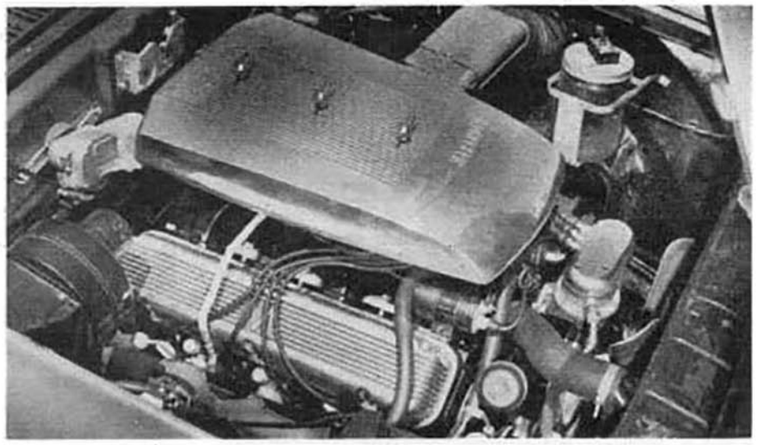
SUPER MARAUDER



CADMIUM PLATED air cleaner houses highly efficient paper filters and has side duct that supplies cool outside air to three two-throat carburetors.

by Don Francisco

NO ONE CAN DENY that '58 Mercurys are big but they are the first big cars to have engines capable of handling them so well that they will please practically anyone. Engines in the two Mercs MOTOR TREND tested previously (June '58 issue) had standard four-throat carburetion. One was a 383-cubic-inch model, the other the larger 430-incher. After driving these cars I knew I would have to get my hands on one of the three-carburetor Super Marauders. If cars with standard engines performed as well as these two did, a car with a three-carburetor engine rated at 400 horsepower could be a real bomb.

Since a Super Marauder setup wasn't immediately available, it was decided to install locally a Super Marauder engine in the four-door Monterey used for the previous test. When the engine was changed, the 2.69 to 1 rear axle ratio, standard with the car's original 383-cubic-inch engine, was replaced with a 3.10 ratio. Cars with 430-inch engines are usually fitted with a 2.91 ratio but the 3.10 is an optional gear.

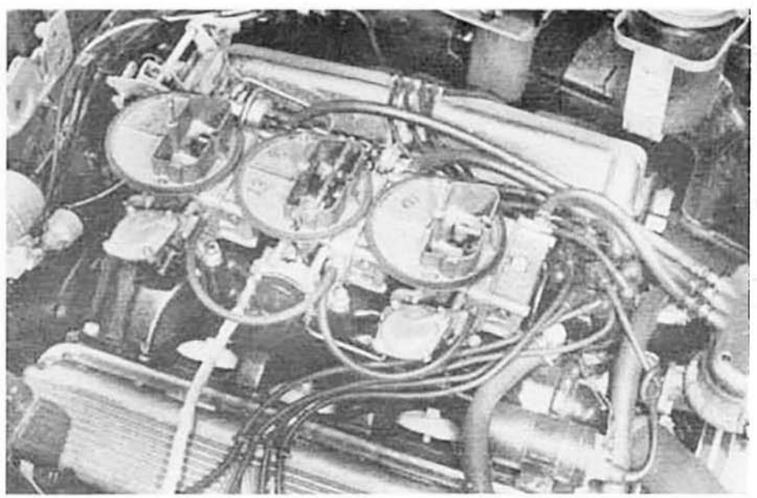
When I was given the Super Marauder I was also given the go-ahead to drive to Indianapolis and back. This would give me an excellent chance to become thoroughly familiar with the car and also to attend the 500-mile Memorial Day race.

My previous impressions of the push-button transmission control were verified on this trip. Pushbuttons—as far as I personally am concerned—must go, and that's all that can be said about them. Throughout the trip the engine started easily, hot or cold. Its idle was a little rougher than with a four-throat carburetor but this wasn't at all objectionable, nor did the rough idle affect driving characteristics.

DETONATION in all the new Ford engines—and our Super Marauder test car was no exception—is caused by too much spark advance. It can be eliminated by increasing the tension of the spring in the vacuum advance diaphragm on the distributor.

With Ford's new engines, such minor throttle movement is required for normal acceleration that manifold vacuum does not drop as much as in other engines. Therefore, by increasing diaphragm spring tension, the timing is retarded with a smaller drop in manifold vacuum. The theoretical purpose of advancing timing with a vacuum diaphragm is to improve fuel mileage; however, it is doubtful whether the adjustment required to eliminate detonation from this source would have any noticeable effect on fuel economy.

Super Marauder engines are exactly the same as other 430-inch Merc engines except for carburetion. Originally they were scheduled to have a different camshaft but this plan was dropped. Carburetion is supplied by three two-throat Holleys with



CARBURETORS dominate the top of the engine but still leave plenty of room for manual linkage installation to eliminate vacuum control of throttles. Factory-installed chrome rocker covers are not included in modifying kit.

