

Mack

Healey

**CHRYSLER CORPORATION
ENGINEERING DIVISION**

DEPARTMENT OF
TECHNICAL DATA AND INFORMATION

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N A S H H E A L E Y

Prepared by the
Department of Technical Data
and Information

Chrysler Corporation
Engineering Division

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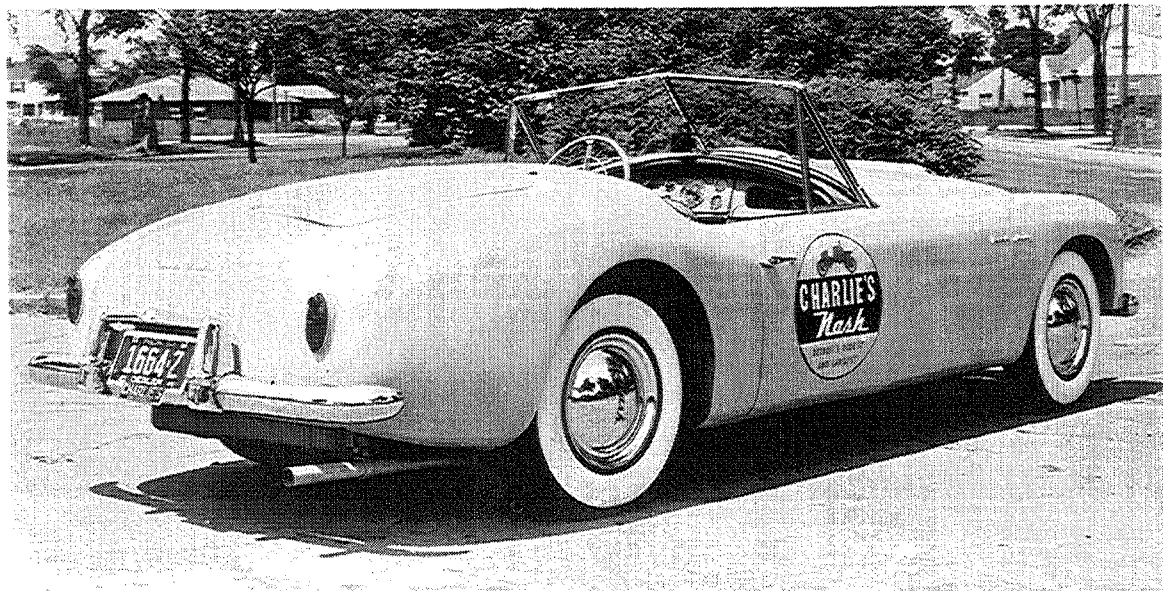
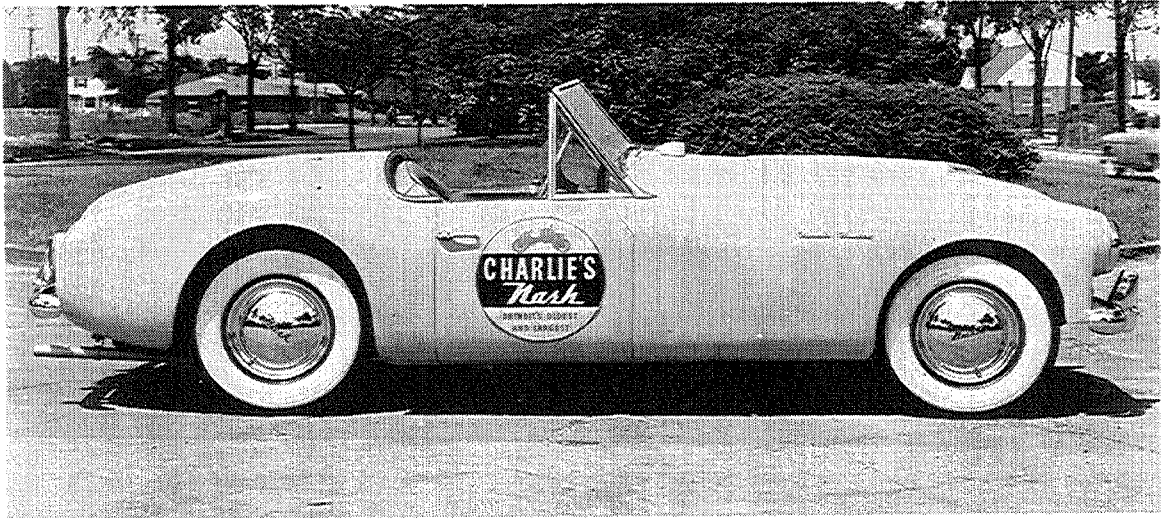
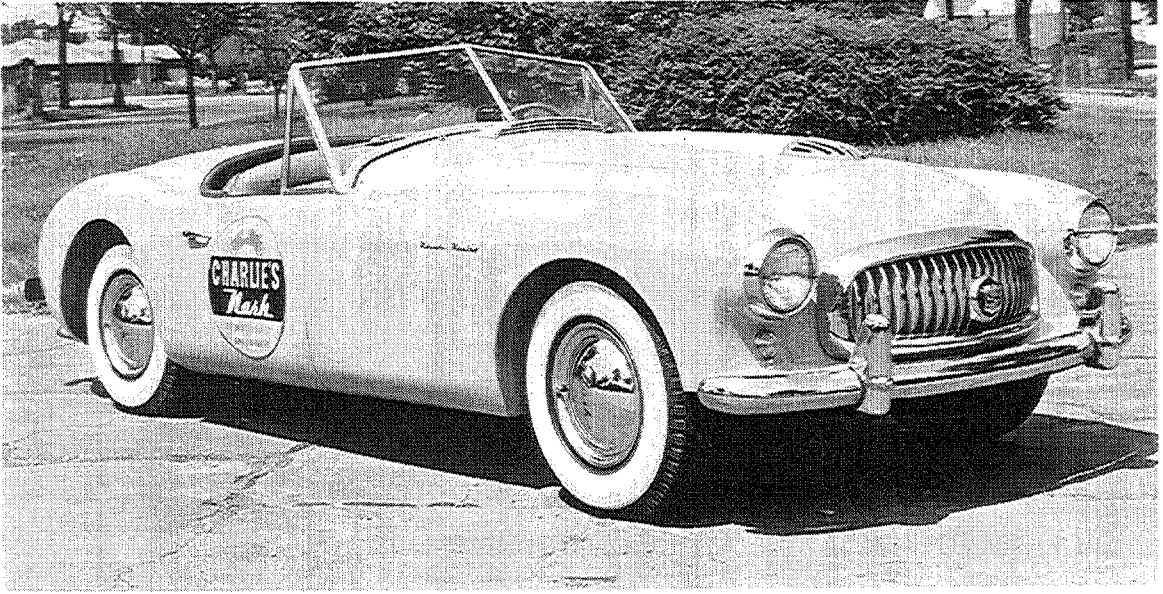
GENERAL

Representing the joint efforts of the Donald Healey Motor Company, Ltd., of England, and Nash Motors Division, the new Nash Healey is the first American sports car to be introduced by a major manufacturer since the early twenties. It is a low, fast convertible featuring an aluminum body with lines reminiscent of Italian styling. Powered by a modified Nash Ambassador engine with a high compression head, the car is said to be capable of 125 miles an hour.

