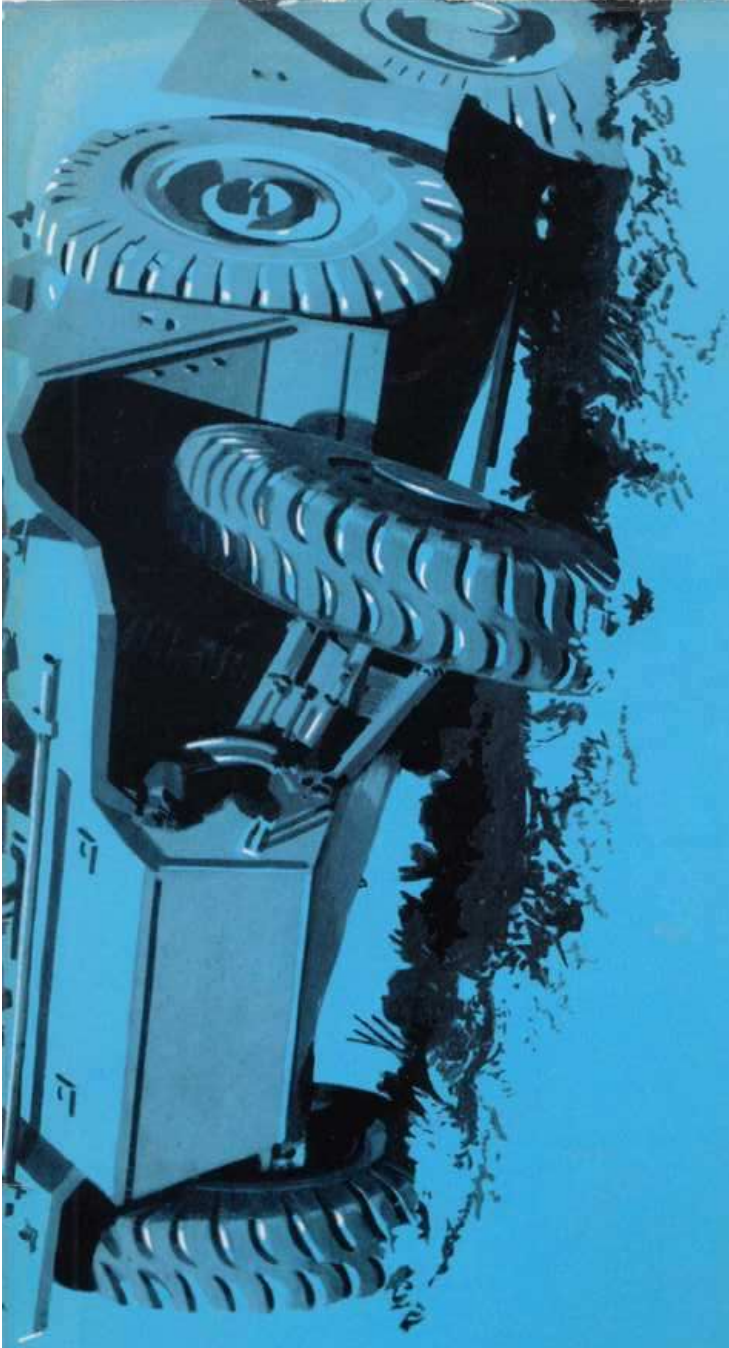


RESTRICTED



# DAIMLER FERRET SCOUT CAR

mark one and two.

# The Daimler Scout Car, Ferret Mk I and Mk II

## LIST OF CONTENTS

Page 3	INTRODUCTION
Page 4	GENERAL DESCRIPTION
Page 7	MANUFACTURE OF THE FERRET
Page 9	ARMAMENTS — CREW — TRAINING EQUIPMENT
Page 10	CROSS COUNTRY PERFORMANCE
Page 11	PERFORMANCE DETAILS
Page 13	WORKSHOP TOOLS — KITTING UP — SHIPPING ABROAD
Page 14	FERRET Mk 1 DIMENSIONS
Page 16	FERRET Mk 1 SPECIFICATION
Page 18	FERRET Mk 2 DIMENSIONS
Page 20	FERRET Mk 2 SPECIFICATION

This brochure is provided for the guidance of accredited representatives of Overseas Countries who are interested in the purchase of Ferret Mk 1 or Mk 2 Scout Cars. The information given must not be communicated either directly or indirectly to the press or to any person not authorised to receive it.



## SALIENT FEATURES

Extremely manoeuvrable and suitable for a variety of military applications from frontier policing to front line reconnaissance.

Economical and reliable performance under all road and cross country conditions.

Armour protection fully in line with modern fire power developments.

Negotiates obstacles up to 1 ft. 4 in. in height, climbs gradients of 1 in 2½, and fords water 3 ft. deep without special preparation or 5 ft. deep with.

Is air transportable and can be dropped by parachute.

Fully waterproofed engine drives through a Daimler Fluid Flywheel and a five-speed, pre-selector gearbox.

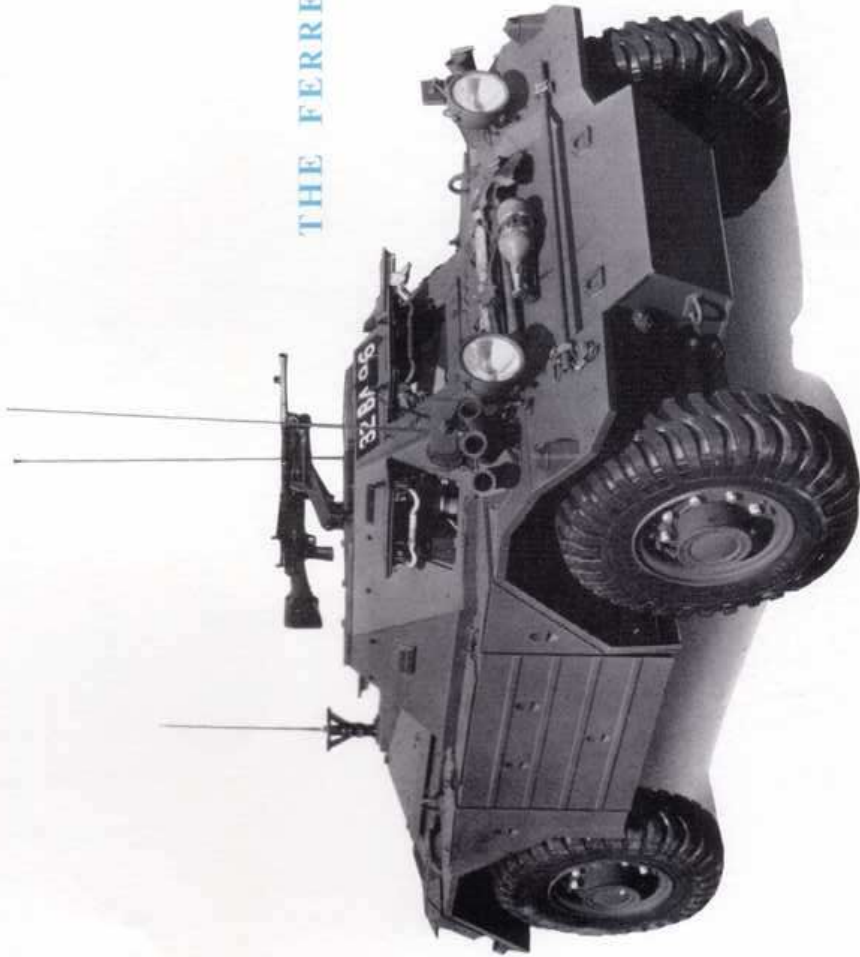
Four-wheel drive and independent springing provide maximum cross country performance.

