African Railway and ISCOR (South African Steel Works).

1941 Vehicle, Reconnaissance. SA Recon Car 8x8 Mk 5.

Remarks: Per a request from the UK, the South African Director General of War Supplies took on the task of developing an 8 wheel heavy armored car for use in North Africa. With design work beginning in 1941, the running prototype (missing body) was able to be tested in March of 1942. Only two of the four axles were powered (the second and third axle), with the first and fourth axle being for steering and to help distribute the load. The first try at the design had the two Albion engines facing front and rear directly behind, and at the rear, directly in front of the driving station. The vehicle seems to actually have had a fairly good performance on a hard surface, but wanted to dig-in on soft soil.

Even though attention was turned to the more promising Mk VI, work continued and the vehicle was redesigned with both engines now at the rear of the vehicle and a 2-pdr gun in the fully rotating turret. Far too large and heavy, and with a marginal performance, the project was finally dropped.



Above: The single Mark 5 prototype with armor and turret installed. Photo: Author's collection.

Vehicle Data: Weight loaded, 35,815 lbs (16260 kg). Length (est), 224 in (5690 mm). Width (est), 96 in (2438 mm). Height (est), 118 in (3000 mm). Wheel Base, 162 in (4120 mm). Drive, 8x4. Armor, 1.6 to 2.4 in (40 to 60 mm). *Armament*: (1) 2-Pdr (40mm). Elevation & traverse, manual. Fire Control, optical. Aux wpn, (1) .303 LMG. *Capacity*: Fuel, gasoline. Crew, 3. *Engine*: (2) Albion 6-cyl inline water-cooled gasoline engines producing 150 hp (111 kW) each. Location, rear. *Transmission*: Manual with 4-fwd and 1 rev gear. *Suspension System*: Leaf spring. Wheels Steerable, front and rear pair. No of wheels, 8. Tire Size, 14.00x20. *Performance*: No data available. *Usage*: Only one prototype was completed. *Manufacturer*: South African Railway.

1942 Vehicle, Reconnaissance. SA Recce Car 8x8 Mk 6.

Above: The Mark 6 with 6-pdr cannon and Crusader style turret. Photos: Author's collection.

Remarks: After the Mk V, came the Mark VI, another eight wheeled vehicle, but of lighter design. Of the two prototypes completed, the first mounted a 2-pdr (40mm) gun, and the second a 6-pdr (57mm). By 1943 work on the Mk VI had progressed to a second prototype, but the pressing need for armored cars had diminished. The British order for 250 cars was canceled and development continued at a slow pace, only the two original prototypes were actually completed. Prototype #1 with the 2-pdr gun was sent to the UK for testing, and the 6-pdr vehicle, prototype #2 was retained in South Africa.

Vehicle Data: Weight loaded, 24,637 lbs (11185 kg). Length, 224 in (5690 mm). Width (with 6lb turret), 104 in (2640 mm). Height (with 6lb turret), 125 in (3168 mm) top of turret. Ground Clearance, 12 in (304 mm). Wheel Base, 128 in (3240 mm). Wheel Tread, 61 in (1550 mm). Drive, 8x8. Armor, .4 to 1.6 in (10 to 40 mm). NBC Protection, individual. *Armament*: Main – Cal, (1) 2-Pdr (40mm) or (1) 6-Pdr (57mm). Elevation & traverse, manual. Fire Control, optical. Aux wpn – Cal, (1-2) .30 cal or .303 LMG. *Capacity*: Fuel, gasoline. Crew, 3. *Engine*: (2) Ford V8s, each producing 95 hp (70 kW) @ 3,000 rpm. Location, rear. Cooling, liquid. *Transmission*: Manual with 4-fwd and 1-rev gear. *Suspension System*: Leaf spring. Wheels Steerable, front and rear pair. No of wheels, 8. Tire Size, 10.50x20. *Performance*: Speed/Land, 40 mph (65 km/h). Range, 248 mi (400 km). *Usage*: Only two prototypes were actually completed, one went to the UK and the other stayed in South Africa. *Manufacturer*: South African Railway.

1942 Vehicle, Reconnaissance. SA Recce Car, Mk 4.

Remarks: The Mark 4 was an uni-body design, with the mechanical components attached to the armored hull, without the use of a separate chassis. The main armament, a 40 mm (2-pdr) gun on a field mounting, was placed to fire directly through slots cut in the turret face, no mantlet was used. A coaxial .303 Vickers light machine gun was mounted to the right of the 2-pdr so as to raise and lower with the main gun. Of the 936 Mark 4s completed, 310 were fitted with a 2-pdr cannon and the remaining 626 only with machine guns.

Vehicle Data: *Weight*: Loaded, 13,900 lbs (6311 kg). Length, 217.5 in (5525 mm). Width, 84 in (2134 mm). Height, 90 in (2286 mm). Ground Clearance, 11 in (279 mm). Wheel Base, 114 in (2896 mm). Wheel Tread, 60 in (1524 mm). Drive, 4x4. Armor, .24-.47 in (6-12 mm, 4 mm under driver's compartment). *Armament*: (1) 40 mm (2-pdr gun). Model, QF Witwatersrand GM. Elevation, manual -5 to +20º. Traverse, manual 360º in 22 seconds. Fire Control, optical. Aux wpn, .303 Vickers. *Capacity*: Fuel, 50 gal (189 liters) gasoline. Ammo/Qty, 40 mm (37 rds), .303 (750 rds). Crew, 3. *Engine*: (1) gasoline powered, liquid cooled, Ford V8 producing 85 hp. Location, rear. *Transmission*: Manual with 4-fwd and 1-rev gear attached to a 2-spd-transfer case. *Suspension System*: Leaf spring. Wheels steerable, front pair. No of wheels, 4. Tire Size, 9.75x18. *General Data*: Electrical, 6-Volt system. Radio, Wireless Set No. 19, no intercom. *Performance*: Speed/Land, 52 mph (84 km/h). Range, 360 mi (579 km). *Usage*: Used by Commonwealth forces during WWII. *Manufacturer*: Chassis, Ford Motor Com-pany of South Africa Pty. Body, South African Iron & Steel Industries.