The Nash Healey chassis is basically a modified Healey Silverstone with frame cross members altered to permit a lower propeller shaft line. Although the car is assembled in England, the power train is entirely American and includes, in addition to the Nash engine, a Borg and Beck clutch, Warner Gear 3-speed transmission (overdrive equipped), Spicer rear axle, and Bendix "Duo-Servo" brakes. An experimental version of the car attracted considerable attention in Europe last year when it placed fourth in the 24-hour Le Mans Grand Prix, covering 2103 miles at an average speed of over 87 miles per hour. A new "saloon" model placed sixth in the 1951 Le Mans race.

Sports car design of the Nash Healey locates the accelerator pedal between the clutch and brake pedals and the gearshift lever is recessed in a notched-out section of the seat cushion. "Trailing link" front suspension, an adjustable steering wheel, and built-in mechanical jacks are among other novel features provided. Standard equipment includes

a leather-upholstered foam rubber seat, directional turn signals, chrome wheel covers, and white sidewall tires. In Detroit, the delivered price of this 2600 pound car is \$4175, including taxes and license fees.



BODY

Mounted on a 102-inch wheelbase, the body of the Nash Healey is 172 inches long and 66 inches wide. The hood line is 40 inches above the pavement, and over-all height to the top of the windshield is 52-3/4 inches. The floor pan is 13 inches off the road and minimum ground clearance (at the front sway bar) is 6 inches.

Even by European sports car standards, the Nash Healey is a very low automobile. As a consequence, it appears as wide as the Nash Rambler, though it is actually 7-1/2 inches narrower. The heavy gauge aluminum body is styled in graceful lines which sweep upward behind the cockpit, giving the Nash Healey a racing car aspect. Headlights project forward from the leading edges of the fenders, and are faired into them. An opening, covered by a chrome grille, is incorporated in a bulge at the top of the hood. This vent opens directly into the engine compartment.

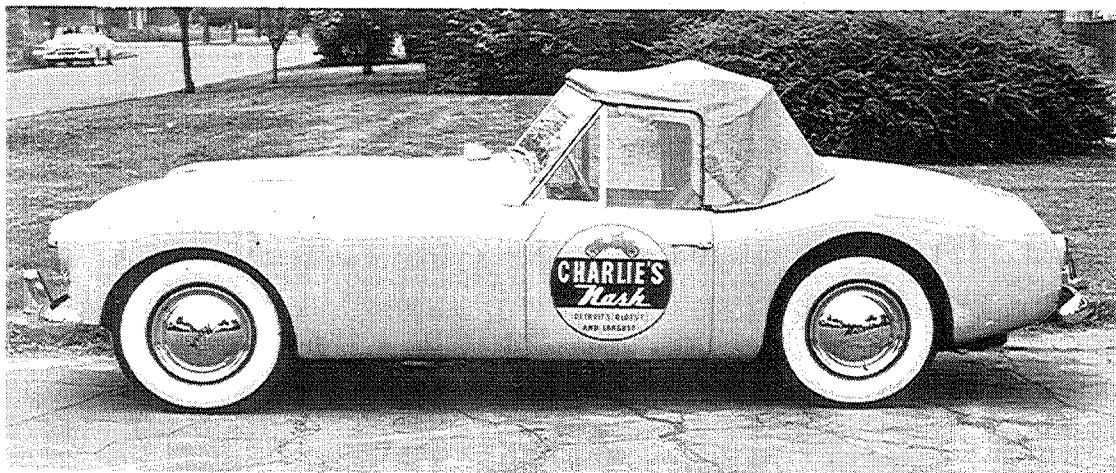
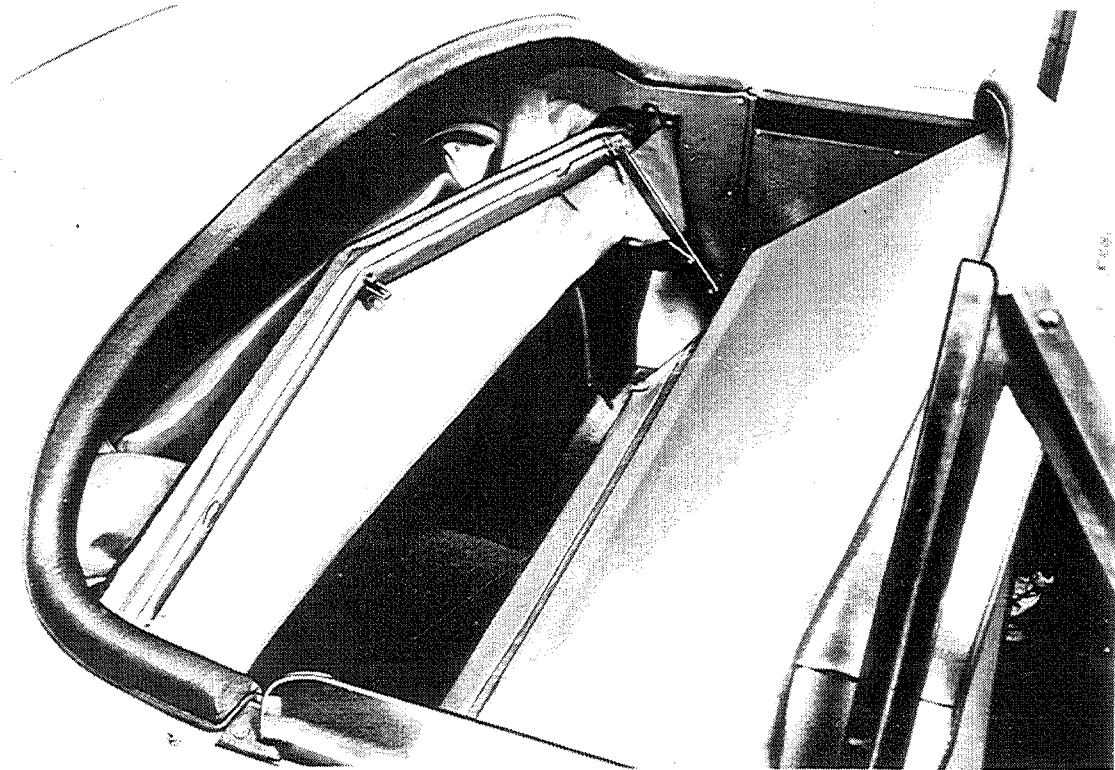
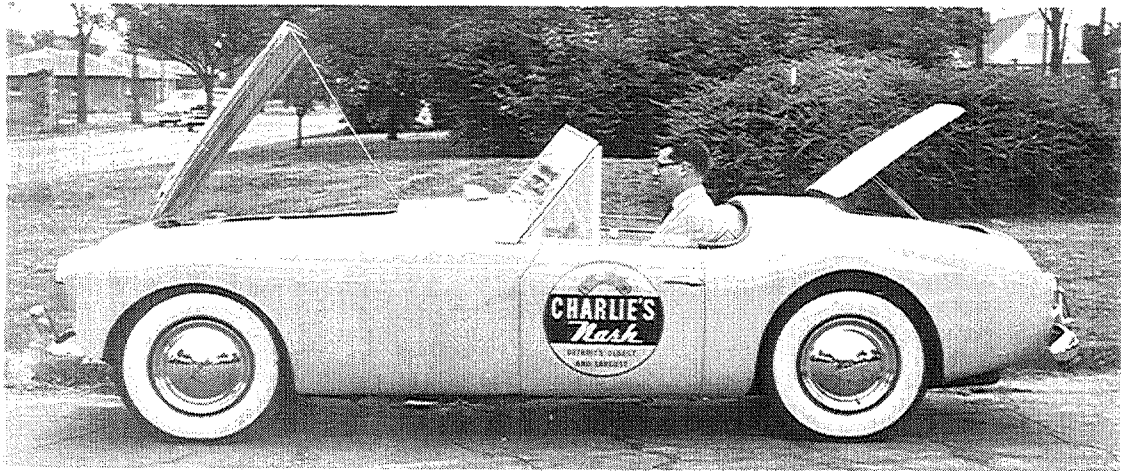
The divided windshield slopes backward at an angle approximately 40 degrees off the vertical, the bottom edge of the glass following the curvature of the hood to the belt line.