The Ferret Mk 2 is ideally suited for use with the Vigilant anti-tank guided missile.

All Ferrets are rigorously inspected at every stage of manufacture which is to the highest technical specification and complies in every detail to the strict War Office standards.

# THE DAIMLER SCOUT CAR

2

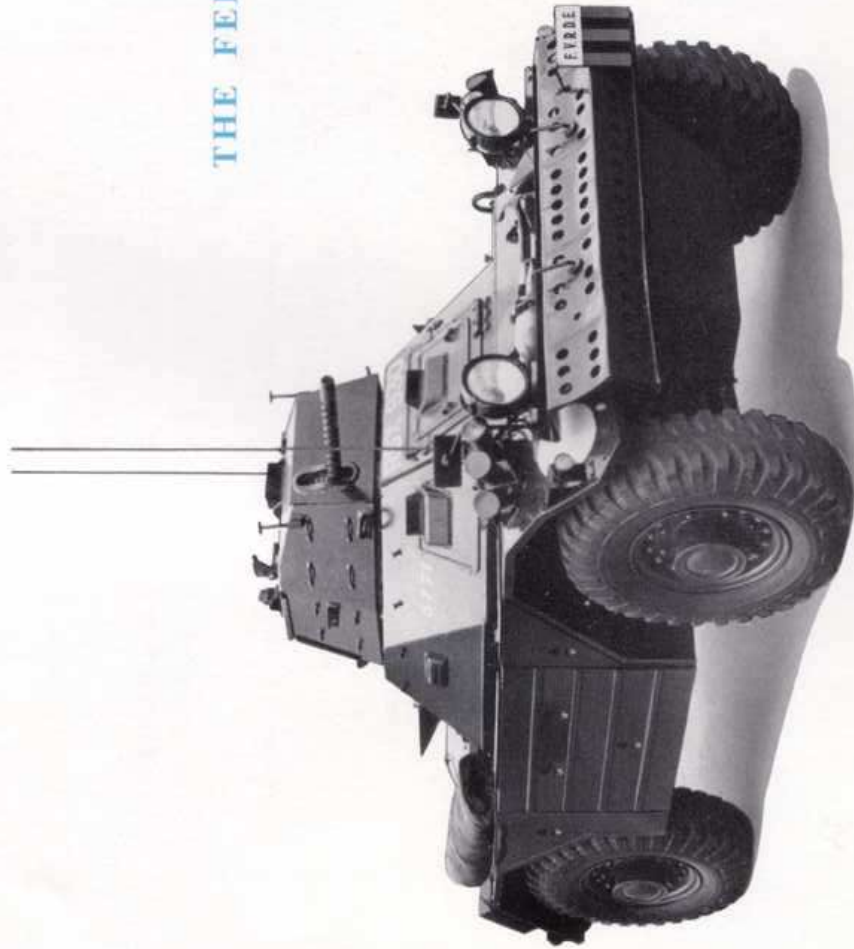


## THE FERRET MARK ONE

The Ferret Mk 1 has been designed as a military liaison vehicle, which by reason of its open top facilitates a quick and comprehensive survey of the surrounding locality being made by crew members.



Since the introduction, during the early years of the second world war, of the Daimler Scout Car, and the successful performance under actual service conditions of thousands of this type of vehicle, the Daimler organisation has evolved the Ferret Range of Scout Cars. The Ferret Mk 1 and 2 have been developed as high speed military liaison/reconnaissance vehicles for use in war conditions or with forces engaged in implementing internal security measures and can now be turned into a deadly combat vehicle by installation of the "Vigilant" anti-tank guided missile. Specifically meeting the requirements of a vehicle having excellent cross-country characteristics and an extremely low silhouette, they are to be found operating under the most arduous of road and cross-country conditions in all corners of the world, and have been accepted as the standard armoured car for many military organisations.



## THE FERRET MARK TWO

The Ferret Mk 2 is utilised in a patrol/reconnaissance capacity and is identical to the Mk 1 with the exception that it has a manually operated turret, housing a medium machine gun, mounted on the top of the armoured hull.



## General Description

*The following details refer to both Ferret Mark 1 and 2 vehicles.*

The Ferret Mk 1 and Mk 2 vehicles consist of a hull, fabricated from armour plate by welding and mounted on four independently sprung wheels (all driving). The suspension system consists of coil spring and wishbone linkages, the former enclosing hydraulic telescopic shock absorbers. This system irons out most of the road shocks experienced under the arduous driving conditions which are encountered whilst traversing rugged cross-country terrain.

The power unit consists of a Rolls Royce B60 6 cylinder engine with a maximum torque of 207 lbs./ft. This engine is fully waterproofed and will operate when completely submerged without any other preparation than venting the crankcase breather pipe. The drive is transmitted to all four road wheels through a fluid coupling, five speed pre-selecting epicyclic gearbox and a transfer box, incorporating a forward and reverse mechanism and differential unit. Five forward and five reverse speeds are obtained. This transmission system allied to the hydraulically operated two leading shoe brakes and recirculating ball steering affords the optimum in ease of control and reduces driving fatigue to a minimum.

