

In late 1920, Rolls-Royce dispatched 53 supervisors and their families to New England to establish Rolls-Royce of America at Springfield, Massachusetts. With them came tooling, drawings and samples. They were determined to make complete Rolls-Royce cars here, and Springfield was not to be just an assembly plant for British parts.

Tool kits were no exception, and contact was made with leading US makers such as Williams (New York) and Billings & Spencer (Hartford) to supply the special tools required to maintain the Silver Ghost. Samples of the British-made tools were supplied to the candidate US makers to exemplify the style and quality expected. By the time the first Springfield car was ready for delivery it carried a complete, though much smaller, tool kit made by US suppliers.

Soon, the content of tool kits began to deviate from British practice. Since American Bosch ignition systems were adopted for the Springfield R-R, the magneto wrench had to be American Bosch as well. Alemite lubrication fittings were used so the lubrication gun was changed to follow suit—and so on. **RR**



Above are two of the maker's marks found on tools in the Springfield tool kit. The mark on the left signifies Williams, and the one on the right is for an unknown maker. Below is a Williams wrench; it was too good a copy of the British tool as it was marked Rolls-Royce Ltd., which was, of course, incorrect.

The Springfield Tool Kit

By John W. de Campi (NH)



The Springfield Silver Ghost Tool kit. In both this kit and the P I's (opposite page) all of the tools that begin with "A" were unique to the American tool kits.



The adjustable wrench was a Billings & Spencer with the Rolls-Royce name very lightly engraved on the face of the moveable part. Art Soutter's famous tool drawing calls these "10-inch wrenches"—maybe they had an unusual way of measuring but the tools are actually 11" long overall.



The early Springfield cars were delivered with the Rees 1C jack, which is a fairly common US jack. It frequently shows up at the Hershey flea market but the handles are tough to find.



Later Springfield cars included the Millers Falls 130 jack which is considerably harder to find today. This jack was smaller and easier to fit into the tool box than the Rees.



The Springfield Phantom I tool kit was definitely smaller than the Ghost kit, but most of the same functions were covered. An adjustable C-spanner (Williams model 474) replaced the three fixed tools of the Ghost kit. The A9998 valve spring compressor was one of the unique American tools not found in any Derby kit; and these are rare today.

WO. Bentley was not only a talented engineer but also a competitive businessman. His cars took a backseat to no others, not even the grand Rolls-Royce. The later Bentley tool kits are well documented because W.O. put pictures of the tool kits in the owners' handbooks of the Speed 6 and 8 Litre. The earlier 3 and 4½ Litre cars are less well documented as their handbooks make only passing mention of some of the "special tools." In the Speed 6 tool kit, bottom, the following



The Vintage Bentley tools were supplied with two finishes, plain steel (which, by now, has become dark) and nickel plate. In general, the special Bentley tools were mostly nickel-plated.

The Vintage Bentley Tool Kit

By John W. de Campi (NH)

tools are unique to the Bentley: E, F, H, I, J, N, O, P, Q, R, S, T, and W. The rest appear to be standard tools of the time. R



Relatively few of the tools in the Vintage Bentley kit were marked with the Bentley name. Two exceptions were the cylinder block wrench and the feeler gauge set.