The name "Nash Healey", in chrome script, is mounted on each front fender just behind the wheel opening. Push button handles operate the doors, with a lock in only the left door handle. A number of standard items of Nash body trim are used. These include wheel covers, front end grille, parking and tail lights, and the familiar fixed cowl vent intake.

When down, the convertible top fits into a space behind the seat on a collapsible linkage. It must be raised manually, locked to the windshield in three places, and fastened to the body at ten points behind the cockpit. No attempt is made to seal the juncture between the side window glass and the top, and the general shape and fit of the fabric leave much to be desired. A relatively large plastic rear window is provided; this window is permanently attached and is not "unzipped" when the top is folded down.

EXTERIOR DIMENSIONS

Wheelbase	102 inches
Over-all Length	172 inches
Over-all Width	66 inches
Height (to top of windshield)	52-3/4 inches
Minimum Road Clearance	6 inches
Tread - Front	53 inches
- Rear	54-7/8 inches

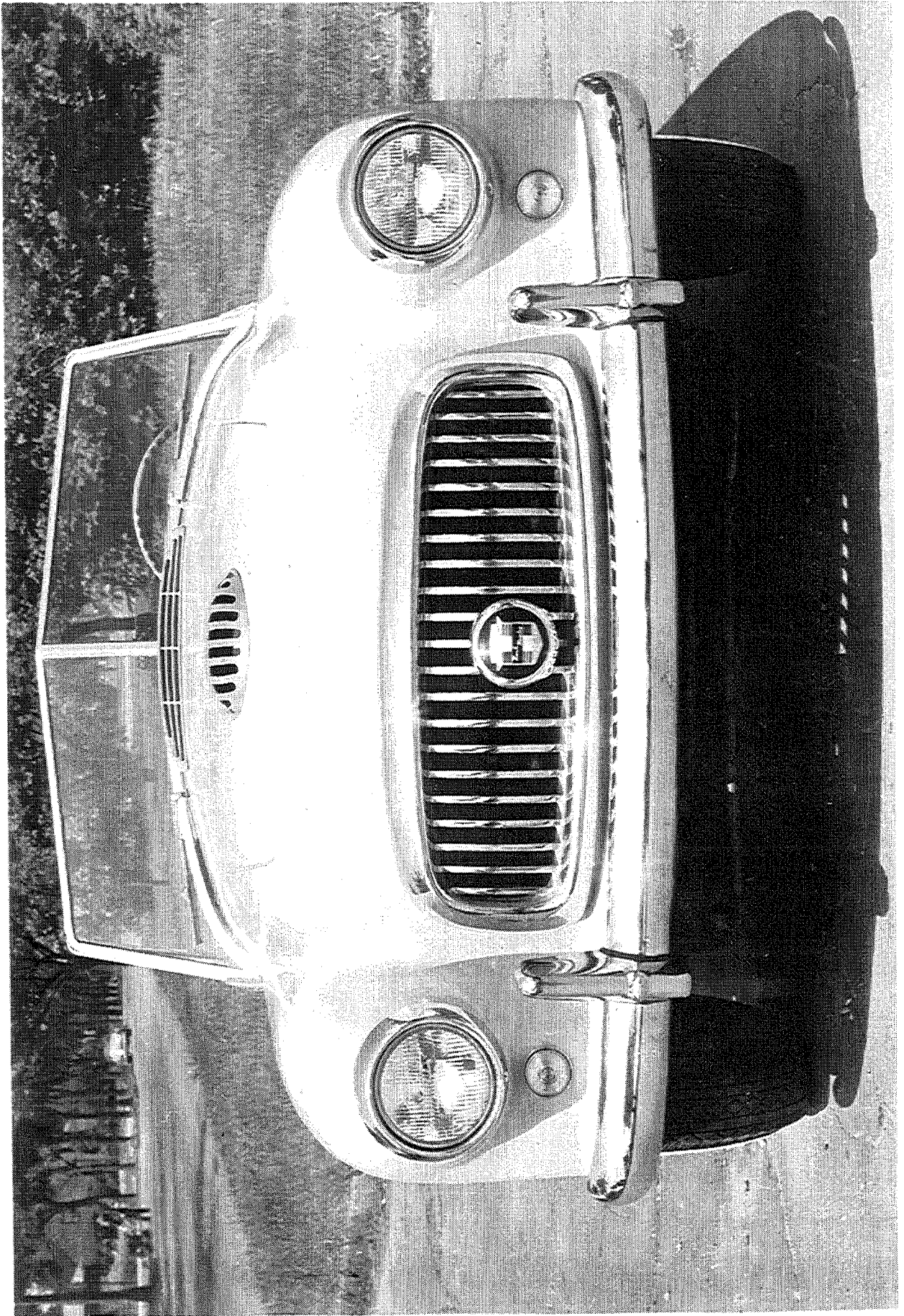


FRONT END

Many familiar Nash features are exhibited on the front end of the Nash Healey. A Nash Ambassador grille is used with a Nash medallion (modified to include the Healey name) mounted in its center. Standard Nash Rambler parking lights are incorporated directly below the American sealed-beam headlights.

