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ABSTRACT

Forty-one country libraries in Wales, Scotland and England were surveyed in 1970 in an attempt to establish current practice in the design and construction of mobile libraries. This report is the first step of the Branch and Mobile Libraries Group of the Library Association to establish standards for mobile library design and construction. The survey covers the overall dimensions of mobile libraries, the chassis, coachwork, external details, internal details, electrical system, heating and ventilation, and accessories. (Author/MM)

MOBILE LIBRARIES

DESIGN AND CONSTRUCTION

A Survey of
Current I

by

C. R. Eastwood, C. T. Nicholls
and C. Rippon.

Branch and Mobile Libraries
Group of the Library Association

April 1971

Price 25p

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Preface

This survey is compiled from returns to a questionnaire sent out early in 1970, which, in spite of its formidable appearance, was completed by 41 county libraries in Wales, Scotland and England.

The Group has been trying, unsuccessfully, to prepare standards for mobile library design and construction, but the obstacles are formidable in a field where local needs are very varied, and local practices and prejudices of engineers, transport officers and librarians often equally diverse. The present publication is not a confession of defeat in the preparation of standards but a stepping stone towards the completion of these standards. It illustrates the real diversity which exists. This can be seen, for example, in the way in which responsibility for vehicle design is allocated amongst these authorities.

Librarians were asked to specify who was directly responsible for the design of mobile libraries. One gave no reply to the question, 21 specified the work as being done by the County Librarian and 5 by the Deputy Librarian, though in both cases sometimes in co operation with other members of staff. Persons directly responsible included:-

"Assistant County Librarian" (3)
"Library staff"
"Supervisor of the Travelling Library Service"
"Amateur design group"
"Senior staff in consultation"
"Travelling librarian"
"Librarian i/c Mobile Libraries"
"Transport Officer (Children's Librarian)"
"Senior Librarian"
"Administrative Officer"

In 3 replies there was indication of help from outside, e.g. "Consultants", "Coach-builders", and "Professional designer", but the main source of assistance was from other departments, shown in 12 replies:-

"Transport Manager" (3)
"Education Transport Officer" (2)
"County Supplies Department"
"County Architect"
"Highways"
"Engineering staff"
"County Mechanical Engineer" (3)

The vehicles to be included on the returns were assumed to be medium-sized rigid vehicles (i.e. not trailers), shelving from 1,800 to 2,800 books, and whilst a few returns are not strictly within this category it was still felt useful to include their details. In a few cases the details given are preferred rather than actual and indicate a future rather than a present practice.

We should like to thank the enthusiasts who completed and returned the questionnaires. These were analysed and discussed at a Group meeting at West Riding County Library in May 1970, but it was hoped that a more permanent record would be useful and would play a part in improving standards of design and construction.

C.T. Nicholls (West Riding)

C. Rippon (Buckinghamshire)

C.R. Eastwood (Somerset)

Analysis of overall dimensions

Library	Width	Minimum length	Maximum length	Height	Interior height	Shelving capacity (public)	Shelving capacity (staff)	Wheelbase minimum	Wheelbase maximum	Floor height	Chassis extension
Cambs	7'6"	20'	23'	10'	6'6"	159'	10'	124"	180"	2'8"	30"
Cheshire	7'8"	25'	25'	10'	6'4"	-	-	145"	170"	2'6"	25"
Cumberland	7'6"	21'	24'	10'2"	6'6"	150-173'	6'	145"	164"	3'	NO
Devon	7'3"	20'	21'	9'6"	6'3"	145'	3'	146"	146"	2'7"	24"
Dorset	8'	22'	22'	12'	7'	200'	10'	145"	155"	2'4"	36"
Dumbarton	7'5"	21'	21'	9'3"	6'4"	129"	13'	-	155"	2'4"	NO
Essex	7'6"	23'6"	23'6"	9'4"	7'3"	200'	6'	170"	-	2'7"	25"
Flint	7'6"	20'6"	24'	10'	6'8"	192"	10'	146"	163"	3'	NO
Glamorgan	7'6"	21'	21'	10'3"	7'	-	-	-	145"	2'7½"	NO
Gloucester	7'1"	24'6"	24'6"	9'3"	6'6"	180'	6'	-	170"	2'9"	28"
Hampshire	7'6"	24'	24'	10'6"	7'	-	-	164"	-	3'	NO
Hertfordshire	7'6"	24'	24'	10'6"	7'	185'	8'	164"	164"	3'	40"
Huntingdons	8'2½"	30'	30'	10'6"	6'6"	200'	18'	209"	209"	2'6"	45"
Kent	7'6"	27'6"	27'6"	10'3"	6'6"	158'	12'	216"	216"	3'2"	NO
Lancashire	7'6"	20'3"	23'8"	10'9"	6'6"	191'	9'	141"	164"	2'6"	NO
Leicesters	7'6"	27'1"	27'1"	10'8"	6'11"	192'	10'	164"	184"	3'1"	24"
Lincs (Lindsey)	7'6" - 8'	22'	24'	10'	6'6"	170'	NIL	144"	170"	2'6"	25"
Merioneth	6'10"	22'	23'	9'6"	6'6"	150'	7'	156"	156"	1'2"	NO
Monmouthshire	7'6"	23'	25'	9'10"	6'	200'	12'	150"	180"	2'9"	NO
Montgomery	7'3"	20'	23'	14'6"	6'8"	141'	8'	164"	168"	3'	NO
Northamptons	7'6"	24'	26'	11'	6'9"	240'	8'	162"	164"	2'7"	NO