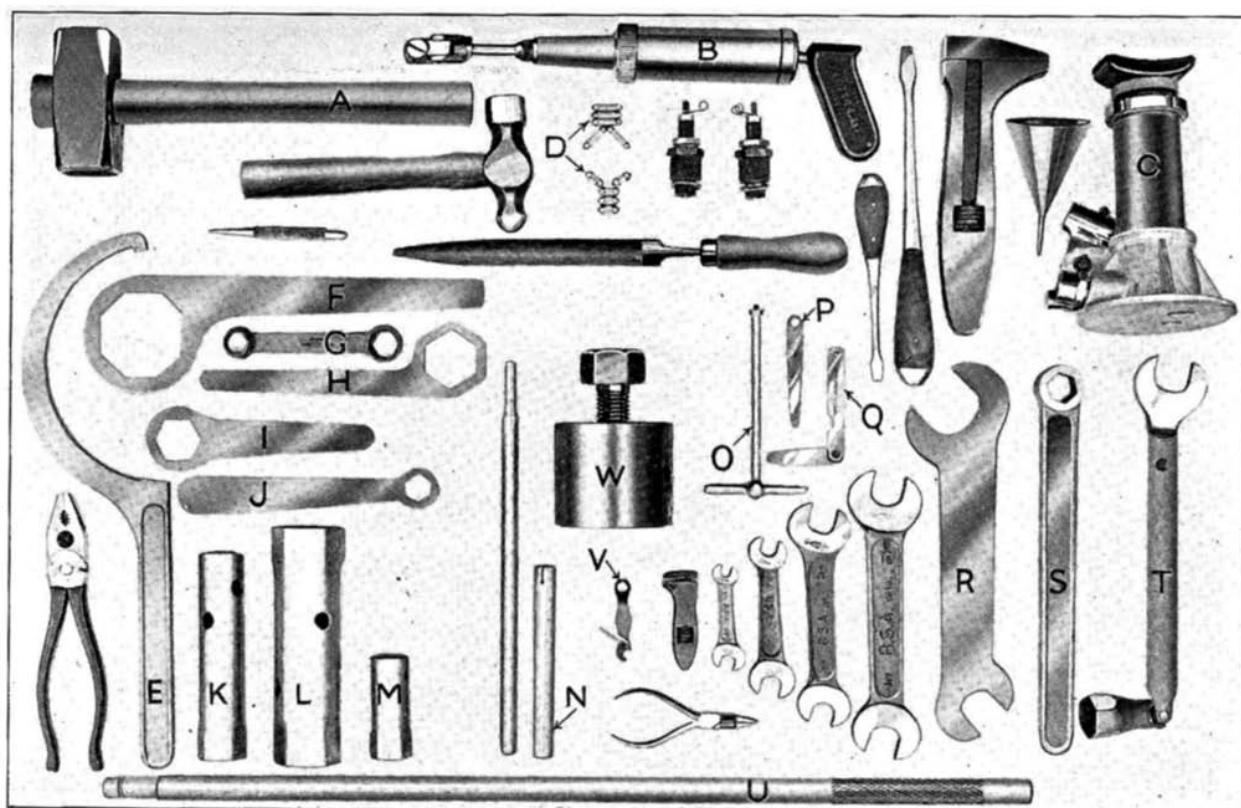


Fig. 7. TOOL KIT.

Wheel locking ring hammer (A). Tecalmit gun (B). Jack (C). Spare fuses (D). "C" Spanner for coupling rod tunnel ring (E). Hub cap spanner (F). Carburetor and induction pipe nut spanner (G). Hub cap spanner (H). Sump drain plug spanner (I). Tappet lock nut spanner (J). Long box spanner (K). Hub retaining nut box spanner (L). Short box spanner (M). Tool for removing oil pressure relief valve ball (N). Tappet Key (O). Shock absorber adjuster gauge (P). Tappet gauge (Q). Fan belt adjustment spanner (R). Cylinder holding down nut spanner (S). Universal joint spanner for sparking plugs (T). Jack handle (U).

The Bentley Speed 6 tool kit.



The open-end wrenches were supplied by Birmingham Small Arms. The correct tools for the Vintage Bentley were BSA wrenches number 1, 4, 7, and 10.



Two screwdrivers came in the kit. Both were the heavy-duty type with the steel shank running all the way through the handle. The large one is about 10" and the smaller one a bit over 6". Note that the correct Bentley tool is the one with the wooden handle squared-off on the end nearest the shaft.



Two adjustable wrenches of the "King Dick" style came in the kit. The large one is over 8" and the smaller a bit over 3".