Both vehicles are suitably designed to accommodate a wide range of current H.F. and V.H.F. wireless equipment approved to War Office pattern. Alternative installations can, however, be provided to suit customer's specific requirements.

The 24 volt electrical system comprises two 12 volt 60 ampere/hour batteries and an automatically controlled 2-speed automatic generator with an output of 25 amperes.

Full technical details of these vehicles can be found on pages 14 to 20.

## **Daimler Ferret Mark Two with the VIGILANT anti-tank missile**

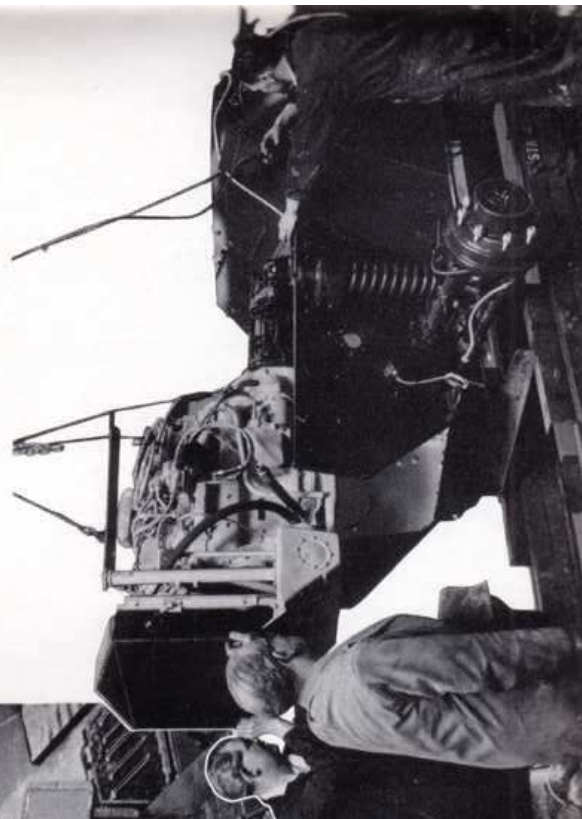
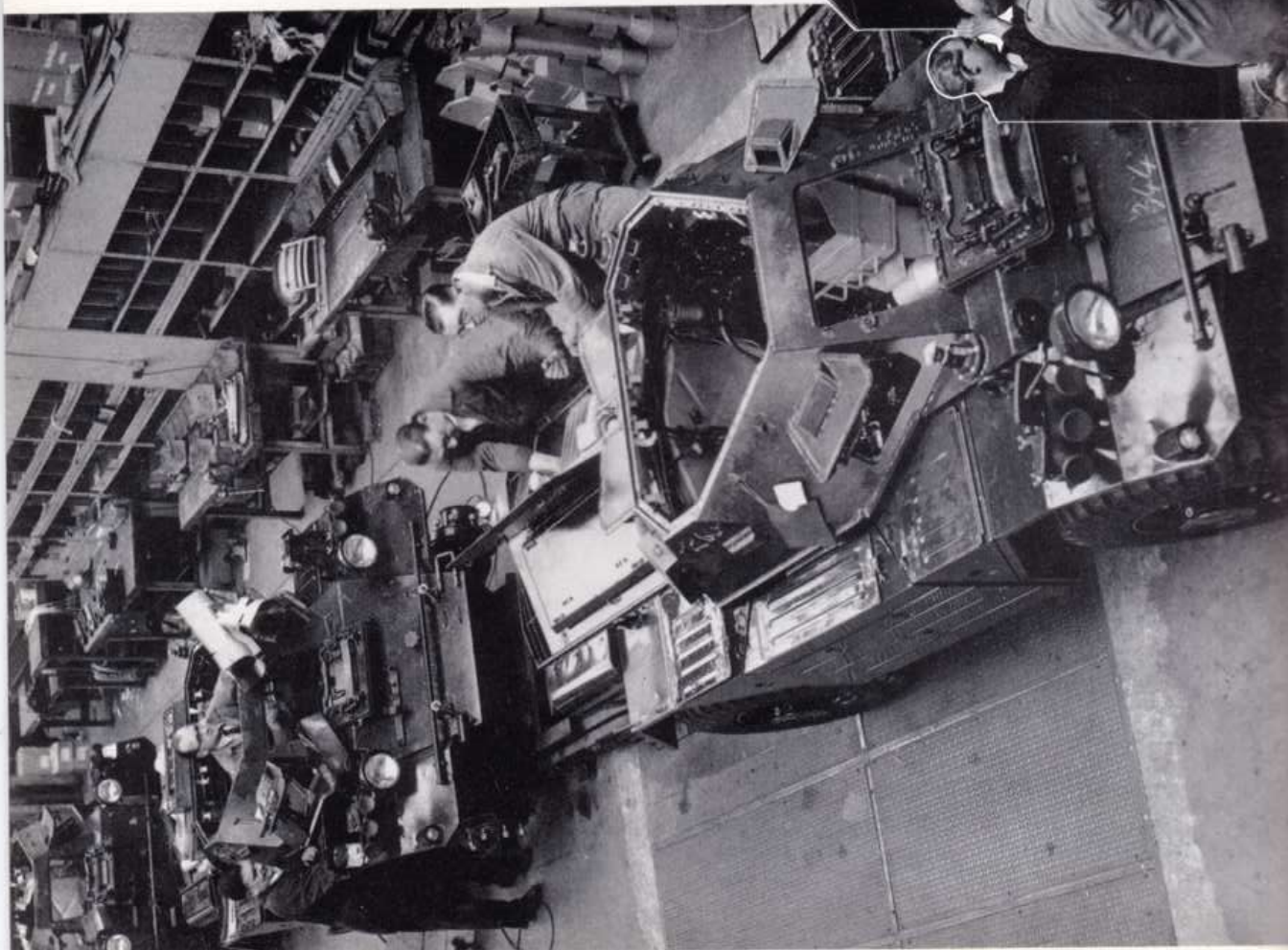
The Daimler Ferret Mark 2 is ideally suited for use with the Vigilant guided anti-tank missile, the installation of which turns the Ferret into a deadly combat vehicle. Provision has been made for carrying two missiles ready for immediate firing. Two spare missiles can also be accommodated. A kit can be provided to convert existing Mk 1 or Mk 2 vehicles.