Analysis of overall dimensions Continued

	Width	Minimum length	Maximum length	Height	Interior height	Shelving capacity (public)	Shelving capacity (staff)	Wheelbase minimum	Wheelbase maximum	Floor height	Chassis extension
Oxfordshire	7'-7'4"	21'	22'	9'6"	6'4"	120'	12'	156"	168"	2'10"	NO
Pembroke	7'6"	15'5½"	15'5½"	-	6'6"	210'	10'	157"	168"	2'4"	42"
Radnorshire	6'11"	22'8"	22'8"	9'10"	6'3"	120'	20'	120"	-	3'	NO
Ross/Cromarty	7'	18'	21'	9'6"	6'8"	167'	10'	-	138"	2'6"	NO
Rutland	7'6"	27'	27'	10'5"	6'11"	197'	10'	145"	184"	3'2"	24"
Shropshire	7'6"	22'	25'	9'9"	6'9"	170'	24'	141"	155"	2'6"	25"
Somerset	7'6"	22'	25'	10'	6'6"	162'	12'	-	141"	3'	NO
Staffordshire	7'6"	20'	26'	11'	6'9"	182'	31'	-	216"	3'	NO
Stirling	8'1"	25'	26'	11'2"	6'6"	197'	13'	-	201"	3'5"	NO
Surrey	7'6"	26'	26'	10'	7'	245'	17'	164"	164"	2'4"	18"
West Suffolk	7'6"	20'	25'	10'6"	6'6"	-	-	145"	160"	-	25"
West Sussex	7'6"	22'	24'	10'	7'	200'	10'	164"	164"	2'6"	MAX
Westmoreland	7'6"	24'	24'	10'	6'6"	180'	30'	-	164"	3'	NO
Wiltshire	7'6"	22'6"	25'	10'6"	6'8"	180'	12'	162"	180"	3'2"	YES
Yorks (E.R)	7'4"	24'	24'	9'6"	6'8"	172'	6'	-	152"	3'	YES
Yorks (N.R)	7'-7'6"	22'	23'	-	6'3"	164'	6'	155"	164"	2'2"	YES
Yorks (W.R)	8'	27'3"	30'	10'9"	7'	220'	2'	212"	212"	3'	NO
Unknown	7'	21'	21'	9'6"	6'6"	155'	6'	145"	145"	3'3"	NO
Unknown	7'6"	17'	19'	10'	6'6"	180'	16'	-	-	-	NO
Unknown	7'6"	22'6"	22'6"	10'6"	6'6"	170'	15'	164"	164"	2'10"	NO

Comments

Section A Overall dimensions

Qu.A.1 Width. Ranging from 6'10" to 8'2½" (Legal maximum) but most widely adopted figure is 7'6" or thereabouts. Width dimension is obviously influenced by operating conditions.

Qu.A.2 Length. Ranging from 15'6" to 30'0" butthe majority of vehicles appear in the 21'0" - 26'0" group. Large communities deserve large vehicles - extra floor area is more vital than extra shelf space.

Qu.A.3 Height (overall). Ranging from 7'0" (Pembroke) to 14'6" (?) (Montgomery) - "the short and the tall". Excessive height probably means unduly high upper shelves and high vehicles have a tendency to roll and corner badly, but the two extreme figures quoted are probably inaccurate.

Qu.A.4 Interior height (floor to ceiling). Average is 6'7". This figure should be sufficient to allow a tall man complete with hat to stand in comfort. Low ceilings tend to promote a sense of claustrophobia amongst older readers.