Typical of European cars, the slender front bumper is inadequate in appearance. Bumper guards are identical with those used on the Rambler.

A relatively small panel on the top of the hood provides access to the engine. This panel is hinged at the front and is supported by a steel prop when open.



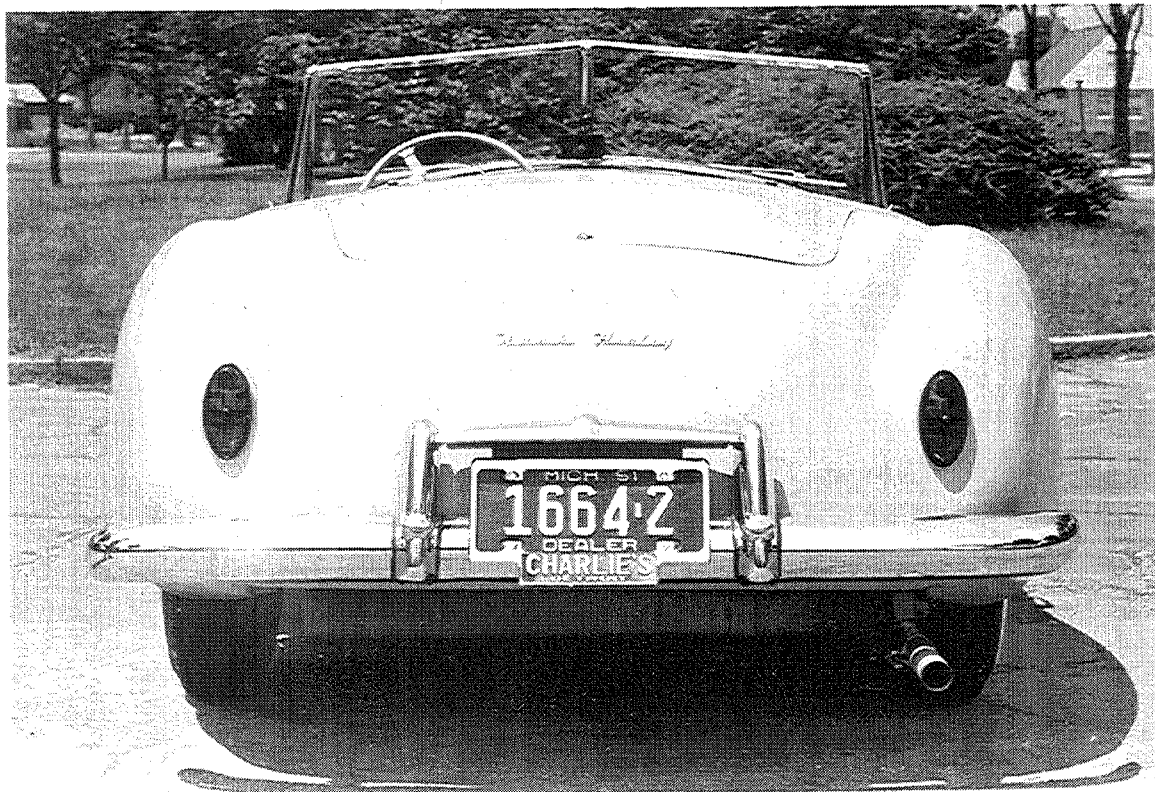
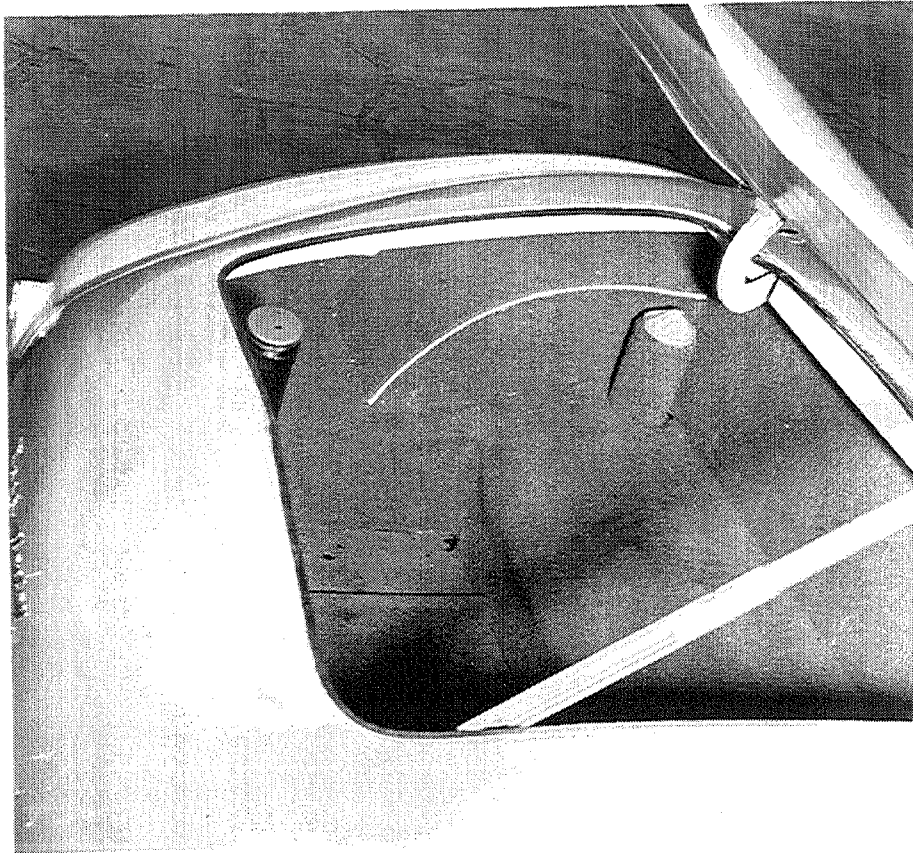
REAR END

The rounded trailing surface of the Nash Healey contributes much to its Continental appearance. The tapering rear fenders terminate in standard Nash Rambler tail lights which are integral with stop lights and turn signals.

The rear bumper is similar to the slim front bumper; Nash Rambler bumper guards, joined by a chrome bar which houses the license light, are also used on the rear. Centered in the body panel above the license assembly is an additional chrome applique identification script.

A practically horizontal deck lid provides "trap door" access to the trunk compartment. This lid is not equipped with a handle, but is lifted by means of the key. Counterbalancing is not used, and the deck lid is supported in the elevated position by a telescoping prop.