5200-mile cross-country road test proves that three carbs add more go to Big M's 430-incher—yet give better mileage

ACCELERATION	Cruising Range	Max. Perf. Range
From Standing Start		
0-45	5.8	5.1
0-60	8.7	7.9
Quarter-mile	18.9 and 87.5 mph	16.4 and 88.7 mph
Passing Speeds		
30-50	—	2.8
45-68	—	2.7
50-80	—	7.3

FUEL CONSUMPTION

Stop-and-Go Driving 10.2 mpg for 340 miles
Highway Driving 14.8 mpg for 4915 miles
Fuel Used: Mobilgas Special

1⅜16-inch venturis on a special aluminum intake manifold. Passages in the manifold are designed on the 180-degree, alternate impulse principle. A large polished aluminum air cleaner is secured to the carburetors with three chromed wing nuts. The cleaner is fitted with a paper-type filtering element and it has a single air inlet on its left side to which is connected the standard Mercury air inlet housing and valve assembly. When the engine is cold this valve directs warm air from around the left exhaust manifold into the cleaner housing and when the engine reaches its normal operating temperature the valve opens to direct cold air into the cleaner.

Fuel is supplied by a standard pump fitted with a special aluminum housing that supports a large-capacity filter and has individual outlets for each carburetor. The filter has a cadmium-plated steel housing and a highly efficient paper filtering element. Large-diameter rubber fuel lines connect the carburetors to the outlets on the fuel pump housing.

Although the three carburetors are the same type and have the same venturi diameters, only the middle one has a choke valve, accelerator pump, and adjustable idle jets. The choke is automatically controlled. Each of the end carburetors supplies fuel for idling but the flow is fixed. Adjustments made to change idling characteristics are done on the middle carburetor only.

Throttle linkage follows the trend set by three-carburetor setups on General Motors cars: the throttle pedal controls only the throttle valves in the middle carburetor. All normal driving can be done with this carburetor alone. Throttle valves in the end carburetors are opened by vacuum diaphragms—one for each carburetor—that are actuated by vacuum created by the air flow velocity in the middle carburetor. This divorces the end carburetors completely from the driver's control, and when they open they open all the way.

Vacuum-controlled throttle valves amount to an automatic control of two-thirds of the engine's carburetion—to prevent their throttle valves from being opened at low speeds when the carburetors aren't needed.

Operation of the throttle linkage during the test followed the plan to the last decimal point but there was one thing about it that I didn't like. This was the lack of control of the closing speed of the throttle valves in the end carburetors. Under certain conditions the rapid closing of the valves had almost the same effect on the passengers as jumping on the brake pedal. This was most noticeable when passing other vehicles traveling at highway cruising speeds.

At normal cruising speeds the throttle valves in the end carburetors are closed but the car accelerates so quickly when the throttle pedal is depressed to pass another car or a truck that its speed quickly reaches the point where the end carburetors open. This doesn't cause any discomfort because all that happens when the throttles open is that the rate of acceleration increases. When the throttle is lifted slightly to allow the car to slow to normal speed again, the valves in the end carburetors snap closed, causing more deceleration than anticipated and throwing the passengers forward in their seats.

Actually this quick throttle closing condition is a minor detail in an otherwise highly satisfactory setup. But if I were fortunate enough to own a car with a Super Marauder engine, one of the first things I would do to it would be to install full-mechanical progressive throttle linkage on its carburetors. A driver could then open the end carburetors when he wanted them to be open and he could control their closing speeds. Control over the opening time might make it possible to improve rates of acceleration at low speeds by giving the engine more carburetion sooner than is possible with the vacuum control. This is something that would have to be practiced until a "feel" of the engine was developed so its demands could be anticipated. Control over the throttle closing would enable the car to be decelerated smoothly.

During the acceleration tests it was extremely difficult to get the car off the starting line without breaking its rear tires loose. Once spinning, they would stay loose unless pressure was eased off the throttle. This was with the transmission in Maximum Performance Range. In this range the car starts in low gear and then shifts to second and high. In Cruising Range the car would get off without wheelspin because it started in second gear and with only a slight loss of speed at the end of the quarter-mile. Acceleration times for 0-45, 0-60, and the quarter-mile suffered less than anticipated when Cruising Range was used.

RESULTS OBTAINED on the Clayton chassis dynamometer at Performance Associates in Covina, Calif. were enlightening. The Super Marauder developed a maximum road horsepower of 195 at 4400 rpm, compared to a maximum of 173 at the same speed for the 430-cubic-inch in the Park Lane tested previously. Horsepower of the Super Marauder was higher than that of the Park Lane over the entire speed range. This would indicate that even at lower speeds, when only the middle carburetor is functioning, the three-carburetor setup is superior to a single four-throat. Another thing that must be taken into consideration is that engines of the same make and model can vary in their horsepower and torque outputs because of variations resulting from mass-production techniques.

Super Marauder engines are supposed to be available in Mercury Monterey, Montclair, Commuter, Voyager, Colony Park and Park Lane models. Cars ordered from the factory with Super Marauder engines are fitted with the chrome-plated rocker arm covers, which are pretty but don't make the car perform any better, and a beefed-up Multi-Matic automatic transmission. The Multi-Matic is the dual-range Merc-O-Matic and is, without doubt, the best automatic transmission that has ever been available in any car. Beefed-up transmissions for Super Marauders have a greater torque capacity than standard transmissions and are required for these engines.

All the parts needed to convert any 430-inch Merc or Lincoln engine to Super Marauder specifications are available in kit form from Lincoln and Mercury dealers. Chrome-plated rocker arm covers are not included in the kit, nor are there any parts for beefing-up the transmission. Dealers in the Los Angeles area are a little hazy about the list price of the kit so if a fellow were interested in buying one it might pay him to shop around. /MT