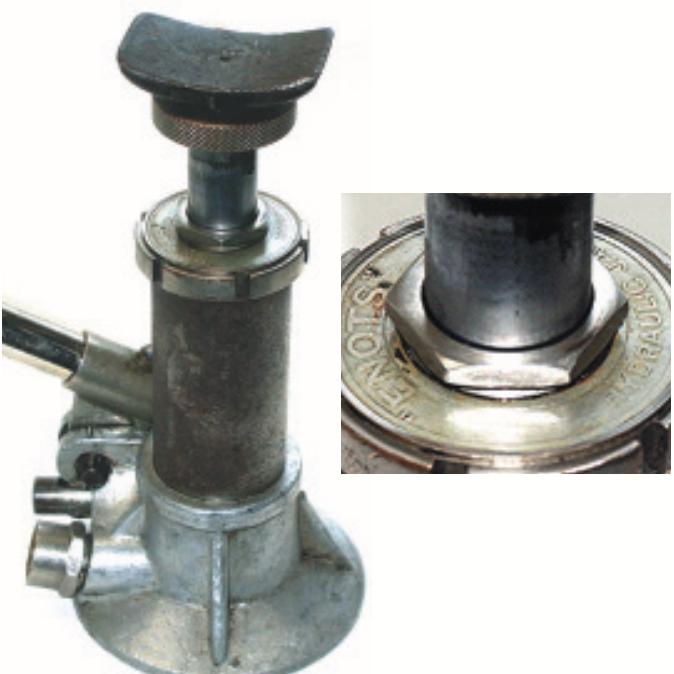


Most old-car tool kits have one or two "must-have" tools, and for the Vintage Bentley, this is it: the tool adjusts the valve clearance and there is no good generic substitute. Fortunately, the BDC (c/o John Hunt, 16 Spiceland Rd., Birmingham B31 1NJ England) offers a replica. It looks a little different but works just fine. The original Bentley tool is shown here.



Fig. 48. KIT OF TOOLS PROVIDED WITH THE EIGHT LITRE BENTLEY. The numbered parts are: 1. Wrench; 2. Wheel locking ring removal hammer; 3. Roolf lamp for filing; 4. Jack handle; 5. Ball removal tool for tilted valves; 6. Tap set; 7. File; 8. Base shock absorber adjusting spanner; 9. Tapset adjusting key; 10. Peder gauge .004 and .008; 11. Ring spanner for upper adjusting; 12 and 13. Spanners for removing shear plates; 14. Hub cap spanner; 15. Cylinder nut spanner; 16. "C" Spanner for maindrive drive housing; 17. Pin adjusting spanner; 18. S.U. carburetor spanner; 19. Sparking plug spanner.

Although the physical layout here is different from the Speed 6 kit shown earlier, the 8 Litre Bentley kit was very similar. The 8 Litre shows a Kaye pump oil can was added for this model. Bentley tool kits were contained in two leather bags (shown top right), each embossed with the Bentley winged B logo. Jim Pike (52 High St., Solihull, WM B90 1EY, England) is reproducing these bags today.



Surprisingly, the Vintage Bentley came with a hydraulic jack made by Enots. These are quite difficult to find today because every Bentley boy covets one.



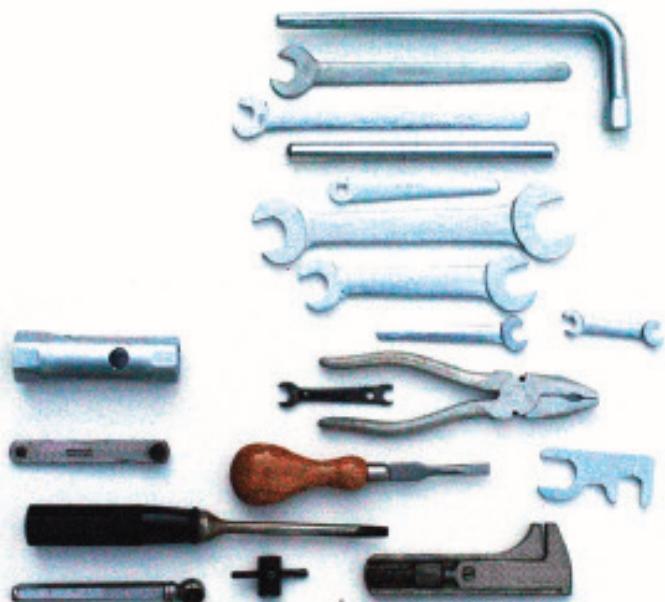
Chassis lubrication was handled by this Tecalemit gun. The Vintage Bentley used the flat-top Tecalemit lubrication fittings (left) that were adopted by Rolls-Royce much later during the Silver Cloud series.

The moment WW II clouds cleared, Rolls-Royce was ready to get back to making cars again. However, instead of making three distinct lines of cars (Phantom, small horsepower and Derby Bentley), they now would make a rationalized line wherein the Mark VI Bentley, the Silver Dawn and the Silver Wraith would all use the same engine and chassis components. The tool kits followed suit, and all the cars had essentially the same kit from 1946 until the Cloud came along in 1955.