Qu.A.5 Shelf capacity. Returns vary considerably from a minimum of 120' to a maximum of 245' for public shelving with an average of approximately 185', and 2' - 31'6" for staff shelving, with an average of 10'.

Section B Chassis (Forward control assumed)

Qu.B.1 Wheelbase. Shortest wheelbase in use is 11'9" and longest is 18'0" (i.e. Bedford (SB) coach chassis). Choice of wheelbase is again influenced by operating conditions and the 164" wheelbase, as exemplified in the Bedford VAS model, is a popular one and indeed a good average.

Qu.B.2 Floor level height (laden). Ranging from 1'2" (Merioneth) to 3'5" (Stirling), with an average of 2'9". Using conventional coach-building methods and materials, the determining factor in floor height is size of road wheels.

Qu.B.3 Petrol or Diesel. 24 use Petrol and 12 Diesel with 3 using mixed fleets. Diesel engines more expensive initially but with annual mileage of 10,000+ better mpg and lower repair bills.

Number of Cylinders. 32 using 6 and only 4 using 4 cylinder engines with 4 authorities employing both types of engine.

Qu.B.4 Power/weight Ratio of Laden Vehicle. 19 authorities failed to answer this question, presumably on the grounds that it was too technical. Ranging from 0.75 (?) in Leicestershire to 90 (?) in Stirlingshire. Most replies inaccurate and for a reliable figure, operators should have consulted their engineering advisers. As far as the Ministry's proposed figure of 8 is concerned, all authorities' submitted returns would appear to be on the safe side of the forth-coming legislation.

Qu.B.5 Engine Position. 38 with conventional engine position, with one semi-underfloor and one fully underfloor.

Qu.B.6 Undersealing of Vehicles. 28 use a genuine underseal preparation, 3 use black bitumastic paint and 10 authorities do not use underseal.

Qu.B.7 Chassis Extension. 19 employ chassis extensions ranging from 1'6" to 3'6" and 22 use the chassis as selected without chassis extension. Some confusion arose over this question between chassis extensions, i.e. those at the end of the vehicle, and wheelbase extensions (such as "Baico").

Qu.B.8 Automatic Chassis Lubrication system. 11 authorities use "Tecalemit" ACL and one "Telelube", and 24 do not employ any such system. The ACL system providing up to 28 supply points for approximately £55 is considered excellent value and also a "MUST".

Section C Coachwork (Special coachwork assumed, not standard van)

Qu.C.1 Framing material. With one exception, all authorities use wood framing, undoubtedly on the score of economy. Alloy framing could add an extra £150 - £200 for a typical mobile body on, say, the Bedford SB model.

Qu.C.2 External cladding (or panelling) is by means of 18 gauge aluminium except 3 authorities who use 16 gauge and 1 using 20 gauge. 18 gauge is perfectly adequate provided the necessary precautions are taken

when bonded to steel.

Qu.C.3 Patterned aluminium. Only 2 authorities use patterned aluminium.

Qu.C.4 Colour impregnated. None used.

Qu.C.5 Stainless Steel. According to the returns only 1 authority uses stainless steel. It is expensive, its stainless property over two - three year periods is doubtful, and curved panels are not possible.

Qu.C.6 Aluminium faced plywood. Only 7 authorities use "Plymax" or similar material, whereas 34 use plain aluminium, mostly of 18 SWG. "Plymax" panels are more expensive but have the advantage of drumming less.

Qu.C.7 Fibreglass. The majority of authorities (35) do not use fibreglass. 2 use it for roof construction either whole or in part and it is included when "Duple" front ends are specified.

Qu.C.8 Special methods employed to ensure good panel sealing. This matter would appear to be left to the individual coachbuilders concerned, but where replies were forthcoming the medium is obviously either the sealing gun ("Ferocaulk") or the use of sealing strip and appropriate mouldings.

Qu.C.9 Preference for size, shape, etc, for panelling.

Most authorities who answered this question do not appear to have any preferences here. Large panels preferred (8' x 4'), but not too large to inflate repair costs or to result in excessive drumming. Panel drumming is normally overcome by the use of an anti-drumming compound (underseal is quite effective) but the employment of small panels, apart from the excessive amount of jointing and moulding required, detracts considerably from the appearance of vehicles.

Qu.C.10 Preference for size, shape, etc, for mouldings. Most authorities ignored this question and those who did answer it prefer the ½" half round conventional moulding, and a small minority prefer that with the plastic insert.

Qu.C.11 Preference for size, shape, etc. for roof construction and materials. Front and rear dome

panels specified in a number of cases with one piece control fibreglass (e.g. "Filon") panel. Several authorities use aluminium roofs incorporating fixed and opening roof lights. It is important here to use as large panels as possible to reduce number of mouldings, which are potential "leak" areas.