Located within the trunk compartment are the fuel tank filler pipe and cap. The spare tire is stored flat on the trunk compartment floor, where it is susceptible to gasoline spillage. The rear shock absorber towers project into the front section of the trunk compartment and further reduce its usable volume. As a result of the low floor pan in the trunk compartment, the fuel tank beneath clears the ground by approximately 8-1/2 inches.



INTERIOR

Interior trim of the Nash Healey is rather plain. The seat is upholstered in leather and incorporates a foam rubber cushion, but the doors and instrument panel are covered in leatherette. No door is provided for the glove box on the instrument panel.

Although the car is listed as a two-passenger vehicle, the seat cushion is 53 inches wide. A center arm rest may be pulled down from the seat back if desired.

Map compartments are recessed into both doors. A semicircular ash tray on each door can be rotated so that it is flush with the door when not in use. Door windows are of tempered glass and have no operating handles. Each window is pushed down or lifted up by means of a steel tab attached to the top of the glass, and will remain at any intermediate position. The triangular front portion of each door window is fixed.

Clustered about a large circular speedometer, the instruments are located in a protruding rectangular section at the center of the instrument panel. These instruments are an ammeter, a fuel gauge, a temperature gauge, and an oil pressure indicator. A resetting knob for the trip odometer is located beneath the instrument panel. All instrumentation is manufactured by Smiths Motor Accessories, Ltd., of London.

The ignition switch, the starter button, and four push-pull control knobs are located beneath the instrument cluster. Instead of a conventional choke, a calibrated "mixture control knob" regulates the

two carburetors. Other control knobs in this group include the control for the Nash Weather Eye heater, a switch to operate the single-speed electric windshield wipers, and the headlight switch.

To the left of the main instrument group are three additional knobs which comprise the overdrive lock-out control, the hood latch control, and a cowl vent control. Overdrive is locked out and the cowl vent is closed when the respective knobs are pulled out. Also on the instrument panel, directly in front of the driver, are three small lights--two red, and one green. The red lights indicate battery discharge and high headlight beam respectively, while the green light comes on when the transmission drops into overdrive. (This occurs when the foot is lifted off the accelerator pedal at speeds above 28 miles per hour.)

At the lower edge of the instrument panel to the right of the steering column, the turn indicator lever projects perpendicular to the panel. The turn indicator assembly is identical with that incorporated on the steering column of the Nash Rambler. A bulb in the red plastic knob flashes when the signal is operating. The cane-type hand brake control is to the left of the steering column.

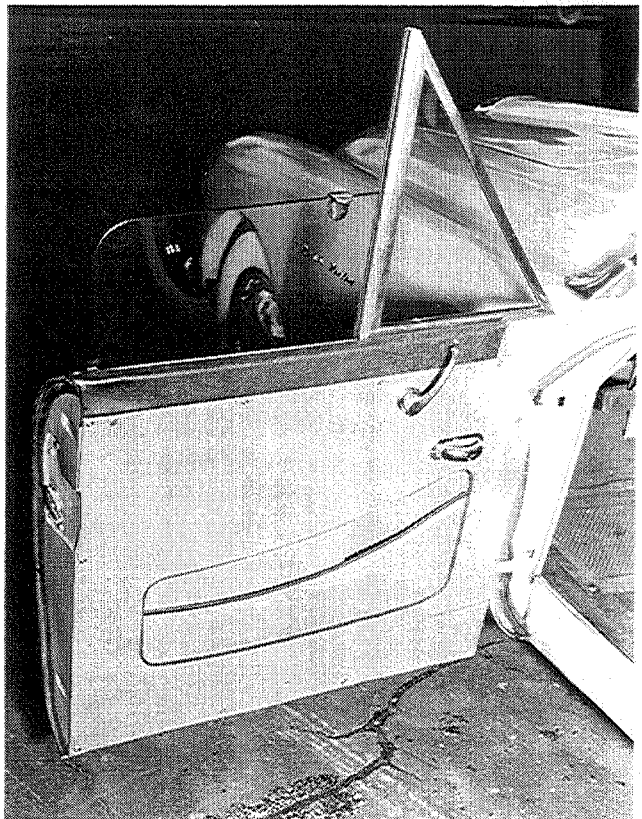
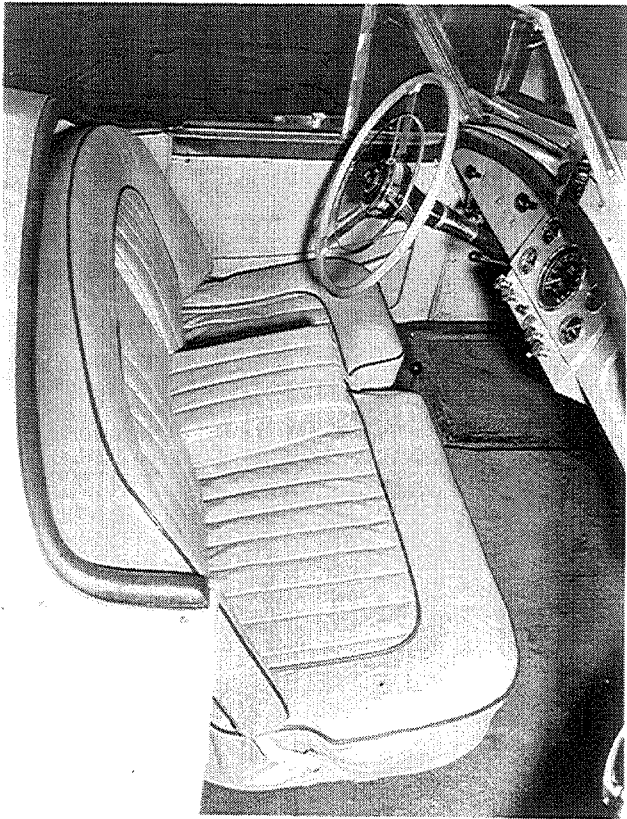
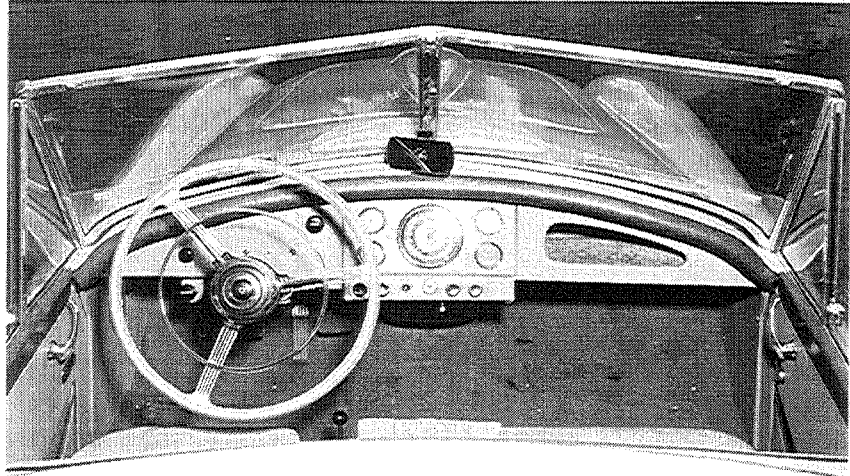
Along the top edge of the instrument panel, a narrow leatherette-covered crash pad runs from door to door. The rear view mirror is mounted just above this pad on the windshield divider strip. A small clock, also made by Smiths, is located in the center of this mirror.

