



Mercedes Benz Sprinter 616 Armored Ambulance



2.0 CONCEPT

2.1 The vehicle is fitted with a Sprinter 616 engine and suspension

2.2 Vehicle Characteristics:

- 2.2.1 Aggressive looking vehicle to discourage attack.
- 2.2.2 Fully armored so that crew is protected in all areas of the vehicle.
- 2.2.3 Large enough to withstand/discourage ramming
- 2.2.4 Head and taillights to be protected from accidental bumping.

3 BASE VEHICLES

BASE VEHICLE: Mercedes Sprinter 616 Freight Carrier.....



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ENGINE: Mercedes-Benz OM 612 DE 27LA 4 stroke diesel, 4 valves per cylinder double overhead cam, direct injection CAN networking engine management.

Inter cooled turbocharger with wastage
electronically controlled common rail Injection system

Pressure: 1350 bar 5 in line cylinders

Bore x stroke = 88 x 88.4

Displacement 2.686 CC

Compression ratio 18:1

Max power 115KW @3800rpm

Max torque 330Nm @ 1400-2400rpm

Water trap Standard

CLUTCH 240mm diameter, Single dry plate with hydraulic release mechanism

TRANSMISSION Type: G33-5

Ratios: 1st =5,053 5th = 0.784 **Reverse** = 4.756

AXLES Front Axle capacity = 2100kg

Rear Axle capacity = 4360kg.

Rear Axle RATIO 5,750:1.

Top speed 112km/h @3800 rpm



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STEERING: Power assisted rack and pinion.

SUSPENSION Front = Transverse parabolic spring / Rear = Parabolic Springs.

Shocks Gas filled front and normal rear

STABILISERS Fitted to both front and rear.

BRAKES Service brakes = Hydraulic dual circuit with vacuum brake booster, ventilated disks front and rear

Parking brake Compressed air spring brake with air heater and air drier

LDC - Load dependant control.

CHASSIS Continuously straight, integral frame concept.

FUEL TANK Capacity = 200liter.

ELECTRICAL SYSTEM 12v 88 amp hour battery 14v 90amp alternator 12v 2.2kW starter.

WHEELS

Rims 6j x 16h2

Tires 215/75R 16C Tubeless radials

Dual rear wheels

WHEELBASE 3550mm

The vehicle is supplied with a diff-Lock.



4. BALLISTIC SPECIFICATION SHEET

Type	Class	Weapon/Ammunition	Range	Velocity	Shots	Spacing
Light Armored Vehicles	B2	9mm	5	358m/s	3	120mm
	B3		5	430m/s	3	120mm
	B4	357 magnum	5	440m/s	3	120mm
	B4+	44 magnum AK47 ball 7.62 x 39	10	710m/s	3	120mm
Fully Armored Vehicles	B5	5.56 x 45 Steel core SS1 09 round	10	950m/s	3	120mm
	B6	7.62 x 51 ball	10	830m/s	3	120mm
	B6+	5.56 x 45 Lead M193round	30	980m/s	3	120mm
	B7	7.62 x 51 AP	30	820m/s	3	120mm
Armor Piercing		AK47 7.62 x 39 AP	30	715m/s	3	120mm



6. CONFIGURATION

6.1 Doors:

6.1.1 there is FOUR doors into the vehicle. One in each side of the cab, and two in the Rear

6.1.2 all doors are fitted with anti tamper locks, and an additional manual bolt mechanism.

6.1.3 Door apertures have a surround plate that acts as an anti crow bar reinforcing, and as a gutter to take liquids away from the door aperture. (e.g. burning fuel)

6.1.4 the rear door can be secured in full open position.

6.2 Locks:



6.2.1 Door locks are tamperproof, and covered on the inside by armor plate to prevent ballistic penetration.

6.3 Seats

6.3.1 Driver and co driver seats will be the seats from original vehicle.

6.3.2 A squat bench will be supplied in the rear of the vehicle

6.4 Seat Belts

6.4.1 The original vehicle seat belts will be fitted for the driver and co driver.

6.5 Glass

6.5.1 Windscreen: 2 piece windscreen with transparent amour glass.

6.5.2 Front doors Door glasses are fixed in the door aperture.

6.5.3 View Ports Rear-2 view ports will be provided in the rear doors

6.5.4 Bulkhead: A view port will be fitted in the bulkhead separating the driver's compartment from the patient area

6.5.5 Anti-spall film will be applied to the bullet resistant glass

6.6 Document Hatch

6.6.1 A document hatch will be provided under the side window on the driver's side. **6.6.2** A ballistic protection sliding plate will be provided to facilitate the passing of ID documents or other items.