1943 Vehicle, Reconnaissance. SA Recce Car, Mk 4F.

Remarks: The Mark 4F was developed with the placement of an order from the British War Office for an additional 1,180 Mk 4s. Delivery of conversion kits from Marmon-Herrington was chronic and it was decided to switch to the chassis of the Canadian built Ford F60L 3-ton truck which were already on order. With the Mark 4F the engine was mounted with the clutch and gearbox facing the front of the vehicle. The Mark 4F was essentially a front wheel drive vehicle, with the drive normally transmitted through the front axle only, but with the driver able to engage the rear wheels as well for four wheel drive. Initial armament for all Mark 4Fs included the 2-pdr (40-mm) quick fire cannon and two-.30 caliber Browning light machine guns.

Vehicle Data: *Weight*: Empty, 12,740 lbs (5784 kg). Loaded, 14,880 lbs. (6756 kg). Length, 217.5 in (5525 mm). Width, 84 in (2134 mm). Height, 90 in (2286 mm). Ground Clearance, 11 in (279 mm). Wheel Base, 114 in (2896 mm). Wheel Tread, 69 in (1753 mm). Drive, 4x4. Armor, .24-.47 in (6-12 mm, 4 mm under driver's compartment). *Armament*: (1) 40 mm (2-pdr gun). Model, Witwatersrand GM QF. Elevation, Manual -5 to +20º. Traverse, manual 360º in 22 seconds. Fire Control, optical. Aux wpn, (2) .30 cal Browning LMG. *Capacity*: Fuel, 40 gal (151 liters) gasoline. Ammo/Qty, 40 mm (53 rds), .30 cal (2,250 rds). Crew, 3. *Engine*: (1) liquid cooled, Ford Mercury V8 producing 95 hp. Cooling, liquid. *Transmission*: Manual with 4fwd and 1-rev gear w/2-spd trnsf. *Suspension System*: Leaf spring. Wheels steerable, front pair. No of wheels, 4. Tire Size, 10.50x20 run flat. *General Data*: Electrical, 6 Volt. Radio, Wireless Set No. 19 w/intercom. *Performance*: Speed/Land, 52 mph (84 km/h). Range, 360 mi (579 km). *Usage*: Used by Commonwealth forces during WWII, and Cyprus, Greece, Guatemala, Israel, Jordan, Lebanon, Rhodesia, South Africa and Syria post war. Most vehicles used after

WWII were the 4F version. *Manufacturer*: Chassis, Ford Motor Company of South Africa Pty. Body, South African Iron & Steel Industries.

1963 Car, Armd, 4x4, Car, Armd, Eland-90 Mk 5.

1963 Car, Armd, 4x4, Eland-60

1972 Carr, Pers, Armd, 8x8. Carr, Pers, 8x8, RMC

1975 Carr, Pers, Armd, 4x4. Carr, Pers, 8x8, Hippo

1978 Carrier, Personnel, Armored, 4x4. Buffel.

Remarks: In service since 1978, approximately 1400 Buffel were completed before production switched to the Bulldog (an upgraded Buffel) and the Casspir, (a newly designed vehicle). With the Buffel the engine was mounted front-center with a minimum for protection. Many vehicles had a simple canvas sheet or no covering at all over the engine. The driver's compartment was offset to the left of the vehicle and above the level of the engine. The crew compartment to the rear had a V-shaped floor and up to 26 gallons (100 liters) of potable water for the crew to help take up and disperse any mine blast.

Vehicle Data: *Weight:* Loaded, 13,524 lbs (6140 kg). Length, 201 in (5100 mm). Width, 81 in (2050 mm). Height, 118 in (2995 mm) (to roll bar). Ground Clearance, 16.5 in (420 mm). Drive, 4x4. NBC Protection, individual. *Armament:* (2) 7.62mm LMG. Aux wpns, crew weapons. *Capacity:* Fuel, diesel. Crew/Passengers, 1/10. *Engine:* (1) Mercedes-Benz inline-line water-cooled 6-cyl diesel producing 125 hp @ 2800 rpm. Location, front. *Transmission:* Manual w/2-spd trnsf, 4-fwd and 2-rev gears for a total of 8/4. *Suspension System:* Coil springs (single front/double rear). Wheels steerable, front pair. No of wheels, 4. Tire Size, 12.50x20 run-flat. *Night Vision Devices:* Individual. *Performance:* Speed, 61 mph (98 km/h). *Usage:* Used by South African military and police as well as a few vehicles transferred to Sri Lanka. *Manufacturer:* ARMSCOR, Pretoria, South Africa.

1979 Veh, Util, Trk, Util, 750kg, 4x4, Trax

1979 Car, Armd, 8x8. Concept Three 8x8 Test-Bed

Remarks: This test-bed was built around a Saracen Armored Personnel Carrier (APC) side wishbone and torsion bar suspension and bevel box drive line system. The test-bed was built by Sandock Austral (Pty) Ltd in Boksburg circa 1979. The test-bed was to validate vehicle design features such as; suspension, soil mechanics, and large caliber gun firing stress mechanics. Firing trials were carried out with the muzzle brake fitted and removed from the 77mm cannon.

Vehicle Data: *Weight:* Loaded, 31,240 lbs (kg). Drive, 8x8. NBC Protection, individual. *Armament:* (1) 77mm cannon. Crew/Passengers, 4. *Engine:* (1) Cummins 210-NA; V-8 Cyl; water-cooled diesel producing 209 hp (156 kW) @ 2300 rpm. Location, rear. *Transmission:* Automatic, 5-fwd and 1-rev gears. No of wheels, 8. *Performance:* Speed, mph

(83 km/h). Range, (175 km) *Usage:* Test vehicle only. *Manufacturer:* Sandock Austral Pty, Ltd. Bocksburg, South Africa.