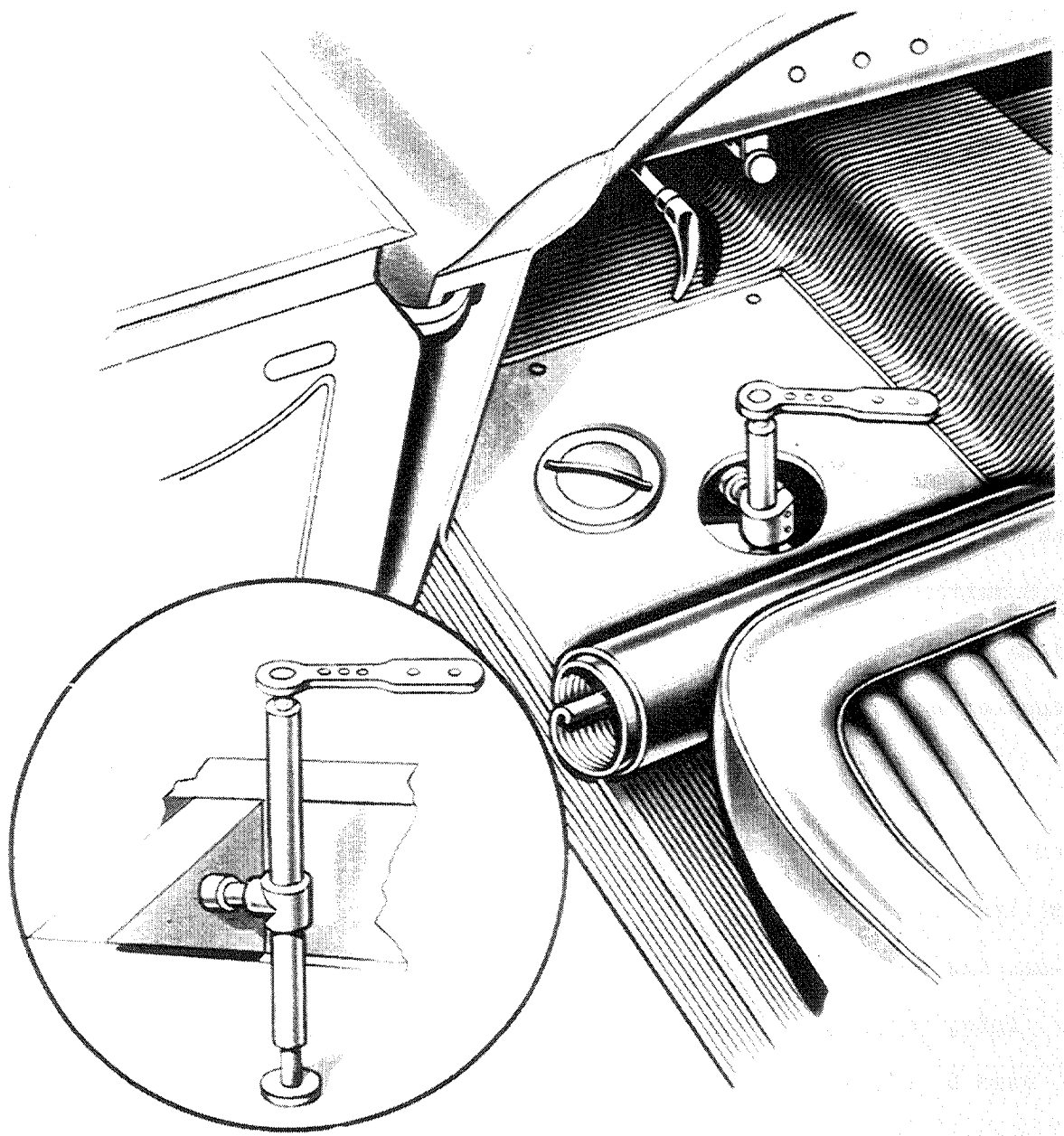
The three-spoke steering wheel has a full horn ring, and is adjustable in two directions. Mounted on a spline, it may be pushed in or pulled out on the axis of the steering column, and locked in position by means of a nut. A telescoping section of helically-wound polished metal ribbon compensates in appearance for any difference in length of the column. A bracket adjustment, which Nash advises should be made by a trained mechanic per authorized service procedure, is provided to increase or decrease the rake, or angle, of the steering column.

The overdrive "kick-down" switch is uniquely located in the center of the steering wheel. The advantage claimed for such unconventional placement (instead of the usual position under the accelerator pedal) is that the overdrive may be disengaged at less than full throttle.

Brake and clutch pedals are more or less conventionally located, but the accelerator pedal is placed between them. Such an arrangement is common on European sports cars and is said to increase flexibility of control under racing conditions. Mounted on the floor, the short gear-shift lever projects up into a notch in the forward edge of the seat cushion beside the driver's right leg. A standard American transmission shift pattern is employed.

On each side of the cockpit, a small cover plate under the floor carpet can be removed to expose the built-in screw-type jack. To elevate the car, a separate pilot tube with an attached handle is inserted into a fitting in the frame. As the handle is turned, the car is tipped sideways on the opposite two wheels.