Like the prewar kits, this tool kit was comprehensive, though much more standardized. Now, in addition to the tools, Rolls-Royce sup-

plied a rubber nest to hold them. On the standard bodies the kit was usually in a drawer under the glove box. Not counting the spark plug

or the lamps, 18 RR tools were included. However, there were enough tools here to accomplish serious work on your car.



The tools in this picture are arranged in approximately the same layout as in the tool kit photo (top of col. 2). From top to bottom, down the center: drain plug tool, $\frac{5}{16}$ BSF and $\frac{1}{4}$ BSF single-end wrenches (for tappet adjustment), tommy bar (for the tube socket), inlet tappet tool, $\frac{7}{16} \times \frac{1}{2}$ BSF wrench (or spanner, if you prefer the British term), $\frac{5}{16} \times \frac{3}{8}$ BSF wrench, 2 BA wrench, pliers (usually the same Lucas Elliot as supplied prewar), Delco ignition wrench with feeler, wooden-handled screwdriver (the alternative bakelite-handled tool is shown in the nest, top of col. 2.), and adjustable wrench (the Lucas Girder supplied since Ghost days). To the right, top to bottom: 2 BA x 5 BA wrench, exhaust valve tool; and to the left, top to bottom: spare spark plug, tube socket, feeler gauge, bakelite-handled screwdriver, tire pressure gauge and tire valve tool.

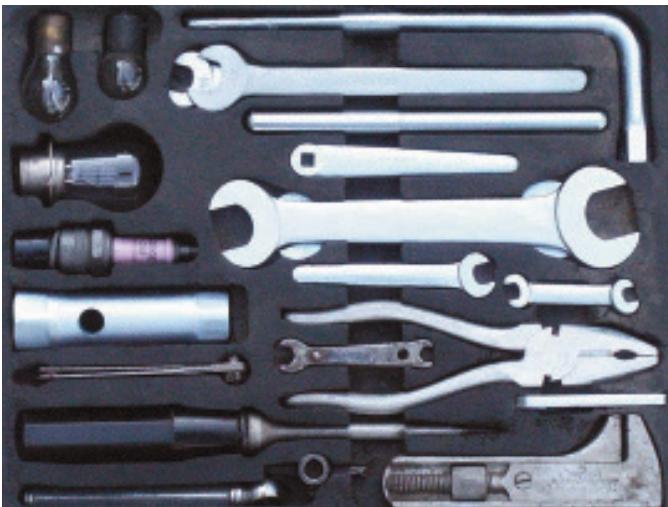


Mounted inside the engine compartment of B189HP were, left to right: oil syringe, oil can and grease gun with starting handle partially visible below.

The Rolls-Royce and Bentley Tool Kits

1946–present

By John W. de Campi (NH)



The 1946–1955 rubber nest with all 18 tools in place. This kit has the rarer bakelite-handled screwdriver (the alternative wooden-handled version is shown at left).



Not all the tools supplied were housed in the rubber nest. The tire tools (air pump, tire irons, wheel cover tool lug wrench and jack handle) are in the boot of this Silver Wraith.



The postwar tools were of lighter construction than their heftier elders. On the left, a wrench from a 1950 kit; on the right, one from a 1920s set.



During the period of 1946–1964, a few coachbuilt cars (mostly by H.J. Mulliner) were equipped with special tool kits different than the standard rubber nest. Above, the kit from a Mulliner R Continental BC14B; below, the kit from a Mulliner S1 Continental.



Kits for Silver Clouds and S Bentleys were smaller. Above, clockwise from lower left: SC I, SC II, SC II with a slightly different nest, SC III. If you count the tools (ignoring the bulbs), the SC I has 12, the SC II, 10 (and occasionally 11) and the SC III, 9. The trend is clear: owners were doing less of the maintenance and the cars were becoming more dependable. Note that the Cloud III kit (bottom right) has a rubber plug where the spare headlamp bulb was normally lodged. Because all the cars bound for the USA had sealed beams, the spare bulb that fit in that space was not needed and RR didn't want the owner thinking that a bulb had accidentally been left out.