Qu.C.12 Where is insulation used? All authorities except 8 use body insulation somewhere or other in their vehicles and a total of 14 insulate all round except of course where fibreglass roofs are in use. Only one authority insulates the floor, despite the simplicity, effectiveness and economy involved in such an operation.

Qu.C.13 What insulation is used? Polystyrene is specified by the majority of authorities. Other materials in use include "Rocksil", "Isoflex", "Isolite", Fibreglass, Glass Wool and foil facings. We need to ascertain which material is the most effective and cheapest.

Qu.C.14 Are wood preservatives used to treat timber framing? All authorities except 4 specify wood preservatives and the most popular is undoubtedly "Cuprinol" (green or clear).

Qu.C.15 Approximate number and area of openings and fixed roof lights. The nature of the returns do not lend themselves to formulating a useful analysis of current trends - there is considerable variety in practices but the "Weathershields" opening roof lights are the most widely used, together with roughly 40% fixed fibreglass small roof lights and 10% large fibreglass panels. Roofs should be so designed to provide an adequate amount of natural light, but it will be necessary to provide blinds to counteract excessive heat from the sun, particularly where large fibreglass panels are employed in roof structures.

Section D External details

Qu.D.1	(a) Do you have a rear window?	23
	(b) Size, sq. ft.	4 sq.ft to 10½ sq.ft.
	(c) Is it openable?	17
	(d) Can it be fully opened to provide an emergency exit?	13

Qu.D.2	What size side mirrors are used?	16 sq.ins. to 70 sq. ins. 60 sq.ins. most popular.
Qu.D.3	Do you use removable rear wheel spats?	4
Qu.D.4	Do you use rubbing strips?	10
	If so, give material.	Wood, Alloy, Rubber, Metal-faced wood.
	Size and position.	Bottom of skirt to 3' from floor.
Qu.D.5	Do you use rear bumpers?	10 8 use quarter bumpers 6 use rubber pads.
Qu.D.6	Do you provide cab doors?	
	Driver's side.	41
	Passenger's side.	25
	Do you use gliding or winding glasses?	Gliding 23 Winding 22 Constant balance 1 Quick action drop 1
Qu.D.7	Where is the public entrance?	
	Nearside	Rural Mobile - nearside.
	Rear	Some Urban Mobiles at rear.
	Elsewhere.	
Qu.D.8	What is the height of the bottom step?	10" to 16", also moveable at 9".
Qu.D.9	What material do you use covering steps?	Lino/Rubber/ aluminium tread.
Qu.D.10	How many interim steps between lowest skirt level step and floor level?	Mostly 1 but some say 3 - obviously wrong (?)
Qu.D.11	What minimum entrance width is required?	2'5" to 3'.
Qu.D.12	Do you use manually-operated doors? If so,	Majority manual - Jacknife, Sliding,

	specify type.	
Qu.D.13	Do you use power-operated doors? If so, specify power, e.g. electric, hydraulic, etc.	6 electric, 1 hydraulic.
	Specify door system, e.g. Jacknife, glider, etc.	Gliding & Jackknife.
Qu.D.14	If you use a manual remote control for doors, specify.	-
Qu.D.15	What is the height of extreme rear of body from ground?	Ranges from 12" to 21".
Qu.D.16	Do you use special windscreens? Divided. Single Wrap-around corners	Depends on Chassis & coachbuilder. Yes Yes Yes.
Qu.D.17	Do you use towing eyes, At front At rear.	 18 6

Section E Internal details

Q.E.1	What ceiling material is used?	Polystyrine, Plastic-faced hard-board, Vinyl, Formica, Plywood, Isoflex, Fibreglass.
Qu.E.2	What floor covering?	Lino, cork, lino tiles.
Qu.E.3	Do you have a mat-well?	41
Qu.E.4	What is area of staff counter(s) in sq.ft?	5 sq.ft to 11 sq.ft.
Qu.E.5	What is height of top of counter from floor?	30" to 42".
Qu.E.6	Specify wardrobe provision, if any.	Majority provide wardrobe.
Qu.E.7	Show on plan position and	Majority have

	shape of counter vehicle - use scale ¼" = 1' and give vital dimensions.	counter behind driver's seat across width of van.
Qu.E.8	Indicate on above plan position of Librarian's and Driver's seats.	Fixed.
	(a)whilst vehicle in motion.	Squab folds.
	(b)whilst operating at stops.	Revolves.
Qu.E.9	Indicate on plan any public seating.	1 only on padded wheel arches.
Qu.E.10	What storage space is needed?	
	(a)externally,e.g.jack, tools, Calor gas bottles,etc. in sq.ft.	3sq.ft to 30sq.ft.
	(b)internally, books, stationery etc. in sq.ft.	4sq.ft to 25sq.ft.