6.7 Run flat tires

6.7.1 The vehicle will be fitted with a 50km run on, Rodguard run flat, tire system

6.8 Star bar & PA System



6.8.1 A star bar and PA system as per the attached specification will be fitted to the vehicle.

6.9 Spot lights:

6.9.1 A set of front and rear facing spot lights will be mounted on the roof.

6.10 Bumpers:

6.10.1 Front and rear bumpers will be incorporated into the armored hull.

6.11 Air conditioning:

6.11.1 A cab air conditioner unit plus a split air conditioner unit for the rear will be fitted. The exterior of the roof will be treated with a reflective Ceramic paint (white in color) and the interior will be covered in foam-backed vinyl to reduce the heat in the vehicle.

6.12 Trunking

6.12.1 Trunking will be provided for the interface items i.e. radios, antennas, etc

6.13 Medical Equipment

6.13.1 Oxygen - (carbon fiber bottles) will be provided (2 off)

6.13.2 A Suction and defibrillator headboards - 1 off will be provided

6.13.3 A stretcher with securing brackets will be provided

6.13.4 Shelving for medical supplies will be supplied

6.14 Two fire extinguishers will be provided

7 RADIO COMMUNICATION SYSTEM



7.1 Client Furbished Item

8 RUNFLAT TYRE INSERTS

8.1 A Rodguard Runflat System will be fitted allowing a 50km run-on at 50km/hr



Runflat

9 STAR BAR -MODEL 14540



starbar14540

9.1 Modern aerodynamic design reduces wind resistance.

9.2 Lenses manufactured from high impact, UV stabilized, Lexan Polycarbonate.

9.3 Rotators are fitted with standard **HI** halogen lamps.

9.4 Highly polished stainless steel duo-mirrors provide additional flashes.

9.5 Intended for emergency vehicles where a siren system is fitted.

9.6 Supplied complete with siren driver housing, wiring harness and mounting brackets. **9.7** New lower deck Alley light design does not obstruct light output of the outer rotators.

9.8 The Alley light assembly is fitted with dual 20 watt lamps providing wide light dispersion. Take-down and Flashers fitted with 35W Dichroic pre-focus modules with 4000 hour lifespan.



9.9 Available with Blue, Red, Amber, Clear or Green lenses

9.10 Color combinations on request. .

Current Consumption at 12V

Light Source	Current	Total
Outer Rotators	4.6 Amp (each)	9.2A
Inner Rotators	4.6 Amp (each)	9.2A
Take-down lights	2.9 Amp (each)	5.8A
Alley lights	3.3 Amp (each)	3.3A
Static Flashers	2.9 Amp (each)	2.9A
Cruise lights	1.6 Amp (each)	2.2A

Junction box: For fitting to vehicle lights. Independent flashing headlights

10 PASIREN:



10.1 Selection of 3 sets of lights, either individually or in selected combinations (the LED backlight flashes to indicate selection).

10.2 Wide range of microprocessor generated siren tones, programmed to comply with local standards/specifications worldwide

10.3 Compact, feature packed, high performance P.A. Siren amplifier (can be installed into a standard dashboard aperture) Wail and Yelp siren tones as defined by the Road Traffic Act. Stenner tone for extra alert at intersections etc. Peak tone for pullover and for instant warning purposes. Air horn tone activated by hooter button.

10.4 Tone toggle - Alternating Wail and Yelp tones with hooter button. Auto light - Automatic selection of emergency lights when any tone is selected. Pressing the hooter button twice will start the siren tone and lights (pushing the Zap button will switch off the siren tones). Master On/Off switch for Zero current drain in the "Off" position.

10.5 Illuminated front panel for easy identification at night.



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10.6 Built in protection against Polarity reversal and output Short circuit.

MODEL	HAC5500
Dimensions (W x H x D mm)	1 23x52x145
Weight (Kg)	1,5
Power Output (11 ohm)	100W
Sound Pressure (wail)	123dB
" " (yelp)	123dB
" " (PA)	118dB
Average Current (off)	Zero
" " (stand-by)	<60mA
" " (yelp-wail)	<10A

Sound pressure measured at 1 meter

Frequency Response	300-9000 Hz
Distortion (0,5 - 40W RMS)	<5% at 1 kHz
Temperature Range	-10 to +60 C
Humidity	90% at 60 C

11 DOCUMENTS TO BE SUPPLIED

The following documents will be supplied with the contract.

11.1 System Spec. document:

11.1.1 a document developed by MC and the client prior to building the vehicle that detail the precise specification. E.g. Vehicle should be able to do 300km without having to refuel.

11.1.2 One document for the contract.

11.2 Interface Control

11.2.1 A document detailing how all interfaces connect. E.g. shows how the superstructure connects to the base vehicle.

11.2.2 Shows where and how the client may fit a Radio etc.

11.2.3 1 document per vehicle type supplied



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11.3 User training manual

11.3.1 A user's manual for the vehicle operator.

11.3.2 One document per vehicle supplied