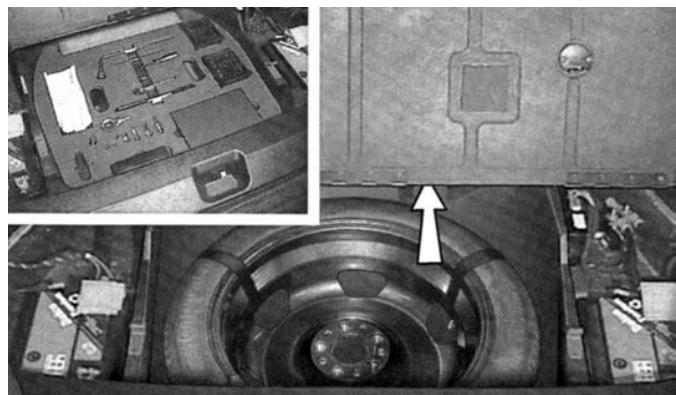


The Silver Shadow/T kit is on the left and the Silver Shadow II (and SW II, T2) kit is on the right. The Shadow kit was reduced to only 8 tools but, lo and behold, the number rose to 12 with the Shadow II—an increase of 4 additional wrenches (from 1 to 5) and the addition of a tire tread gauge. With the Shadow II, the spare bulbs moved into the lid of the tool kit where they stayed in later kits.



These are the Silver Spirit/Spur kits—the earlier one on the left and the later on the right, both including 10 tools.

Over the period covered by this article, the tools changed: 1946–55 kits clearly showed RR-designed tools and, in those early kits, nothing but the tire gauge was chromed. The Cloud kits showed some evidence of RR design but most of the tools had become proprietary items from outside makers Britool and Garrington. From the Shadow on, the kits were just collections of proprietary tools from various makers (Stanley, Bedford, Heyco, Gedore etc.); and recently, the tools have been chromed. R



From the Arnage handbook we show the current tool kit.



The Springfield wheel wrench [1] wasn't as good a quality tool as were many of the other Rolls-Royce tools from either Springfield or Derby. However, the wrench responds well to restoration and can be made to look like new in only two hours of work (not counting the time it takes paint to dry).



Fresh from Hershey, an unrestored wheel wrench.

The process takes 8 steps and we will describe them all:

- 1 Take a sharp, narrow (about $\frac{1}{4}$ – $\frac{3}{8}$ " wide) chisel and knock off the rivet heads on the tool's underside (not the side with the nameplate). The rivets are soft brass and will cut away easily. Drift out the remaining rivet. The job is made easier if you hold the wrench in a vice with soft jaws. Since the tool tapers, it will not hold well in standard steel jaws.
- 2 When the nameplate is off, examine it and decide if it is worth restoring. If not badly damaged, these brass plates will usually restore nicely. Polish with a good metal polish, shining the raised parts but avoiding polishing the background. After wiping away all polish residue, apply clear lacquer to maintain the newly polished finish.



Using black instead of red primer underneath the final black coat will hide the inevitable chips the tool will acquire in use.



Brass hollow point rivets $\frac{1}{8}$ " in diameter and $\frac{3}{8}$ " long.

Springfield Wheel Wrench Restoration

By John W. de Campi (NH)

- If the original brass nameplate is missing or shot, you can buy quite a nice replacement nameplate made of aluminum from the Southern California Region of the CCCA [2].
- 3 The part of the wrench that has, in its use, been hammered on will have developed a deformed edge. The sharp portion of this edge should be hammered or ground away. In photo [3] you can see that we have ground away some of the deformed edge of that tool.
 - 4 Bead-blast the tool to remove any rust and to prepare the steel for paint. If you don't have access to a blasting cabinet, wire brushing will suffice.
 - 5 Wash the tool with a paper towel soaked in lacquer thinner to remove any oils or residue that would interfere with the bonding of the paint.
 - 6 Spray-paint with black primer [3]. Black primer is better than red because, in later use should the primer be revealed when you hit the tool, the black looks better than the red. You can paint both sides at once if you hang the tool from a wire.
 - 7 Spray-paint with black enamel—flat, semi-gloss or gloss at your choice. The restoration looks nicer if you use glossy but the original finish was dull.
 - 8 Rivet the nameplate back into position. Your local hardware store should have brass hollow point rivets $\frac{1}{8}$ " diameter and $\frac{3}{8}$ " long, and these are just slick for this purpose [4]. Lock a piece of brass rod into your vice, protruding about 1" vertically above the jaws. With the rivet in place, use the brass rod as a "backer" for the head of the rivet. Use a large center punch to spread the hollow point. This job will be much easier if you have someone else hold the wheel wrench while you hold the punch and hammer. Next, strike the spread end with the ball end of a small ball-peen hammer to complete the forming of the rivet end. After seating the five rivets, the restoration is complete [5].

