



Mercedes-Benz

O 317

vdh-Archiv



## O 317 - a Profitable 39.4 ft. Bus for City and Overland Route Service

The O 317 — 39.4 ft. has been proving its worth as a city and overland route service bus for years. It meets in its overall conception the most varying demands. At 39.4 ft. overall length and 16 tons total weight the vehicle permits economic utilization of the maximum vehicle ratings for two-axle buses.

For profitability the new 210 HP/DIN (230 gr. HP/SAE) engine OM 346 is particularly decisive since its designers concentrated their efforts on economic operation. The engine operates on the Daimler-Benz direct-injection system. This means above all: low fuel and oil consumption, as well as long life at minimum care and service requirements.



### Comfortable Entrances

The O 317 production model is provided with air-operated pivot-type folding doors which can be operated by the driver. They provide very wide door openings which fold completely against the sides. The wide steps are low and easily reached even by older persons. The steps are covered with waffle

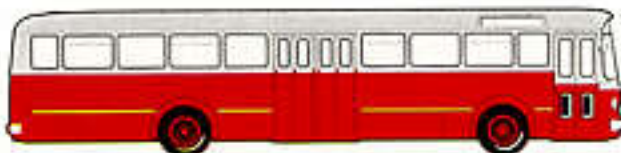
sheet metal and metal-edged.

Air suspension keeps the steps always at the same height independent of the load. Entrance lamps will light up when doors open, switched on and off by a door contact.

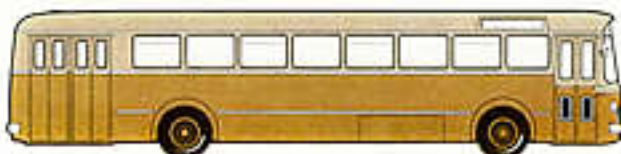
### Heating and Ventilating

A heating and ventilating system provides for adequate fresh air and comfortable temperatures, meeting all demands. — Above the windshield are two large air intakes with adjustable control flaps; slidable vent windows and two roof vents permit a finely controllable fresh air intake.

The air bellows suspension requires no servicing and the sturdy shock absorbers provide excellent riding characteristics for comfortable travel. The required safety is guaranteed by the triple braking system with dual-circuit compressed-air brake, engine brake and ratchet handbrake.



1/98 Basic type, 48 seats, standing room for 50, total weight up to 35,270 lbs (16,000 kg)



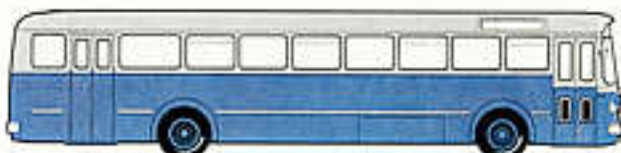
1/108 44 seats, standing room for 64, total weight up to 35,270 lbs (16,000 kg)



Depending on door and seat arrangement the O 317 is used as a city bus or for route service. As of late, the O 317 is increasingly used for heavy long-distance route service, since its length of 39.4 ft. offers a large number of available seats and the 210 HP/DIN (230 gr. HP/SAE) engine permits economic driving.

A self-supporting chassis is the sturdy under-structure for the various types of bodies. It is a high-walled lattice frame with side and cross members. Connecting the side members with the individual cross members provides a compact under-structure framework possessing high torsional and bending stiffness, as well as high strength against any bending and shearing forces which may show up.

1/108 55 seats, standing room for 51, for commuter service 55 seats, 13 center aisle seats, total weight up to 35,270 lbs (16,000 kg)



#### Minimum Service and Maintenance Requirements

As a result of its well thought-out design the O 317 requires but a minimum of care. Its external surfaces with flush-closing doors and windows permit cleaning in mechanical washing systems. The modern air suspension requires practically no servicing. The new engine design needs but little service and

care. The entire injection system is connected to the engine oil circuit and therefore service-free. Oil changes should be made every 5,600 miles only.

The warm-water fresh-air heating system with fan is housed at the front end. Two circulating air heaters with fan are housed in the rear of the vehicle. A portable unit can be used as an additional heater for preheating the passenger compartment (optional).



## Large, Functional Interior

The large interior of the O 317 offers much room for a large number of passengers. Well padded seats — which are easily cleaned, too — and enough hand rails for the standing room passengers offer a high degree of safety. The interior is also functionally well equipped for cleaning. The floor is covered with Pegulan ribbed

in the center aisle and smooth underneath the seats. For better cleaning it is drawn up the side walls in a trough-shaped pattern. The side walls are lined with phenolic-resin molded wooden panels. The ceiling is lined with Resopal. All material used is extremely robust and easy to clean.