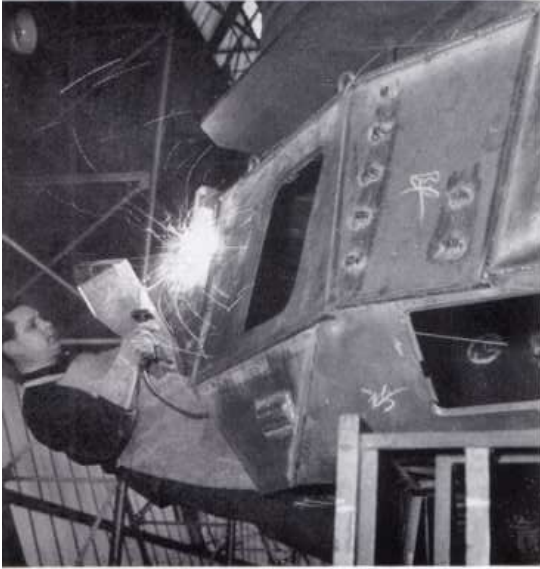


**FERRET MANUFACTURE**  
*A section of the Ferret assembly track at the  
Daimler Works.*

*The illustration below shows the complete power  
pack unit being lowered onto its mountings within  
the vehicle.*







*The welding of the armour plate hull.*



*Assembling the suspension and front drive.*

## Manufacture of the Ferret

Daimler have for many years been engaged in the production of high quality motor cars, commercial and military vehicles. The experience gained throughout these years has been aptly utilised in the manufacture of the Ferret range of Scout Cars. In one of the most modern factories in the automotive industry the Ferret cars are assembled, inspected and tested.

Modern manufacturing techniques are used at each and every stage of the vehicle's journey along the assembly track, from the highly complex welding of the armour plate hull to the fitting of the smallest nuts and bolts.

The ultimate arduous military tasks of a vehicle of this nature necessitate the strictest of War Office test and inspection standards, and these are rigidly maintained at all stages of manufacture.





## Armaments

On the Ferret Mk 1 Scout Car pintle mountings are provided for either a .303 inch Bren or .30 inch Browning machine gun. The Mk 2 Ferret houses in the turret a .30 inch Browning machine gun for operation by the car commander and can be fitted with "Vigilant" anti-tank guided missile equipment. Stowage is available inside the vehicle for ammunition—details of which are given fully in the detailed specification on pages 14 to 20. Both vehicles are equipped with multi-barrel smoke dischargers to provide a smoke cover.

## Crew

Provision is made for the accommodation of a crew of two consisting of Driver/Signaller and Commander/Gunner. Seating is available for a separate operator when required. Driver's controls and ancillary equipment are suitably grouped to ensure maximum comfort and safety to crew members under all driving conditions. Adequate stowage for vehicle and crew's effects is available in special containers housed within the vehicle.

## Training Equipment

Sectional major and minor components and other training aids can be supplied for driving, maintenance and gunnery training.



*The .30 Browning gun being assembled in the turret of the Mk 2.*

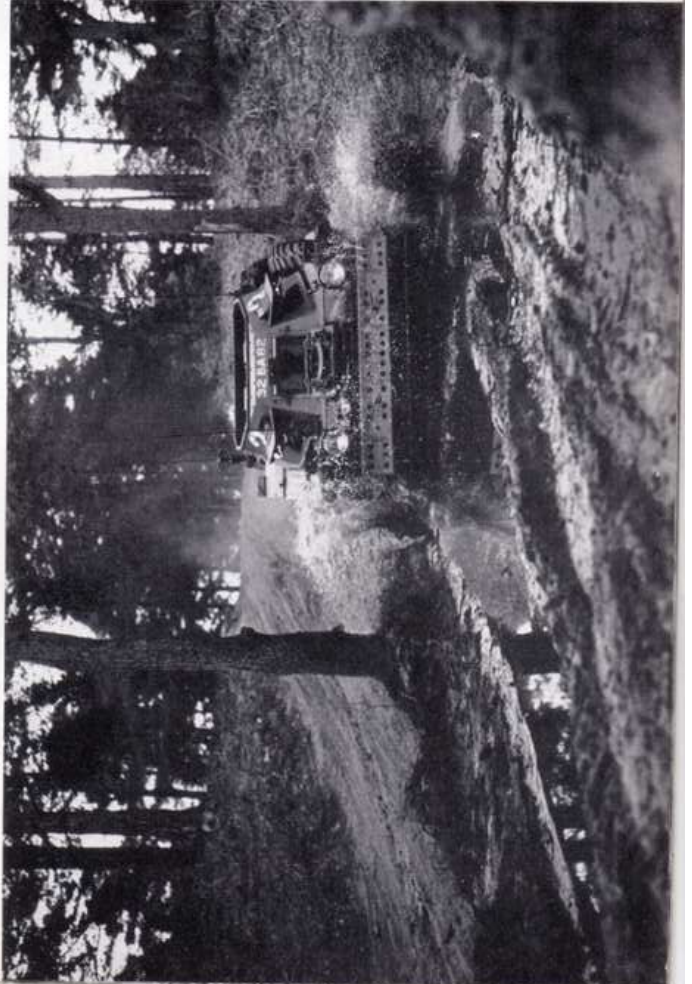
*The worst conditions of mud and water prove no obstacle to the Ferret.*



## Cross-Country Performance

By reason of its suspension, transmission and steering systems, the Ferret is able to travel over all types of terrain with a maximum of ease, and efficiency. Wheel spin in rain-soaked soggy conditions is obviated by the drive to all four wheels. Extreme gradients are overcome easily by the wide range of low gears available through the pre-selective epicyclic gearbox and the vehicle's modest turning circle ensures rapid manoeuvrability.

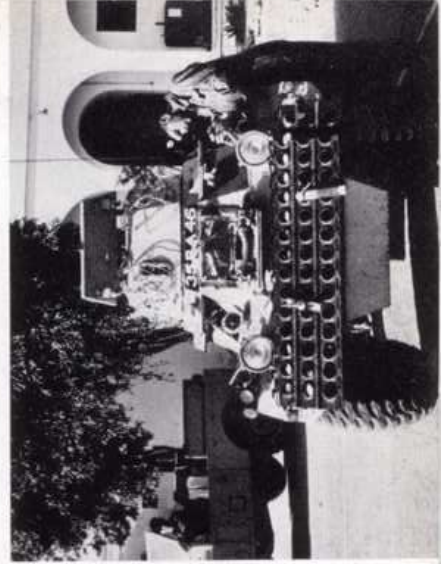
The design of the hull ensures that the Ferret is able to ford stretches of water up to a depth of 3 ft. without any previous preparation being carried out, or up to 5 ft. with special preparation.



