

BUILDING THE

AM-Healey

All-American Conversion Uses AM Parts Only
To Produce Significant Performance Boost

By Carl Chakmakian

THE NASH-HEALEY IS A "NATURAL" for an American Motors V-8 engine installation. The added power and torque, accompanied by only a slight increase in weight, brings the Healey up to modern standards for sports cars and the swap points to the strong possibility that owners of older Ambassadors can follow suit with equal success (but with somewhat more difficulty).

The conversion job in the Healey was accomplished with a minimum of difficulty except for a few "trying" moments here and there. The swap, of course, was not a "first"—Pierce Venable, of Torrance, California was the first to stuff an AM V-8 into a N-H coupe and he was preceded by others who had found room for Cadillac, Buick, Pontiac, Chevrolet, and Mercury engines. No doubt the non-family conversions provided fine performance, but problems in matching bellhousings, transmissions and driveshafts were more complex.

Of the several American Motors V-8's that could have been used, the 327-cubic inch versions are the best choices. These engines mate perfectly with the three-speed Warner Gear transmission (with overdrive in the Healey) by using the American Motors 250-cubic inch V-8 bellhousing. The aluminum housing is AM part No. 3145020; the mud-pan steel stamping is AM No. 3145133; and these are used with two gaskets, AM No. 3145183.

The 630-pound '57 Rebel engine was used for this conversion.

Getting Started: Remove the entire seat assembly and carpets. Remove the center front section of the floor board, which is attached with hex head bolts. (A 10 mm socket or wrench is mighty handy in removing these bolts.) Remove the hood and radiator. Disconnect all wires connecting to the old six and mark the wires with tags if you don't want confusion later. Disconnect the bell-housing from the transmission and lift the engine out.

First step in the installation involved

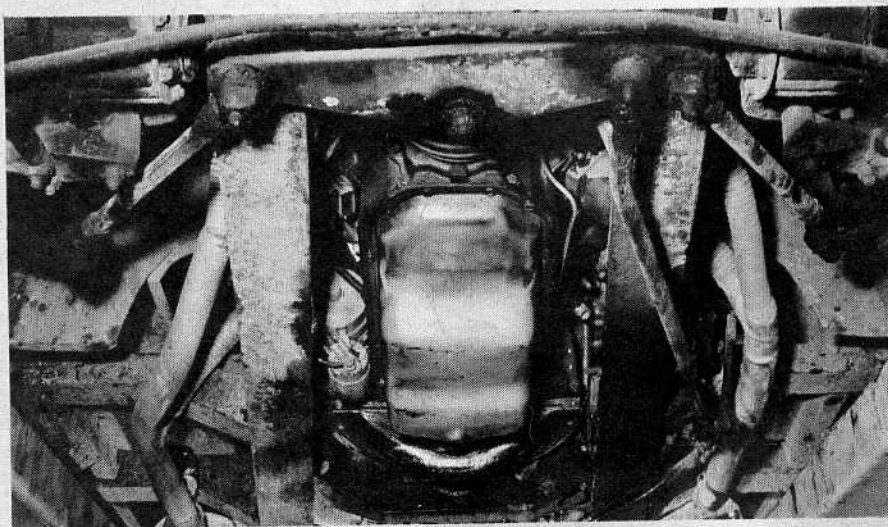
providing clearance for the starter. To do this, the bellhousing was attached to the transmission to permit a visual check of where and how much frame notching would be needed. Sufficient clearance was calculated to allow for removal of the starter without having to pull the engine. A section of the frame side and top was removed and a steel plate, fabricated from 5/64-inch stock was welded in place and boxed for strength.

Front engine mount work was next. Standard AM cushions attach directly to the block in the normal manner with four standard 3/8-inch diameter bolts and lock-washers on each side. Mounting bracket 3150393 (left), is used for the right side, and 3150394 (right) is used for the left side. These brackets can be welded directly to the frame, but this procedure requires that the single hole (for the 7/16-20 stud on cushion 3150303) be modified to facilitate engine removal due to the 45-degree angle of the mounting surface.

An alternate method was used which required two flat mounting plates made of 1/8-inch-thick steel plate. Two 7/16-20 hex-nuts (or weld-nuts) were welded to the plate to match the 3/4-inch hole centers of mounting brackets 3150393 and 3150394. To insure correct positioning of the plates, the new engine with front mounts and bellhousing attached was temporarily installed in position and bolted to the transmission. With the engine centered and the front brackets resting directly on the top of the frame (without the plates) the location of the bracket holes was carefully scribed on the frame.