Qu.E.11 Shelving.
(a) indicate % of Fiction, Non-Fiction, Children's.

Most popular proportions	A.F.	A.N.F.	Children's	
	40	40	20	(3)
	50	45	5	(3)
	60	40	-	(3)
	50	40	10	(3)
	55	45	-	(2)
	50	35	15	(2)
	55	32	13	(2)
Others				
Odd ones	50	40	5	
	43.9	46.04	10.06	
	57.6	35.3	7.1	
	59	41	63	
	50	50	10	
No Children's	45	55	-	
	63	37	-	
	40	60	-	
	50	50	-	
More Non-Fiction than Fiction	47	50	3	
	45	47	8	
	40	55	5	

	Equal Non-Fiction and Fiction	48 42.5 45	48 42.5 45	4 15 10
	High Children's	40 45	27 10	33 45
	1 Gramophone Record	51	41	4 + 4% gramophone records

Qu.E.11 (b) What ft. run of oversize shelving is required? 3' to 12'.

(c) Indicate minimum height of bottom shelf from floor, and maximum height of top shelf $3\frac{1}{2}$" to 12"

4'11" to 6'3".

(d) Do you find a 1 in 5 shelf slope is sufficient to retain books on sides? 2 say No.

At rear? 19 say No; of these:
9 use 1 in 4
5 use slats
1 uses lips.

Qu.E.12 Specify size and type of tier guides preferred. 1", $1\frac{1}{4}$", $1\frac{1}{2}$", 2" - Perspex, Letraset, Dymo, Graforel, Cork, Self-adhesive letters.

Qu.E.13 What area of public notice board is provided? None to 8 sq.ft.

Section F Electrical System

Qu.F.1 What battery capacity (in ampere/hours)?
Capacities quoted by the 22 coherent replies showed the following range: 64, 95, 100, 114, 115 (2), 129 (2), 144 (2), 146, 160, 185 (2), 195, 200, 232, 240, 260, 292, 370, 460. If the extremes of 64 and 460 are ignored (both seems unlikely, but not impossible), there is an average of 177Ah.

Usually an extra battery is wired in parallel to the original 12 volt battery provided with the chassis and in this case the original capacity will be doubled as it is essential when arranging batteries in parallel to use two of the same type. Another arrangement quoted by a small minority of replies is where the original chassis battery is retained for the vehicle's normal running and a secondary battery (separately charged from a trickle-charger) is added for the auxiliary equipment such as internal lights.

Qu.F.2 Do you use a generator or alternator? Alternators are now clearly in general use; 28 replies quoted these and only 5 generators.

Qu.F.3 (a) Do you employ trickle-chargers? 24 replies said Yes.

(b) If so, are they on the vehicle or in the garage? Almost equally divided; either may be used, even within one authority.

(c) What capacity trickle-charger is used? The following amperages were quoted: 2, 3 (5), 3.5, 4.5 (2), 5 (10), 6 (2), 7 (2), 8.

Qu.F.4 Do you use a separate generating set for power? Though these are extensively used in the United States, none were used by libraries replying.

Qu.F.5 Give details of number, wattage and type of lights used.

No.	Wattage	Length	Type
5	20W	2'	
6	36W		Tungsten
6	120W		
5	12W		
4	20W		Osram
6		2'	
12	20W	2'	Easco
8	20W	2'	
8	20W	2'	
8	20W		Phillips
7		2'	
6	20W	2'	
5	40W		
6			
7	20W		
6	20W		

No.	Wattage	Length	Type
10	20W	14"	
7	20W	2'	
8	15W		
7			Easco Jilyte type C51
7	60W		
6	60W		
7		2'	
9	20W	2'	Phillips
6	20W		Easco
7	20W		
8	20W	2'	Phillips & Easco
5	20W		
6			Easco Minilytes
7	20W		
8	20W	18"	
4	20W		
6	20W		Phillips
7			
8		2'	
4	20W	2'	
6	20W	2'	Easco
8	20W		
8	20W		
5	20W		Labscrafts
6	24W		

The above 41 replies show the variety of systems used. A full comparison is not possible because of the incomplete and sometimes vague information given and, of course, some variety in size of vehicles. All the above lights specified seemed to be transistorized fluorescent fittings. Most replies included step-lights and some mentioned lights in cab and boot.