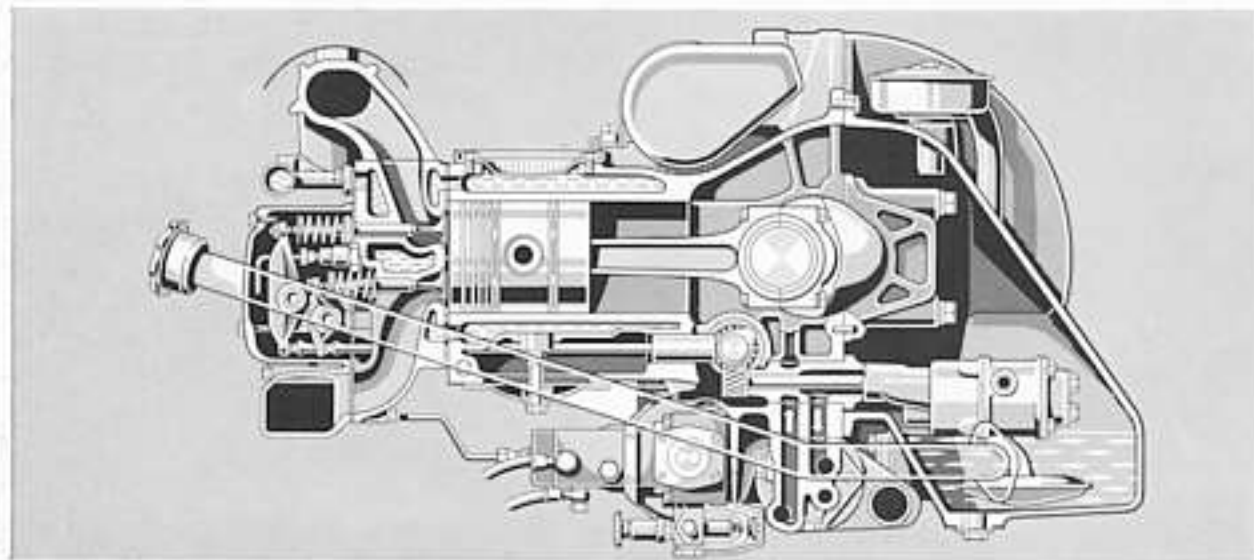
### Comfortable Driver's Seat

A functionally designed space has been made available for the driver of the O 317. A hydraulically dampened seat, hydro-steering, synchronized transmission, foot and engine brake coupled by pedal plate valve, and optionally available pneumatic bus stop brake facilitate the responsible work of the driver.

The large front windcreens permit unrestricted visibility close to vehicle front end, as well as up to traffic lights. Two tandem windshield wipers help in providing a large field of vision during all kinds of weather. The two lower windows in the front door facilitate the approach to the bus stop. The driver's seat is separated from the interior by a glass pane provided with a curtain against reflection and disturbances.



## Substantially Reduced Consumption, Simplified Care and Maintenance



### Technical Details of OM 346 Engine

The 6-cylinder diesel engine OM 346 h has an output of 210 HP/DIN (230 gr. HP/SAE) at 2,200 rpm, and 218 HP after automatic disconnection of fan by viscose clutch. Displacement is 10,809 cc. The individual cylinder heads have two intake and exhaust valves with valve seat rings each; of the 4 piston rings each the top rings are chrome-plated. The particularly sturdy crankshaft is mounted

in 7 steel-backed shells and three-component bearings. Crankshaft vibrations are effectively dampened by the vibration damper. A thermostat provides constantly uniform and favorable temperatures. The oil heat exchanger keeps the engine lubricant at the most favorable temperature. A bypass micro oil filter is used in addition to the large main flow filter.

The horizontal engine OM 346, together with the clutch and the fully synchronized gearbox, is mounted horizontally under the floor between the axles. The entire power unit is suspended at 3 points in rubber bearings under the two side members of the frame. These rubber supports prevent engine vibrations from being transmitted to the body. Loosening 9 fastening bolts permits easy removal of complete power unit through a raisable flap at right-hand side wall. Service jobs can be easily performed through large floor flaps from inside passenger compartment or through the engine compartment flap from the side. Within range of engine the floor is particularly well insulated against noise and heat.