1981 Carr, Wpns, 155mm Gun, Self-Propelled, 6x6. G6 Rhino

1982 Carrier, Personnel, Armored, 4x4. Bulldog.

Remarks: Developed as a replacement for the Buffel armored personnel carrier, the new vehicle was based on the South African developed SAMIL 20 truck chassis. Like the Buffel, the Bulldog is open topped vehicle with the driver in a separate compartment at the front, and the crew carried in a blast resistant compartment at the rear of the vehicle. While the South African Army chose the Casspir as their new APC, the Air Force selected the Bulldog, and uses them for airfield defense.

Vehicle Data: *Weight*: Loaded, 16,960 lbs (7700 kg). Length, 210 in (5340 mm). Width, 90.5 in (2300 mm). Height, 122 in (3100 mm). Ground Clearance, 18 in (460 mm). Drive, 4x4. NBC Protection, individual. *Armament*: (1) 7.62mm LMG. Elevation & Traverse, manual. Fire Control, n/a. Aux wpns, individual. *Capacity*: Fuel, diesel. Crew/Passengers, 1/10. *Engine*: (1) front mounted, air-cooled 4-cyl diesel. *Transmission*: Type, manual with 6-fwd and 1-rev gear. *Suspension System*: Type, coil. Wheels steerable, front pair (power). Turning Radius, 21-ft (6.5 m). No of wheels, 4. Tire Size, 14.50x20. *Night Vision Devices*: Individual. *Performance*: Speed/Land, 56 mph (90 km/h). Range, 560 mi (900 km). Fording Depth, 47 in (1200 mm). Max Grade, 60%. Trench Crossing, 34 in (865 mm). Step, 23.5 in (600 mm). *Usage*: Only used by the South African Air Force. Manufacturer: ARMSCOR, South Africa.

1982 Carr, Pers, Armd, 4x4. Carr, Armd, Samil
1982 Carr, Pers, Armd, 6x6. APC, Samil 100, 6x6

1984 Veh, Recce. Patrol Veh (Pathfinder) 4x4, Jakkal.

Above Associated Automotive Distributors' Jakkal with M40 106mm recoilless rifle. (Photo: J. McKaughan)

Remarks: Small, agile weapons carrier and utility vehicle for airborne units. The Jakkal could be both delivered by aircraft, slung under a helicopter, and airdropped. Besides a recoilless rifle, the Jakkal can mount both heavy and light machine guns as well as acting as a tractor for a wheeled rocket launcher of anti-aircraft mount such as the ZPU-23-2. A replacement is being sought by the SANDF as the vehicle is no longer supported and logistics are becoming a problem.
Vehicle Data: Length (w/o wpn), 95 in (2408 mm). Width (est), 48 in (1220 mm). Height (est), 30 in (762 mm). Grd Clearance (est), 6 in (152 mm). Wheel Base (est), 61.5 in (1565 mm). Drive, 4x4. Armor, n/a. *Armament*: As fitted by user. Elevation & traverse, manual. *Capacity*: Fuel, gasol-

ine. Crew, 2. *Engine*: Type, gasoline. Location, front. *Transmission*: Manual. *Suspension System*: Leaf spring. Wheels Steerable, front pair. No of wheels, 4. *Night Vision Devices*: As fitted by user. *Performance*: Speed (est), 45 mph (72 km/h). Fording Depth (est), 24 in (610 mm). *Usage*: Only used by South African Defense Force airborne units. Now out of production a few were still in service as of 2002. *Manufacturer*: Associated Automotive Distributors, Cape Town, South Africa.

1984 Carr, Pers, Armd, 4x4. Reumech Casspir Mk 1.

Above: Casspir Mk 1 on riot duty in South Africa. (Photo: SADF)

Remarks: Developed by TFM Pty. Ltd. To supplement the Buffalo APC, the Casspir I was in production from 1981 to approximately 1990 when the Casspir Mk 2 was introduced. Armament for the Casspir Mk 1 ran from small arms to 7.62mm LMG. These machine guns are sometimes supplemented with captured weapons such as the Russian 12.7mm HMG.

Vehicle Data: Drive, 4x4. NBC Protection, No. *Armament:* (3) 7.62mm LMG. Elevation, manual. Traverse, manual. *Capacity:* Fuel, diesel. Crew/Passengers, 2/12. *Engine:* Mercedes-Benz, 6-cyl, in-line diesel, producing 170 hp. Location, front. Cooling, liquid. *Transmission:* Manual. *Suspension System:* Type, leaf spring. Wheels steerable, front axle. No of wheels, 4. *Performance:* Speed/Land, 61 mph (98 km/h). *Usage*: South Africa used The Casspir Mk 1. *Manufacturer*: TFM Pty. Ltd.

1984 Carr, Pers, Armd, 6x6. MICV Ratel.
120 refurbished Ratels were delivered to Jordan in 2003.

1985 Carr, Pers, Armd, 4x4. Rhino.

1985 Carr, Pers, Armd, 6x4. Sesspir

Above: The single Sesspir experimental Casspir Mk I with the addition of a dead steerable axle at the front. Cross-country performance was inproved as much as hoped and the project was dropped.

1985 Car, Armd, 8x8. Rooikat 76mm Gun

1985 Vehicle, Reconnaissance. Mecham BAT.

Above: Airborne Mecham BAT with full load of troopers. (Photo: SANDF)

Remarks: Vehicle is both air-portable and air-dropable for rapid deployment with airmobile and parachute units. Simple ladder type frame with leaf spring suspension. Biggest innovation was palletized load system for the rear of the vehicle allowing a tailoring for the expected mission. Pallets included mortars, cargo, passenger and additional weapons. The BAT has reached the point where logistics and repairs are becoming too expensive to make it worth retaining the vehicle in service.
Vehicle Data: Length, 122 in (3100 mm). Drive, 4x4. Armor, steel plate. *Armament*: (2) 7.62mm LMG. Elevation & traverse, manual. *Capacity*: Fuel, gasoline. Crew/Passengers, 2/6. *Engine*: Type, gasoline. No. of Cyls, 6. Location, front. Cooling, liquid. *Transmission*: Manual with 5-fwd and 1-rev gear through a 2-spd transfer case. *Suspension System*: Leaf spring. Wheels Steerable, front pair. No of wheels, 4. *Night Vision Devices*: As fitted by user. *Performance*: Speed, 75 mph (120 km/h). Range, 310 mi (500 km). *Usage*: Used by South African National Defence Force airborne units. As of 2002 vehicle was being phased out of service. *Manufacturer*: Mecham, South Africa.