Qu.F.6 List all electrical equipment, e.g. Fans, heaters, clocks, doors, special or additional batteries, voltmeter, ammeter.

Clocks. 15 specified as being used but details given of only two:

Time Master, battery operated.
Transistorized battery clock (L.P.U.2)

Fans. 19 were specified, details as follows:

K.L. Reversible
Trico rubber bladed
K.L. Motovair 7¼" high speed extractor fan
K.L. Extractor
K.L. Extractor unit type No. 2963.

Batteries. See Qu.F.1

Doors. 10 replies indicated electric doors, either Jacknife or Glider, and one reply specified electro-pneumatic.

Heaters. Most heaters employ fans to circulate warm air and although only 16 replies specified cab heaters, this is probably an under-estimation of the numbers used. 19 replies specified Webasto heaters which also require a source of electric power to drive fans.

Other electrical accessories.

Ammeter (14
Voltmeter (5)
Electric kettle (3)
Inspection lamp (1)
Illuminated signs (1)
Aeon emergency 6-way flasher unit (1)
Lucas No.494 red fog warning lamp at rear (1)

Qu.F.7 Give details of fog/spot lamp (s).

9 replied "none"
1 replied "supplied"
1 replied "built into body"
1 replied "Lucas"
1 replied "Notek (rubber)"
1 replied "as legal requirements"
1 replied "usual"
1 replied "Bosch flat beam"
+5 replied "one"
+1 replied "fog lamp - not specified"
+4 replied "one for lamp"
15 replied "two", with some variations, such as "one each", "Lucas 1 fog and 1 spot", "2 Lucas, "2 x 36W", "matching spot and fog lamps - type not specified", "one of each, quartz halogen type".
1 replied "2 Lucas (Type SLR 576) Long range driving lamps.
1 replied "2 Bosch 03005451001".
1 replied "Two Lucas 'Silver Sabre' tungsten halogen".

This must have been a bad question to have got such varied replies. The last three are obviously the most useful and informative. Those marked with an asterisk may now risk breaking the law unless the fog/spot light provided is always used with headlights. Some of the other vague replies lack knowledge of the vehicle and possibly of the law too.

Qu.F.8 Give details of reversing lamp (s).

6 replied "none", or left the space blank.
9 replied "one", sometimes specifying "offside rear".
5 were vague, e.g. "Lucas 488", "Usual", "Supplied", "Body builder's discretion", "Built into body".
22 specified "two", replies to give fuller details were as follows:

"2 Lucas 494".
"2 Lucas type 464 - 24W".
"2 Bosch 0307105001".
"2 x 18W.
"2 Lucas 532 10 flush fitting".
"Type which forms part of the B.M.A.C. Rear Light Unit (No. 759)".

Section G Heating and Ventilation

Qu.G.1 Do you utilize engine-heat circulation systems, other than normal cab heater? If so, give type.

This question was intended to find out what instances of the formerly fairly popular Clayton heaters were in use, but only two replies were positive - "Some models (Clayton S12)", and "Clayton bus heater". Clearly the earlier advantages claimed for this heater have not materialized.

Qu.G.2 Have you used any form of night-storage heater? If so, give type and details.

The only instance of this more modern form of heating being employed was in the reply from Northamptonshire, who fitted the 2KW Electrolux on 5 vehicles as a replacement for Calor gas. Northants claim these heaters are much preferred by the staff, being clean, effective and trouble-free, and they would not now prefer any other system. Only one heater is installed in each vehicle, the type used being Electrolux 2KW Model GU22, and the heaters are charged only at night. The heat loss during the day is gradual and the temperature of the interior of the vehicle is reported to remain at a comfortable level to the end of the day. The system has the usual snag common to all heat storage methods, of lack of flexibility, which is desirable due to the rapid changes in general temperature, but use of window and door ventilation is said to be effective in dispersing unwanted heat fairly quickly. The heaters are built into the staff