BUILT-IN CAR JACK

ENGINE

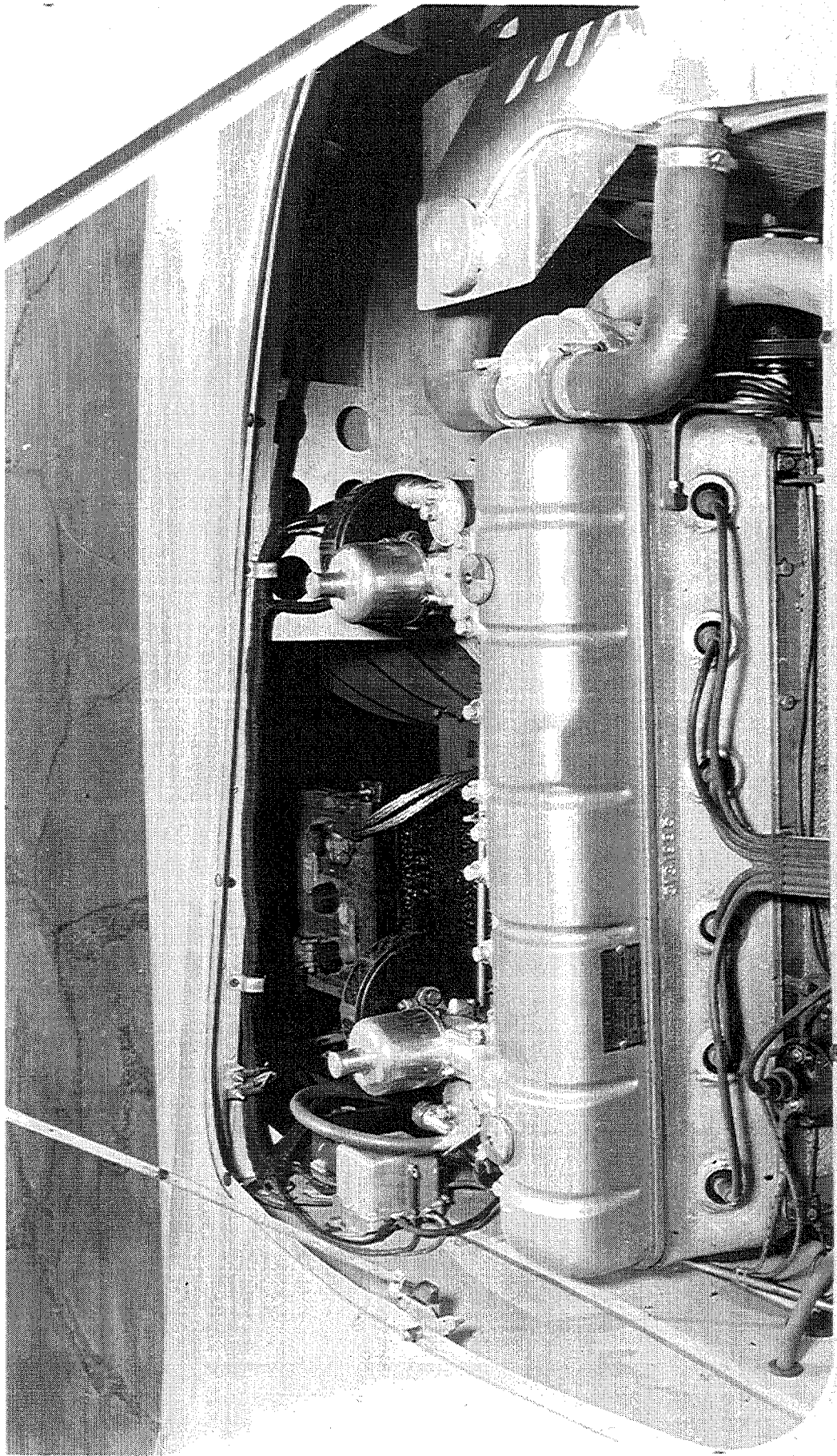
The Nash Healey is powered by a 6-cylinder Nash Ambassador engine with a special aluminum-alloy cylinder head giving it a compression ratio of 8.1:1. Designed to operate on premium fuels only, it is rated at 125 horsepower at 4000 rpm and is reported to develop 210 lb. ft. of torque at 1600 rpm. With a bore of 3-3/8 inches and a 4-3/8 inch stroke, this overhead valve engine has a displacement of 234.8 cubic inches.

Typical of Nash engines, the intake manifold passages are cast into the block, but the special head is also recessed to enlarge the cross section of these passages for higher volumetric efficiency. Two British S.U. single-throat carburetors, mounted horizontally on the left side of the block, supply the fuel mixture to the engine; each carburetor is equipped with a dry type air cleaner.

S.U. carburetors are of the "automatic expanding choke" design. The cross-sectional area of the main air passage adjacent to the fuel jet and the effective orifice of the jet are both variable, and are controlled partly by manifold vacuum and partly by accelerator pedal position. Each carburetor is equipped with a chromium-plated cast bronze dome which acts as an atmospheric dashpot (balanced against manifold vacuum) to damp out resonant pulsations otherwise associated with this type of control. The carburetor has no idling jet.

The engine has seven crankshaft counterweights and seven main bearings. Crankshaft end thrust is taken by the center main bearing. Normal oil capacity is six quarts. An oil filter can be installed at extra cost.

A pressurized cooling system is used, which holds 17 quarts of coolant (including heater). Since access to the radiator would otherwise be difficult, the filler cap is moved several inches back into the engine compartment by means of a rearward inclination of the top tank.



CHASSIS

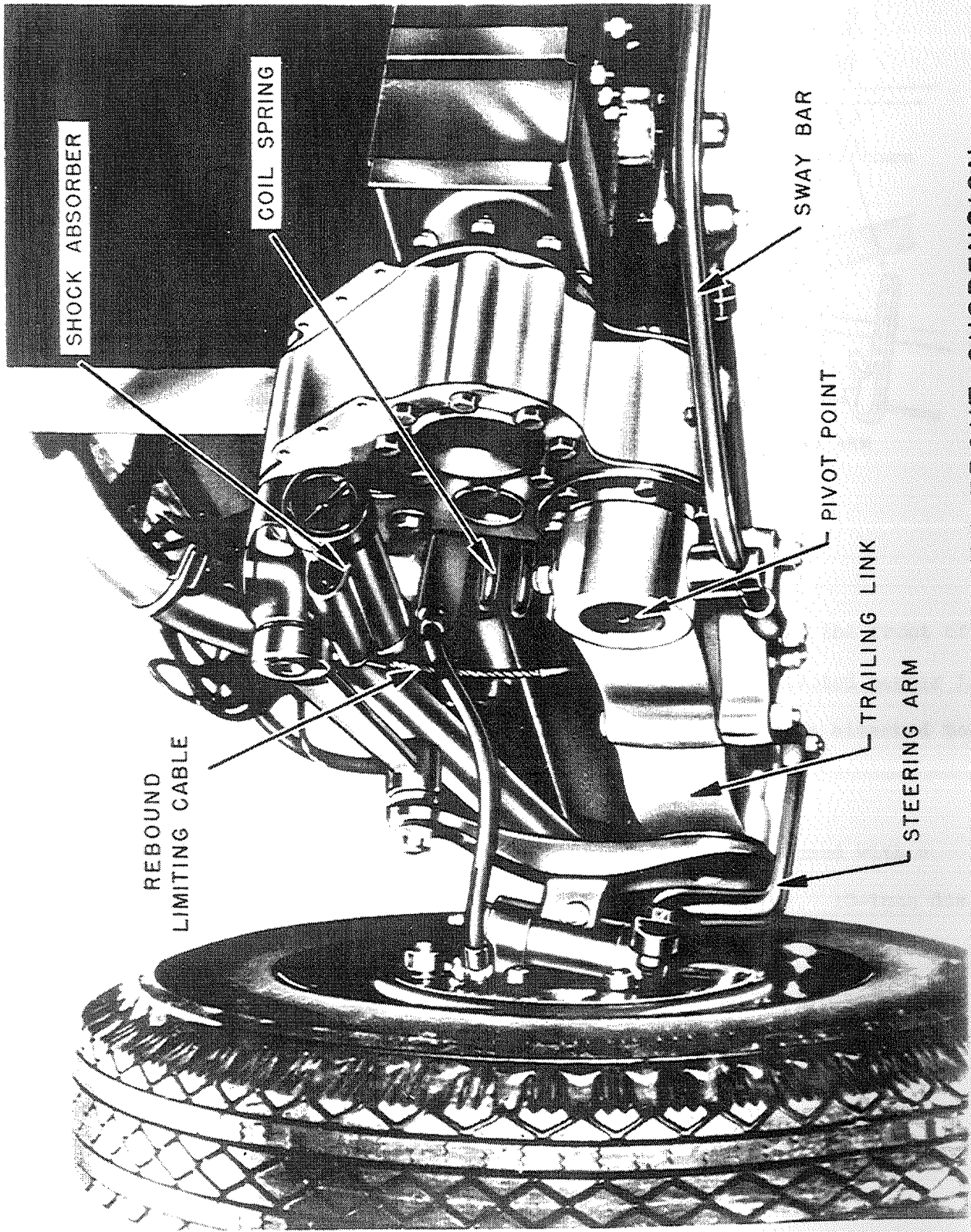
The Nash Healey frame is fabricated from light sheet metal and weighs only 160 pounds. Despite its lightness, however, its welded box section structure with tubular cross members is said to be exceptionally rigid.