1986 Carr, Pers, Armd, 4x4. Wolf APC

1986 Carr, Pers, Armd, 6x6. AC200

1989 Carrier, Personnel, Armored, 4x2. FTM Mamba Mk 1.

Above: 4x2 Mamba I based on stock Toyota truck components. (Photo: Mecham Ltd)

Remarks: The Mamba I, was designed by Dr. Vernon Joynt Mechem Ltd., using stock Toyota truck components for the engine and running gear. Primarily a police vehicle, the Mamba I was also used by the SADF which asked for a 4x4 version to be developed (resulting in the Mamba Mk 2 in 1990) which used the then standard with the SADF Unimog 416 parts inventory. The armored hull protects against small arms fire and shell fragments, and all glass is bulletproof to the same standard as the hull. Crewed by two, the Mamba Mk 1 can carry five fully equipped troops seated in the rear cabin. There are also roof hatches above the rear compartment. Although supplemented by the Mk 2 starting in 1993 the Mk 1 was still in use for several more years. The basic configuration of the vehicle is standard, with the driving compartment at the front behind the engine, the driver on the right and the vehicle commander on the left and five passengers in the rear.
Vehicle Data: Length, 191 in (4850 mm). Width, 84 in (2140 mm). Height, 86.5 in (2200 mm). Wheel Base, 105 in (2660 mm). Drive, 4x2. NBC Protection, No. *Armament:* As fitted by user. *Capacity:* Fuel, diesel. Crew/ Passengers, 2/5. *Engine:* Toyota 4-cyl in-line diesel Model JO 5 C, producing 102 hp @ 2900 rpm. Location, front. Cooling, liquid. *Transmission:* Toyota Model H261, manual, 6-speed synchromesh with 5-fwd and 1-rev gears. *Suspension System:* Type, leaf spring. Wheels Steerable, (2 power) front axle. No of wheels, 4. Tire Size, 12.50x20. *Performance:* Speed/Land, 75 mph (120 km/h). *Usage*: Nearly 500 Mamba Mk 1s were completed and used in South Africa, while Sweden acquired four Mk 1s for UN peace keeping duty. *Manufacturer*: TFM Pty. Inc. South Africa.

1990 Carrier, Personnel, Armored, 4x4. Reumech Casspir Mk 2.

Remarks: Developed by Reumech OMC, which took over for FTM Pty. Ltd, the Casspir II was in production from 1990 to approximately 1995 when the Casspir Mk 3 was introduced. The Mark II and Mark III were essentially the same vehicle with improved mine protection on the Mk 3 which also weighed more than the Mk 2. Armament for the Casspir Mk 2 was (3) 7.62mm LMG. In 1999 when India purchased an additional 80 Mk 2s to go with their original 10 units, the per vehicle cost was approximately $119,000 each.
Vehicle Data: *Weight:* Empty, 20,881 lbs (9480 kgs). Loaded, 23,965 lbs (10,880 kgs). Length, 272 in (6900 mm). Width, 96.5 in (2450 mm). Height, 123 in (3125 mm).

Ground Clearance, 14.8 in (376 mm). Wheel Base, 165 in (4200 mm). Drive, 4x4. Armor, welded armor plate. NBC Protection, No. *Armament:* (3) 7.62mm LMG. Elevation, manual. Traverse, manual. *Capacity:* Fuel, diesel. Crew/ Passengers, 2/12. *Engine:* Mercedes-Benz OM-325A, 6-cyl in-line producing 166 hp. Location, front. Cooling, liquid. *Transmission:* Manual. Mercedes-Benz MB G3 with 5-fwd and 1-rev and 2-spd trnsf. *Suspension System:* Type, leaf spring. Wheels steerable, (power) front axle. Turning Radius, 68.8-ft (21 m). No of wheels, 4. Tire Size, 14.00x20. *Performance:* Speed/Land, 56 mph (90 km/h). Max Grade, 60%. *Usage*: The Casspir Mk 2 is in use with South Africa (390), Angola (3) 1996, India (90), Namibia (5), Peru (20), and Uganda (70). *Manufacturer*: Reumech OMC.

1990 Car, Armd, 8x8. Rooikat 105mm Gun

1992 Carr, Anti-Aircraft, Rooikat ZA35

1992 Carr, Pers, Armd, 4x4. RG-12 Nyala.
Three vehicles were delivered to the Ivory Coast in 1996.

1993 Car, Armd, 8x8. Rooikat 35mm Gun

1994 Car, Armd, 4x4, Mechem MC-90.

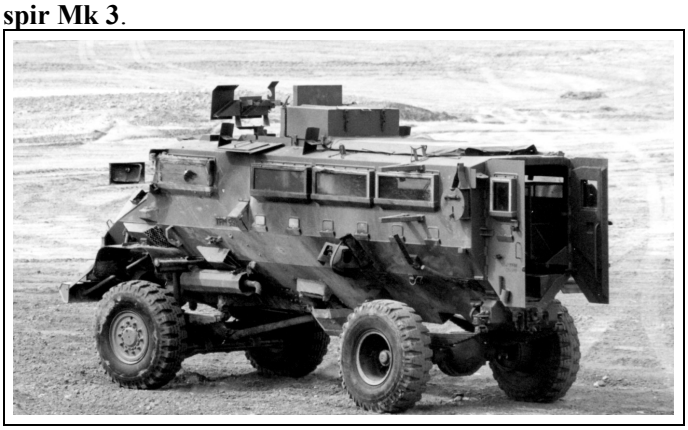
1994 Carrier, Personnel, Armored, 4x4. Reumech Ingwe Mk 2