varied forms of heating and returns showed a variety of experience with, and opinions about, Webasto, e.g.,
"Satisfactory".
"Good" (2 replies).
"Good - but regular servicing by manufacturers essential".
"If properly maintained and serviced annually this system is very efficient - must be installed and operated in accordance with manufacturer's instructions".
"Best system available - no space taken inside vehicle; heating/ventilation very effective - needs careful installation".
"Very effective heating unit. Occasionally the control switch mechanism has given some trouble".
"Effective for approximately 5 years then cause great trouble".
"Effective but has replacement parts difficulty".
"Very satisfactory except in extremely cold weather".
"Ineffective, therefore Calor gas heaters have been supplied in all vehicles for cab area heating".
"Webasto had edge on performance (compared with Calor gas) despite high cost of installation and maintenance".
"Small Webasto clogs with dust very easily and has to be returned to maker for repairs which take a long time. Larger Webaato is very efficient but heavy on batteries".
"Webasto very much most effective system; reasonably controllable; not too heavy on batteries; can be used as fresh air system".
"Webasto heavy on batteries; reverting to Calor gas".
"Occasional breakdowns; otherwise good".
"Satisfactory (provided fresh air entry to heater). Webasto in use for 10 years. Annual service advisable".
"Effective; too hot for continous running in milder weather".

Qu.G.5 If none of above used, indicate system employed.

The only reply to this question was from an authority where the Fire Officer had insisted on the discontinuance of Calor gas "Thermex" heaters, a flameless type, and these had been replaced by paraffin convectors which were effective as heaters but tended to smell and required adjustments to flame regularly because of movement of vehicle.

counter and heat both the staff area and the main body of the vehicle. It is clearly desirable to make the heaters removable in order to keep down the vehicle's unladen weight, but also necessary to have their fixing arrangements very secure to prevent damage due to the involuntary movement of these heavy heaters in the event of an accident.

Qu.G.3 If you use Calor Gas, give number and types of appliances.

15 replies indicated Calor Gas still being used and another 3 said that this was used on older vehicles but had been replaced on newer vehicles, usually by Webasto heaters. 5 replies said only "convector" without giving full details, but other replies were:
"Harper Model 4000 convector (reasonably good and usually trouble free)".
"Harper 3000L and 4000L (satisfactory - takes little more space - but better if flued, as ideal)".
"Single burner at front and double burner with flue at rear (very good provided adequate ventilation, i.e. flue vent)".
"Harper 4008".
"2 Vek No.2 heaters (adequate, no trouble)".
"Calor Harper 4000".
"Portable gas fire (10lb.) and quick boiling ring".
"2 Mini-convector heaters fed from two Propane gas cylinders with changeover valve (present gas system as good as any and more reliable than Webasto system previously used)".
"Royal convector (sufficient for normal conditions in mild (sic) S.W. climate)".
"Two, fore and aft, Harper type 4008 and Infradex (effective and reliable but however carefully the system is installed, a slight smell of gas is usually evident. Adequate ventilation is important with bottled gas installations.)".

Qu.G.4 If you use Webasto or similar combustion heater, give type and other details.

4 replies indicated use of Webasto but did not give any details. 1 reply said Webasto was in use on some vehicles but had not been put in new vehicles since 1964. The most common heater was the Webasto 12 ASM (H.L. 3003) used by 15 authorities, whilst 1 authority used either the 12 ASM or the 26 ASM. 5 authorities used only the larger 26 ASM (H.L.6504). Many authorities have now had long experience with

Section H. Accessories

Qu.H.1 Fire Extinguisher. All replies showed that fire extinguishers were provided. 20 replies did not specify type used, though one said "As supplied by County Fire Brigade", another "Not Carbon Tet.", and a third "Two, hand pump type". One suspects that the hand-pump type may be the Carbon Tetrachloride or CTC type which is now no longer considered safe for use in confined areas, e.g. a mobile library. In fact 5 replies showed clearly that CTC extinguishers are still in use, and one library reported the use of a Methyl Bromide extinguisher, the fumes of which are even more toxic than the CTC. Two foam extinguishers, "Foamite", and "Nu-Swift Airfoam" were reported; these are considered rather old-fashioned these days and are messy in operation but are at least effective and safe. One library used a CO2 (carbon dioxide), a gas type extinguisher which is effective in putting a fire out temporarily but may not succeed in keeping it permanently under control. 7 libraries used a dry powder type, varying in capacity from 3 to 5 lbs. weight. This is a very satisfactory modern type of extinguisher and the 3 lb. size is considered quite adequate for an average-sized vehicle. 5 libraries used the BCF type which is at least effective as powder is cheaper; sizes varied from 1½ to 3 lbs., the latter being recommended.

The above paragraph has been compiled in co-operation with a County Fire Officer who pointed out the need for care in installation and use of Calor Gas cylinders. Storage compartments for these should be ventilated, at the bottom, to allow leaking gas, if any, to escape.

Qu.H.2 First Aid equipment. This is provided by all authorities but few details of types were noted. Typical replies were:
"Made up box (Boots)"; "Kit from Boots"; "Boots large tin". Four replies said provision was "P.S.V. standard", and one was "as Ministry Instructions for office use". Brand names quoted, apart from Boots, were Bradex (3), Compactoid (1), Paragon 8207 (1), and Romac (3).