## PERFORMANCE

(The performance details given below apply to both marks of vehicle unless specifically shown)

Maximum Road Speed	..	..	58 m.p.h. (93.3 km./hr.)
Average Road Speed	..	..	45 m.p.h. (72.4 km./hr.) over 100 miles run
Fuel Consumption Road	..	..	9 m.p.g. (3.2 km./litre)
Average Cross-country speed	..	..	25 m.p.h. (40.2 km./hr.) over 40 miles run
Fuel Consumption Cross-country..	..	..	5 m.p.g. (1.7 km./litre)
Vertical Obstacle	..	..	1 ft. 4 ins. (40.64 cm.)
Maximum Gradient	..	..	24°
Shallow Fording	..	..	Up to 3 ft. (0.914 m.) in depth
Deep Fording	..	..	Up to 5 ft. (1.524 m.) in depth, with special preparation
Trench Crossing	..	..	4 ft. (1.22 m.) wide channels
Turning Circle	..	..	38 ft. (11.59 m.)
Radius of Action	..	..	190 miles (305.71 km.)
Tilting Angle	..	..	Mk 1. 50° left-hand and right-hand Mk 2. 45° left-hand and right-hand



*The Ferret in service in the Middle East.*

*Ferret scout cars are continually tested under the most arduous conditions.*



*The latest wading equipment enabling the vehicle to ford stretches of water up to 5 feet in depth is depicted above.*

*Easy manoeuvrability is a feature of the Ferret.*





## Workshop Tools

Recommendation of special Tools for use in workshops necessary when carrying out major overhauls, as distinct from those issued with vehicles can be had on application.

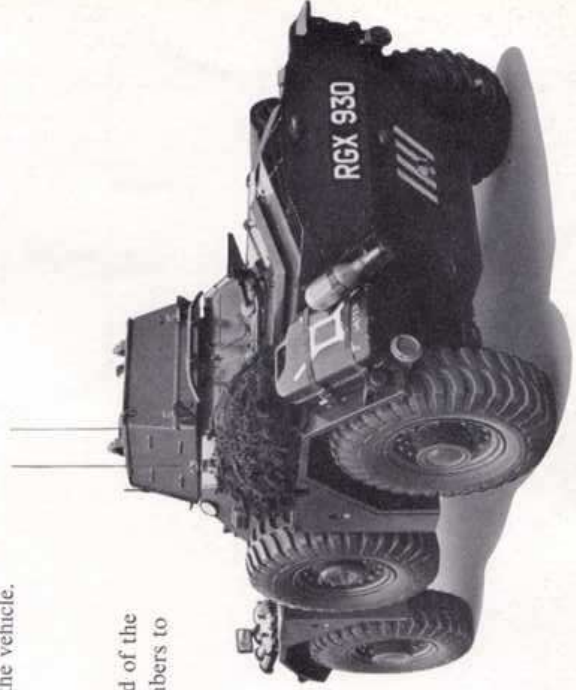
The requirements will be dependent on the Repair and Overhaul Organisation in use in the countries concerned, and the conditions under which the vehicles are operated.

## Kitting Up

When the vehicle leaves the factory, it is normally equipped with certain removable fittings and equipment in accordance with a list known as the "Table of Tools and Equipment" or "Complete Equipment Schedule". This document covers the equipment normally required by the British Army but can be varied to suit the customer's own requirements. The method of stowing this equipment is illustrated in the "Stowage Diagrams" provided with the vehicle.