"Trailing link" front suspension (see illustration) provides unusually soft springing for a sports car. In this type of suspension each wheel is mounted on a swinging arm which is pivoted ahead of the wheel centerline and cushioned against a coil spring. Each wheel, thus, deflects in a vertical arc without change in tread or camber. Because of the inherent "roll" associated with such a system, a stiff torsional stabilizer, or sway bar, is employed to improve cornering characteristics. A steel cable limits the downward travel of each wheel during rebound or when the car is jacked up.

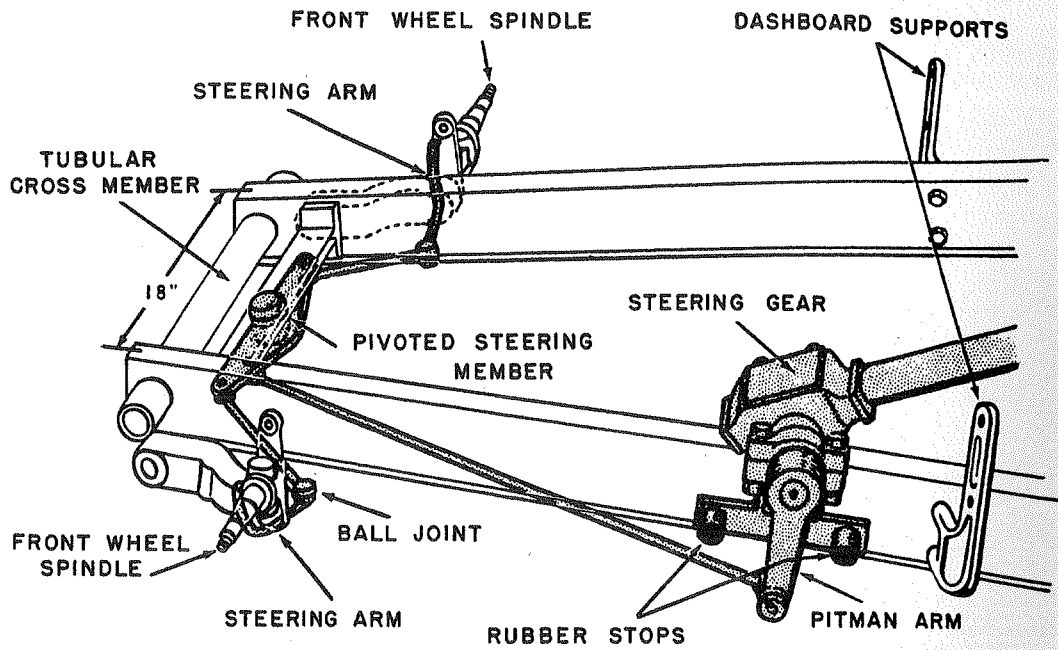
Girling-Luvax "Hydromech" shock absorbers are incorporated in the front suspension. Horizontally mounted, these units have hydraulic pistons which are operated by means of a cam and lever arrangement.

The rear suspension is similar to that used in current Nash Ambassador models and features coil springs with direct acting shock absorbers. Modifications in spring design and shock absorber calibration were, of course, necessary to accommodate the weight and operating characteristics of the Nash Healey.

The unique steering motion of the Nash Healey (see illustration) includes a conventional worm-and-roller which is connected, by means of a pitman



NASH HEALEY TRAILING LINK FRONT SUSPENSION



NASH HEALEY STEERING LINKAGE

arm and a drag link, to a center-pivoted cross member at the front of the frame. Operating much like a walking-beam, this pivoted member is connected to the steering arms by means of short tie rods attached to either end of the beam.

The car has a torque tube drive. A 4.1:1 rear axle is used with a standard Nash transmission, including a 0.7:1 overdrive. 10-inch diameter Bendix "Duo-Servo" hydraulic brakes and 6.40 x 15 tires are employed on the 15-inch wheels. Total braking area is 176 square inches.

Fuel tank capacity is 20 U.S. gallons.

NASH HEALEY - SPECIFICATIONS

Engine

- Number of Cylinders 6
- Valve Arrangement Overhead
- Bore 3-3/8
- Stroke 4-3/8
- Displacement 234.8
- Compression Ratio 8.1 : 1
- Brake Horsepower 125 at 4000
- Torque 210 at 1600

Battery

- Model Auto-Lite
- Ampere Hours: 20-Hour Rating 105
- Number of Plates 15

Clutch Plate Diameter 10

- Transmission 3-Speed
- Ratio - 1st 2.57 : 1
 - 2nd 1.55 : 1
 - 3rd 1 : 1
 - Overdrive 0.7 : 1

Rear Axle Ratio 4.1 : 1

- Tire Size 6.40 x 15
- Normal Pressure 24 psi.

Brakes

- Type Duo-Servo
- Drum Diameter 10
- Total Braking Area 176 sq. in.
- Front Cylinder Diameter 1-1/16
- Rear Cylinder Diameter 7/8

Suspension

- Front Trailing link with coil spring
- Rear Coil Spring

Capacities

- Fuel Tank 20 U.S. gallons
- Cooling System (with heater) 17 quarts
- Engine Oil 6 quarts
- Transmission 2-1/4 pints
- Overdrive 1-1/4 pints
- Rear Axle 4 pints

Curb Weight 2600 pounds

