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Four New Engineering Vehicles

A. W. THOMAS, A.M.I.Mech.E., A.F.R.Ae.S., and E. R. COLLINGS†

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Recent designs of commercial vehicles have been adapted for Post Office engineering use. Two of the vehicles described are standard types of van requiring only slight modification to suit them for engineering duties. The two larger vehicles dealt with have Post Office designed bodies mounted on standard commercial chassis. The new vehicles are compared with corresponding types at present in use.

INTRODUCTION

THE design of commercial vehicles is always changing to meet customers' requirements and to take advantage of developments in engineering and manufacturing processes. The transport requirements of Post Office engineering staff also change as more telecommunications plant is provided and new types of equipment are introduced. It is therefore desirable to consider periodically whether the types of vehicles already in use are adequate for their purpose. For this reason a committee consisting of Regional and Headquarters representatives was set up in 1958 to study engineering-transport requirements. Basically, the best value for money is obtained by modifying or adapting complete commercial vehicles to suit Post Office needs. For vehicles to be used by external gangs such adaptation is not possible, and special bodywork to meet Post Office requirements must be built on standard chassis.

In reviewing engineering-vehicle design, account must be taken of varying requirements for transporting men, tools, stores and equipment to carry out similar jobs. For example, the new 15 cwt Utility vehicle will meet most of the requirements for transporting two men and their tools and equipment, but in some areas a 25 cwt Utility vehicle may be required for similar duties, whilst in other areas a Morris Minor would suffice. The committee have therefore endeavoured to provide vehicles of different load capacities but having similar functions, leaving the final choice of vehicle to Regional and Area staff.

To avoid lengthy field trials with the larger coach-built vehicles, full-size models of body interiors were produced at the Central Repair Depot, Kidbrooke. Regional staffs were invited to view these models and comment on the layouts. Valuable suggestions were received and incorporated in the prototypes of the new 25 cwt and 30 cwt Utility vehicles. The British Motor Corporation (B.M.C.) then co-operated in building these bodies on the appropriate chassis and also produced for the committee's inspection a commercial model of their new Mini-Minor and also of their new 15 cwt van. Brief descriptions of the new vehicles are given in the following paragraphs, and the main features and dimensions are compared with the present corresponding types.

MORRIS MINI-VAN

The Morris Mini-Van is illustrated in Fig. 1. This recently introduced vehicle has been adapted for use as a 4½ cwt engineering van by the provision of metal bins in the load-carrying part of the body, this part being divided from the cab by an expanded-metal partition.

† Motor Transport Branch, E.-in-C.'s Office.

FIG. 1—MORRIS MINI-VAN

The bins are modified versions of those used in the present Morris Minor Type 3 van. Arrangements are being made so that pruning and survey rods, and folding steps can be carried on the roof of the new van because its body is too short to enable them to be carried inside.

The appearance of the vehicle is extremely deceptive because, although the body space is slightly smaller than that of the Morris Minor, the cab portion is in fact bigger. Seating is provided for one passenger in addition to the driver, and the load capacity is 4½ cwt. It is intended that this vehicle should supersede the present Minor van in towns and other suitable areas where its smaller size, greater manœuvrability and decreased fuel consumption are advantageous.

The design of the vehicle is most interesting as it

TABLE I
Comparison of Mini-Van and Present Minor Van

Vehicle	Minor Van	Mini-Van
Function	Transporting linemen, fitters, etc.	
Chassis type	¼-ton	Mini-Van
Engine size	803 c.c	848 c.c
Dimensions	*ft in.*	*ft in.*
Overall length	12 0	10 9⅞
,, height	5 10	4 11¼
,, width	5 0	4 7½
Interior length	4 4	4 1
,, height	3 7	3 0½
,, width	4 7	4 5
Turning Circle	32 0	29 6
Carrying capacity:		
Volume (ft³)	65	45
Load, excluding passengers (cwt)	5	4½
Gross moving weight (cwt)	23	19¼
Seats in cab	2	2
Ladder carried	One 8 ft (extending) ladder	
Steps carried	One pair	

FIG. 2—15 CWT UTILITY VAN

incorporates the following major departures from conventional practice:

(*a*) The 4-cylinder 848 c.c engine is mounted transversely in the vehicle.

(*b*) The engine, gearbox and differential-transmission gears are all contained within a common casing and are lubricated by the engine oil. This reduces the number of lubrication points of these major items from three to one.

(*c*) Front-wheel drive is used.

(*d*) Independent rubber suspension is provided for all road wheels.

The engine and transmission-unit with radiator and complete front-suspension assembly are carried on a sub-frame which is bolted to the main body structure. Thus, the complete unit can be removed for overhaul by releasing four bolts and detaching the various linkages.

The new Mini-Van and the present Minor van are compared in Table 1.

15 CWT UTILITY VAN

The B.M.C. series J2 standard van with a 1,500 c.c. petrol engine has been modified so that it can transport the tools and stores for working parties of two men. It has a payload of 15 cwt and will serve as a replacement for the existing 10 cwt van. It will also carry out the lighter duties now performed by the 1-ton Utility vehicle. The new van is shown in Fig. 2.