After an exceptionally long test period extending for many years the O 317 is now provided with the OM 346 engine operating on the Daimler-Benz direct-injection system. This means above all: low fuel and engine oil consumption under all driving conditions. Additional advantages: no service

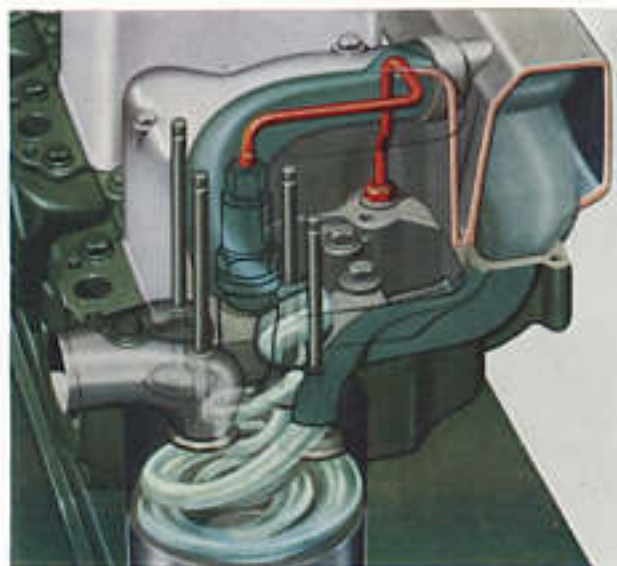
required for injection system, improved cooling water system, oil change only every 5,600 miles (formerly 2,800 miles).

This new engine is a combination of all the good characteristics of the prechamber engine — out-

standing cold start characteristics at any outside temperature, quiet running in all speed ranges, low dead weight, coupled with the advantages of the Daimler-Benz direct-injection system — substantial fuel savings and favorable thermic loads with their, above all, positive influence on durability.

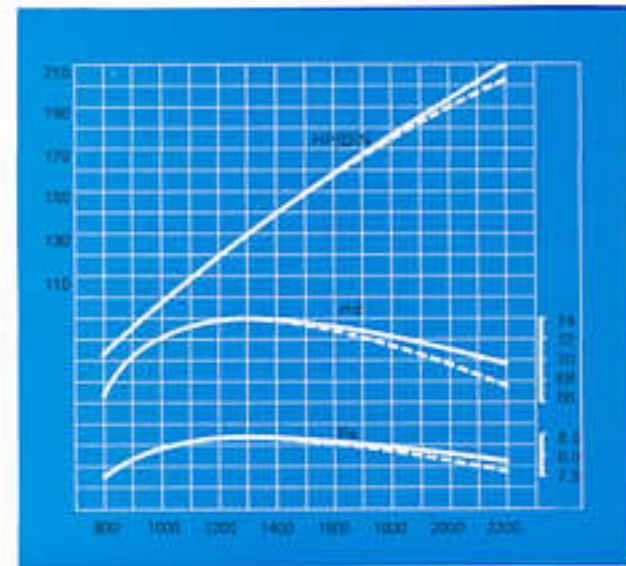


The OM 346 is provided with a viscous fan which will cut in or out depending on the cooling water temperature. With the fan cut out, 218 HP are available for driving the bus. This means both savings in fuel, since maximum power is not always required, and faster warming up of engine to required operating temperature.

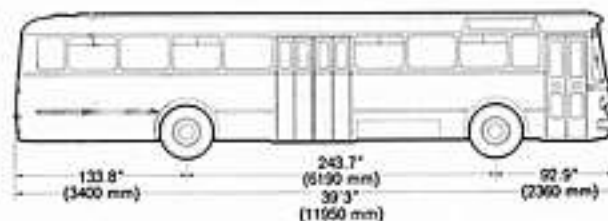


#### Operation of Direct-Injection System

The special shape of the air ducts imparts a strongly rotating motion to the intake air. While the one intake duct confers this rotational motion around the cylinder axis to the air, the air flow of the other duct provides a tangential flow in support of the rotational motion. During compression the rotating speed of the air swirl in the piston trough is still further



increased. The fuel is then injected right into and mixes with the intensively swirling air. The relatively large piston trough prevents any localized overheating on injection nozzle and valve webs.