Qu.H.3 Washing provision for staff. A total of 14 replies indicated that no provision was made for washing and a further 10 replies showed that there was some provision but were not able to specify the

method used, though in default of specific details it may be presumed that the provision is primitive. 6 replies honestly admitted to a basic provision, i.e. a washing bowl (plastic) and a thermos container for hot water, which is clearly better than nothing, and has the advantage of being able to be tucked away without using up valuable space. The 12 replies offering more than this basic provision were as follows:
"Wash hand unit in counter top with Thermil bottle"(2).
"Wash basin in counter"
"Removeable sink unit with Thermos tank".
"Insulated 5 gallon tank and siphon to tap".
"David Bloom type washing compartment".
"Handbasin".
"Tank, basin (H. & c.) with 'Main Minor B' water heater (gas)".
"Smith's Thermowell unit"
"Stainless steel sink - 'Whale' pump tap".
"Washbowl by Harry Lee & Son, Manchester".
and one mysterious contribution, "Yes, rear corner cupboard".

Qu.H.4 Special horns for announcing arrival. Only 7 replies admitted to the use of special horns and it seems obvious that the once widespread use of two-tone horns has been limited by the change in Construction and Use Regulations which was intended to restrict the use of such horns to emergency vehicles. 3 replies showed use of the 'Hella' electric horn and 3 indicated wind, or vacuum horns, without specifying type, though one reply specified "single tone" with one eye on the regulations. The most specified reply was "Type used on boats (Styan Signal Siren), Styan Laboratories Ltd., Alexandra Street, Wolverhampton".

Qu.H.5. Clock. All replies indicated that clocks were provided but only a minority said what type. Other types specified in addition to those listed in Qu.F.6 were :-
"Smith's battery".
"Smith's Sectronic transistorized (Leakproof U.2 battery)".
"Metamec battery".
"Kienzle coach type battery 1.15 volt".
"Gibson's 8 day (Model 303)".
"Andrews".
"Smith's 8 day".

Qu.H.6 Warning triangles. These are not the type

which can be fixed to the rear of a vehicle but the portable collapsible type which can be carried in a locker or cupboard and can be placed in front and behind a vehicle to warn approaching traffic of a breakdown or accident. Such equipment can be a money-saver or even a life-saver and is cheap to provide. Only 5 replies indicated provision and only 2 were specific:
"Tudor self-supporting, can be collapsed. Red reflective lens material (reticular)".
"Bluemell's Advance Warning Triangle".

Qu.H.7 Other accessories. A few examples of likely accessories were given in the Questionnaire and these were the ones most quoted, as follows:

Seat belts. 20 authorities fitted these, though one said "never used". Only 4 gave details of type and all these were "Britax", the Inertia Lock automatic type.

Radiator blinds. 20 authorities used these, the only types quoted (one each) being "Imperial" and "Varivane".

Engine covers or muffs. These are used by 28 authorities and the only type quoted (by only one reply) was "S. Norrish Ltd,".

Sun visors. These were fitted by 35 authorities and in 9 replies sun blinds were fitted to roof lights. The only manufacturer or type named, for both visors and blinds, was Nicholls, Fraysse & Co.Ltd., N.W.10.

Mud flaps. 31 examples were given, in two cases being qualified as "Individual at front, full width at rear". No types were given.

Tow-rope. A surprisingly small number of authorities (5) supplied these.

Shovel. 24 were supplied, one specified "County Highways issue", and one authority also provided "Grit bags", and one "chains".

Screen washers. These are coming into general use and 29 replies covered these.

Other external equipment comprised:
Locking cap on fuel tank (3).

Chromium plated easy-clean wheel trim (1).
Tyre pump, mechanical (1).
Hydraulic jack (2).
"Stenor" ¾" 30" long wheelbrace.
Wheelchock.
Reflective number plates (2).
"Scotchlite" fluorescent strip across rear of vehicle.

Other internal equipment quoted was:

Ash trays (2).
Doormats (1). Clearly more are in use but were overlooked in returns.
Spare doormat (1).
Link mats in cab (2).
Calor gas cooking equipment (1).
Plug for electric kettle (1).
Kettle (1).
Torch (1).
Detachable desk top (2' x 1'6") in front of passenger seat (1).
Lockable dashboard lockers (1).
Windscreen interior blind (1).
Leaflet holder (1).
Pamphlet holders on cupboard doors (1).
Pouch pockets in cab.

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