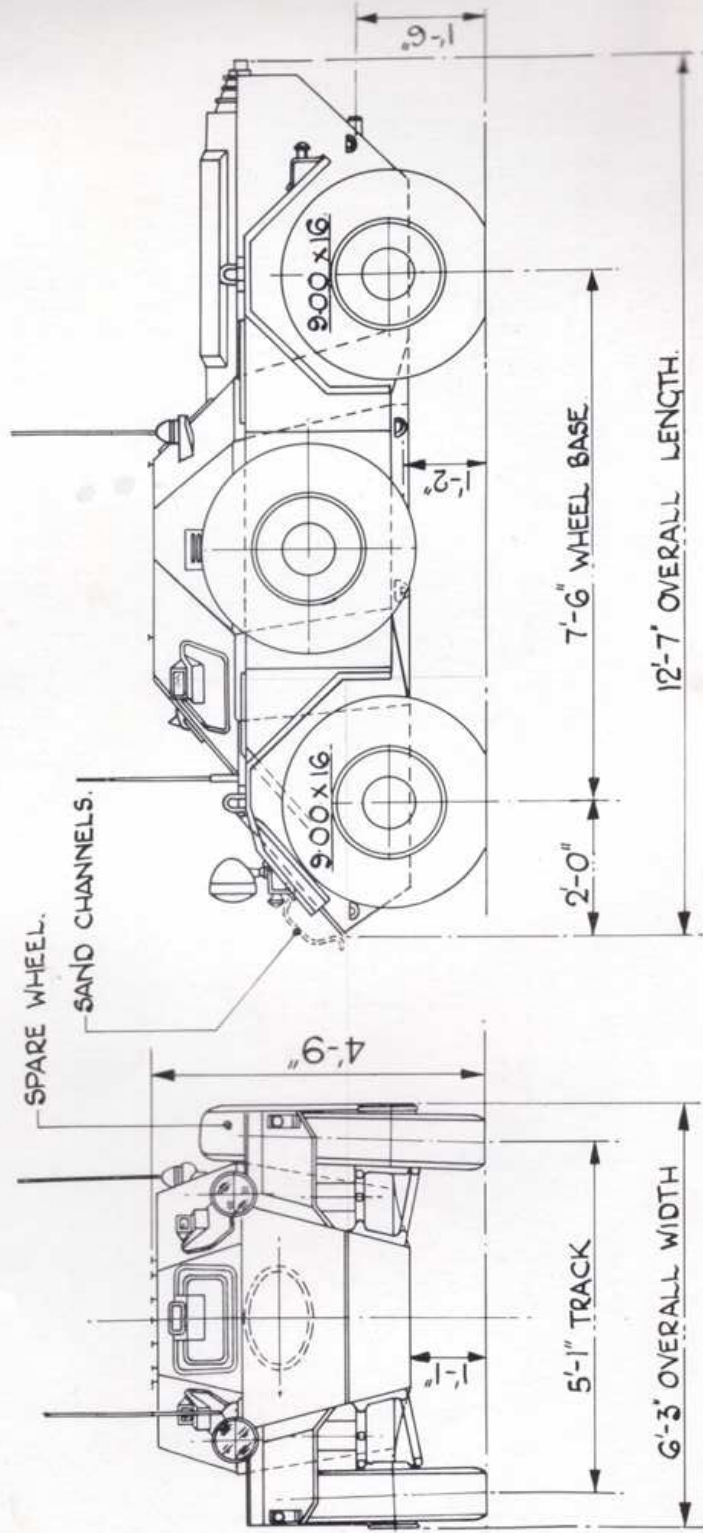
## Shipping Abroad

Vast experience has been gained with regard to the shipment abroad of the Ferret Mk 1 and 2 vehicles as they have been supplied in great numbers to military depots in all parts of the world. Vehicles are normally packed and preserved for overseas shipment as "Hold Cargo" only. Special arrangements can, however, be made for shipment as "Deck Cargo" at an extra cost.



*The Ferret scout car complete  
with full service kit.*

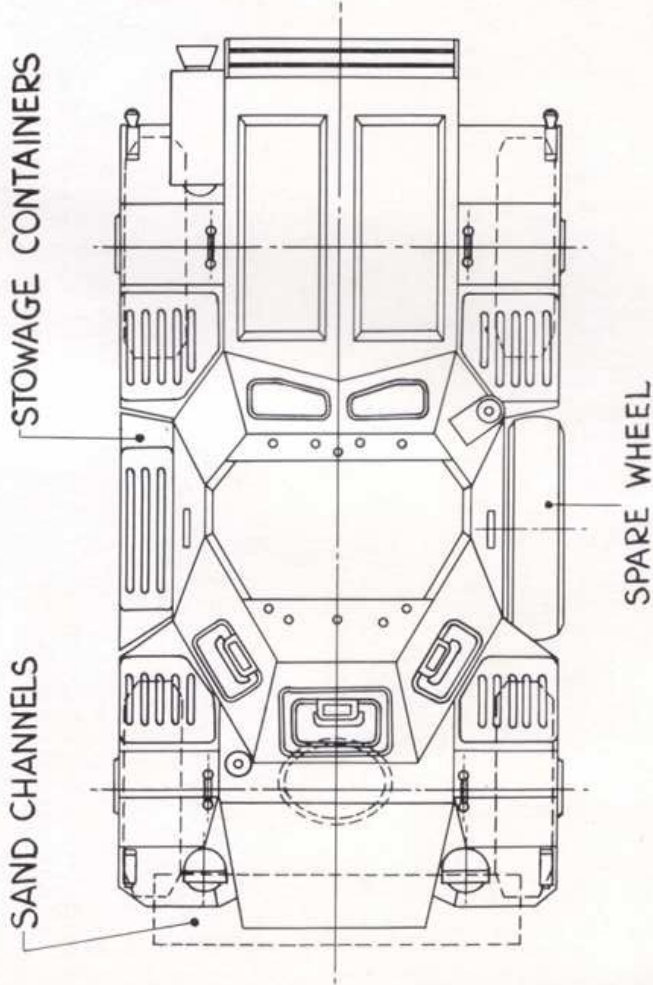
# THE DAIMLER SCOUT CAR



# FERRET MARK ONE

## DIMENSIONS

Length of Vehicle..	12 ft. 7 ins. (3.835 m.)
Height .. .. .	4 ft. 9 ins. (1.448 m.)
Width .. .. .	6 ft. 3 ins. (1.905 m.)
Track (front and rear)	5 ft. 1 in. (1.549 m.)
Wheel Base .. .	7 ft. 6 ins. (2.286 m.)
Ground Clearance..	1 ft. 1 in. (33.02 cm.)
Approach Angle:	
Front .. .. .	60°
Departure Angle:	
Rear .. .. .	50°
Wheel Rolling Radius	16½ ins. (41.275 cm.)
Side Overturn Angle	50°





# SPECIFICATION

## FERRET MARK ONE

### GENERAL

Vehicle Type .. Ferret Mk. 1/1 Car Scout 4 × 4 liaison  
 Crew .. 3, *i.e.*, Commander; Gunner and Driver.  
 Weight laden .. 9,296 lbs. (4220 kgs.)  
 Weight on Front Axle .. 4,172 lbs. (1894 kgs.)  
 Weight on Rear Axle .. 5,124 lbs. (2326 kgs.)  
 Power Weight Ratio .. 28.3 Brake horse power per ton, gross  
 (29.7 cv. per 1016 kgs.)  
 Power Weight Ratio .. 23.4 Brake horse power ton, nett  
 (23.7 cv. per 1016 kgs.)  
 Tractive Effort Max. ... 219 lbs. per ton (99 kgs. per 1016 kgs.)  
 (100% EFFY.) Nett — Top Gear  
 Tractive Effort Max. ... 1,325 lbs. per ton (601 kgs. per 1016 kgs.)  
 (100% EFFY.) Nett — Low Gear  
 Fuel Capacity .. 21 Gallons (95.4 litres)  
 Bridge Classification .. 4

### ARMAMENT

Alternative provision is made for either .303 inch Bren or .30 inch Browning machine gun.

### SMOKE PROTECTION

Two Multi-barrel Smoke Dischargers.

### STOWAGE FOR THE FOLLOWING AMMUNITION

450 rounds .303 inch Bren or .30 inch Browning machine gun  
 320 rounds Personal Weapons.  
 6 Hand Grenades  
 12 Smoke Grenades

### ARMOUR

#### Hull

Front: .472 ins. (12 mm.) at 50° and .63 ins. (16 mm.) at 35°  
 Sides: .472 ins. (12 mm.) at 20° and 15° also. .63 ins. (16 mm.) at 15°

### ARMOUR (continued)

Rear: .472 ins. (12 mm.) and .237 ins. (6 mm.) at 45°  
 Floor: .394 ins. (10 mm.) Driving Compartment, remainder .236 ins. (6 mm.)  
 Roof: Open (Canvas Cover)

### SIGHTING AND VISION

Three Periscopes No. 17 Mk 3  
 Glass block, look-out slits on each side of hull centre top panel.  
 Laminated glass windscreen for driver when not in closed down position

### COMMUNICATIONS

One of the following main sets can be fitted: 19, C.12, C.13 or C.42 (V.H.F.) implemented by the B.47 (V.H.F.) secondary set if required.