# Dimensions

|                                      |          |       |       |
|--------------------------------------|----------|-------|-------|
| Wheelbase                            | in.      | 230.3 | 243.7 |
|                                      | (mm)     | 5850  | 6190  |
| Track, front                         | in.      | 78.0  | 78.0  |
|                                      | (mm)     | 1980  | 1980  |
| Track, rear                          | in.      | 70.4  | 70.4  |
|                                      | (mm)     | 1788  | 1788  |
| Overall vehicle length               | ft., in. | 39'3" | 39'3" |
|                                      | (mm)     | 11950 | 11950 |
| Overall vehicle width                | in.      | 98.4  | 98.4  |
|                                      | (mm)     | 2500  | 2500  |
| Overall height (loaded and unloaded) | in.      | 117.3 | 117.3 |
|                                      | (mm)     | 2980  | 2980  |
| Length of overhang, front            | in.      | 106.3 | 92.9  |
|                                      | (mm)     | 2700  | 2360  |
| Length of overhang, rear             | in.      | 133.8 | 133.8 |
|                                      | (mm)     | 3400  | 3400  |
| Turning circle dia.                  | ft.      | 66.6  | 71.2  |
|                                      | (m)      | 20.3  | 21.7  |

# Passenger Capacity

depending on seat and door arrangement up to 108 persons.

# Weights

|                     | Front Axle | Rear Axle | Total  |
|---------------------|------------|-----------|--------|
| Perm. weights up to | lbs        | 13,220    | 22,050 |
|                     | (kg)       | 6,000     | 10,000 |

# Engine

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Type designation                | OM 346 h                            |
| Method of operation             | DB direct-injection system          |
| No. of cylinders                | 6                                   |
| Bore / Stroke                   | 5.03 in./5.51 in.<br>(128/140 mm)   |
| Total displacement              | 10809 ccm                           |
| Output acc. to SAE <sup>1</sup> | 230 gr. HP/2200 rpm                 |
| Output acc. to DIN <sup>2</sup> | 210 PS/2200 rpm                     |
| Compression ratio               | 17.0 : 1                            |
| Capacity of cooling system      | 12.0/14.5 Imp./US gal.<br>(55 ltr.) |

|                                      |                                                    |
|--------------------------------------|----------------------------------------------------|
| Oil capacity of crankcase, min./max. | 3.0/3.7 Imp. gal.,<br>3.7/4.5 US gal. (14/17 ltr.) |
| Starting motor                       | 6 HP/24 V                                          |
| Generator                            | 1000 W/12 V                                        |

# Consumption

|                                                   |                                                                   |
|---------------------------------------------------|-------------------------------------------------------------------|
| Fuel consumption <sup>2</sup> at reduction 7 : 43 |                                                                   |
| measured at 36.6 mph (52.5 km/h)                  | 15.7 miles/Imp. gal.,<br>13.6 miles/US gal.<br>(18.0 ltr./100 km) |
| Engine oil consumption <sup>2</sup>               | 0.3 ltr./100 km                                                   |

# Chassis

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| Clutch          | Single-disk dry clutch                                                                                 |
| Steering system | ZF hydro-steering                                                                                      |
| Transmission    | DB 4-speed synchromesh transmission,<br>or DB 5-speed transmission,<br>or Voith-Diwabus transmission * |

Power train ..... Cardan shaft

Rear axle reduction optional

for DB transmission ..... 6.143 5.625 4.875

for Voith transmission ..... 4.875

2-speed axle (for DB 4-speed transmission) ..... optional

Pedal brake ..... pneumatic 4-wheel brake with  
pedal plate valve

Handbrake ..... ratchet brake acting on rear wheels

Additional brake ..... DB engine brake, coupled  
with pedal plate valve of pneumatic brake

Wheels ..... Disk wheels on oblique shoulder rims

Tires (front single, rear double) ..... 11.00 - 20 Super

Fuel tank capacity ..... approx. 44/53 Imp./US gal.  
(200 ltr.)

Battery ..... 2 x 135 Ah

Voltage of consumers ..... 12 Volt

Lubrication ..... individual nipple lubrication

Ventilation, heating and defrosting ..... by motor-driven fan and  
heat exchanger