Racks and bins are provided behind a partition separating the van body from the cab. The standard metal roof is replaced by a translucent roof of fibre glass, primarily to give more light to the interior of the vehicle, but advantage was also taken of this change to increase the internal headroom by 3½ in.

The ladder carrier on the roof is designed to take a 14 ft extending ladder. To avoid loading the fibreglass roof, the carrier is supported by metal brackets fixed to the metal sides of the vehicle.

The single-leaf rear door of the standard van has been changed to a double-leaf rear door made in fibreglass material. Less space is required behind the vehicle to open the double-leaf door.

By mounting the engine to the rear of the driver's seat, which is situated between the front wheels, it has been possible to place the cab doors in front of the wheel

TABLE 2

Comparison of Present 10 cwt Van and New 15 cwt Utility Van

Vehicle	10 cwt Van	15 cwt Van
Function	Transporting small parties of men engaged on overhead or underground work	
Chassis type (maker's code)	JB	J2
Engine size Fuel	1,500 c.c petrol	1,500 c.c petrol
Dimensions:	*ft* *in.*	*ft* *in.*
Overall length	12 8	14 4
,, height	7 0	8 3½
,, width	5 8	6 1¾
Interior length	7 0	9 0
,, height	4 6½	5 1
,, width	4 10	5 7
Turning circle	35 0	37 0
Carrying capacity: Volume (ft³)	140	200
Load, excluding passengers (cwt)	10	15
Gross moving load of vehicle (cwt)	40	44½
Towing capacity (cwt)	Trailer tool-cart only	10
Seats in cab	2	2
Ladders carried	One 8 ft (extending)	One 14 ft and one 8ft (extending)
Steps carried	One pair	One pair

FIG. 3—25 CWT UTILITY VAN

arches so that improved access to the cab is given compared with the existing 10 cwt van.

The new 15 cwt van and the present 10 cwt van are compared in Table 2.

25 CWT UTILITY VAN

The present type of 1-ton Utility vehicle will be superseded by a vehicle based on the new B.M.C. 2-ton forward-control chassis fitted with a 3·4-litre diesel engine. A Post Office designed body permitting a payload of 25 cwt and a towing capacity of 35 cwt will be mounted on this chassis (Fig. 3).

The vehicle is of the conventional forward-control type. The cab, which can carry four men, has a wrap-round windscreen with low forward corner-windows to give the driver improved visibility. Vertical as well as horizontal movement of the driver's seat is provided.

The body is a Luton-head type (i.e. with carrying capacity above the cab) of integral construction, and, with this type of body, ladder apertures at the front are unnecessary. The usual shelving and racks are provided inside the van. On the off-side a shelf supports a 14 ft extending ladder, which projects above the cab. To prevent water dripping on to the driver (if a ladder is stowed in a wet condition) a protective canvas apron is provided. Lockers are fitted for the crew's personal belongings.

30 CWT UTILITY VAN

The new 30 cwt Utility van is shown in Fig. 4. This vehicle was designed as a replacement for the obsolescent 30 cwt Utility vehicle. A Post Office designed body has been mounted on the B.M.C. 3-ton forward-control chassis, which, like the 2-ton chassis, has a 3·4-litre diesel engine. A double cab is provided with seats and personal lockers for five men. A folding table is also fitted in the cab, which has a wrap-round windscreen and low forward corner-windows similar to those on the new 25 cwt van.

In the body of the vehicle, shelves and racks are provided for stores and ladders. Bolsters capable of supporting two 32 ft medium poles or four 26 ft light poles are also fitted. To enable poles, ladders or other long items to project through the front of the body, trapdoors are fitted. To prevent rain entering the body the trapdoors are provided with protective canvas aprons.

The new 25 cwt and 30 cwt Utility vehicles and the present 1-ton Utility and 2-ton General Utility vehicles are compared in Table 3.

TABLE 3

Comparison of New 25 cwt and 30 cwt Utility Vehicles and Present 1-ton Utility and 2-ton General Utility Vehicles

Vehicle	Present 1-ton Utility	New 25 cwt Utility	New 30 cwt Utility	Present 2-ton General Utility
Function	Transporting external gangs on overhead and underground duties			
Chassis type (maker's code)	LC5	FG(2T)	FG(3T)	QXM
Engine size	2,199 c.c	3,400 c.c	3,400 c.c	4,752 c.c
Fuel	petrol	diesel	diesel	petrol
Dimensions:	*ft in.*	*ft in.*	*ft in.*	*ft in.*
Overall length	16 6	16 7½	19 0	20 6
,, height	8 9	9 3	9 4	9 8
,, width	6 6	7 0½	7 0½	7 5
Interior length	7 10	7 7 (near side) 9 4 (off side)	9 8½	10 7
Interior height	5 11	6 3	6 3	6 4
,, width	6 3½	6 4¾	6 5	6 7
Turning circle	45 0	40 0	45 0	50 0
Carrying capacity:				
Volume (ft³)	240	300	380	430
Weight, excluding passengers (cwt)	20	25	30	30
Gross moving load of vehicle (cwt)	65	84	110	115
Towing capacity (cwt)	35	35	35	45 (trailers fitted with over-run brakes) 100 (trailers fitted with vacuum brakes)
Seats in cab	2	4	5	5

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FIG. 4—30 CWT UTILITY VAN