1994 Carrier, Personnel, Armored, 4x4. Reumech Mamba Mk 2.
Remarks: The Mamba II, was designed by Mechem Consultants subsidiary of the Denel Group and developed by Reumech (now Alvis-Vickers OCM), and entered service with the South African Defence Force in 1994. Unlike the Mamba I, which used Toyota components, the Mamba II makes use of many Unimog 416 parts to enable better NATO compatibility. It has a V-shaped all-steel welded hull to provide a high level of protection against anti-tank mines, small arms fire and shell splinters. All glass is bulletproof and wire-mesh grilles that can be fitted to windows afford further protection. All occupants enter the Mamba through a large rear-access door. If required, firing ports may be fitted to windows in the rear compartment and a 12.7mm (.50 cal) machine gun can be mounted on the roof. There are six roof hatches in the rear compartment and two above the driver and commander's position. Additionally, smoke grenade launchers, night-vision equipment, run-flat tires and a variety of radios and suppression equipment may be fitted. Between the years 1993 and 1997, a total of 653 Mamba Mk 2 were built for the local market with a few exports. The basic configuration of the vehicle is standard, with the driving compartment in front behind the engine, having the driver on the right and the vehicle commander on the left. The rear compartment can carry nine troops with five on the left and four on the right in individual seats. A spare wheel is mounted on the left side with height of the driver. Standard equipment includes a 100-liter (26.4 gal) water tank for the crew. Options include air conditioning; roof mounted machine gun, additional hatches for the passengers to use their weapons, additional radio operator equipment. A 5,000 kgs (11,013 lbs) capacity winch can also be fitted.
Vehicle Data: *Weight:* Empty, 12,577 lbs (5710 kgs). Loaded, 14,978 lbs (6800 kgs). Length, 215 in (5460 mm). Width, 87 in (2205 mm). Height, 98 in (2495 mm). Ground Clearance, 16 in (410 mm). Wheel Base, 114 in (2900 mm).

Drive, 4x4. Armor, protected up to 7.62mm or 14 kgs of TNT. NBC Protection, No. *Armament:* (1) .50 cal HMG. Elevation, manual. Traverse, manual. *Capacity:* Fuel, diesel.

Crew/Passengers, 2/9. *Engine:* Mercedes-Benz Model OM 352 6-cyl in-line diesel producing 123 hp @ 2800 rpm. Location, front. Cooling, liquid. *Transmission:* Type, manual, 4-spd synchromesh. Speeds Fwd/Rev, 4/1. Mfr, Mercedes-Benz. Model, UG 2/30. *Suspension System:* Type, Coil spring. Wheels Steerable, (2 power) front axle. Turning Radius, 41-ft (12.5 m). No of wheels, 4. Tire Size, 12.50x20. *Performance:* Speed/Land, 63 mph (102 km/h). Range, 559 mi (900 km). Max Grade, 70%. *Usage*: Nearly all Mamba Mk 2s were used in South Africa, although 10 were delivered to the Ivory Coast and a further 10 to Uganda in 1996. *Manufacturer*: Alvis-Reumech OCM.

1995 Carrier, Personnel, Armored, 4x4. Reumech Casspir Mk 3.



Above: Casspir Mk 3 during a mine resistance demonstration. (Photo: Steve Zaloga)

Remarks: Casspir, an anagram of the acronyms SAP (South African Police) and CSIR (Council for Scientific and Industrial Research) was designed in the late 1970s and introduced into police and later military service in the 1980s. Today it is used as a troop carrier for the motorized infantry. Several are also deployed with peacekeepers in the Democratic Republic of Congo. Refurbished Casspirs are now being sold to other countries, including India. Originally developed for the conditions in South Africa where a very high mine threat was prevalent; Casspirs are certified to protect their occupants against the effects of a triple TM-57 mine blast (equivalent to 21kg of TNT) under any wheel, or a double mine (14kg of TNT) anywhere under the hull. Standard ballistic protection is against 7.62 x 51 mm NATO ball ammunition, whilst protection against armor-piercing ammunition and the TMRP-5 self forming fragment mine is also available as an option. In standard APC configuration Casspir has two pneumatically operated rear doors and a partially open roof with hatches above the driver and co-driver positions. A full armored roof with hatches is available as an option. A variety of weapons can be mounted and firing ports are fitted below or in the armored windows for the employment of personal weapons. While plans were at first made to continue the Casspir series with the Mk 3, it was later decided to cease production and introduce the Sable APC instead, enabling the development of a brand new vehicle from the ground up.

Vehicle Data: *Weight:* Loaded, 25,198 lbs (11,440 kgs). Length, 274 in (6950 mm). Width, 102 in (2600 mm). Height, 113 in (2880 mm). Ground Clearance, 13.4 in (340 mm). Wheel Base, 164 in (4175 mm). Drive, 4x4. Armor, welded armor plate. NBC Protection, No. *Armament:* (2) 7.62mm LMG. Elevation, manual. Traverse, manual. *Capacity:* Fuel, diesel. Crew/Passengers, 2/12. *Engine:* Mercedes-Benz OM-325A, 6-cyl in-line producing 166 hp. Location, front. Cooling, liquid. *Transmission:* Manual. Mercedes-Benz MB G3 with 5-fwd and 1-rev and 2-spd trnsf. *Suspension System:* Type, leaf spring. Wheels steerable, (power) front axle. Turning Radius, 68.8-ft (21 m). No of wheels, 4. Tire Size, 14.00x20. *Performance:* Speed/Land, 52.8 mph (85 km/h). Range, 479 mi (770 km). Max Grade, 60%. *Usage*: The Casspir Mk 3 is in use with South Africa and Djibouti (9) in 2001. *Manufacturer*: BAE Systems Land Systems OMC. Benoni, South Africa.