# Speeds

at max. engine speed

|                     |             |       |       |
|---------------------|-------------|-------|-------|
| Rear axle reduction | 6.143       | 5.625 | 4.875 |
| 1st Gear            | mph 10.2    | 7.1   | 11.2  |
|                     | (km/h) 16.5 | 11.5  | 18.0  |
| 2nd Gear            | mph 16.5    | 13.4  | 18.3  |
|                     | (km/h) 27.0 | 21.6  | 29.4  |
| 3rd Gear            | mph 27.4    | 19.9  | 29.9  |
|                     | (km/h) 44.1 | 32.0  | 48.1  |
| 4th Gear            | mph 43.6    | 29.7  | 47.5  |
|                     | (km/h) 70.1 | 47.8  | 76.5  |
| 5th Gear            | mph 43.6    | 47.5  | 54.9  |
|                     | (km/h) 79.1 | 76.5  | 88.3  |

with 2-speed axle \* engaged

|                     |             |       |       |
|---------------------|-------------|-------|-------|
| Rear axle reduction | 6.143       | 5.625 | 4.875 |
| 1st Gear            | mph 7.3     | 8.0   | 9.2   |
|                     | (km/h) 11.8 | 12.9  | 14.8  |
| 2nd Gear            | mph 11.9    | 13.0  | 15.0  |
|                     | (km/h) 19.2 | 21.0  | 24.2  |
| 3rd Gear            | mph 19.5    | 21.3  | 24.6  |
|                     | (km/h) 34.4 | 34.3  | 39.6  |
| 4th Gear            | mph 31.0    | 33.9  | 39.0  |
|                     | (km/h) 49.9 | 54.5  | 62.9  |

# Hill-Climbing Ability

at altitudes up to 984 ft.  
(300 m) above sea level

|                             |        |       |       |
|-----------------------------|--------|-------|-------|
| Rear axle reduction         | 6.143  | 5.625 | 4.875 |
| 1st Gear                    | % 19.4 | 29.1  | 17.7  |
|                             | % 11.4 | 14.5  | 10.3  |
| 2nd Gear                    | % 6.5  | 9.4   | 5.8   |
|                             | % 3.6  | 5.8   | 3.2   |
| 3rd Gear                    | % 3.6  | 3.6   | 3.2   |
|                             | % 3.6  | 3.6   | 3.2   |
| 4th Gear                    | % 3.6  | 3.6   | 3.2   |
|                             | % 3.6  | 3.6   | 3.2   |
| 5th Gear                    | % 3.6  | 3.6   | 3.2   |
|                             | % 3.6  | 3.6   | 3.2   |
| with 2-speed axle * engaged |        |       |       |
| Rear axle reduction         | 6.143  | 5.625 | 4.875 |
| 1st Gear                    | % 28.3 | 25.6  | 21.9  |
|                             | % 16.5 | 15.0  | 12.8  |
| 2nd Gear                    | % 9.6  | 8.7   | 7.3   |
|                             | % 5.7  | 5.1   | 4.2   |
| 3rd Gear                    | % 5.7  | 5.1   | 4.2   |
|                             | % 5.7  | 5.1   | 4.2   |
| 4th Gear                    | % 5.7  | 5.1   | 4.2   |
|                             | % 5.7  | 5.1   | 4.2   |

\* Optional

<sup>1</sup> The output stated in PS is effectively available at the clutch for driving the vehicle after deduction of all auxiliary drives. The output stated in gr. HP includes the power for auxiliary units not required to operate the engine.

OM 346 h engine with 180 PS optionally available.