### ENGINE

Make .. Rolls Royce B.60  
 Bore and Stroke .. 3.50 ins. × 4.50 ins. (88.9 × 114.3 mm.)  
 Number of Cylinders .. 6, in-line, straight vertical, water cooled, petrol driven, inlet cover exhaust valve engine.  
 Compression Ratio .. 6.4 to 1  
 Maximum Horse Power (Gross) .. 116 Brake Horse Power.  
 Maximum Horse Power (Nett) .. 96 Brake Horse Power at 3,300 revs. per minute.  
 Max. Torque (Gross) .. 207 lbs./ft.  
 Max. Torque (Nett) .. 195 lbs./ft. at 2,000 revs. per minute.

**ENGINE (continued)**

Coolant Capacity .. 4½ gallons (20·4 litres)  
 Oil Capacity .. 2½ gallons (12·5 litres)  
 Lubrication .. Dry sump system  
 Normal Oil Pressure .. 35 lbs. per square inch at 3,500 revs. per minute with engine coolant at 176 F. (80 C.)

**TRANSMISSION**

Clutch .. Daimler Fluid Coupling  
 Gearbox .. Daimler, Driver controlled, pre-selective epicyclic, 5 speed unit, providing five speeds.  
 Transfer Box .. Forward and reverse gear trams having spiral bevel directional control gears with positive dog engagement and a double helical drop down gear to a single central bevel type differential, which in combination with the gearbox provides 5 forward and 5 reverse speeds.

**Gear Box Ratio**

Top: 1·000 to 1  
 4th: 1·569 to 1  
 3rd: 2·437 to 1  
 2nd: 4·381 to 1  
 1st: 6·046 to 1

**Overall Ratio**

Top: 6·217 to 1  
 4th: 9·754 to 1  
 3rd: 15·150 to 1  
 2nd: 27·24 to 1  
 1st: 37·58 to 1

**TRANSMISSION (continued)**

Steering .. 3-Track ½ in. pitch recirculating ball servo system on front wheels.  
 Brakes .. 13 in. diameter × 2½ in. (330·2 × 63·5 mm.) wide "Lockheed" drum pattern, dual leading shoes servo hydraulic foot operated, and hand operated mechanical linkage.

**SUSPENSION**

Road Wheels .. Four 6·50 × 16 in. Divided Disc Rims in light alloy material with 9·00 × 16 in. R.F. tyres, tubes and bead spacers. Mounted on fully independent coil spring and wishbone linkages. The single coil spring encloses the shock absorber and is mounted on a stabiliser bracket at the bottom and carried in brackets at the top attached to the hull plates.  
 Shock Absorbers .. Double acting hydraulic telescopic pattern.

**VEHICLE ELECTRICAL SYSTEM**

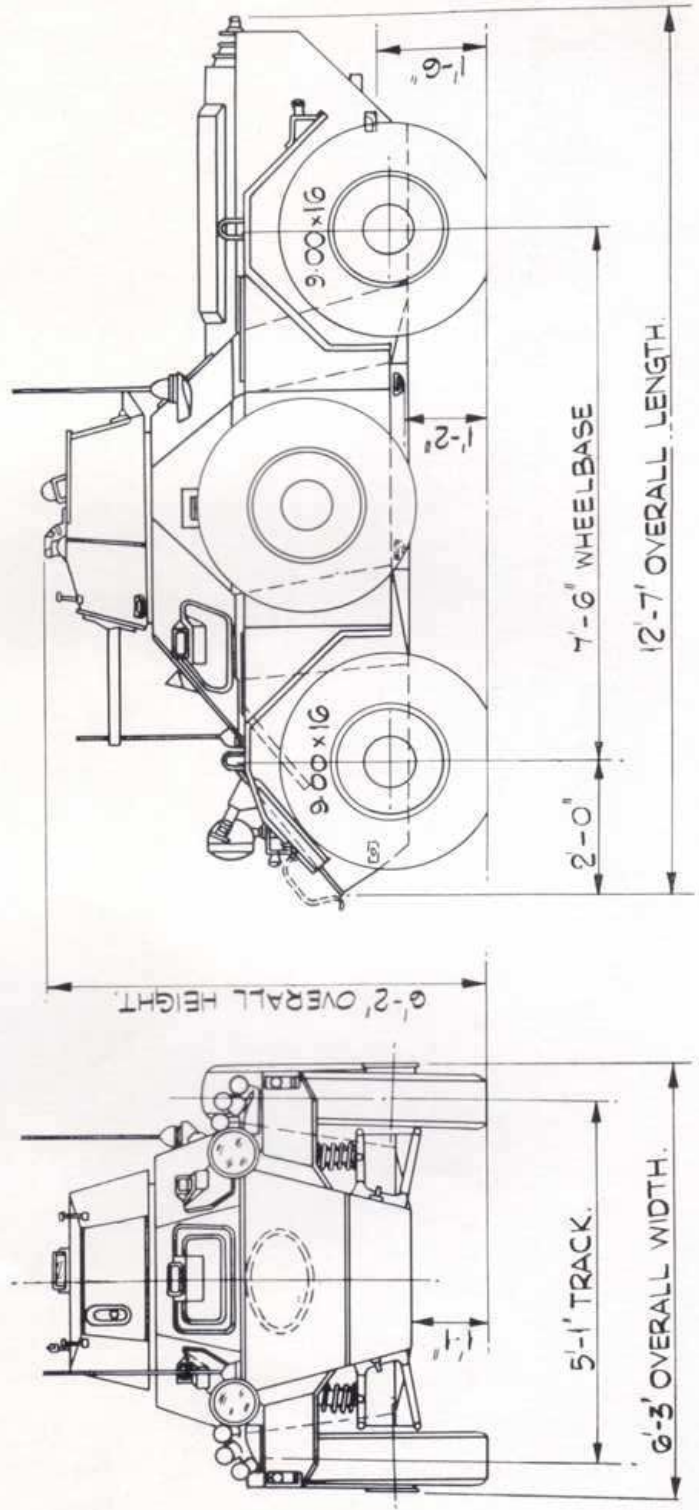
Power Supply .. 24 Volts (2-12 Volt, 60 ampere/hour batteries)  
 Generators .. 2 Speed (automatic) Generator, 25 amps. output at 600 revs. per minute.  
 Wiring .. Negative earth return.  
 Wireless Supply .. 24 Volts.