RROC members John de Campi and Pierce Reid are writing a book on RR tools and this article is an extract.



On top, original nameplate polished and lacquered. Below, the Southern California Region CCCA replica nameplate.



Two completed wrenches. The one at the bottom is the one pictured throughout this story. The one above has the CCCA replica nameplate.



The completed project, nestled in Hooper's drawer. The three trays at the left hold the shallow tools and were cut from $\frac{3}{8}$ " plywood stock with a $\frac{3}{16}$ " bottom. Those pictured on the right fit in the deeper part of the drawer and are cut from $\frac{3}{4}$ " stock. The goal was to place the often-used items (tire gauge, smaller spanners) in the front of the drawer (top in the photo, left side of the car), leaving less frequently used ones at the other end. The box spanners and their tommy bars are not scattered at random as they were in the old tray, but are all together in the center panel above. Each panel can be lifted out separately.

In the years since Ned Estridge's article "Tool Cases Deluxe" (FL68-3, pp. 1064-65) almost nothing has been published about tool tray design and fabrication. Hopefully the information presented here will prove useful, whether the reader's desire is to restore an existing tool kit or replace one that is long lost. A list of photos in back issues of *The Flying Lady* and in standard reference books is provided to acquaint readers with tool tray layouts as found in the work of several coachbuilders. 

Articles about tool kits in Derby cars, Vintage Bentleys, Springfield cars and Crewe cars are in development.

PHOTO INDEX OF TOOLS AND TOOL TRAYS IN *THE FLYING LADY*

PAGE	COACHBUILDER	CHASSIS	COMMENTS
90	John Marston	41YB	Photo of tools with serial numbers, no tray
	Alpine Eagle tray		
110			Drawing of tools for 20HP cars
174			Drawing of tools for Springfield Silver Ghost cars
395	Gurney Nutting	GHL34	With drawing of 25/30HP tools
541	Gurney Nutting	GKC26	
568		3AEX37	Photo of tools with serial numbers, no tray
656	J. Compton	B161MX	Tool rolls supplied for 4 $\frac{1}{4}$ L Bentley
751	Barker	3CM5	
795	Hooper	3DL156	Boot-lid tray with straps, eyelets and button snaps
938	Park Ward	MS64	
1064			Ned Estridge article: "Tool Cases Deluxe"
1294		67GX	New tray as part of 4-piece luggage set
1492	James Young	WEC7 (?)	
1615			Tools for Speed Six Bentley
1677	Vanden Plas	B7HM	Possibly a newly made tray
2228			Tools with serial numbers for Silver Dawn cars
2412	Barker	2617	Reconstructed for Wilkinson replica tourer body
2444	Freestone & Webb	GKC18	
2686	Barker	4556	Original with Silver Ghost
3135	Park Ward	26MS	
4290	Barker	3CM92	
4566	Hooper	B194HK	
4594	Freestone & Webb	B136AH	
4722			P III tools and tray for sale, also on page 4745
4733	Windovers	WHC43	
4738	Hooper	HLW41	
4908	Thrupp & Maberly	GBJ49	
5106	Vesters & Neirinck	3CP144	(see also p. 6179)
5281	James Young	DLW125	
5335	Thrupp & Maberly	B35BL	
5340	Merrimac	61JH	Springfield Silver Ghost tool roll
5467	Gurney Nutting	B166HK	
5491	Charlesworth	GWN7	
6179	Vesters & Neirinck	3CP144	(see also p. 5106)
6398	Unidentified		
6716	H. J. Mulliner	BC14B	Bentley R Type Continental
6732	Barker	176MY	
6734	H. J. Mulliner	61RY	

A number of books contain photos of tool trays; especially noteworthy examples are:

The Rolls-Royce Wraith, by Tom C. Clarke (p. 233, H. J. Mulliner WBM64)
Bentley, the Silent Sports Car, by Michael Ellman-Brown (p. xi, H. J. Mulliner B79MX)
Automobile Quarterly, vol. 17, no. 2 (pp. 146 and 147, Freestone & Webb 3AZ174
 and H. J. Mulliner 3DL198)