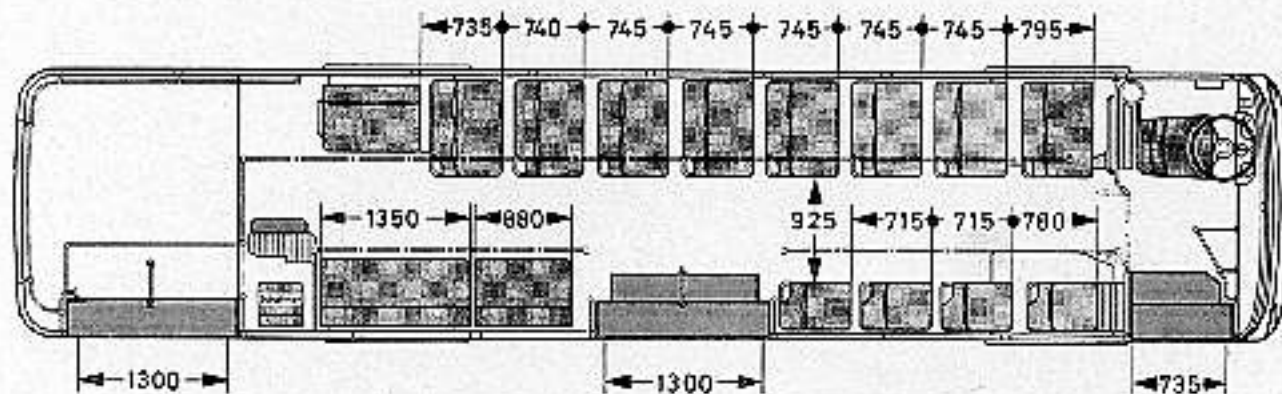
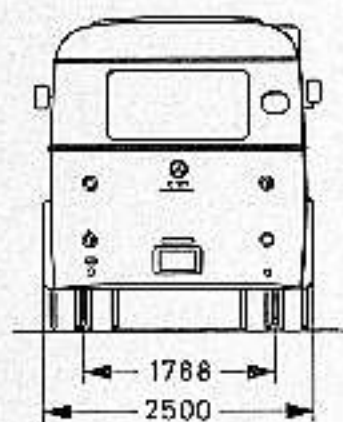
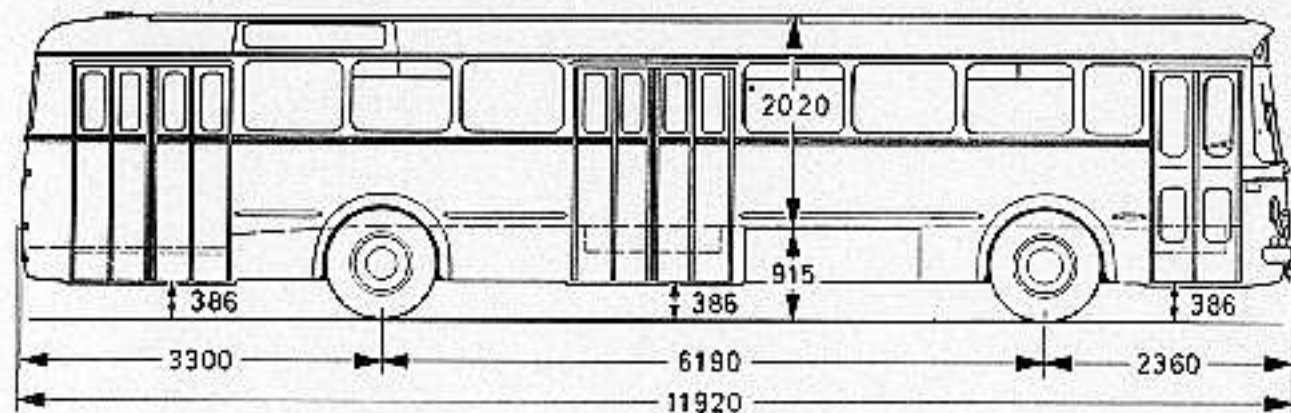
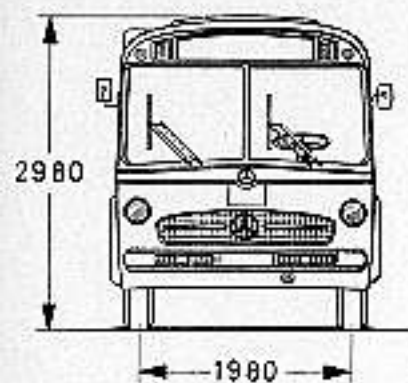
<sup>2</sup> Technical Data acc. to DIN specifications 70 020 and 70 030 as per VDA Form.

<sup>3</sup> Only in combination with 4-speed transmission.

Subject to changes in design and equipment.



Daimler-Benz Aktiengesellschaft Mannheim Plant



#### Dimensions

|                        |                     |
|------------------------|---------------------|
| Wheelbase              | 243.7 in. (6190 mm) |
| Track, front           | 77.9 in. (1980 mm)  |
| Track, rear            | 70.4 in. (1788 mm)  |
| Overall vehicle length | 39.0 ft. (11.92 m)  |
| Overall vehicle width  | 90.4 in. (2500 mm)  |
| Overall height         | 117.3 in. (2980 mm) |
| (loaded and unloaded)  |                     |

|                           |                     |
|---------------------------|---------------------|
| Length of overhang, front | 92.9 in. (2360 mm)  |
| Length of overhang, rear  | 132.7 in. (3300 mm) |
| Turning circle dia.       | 71.2 ft. (21.7 m)   |

#### Passenger Capacity

depending on seat and door arrangement,  
as well as wheelbase: up to 111 persons.

#### Weights

|               |      | Front Axle | Rear Axle | Total  |
|---------------|------|------------|-----------|--------|
| Perm. weights | lbs. | 11,100     | 22,000    | 33,200 |
|               | (kg) | 6,400      | 10,000    | 16,000 |