Above: Casspir Mk 3 with 106mm RR. (SAA Photo)

1995 Carr, Wpns, MRL, ARMSCOR, 127mm Valkiri Mk 2

1996 Veh, Util, Veh, Util, Airborne, 4x4, Jackal

1997 Carr, Pers, Armd, 4x4. Windhoekeker Maschinenfabrik Wer'wolf

2000 Vehicle, Reconnaissance. CSIR Defencetek G-BAT.

Above: CSIR G-BAT with 40mm Grenade launchers and personnel carrier pallet at the rear. (Photo: CSIR Technology)

Remarks: The G-Bat was designed and built and tested in South Africa. The body is manufactured from aluminum tabular sections with provisions for add-on armor. These add-on armor kits can be fitted in less than an hour and protect the frontal arc of the vehicle. The chassis and drive train components are from the Mercedes Benz 290 GD chassis. The use of a commercial chassis already in the inventory of several European militaries make service and spares available in many parts of the world. The G-BAT can also be supplied with left or right-hand drive. Depending on the mission, the G-BAT can be equipped with; 7.62mm light machine guns, a 12.7mm heavy machine gun in dual or single mount, 20mm cannon, 40mm grenade launcher, or 20/14.5mm anti-material rifle. The vehicle rear pallet can also mount LMGs, Multiple Rocket Launchers, 60mm mortars, or AA/AT Missiles. Designed for pallets the G-BAT can be used as command, communications, or personnel carrier.

Vehicle Data: Weight empty, 5,513 lbs (2500 kg). Loaded, 8,159 lbs (3700 kg). Length, 157.5 in (4000 mm). Width, 65 in (1650 mm). Height, 74 in (1870 mm). Ground Clearance, 10 in (260 mm). Wheel Base, 94.5 in (2400 mm). Wheel Tread, 61 in (1555 mm). Drive, 4x4. Armor, Modular to fit mission. *Armament*: As fitted by user. Elevation & traverse manual. Fire Control, optical. Aux wpn, as fitted to pallet. *Capacity*: Fuel, 25 gals (96 liters) diesel. Crew/Passengers, 2/5. *Engine*: Turbo-diesel. (1) Mercedes-Benz, water-cooled, 5-cyl in-line producing 119 hp (88 kW) @ 3800 rpm. Location, front. *Transmission*: Automatic with 4-fwd and 1-rev gear and 2-spd transfer case. *Suspension System*: Coil spring. Wheels Steerable, front pair w/power assist. Turning Radius, 37.5 ft (11.4 m). No of wheels, 4 (5-hole rims). Tire Size, 7.50Rx16. *General Data*: Elec Voltage, 24 V 60 amp. *Night Vision Devices*: As fitted by user. *Performance*: Speed, 81 mph (130 km/h). Range, 559 mi (900 km). Fording Depth, 24 in (600 mm). Max Grade, 70%. Step, 12 in (300 mm). *Usage*: Evaluated by the SANDF, the G-Bat was put on hold because of budget restraints. *Manufacturer*: CSIR Defence Technology, SA.

2001 Carrier, Personnel, Armored, 4x4. RG-31 Mine-Protected Vehicle.

Above RG-31 Mk II of the Ugadian Army with AMISON in Somalia.

Remarks: South Africa delivered seven of these vehicles to Swaziland and a further seven to the UN to support operations in 2001.

2003 Carrier, Personnel, Armored, 4x4. Vickers Mamba Mk 3.

Remarks: A combination of new builds and upgrades of existing Mamba Mk 2s, 220 Mk 3s were delivered and in service by the end of 2003. The main external difference in the Mk 3 is that, it is a little taller than the Mk 2. The Springbuck APC or the upgraded Oryx APC have replaced the Mk

3 in production.
Vehicle Data: *Weight:* Empty, 11,400 lbs (5176 kgs). Length, 215 in (5460 mm). Width, 87 in (2205 mm). Height, 98 in (2495 mm). Ground Clearance, 15.5 in (390 mm). Drive, 4x4. Armor, protected up to 7.62mm or 14 kgs of TNT. NBC Protection, No. *Armament:* (1) .50 cal HMG. Elevation, manual. Traverse, manual. *Capacity:* Fuel, diesel. Crew/Passengers, 2/9. *Engine:* In-line Diesel. Location, front. Cooling, liquid. *Suspension System:* Type, coil spring. Wheels steerable, front pair (power). No of wheels, 4. *Performance:* Speed/Land, 63 mph (102 km/h). Range, 559 mi (900 km). *Usage*: the Springbuck APC or the upgraded Oryx APC has replaced The Mk 3 in production. *Manufacturer*: BAE Systems Land Systems OMC, Republic of South Africa.

2004 Carrier, Personnel, Armored, 4x4. Oryx.
Remarks: First designed and built in South Africa to replace the Mamba 4x4 MPAPC, in March 2005 the US Army concluded that the South African designed Landmine Protected Armoured Vehicles (MPV's) were the most suitable vehicles for the new Iraqi Armed Forces. In cooperation with International Truck and Engine of Warrenville, Illinois, the Oryx was developed to specifically meet the requirements of Iraq. This called for a vehicle with high mobility, good ballistic protection (B7+, 7.62X54mm API) and being able to take multiple tank-mines, this proving to be the best protection also against IED's. The end result is the Oryx. The initial order by the US for the Iraqi Army was under 200 vehicles with deliveries to start in late 2005, early 2006.