**FIRE FIGHTING EQUIPMENT**

One inside vehicle. Wet Water type.  
 Two outside vehicle. CHLOROBROMOMETHENE.



# THE DAIMLER SCOUT CAR

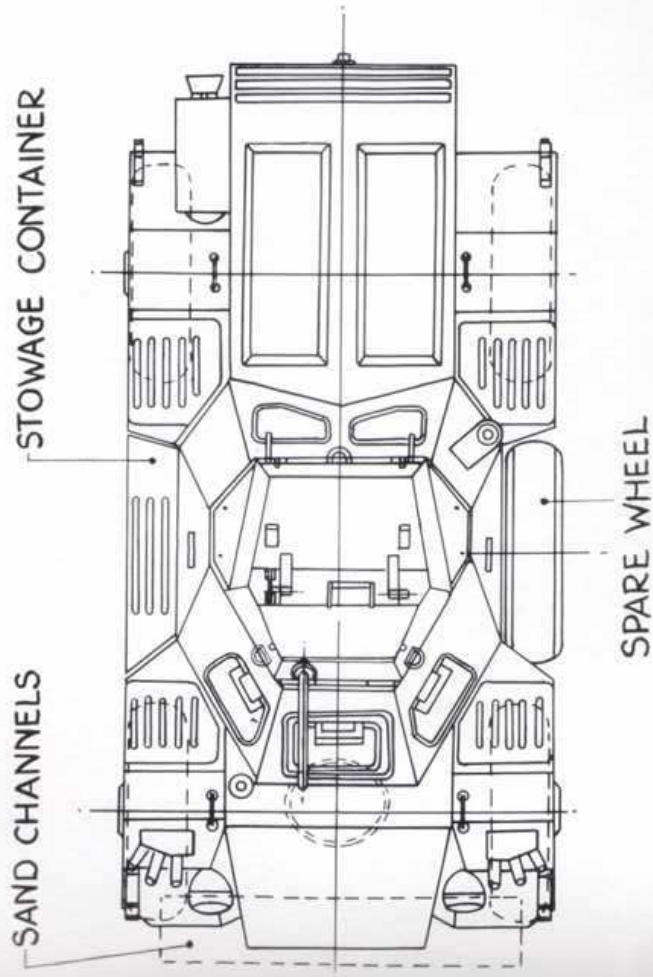




# FERRET MARK TWO

## DIMENSIONS

Length of Vehicle..	12 ft. 7 ins. (3.835 m.)
Height .. .. .	6 ft. 2 ins. (1.879 m.) to top of Turret
Width .. .. .	6 ft. 3 ins. (1.905 m.)
Track (front and rear)	5 ft. 1 in. (1.549 m.)
Wheel Base ..	7 ft. 6 ins. (2.286 m.)
Ground Clearance..	1 ft. 1 in. (33.02 cm.)
Approach Angle:	60°
Front .. .. .	
Departure Angle:	50°
Rear .. .. .	
Wheel Rolling Radius	16 1/2 ins. (41.275 cm.)
Side Overturn Angle	45°





#### ENGINE (continued)

Max. Torque (Gross) .. 207 lbs./ft.  
Max. Torque (Nett) .. 195 lbs./ft. at 2,000 revs. per minute  
Coolant Capacity .. 4½ gallons (20.4 litres)  
Oil Capacity .. 2½ gallons (12.5 litres)  
Lubrication .. Dry sump system  
Normal Oil Pressure .. 35 lbs. per square inch at 3,500 revs. per minute with engine coolant at 176 F. (80°C.)

#### TRANSMISSION

Clutch .. Daimler Fluid Coupling  
Gearbox .. Daimler, Driver controlled, pre-selective epicyclic, 5 speed unit, providing 5 speeds.  
Transfer Box .. Forward and reverse gear trains having spiral bevel directional control gears with positive dog engagement and a double helical drop down gear to a single central bevel type differential, which in combination with the gearbox provides 5 forward and 5 reverse speeds.

#### Gearbox Ratio

Top: 1.000 to 1  
4th: 1.569 to 1  
3rd: 2.437 to 1  
2nd: 4.381 to 1  
1st: 6.046 to 1

#### Overall Ratios

Top: 6.217 to 1  
4th: 9.754 to 1  
3rd: 15.150 to 1  
2nd: 27.24 to 1  
1st: 37.58 to 1

#### TRANSMISSION (continued)

Steering .. 3 Track  $\frac{1}{4}$  in. pitch recirculating ball servo system on front wheels.  
Brakes .. 13 in. diameter  $\times$  2½ in. (330.2  $\times$  63.5 mm.) wide "Lockheed" drum pattern, dual leading shoes servo hydraulic foot operated, and hand operated mechanical linkage.

#### SUSPENSION

Road Wheels .. Four 6.50  $\times$  16 in. Divided Disc Rims in light alloy material with 9.00  $\times$  16 in. R.F. tyres, tubes and bead spacers. Mounted on fully independent coil spring and wishbone linkages. The single coil spring encloses the shock absorber and is mounted on a stabiliser bracket at the bottom and carried in brackets at the top attached to the hull plates.  
Shock Absorbers .. Double acting hydraulic telescopic pattern.

#### VEHICLE ELECTRICAL SYSTEM

Power Supply .. 24 Volts (2-12 Volt, 60 ampere/hour batteries)  
Generators .. 2 Speed (automatic) Generator, 25 amps. output at 600 revs. per minute.  
Wiring .. Negative earth return.  
Wireless Supply .. 24 Volts.

#### FIRE FIGHTING EQUIPMENT

One inside vehicle. Wet Water type.  
Two outside vehicle. CHLOROBROMOMETHENE.







BY APPOINTMENT TO  
H.M. QUEEN ELIZABETH THE QUEEN MOTHER  
MOTOR CAR MANUFACTURERS  
THE DAIMLER CO. LTD.

# THE DAIMLER COMPANY LIMITED

G.P.O. BOX No. 29

COVENTRY · ENGLAND