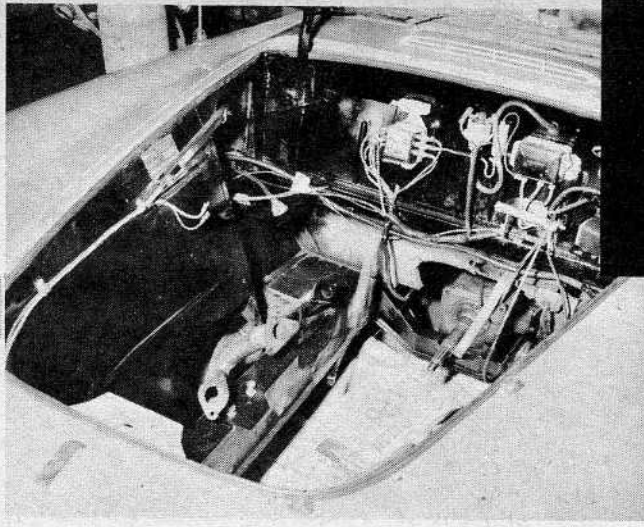
Then the engine was removed and 1 1/8-inch holes were cut in the top of the frame, with a hole-saw, using the scribed marks as a guide. The holes provide clearance for the weld-nuts and permit flush-mounting of the plates. The plates, which distribute the load over a larger area than if the brackets were welded directly to the frame,

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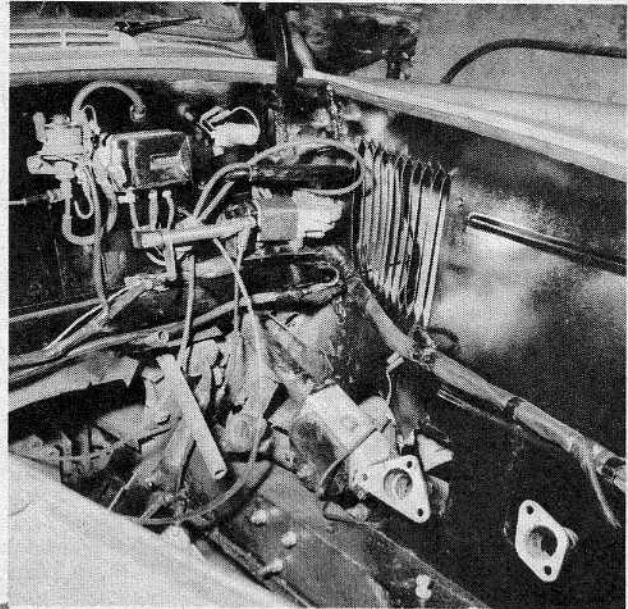
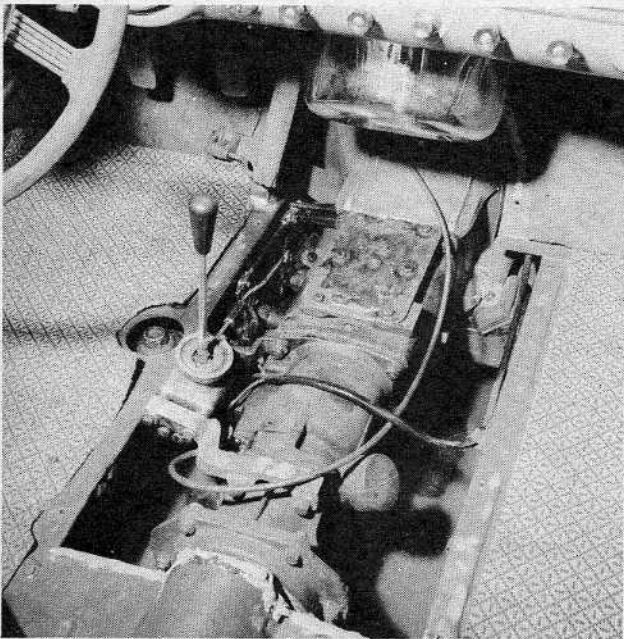


One of the reasons the Healey swap is relatively easy is due to the use of center-arm steering and outboard-mounted box. In stock Ambassador, swapper will have to contend with linkage that passes under engine (which requires pan sectioning and use of dropped link) and inboard box.

The WORLD of SWAP



Above: It was necessary to notch the right frame member (arrow) to allow removal of the starter when required without pulling the engine. Right-side header setup posed no major problems in construction or installation. Steel plate to distribute front mount stress was welded to top of frame member and can be seen between front and middle exhaust stack. Stock battery box platform was discarded and one suitable for a 12-volt unit was mounted in a new location after some fender panel cutting. Left: The AM 250-cubic inch V-8 bell-housing couples the late-model engine to the earlier Warner transmission without difficulty but the rear mounts had to be modified.



To obtain adequate left-side clearance, the steering box was moved outboard 1¼ inches on steel bar stock spacers; secured by longer bolts. Relocation of the box pivoted the steering column slightly, requiring fabrication of a new cover plate at the tow-board. Specially-made header system had a fairly tight fit about the steering box and some fender panel surgery was required. Special carburetor linkage is mounted on firewall just below voltage regulator. Stock 6-volt Lucas windshield wiper motor (next to carb linkage) was replaced by a 12-volt motor from a Metropolitan. Left: Header system, made of stainless steel flex tubing, feeds into stock N-H straight-thru mufflers. Another modification, yet to be made, is the installation of '55-'56 Nash Ambassador 11-inch brakes which up lining area from 171 to 192 square inches.