Oryx Data: *Weight:* Empty, 19,548 lbs (8875 kg). Length, 225 in (5716 mm). Width, 90.5 in (2300 mm). Height, 97.5 in (2477 mm). Ground Clearance, 14.5 in (366 mm). Wheel Base, 140 in (3555 mm). Drive, 4x4. Armor, armor /glass up to 7.62mm AP. *Capacity:* Fuel, diesel. Crew/Passengers, 2/8. *Engine:* International, diesel V8 producing 230 hp @ 3300 rpm. Location, front. Cooling, liquid. *Transmission:* Allison Model 2500, automatic with 5-fwd and 1-rev gear with a 2-spd transfer case. *Suspension System:* Type, leaf-spring. Wheels Steerable, power steering to front pair. Turning Radius, 52.5 ft (16 m). No of wheels, 4. Tire Size, 395/65x20. *General Data:* Elec Voltage, 12V system. *Performance:* Speed/Land, 68 mph (110 km/h). Fording Depth, 29.5 in (750 mm). Max Grade, 70%. Variants of the Oryx: Standard Oryx 4X4 APC, Oryx 6X6 APC, Command & Control Vehicle, Ambulance, Armored Utility Vehicle and Weapons Platform. *Usage*: Vehicles have been purchased to upgrade the Iraqi armed forces. *Manufacturer*: BAe (UK), Armor Technology Systems (SA), and International Military Vehicles (USA).

2004 Carrier, Personnel, Armored, 4x4. Springbuck.
Remarks: Concept design of the Springbuck APC was started in 2001 by Drakensberg Truck Manufacturers with the development of the 4-cylinder engine, 4x4, Mark I. This vehicle was designed to replace the 4x4 Casspir APC and supplement the Mamba. The Springbuck Mk I has an all welded V-shaped hull along with all round vision and a

large door at the rear. Roof hatches are provided along with weapon mounts and or weapon ports in the armored glass. Fuel and drinking water tanks are mounted externally and will come free in the event of a mine blast. In its basic form, the Springbuck is proof against 7.62mm ball ammunition. The standard engine for the Springbuck Mk I is a Mercedes-Benz diesel, but other engines are available. Development of the basic vehicle continued with the Mk II, Mk III and Mk IV 4-cylinder driven, single door vehicles. The latest version is the Springbuck IV APC fitted with a 4 cylinder diesel engine. This is a permanent 4x4 with a driver and 10 passengers. Basic ballistic protection is B6 upgradeable to B7. The

all-steel armored v-shaped hull is designed to withstand a TM57 landmine under the hull or two under any wheel. The standard configuration can be easily adapted to various applications including the addition of turret-mounted weaponry so the design can be effectively used as a combat vehicle. The Springbuck IV APC uses internationally available drive-line components for reliability as well as availability of parts.

Springbuck IV Data: *Weight:* Empty, 14,994 lbs (6800 kg). Loaded, 22, 026 lbs (10,000 kg). Length, 231.5 in (5883 mm). Width, 93 in (2363 mm). Height, 98 in (2468 mm). Ground Clearance, 13.5 in (343 mm). Wheel Base, 134.3 in (3412 mm). Drive, permanent 4x4. *Armor.* NATO B6 upgradeable to B7 standard. *Capacity:* Fuel, diesel 73.9 gals (280 liters). Crew/Passengers, 1/10. *Engine:* MWM 4.10T, 4-cyl turbo-charged diesel producing 139.6 hp (103 kW) @ 2600 rpm. Location, front. Cooling, liquid. *Transmission:* Type, Allison 1000 Automatic with 2-speed transfer case. *Suspension System:* Semi-eleptical leaf spring with hydraulic shock absorbers. Wheels steerable, front pair with power assist. Turning Radius, 49.2-ft (15 m). No of wheels, 4. Tire Size, 12.5x20. *Performance:* Speed/Land, 68 mph (110 km/h). Fording Depth, 29.5 in (750 mm). Max Grade, 70%. *Usage*: In use with South Africa. *Manufacturer*: Drakensberg Truck Manufacturers (Pty) Ltd., Plot 145 Waterval, Wallmannsthal, Pretoria, Gauteng Province. South Africa.

2004 Carrier, Personnel, Armored, 4x4. Sable.

Remarks: Designed as a replacement for the aging Casspir series of mine-protected APCs, the Sable tried to build on the experience gained from years of field usage. The Sable is protected against up to a triple TM-57 AT mine (equal to 46 lbs [21 kg] of TNT) with the option of up-armoring against self-forming fragmentation mines. The monocoque hull is of steel construction with the vehicle commander and driver at the front and the 12 passengers divided up with six to a side facing inward. Roof hatches are available to allow the passengers to fire out of the vehicle.

Vehicle Data: *Weight:* Empty, 21,035 lbs (9550 kg). Loaded, 26,167 lbs (11880 kg). Length, 233 in (5928 mm). Width, 100 in (2545 mm). Height, 106 in (2700 mm). Ground Clearance, 16.5 in (411 mm). Wheel Base, 141 in (3574 mm). Drive, 4x4. Armor, welded steel proof against 7.62mm AP. *Armament:* As fitted to roof hatch. Elevation & traverse, manual. *Capacity:* Fuel, diesel. Crew/Passengers, 2/12. *Engine:* MWM turbo-charged 6-cyl diesel producing 240 hp @ 2400 rpm. Location, front. Cooling, liquid. *Transmission:* Allison, automatic w/2-spd trnsf case. Speeds Fwd/Rev, 5/1. *Suspension System:* Semi elliptic leaf spring. Wheels Steerable, power - front pair. Turning Radius, 52.5-ft (16 m). No of wheels, 4. Tire Size, 14.0x20. *General Data:* Elec Voltage, 24V. Intercom, Yes. *Performance:* Speed/Land, 74.5 mi (110 km/h). Fording Depth, 39 in (1 m). Max Grade, 60%. *Usage:* Pre-production vehicles have been completed. *Manufacturer:* Armour Technology Systems, Republic of South Africa.

2005 Carrier, Personnel, Armored, 4x4. IVEMA Gila.

Remarks: Designed in 2005, the Gila's South African designed V-shaped hull exceeds NATO basic specifications for mine protection, while ballistic protection meets NATO Level 1 specifications, but can be upgraded to Level 3. IVEMA's C-130 air-transportable APC is based on South

African technologies along with modern dynamics. These include an advanced engine, automatic gearbox and high capacity axles. The standard Gila is also fitted with disc brakes, ABS, central tire inflation system (CTIS), run-flat tires, military-spec electric harness and air conditioner. A light turret to accommodate any of several existing weapons in service around the world is fitted on the top of the vehicle behind the driving crew station. Provision is also made for a 7.62mm machine gun mount at the rear. The vehicle design

allows for easy maintenance and repair. The engine, gearbox and cooling system being mounted on a rail, which allows for the engine to be removed and replaced within an hour in field conditions. Many of the components are available commercially as "off-the-shelf" items. After-detonation cost is exceptionally low and after blast repairs can be done in the field.

Vehicle Data: *Weight:* Empty, 22,908 lbs (10400 kg). Loaded, 29,956 lbs (13600 kg). Drive, 4x4. Armor, NATO Level 1 (5.56mm ball). NBC Protection, individual. *Armament:* (1) .50 cal. (12.7mm) HMG and (1) 7.62mm LMG at rear of vehicle roof. Elevation & traverse, manual. *Capacity:* Fuel, diesel. Crew/Passengers, 2/9. Engine: Mercedes-Benz Euro III diesel. Location, front. Cooling, liquid. *Transmission:* Automatic. Suspension System: Type, leaf spring. Wheels steerable, front pair (power). No of wheels, 4 (Run flats). Other, central tire inflation. *Night Vision Devices:* Driver, Commander, individual. *Usage:* As of 2006 only a prototype had been completed. The Gila is designed to be used in Motorized Infantry and unconventional warfare roles, as well as for multi-mission tasks within peace support missions. *Manufacturer:* IVEMA, Republic of South Africa.

2009 Carrier, Personnel, Armored, 4x4. Springbuck 6 APC.

Above: Springbuck 6 APC during testing. Photo: Drakensberg Truck Manufacturers (DTM).

Remarks. The latest refinement of the Springbuck design is the Springbuck 6 APC which introduced a 6-cylinder, water-cooled, diesel, MWM engine producing 198 hp (146 kW) of power. The vehicle itself has permanent 4-wheel drive and carries a driver and 10 passengers. With B6 ballistic protection upgradeable to B7, the all-steel armored v-shaped hull is designed to withstand a TM57 landmine under the hull or two under any wheel. The standard configuration can be easily adapted to various applications and by the addition of turret-mounted weaponry the vehicle can be effectively used as a combat vehicle. A major change was the introduction of a total of three doors to the vehicle instead of a single door at the rear. The standard configuration and modular interior layout of the Springbuck 6 can be adapted to various applications such as: armored personnel carrier, cash-in transit vehicle, combat vehicle, command vehicle, riot control vehicle, tactical patrol vehicle, tactical fire-support vehicle or as a tactical ambulance with stretcher.

Springbuck 6 APC Data: *Weight:* Empty, 14,994 lbs (6800 kg). Loaded, 22, 026 lbs (10,000 kg). Length, 231.6 in (5883 mm). Width, 93 in (2363 mm). Height, 97 in (2468 mm). Ground Clearance, 13.5 in (343 mm). Wheel Base, 140 in (3562 mm). Angle of approach, 48 degrees. Angle of departure, 43 degrees. Drive, permanent 4x4. Armor. Proof against B6 upgradeable to B7 NATO standard *Capacity:* Fuel, diesel 37 gals (140 liters). Crew/Passengers, 1/10. *Engine:* Mercedes-Benz, 6-cyl turbo-charged MWM 6.10T diesel producing 198 hp (146 kW) @ 2600 rpm. Location, front. Cooling, liquid. *Transmission:* Type, Allison automatic. Speeds Fwd/Rev, 5/1 w 2/spd trnsf. Model, 1000. *Suspension System:* Semi-eleptical leaf spring with hydraulic shock absorbers. Wheels steerable, front pair. Turning Radius, 52-ft (15.3 m). No of wheels, 4. Tire Size, 12.5x20. Steering, power assist with either Left or Right hand drive at the operator's request. *Performance:* Speed/Land, 68 mph (110 km/h). *Range:* 372 mi (600 km). Fording Depth, 29.5 in (750 mm). Max Grade, 70%. *Usage*: In use with South Africa. *Manufacturer*: Drakensberg Truck Manufacturers (Pty) Ltd., Plot 145 Waterval Wallmannsthal, Pretoria, Gauteng Province. South Africa.

2010 Carrier, Personnel, Armored, 4x4. Casspir Mk II (New Build)

Above: With demand more than could be met by reconditioning old vehicles, MECHEM began production of brand new Casspirs using the updated designs and jigs. (Photo: MECHEM)

2010 Carrier, Personnel, Armored, 4x4. Casspir-S (Casspir-Short)

Above: Based on the Casspir Mk II (New Build) chassis and components the Casspir-S has a reduced armored crew compartment but with the addition of a tray at the rear capable to handle cargo or a weapon's mount. (Photo: MECHEM)

2010 Carrier, Personnel, Armored, 4x4. Casspir-LP (Casspir-Low Profile).

Above; Along with the Casspir-S, MECHEM developed a Casspir Mk II (New Build) that could operate with a lowered suspension. The new design is able to fit into most medium sized cargo aircraft; making deployment of a Casspir much easier. (Photo: MECHEM)

2010 Carrier, Personnel, Armored, 4x4. Casspit Mk IV

Above: Along with the Casspir Mk II (New Build), MECHEM has also developed a follow-on vehicle incorporating new technology and design for mine-resistant vehicles. (Photo: MECHEM).

2012 Carrier, Personnel, Armored, 4x4. IVEMA Gila.

Above: In an effort to meet the demand for new vehicles similar to the Casspir, IVEMA has produced a near clone to the original vehicle. The vehicledoes feature a new engine and running gear, along with a redesigned interior. An Anti-Aircraft/Anti-Tank mounting as well as a Police/Interior Security design has also been developed. (Photo IVEMA)