By ALEX WALORDY

MAKE YOUR S/S FAIRLANE

Hot 289 Fairlane fitted with headers and suspension changes has been cleaning up at the strip, is even faster with special ram manifold. Note long traction bars pivoted at front of chassis and extending back to rear axle.

WE KNOW of a hot Fairlane in New England that is turning close to 120 mph and does this in the low 12-second bracket. Admittedly it is powered by a 427 cubic inch mill and runs F/X. Now, how will a stock Fairlane with a modest amount of preparation fare at the strip? To cite but one example, there is a Fairlane sponsored by Bob Ford in Dearborn, Michigan. At one major strip, it was received with a friendly snicker and placed in G/S "to give you a chance to win something occasionally . . ." Now it has just been transferred from D/G to C/G status and *still* wins!

Its times have been improving steadily. In the space of a month they went up from 99.98 mph to 103 mph. ET's registered at the Detroit Dragway, which means honest clocks, range between 13.8 and 14.1 seconds. So far there is no catching this Fairlane. What's more, it is being done in stock class with a stock four-barrel manifold, a set of tubular headers and a little tickling in the suspension department. In other words, with a 289 four-barrel Fairlane, you don't have to buy a hood full of Factory Experimental parts to win.

Getting interested? There's more: For instance, a ram manifold with four single-barrel Galaxie Six carburetors, or a pair of four-barrels. The valve train department is certainly standing up well, what with getting off the line at 5,000 rpm, shifting the four-speed at 7,000 and crossing the traps between 6,500 and 6,700 rpm. All of this is done with a 5.3-to-1 rear and 9.50 X15 M&H tires. Front tires are 6.70 X 15 Michelin "X" 's with very low rolling resistance. There is a reason for this: Michelin X tires have steel wires embedded in their carcasses and running in the direction of rolling motion. Where the ordinary tire performs a worm-like dance in the ground patch area, alternately compressing and stretching and consuming power in the process, the Michelin remains quite stable and saves horses.

The hot Fairlane is a sort of joint development project. It is owned by Doug Nash, who also drives it quite successfully at the strip. Ernest Mac Ewen is the mechanic and fine tune man on the project. Both cooperate quite closely with Dearborn High

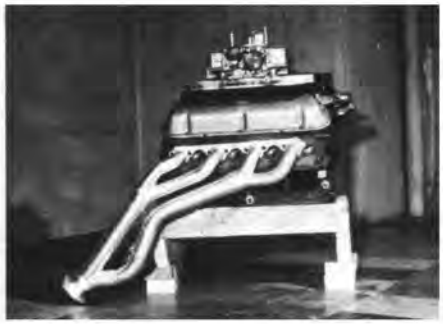
(L to E) Ernie Mac Ewen is mechanic, Doug Nash driver and Dean McCann one of engineers on car, which is towed to drag strip at all times.

A WINNER!

A peek under the hood shows the interesting, long-branched exhaust headers. An adjustable screw replaces the regular vacuum advance.

The long branch headers are routed along both sides of the clutch equalizer bar. This installation calls for some manual dexterity.

Dave Farell of Dearborn High Performance shows headers used in this winning Fairlane. Note separating branches to avoid pulse interference.



The headers have generous sweeps, but hug the contours of the engine and thus require nothing in the way of sheet metal modification.

The four-speed transmission is used to accomplish 7,000 rpm shifts. The car storms through the traps at 6,500-7,000 rpm using a 5.43 rear end.

Performance, a company staffed and owned by a pair of sharp-eyed engineers named Dean McAnn and Dave Farell. The result has been a stream of goodies, not just for the strip but for hot street performance. These include dual quad ram manifolds, ram manifolds with four single venturi carbs, and even development work on a GMC blown version that will fit under a Fairlane hood. In fact, most of the items under development are designed not to require body changes and to fit all cars using the 289 Fairlane engine.

Heading the list is a set of unique long branch exhaust headers especially designed for the drag strip. The branches begin with 1½-inch tubing at the ports, become 1¾ inches where they merge into pairs, and grow to 2½ inches at the flanged connections. On the right side, ports 1 and 2 merge into one collector and ports 3 and 4 into another. The left side exhaust is more unusual in shape since the 5 and 7 branches sweep up while the 6 and 8 branches sweep down before joining their respective collectors. The firing order on a Fairlane is 15426378, and if you sketch out the headers and number the ports you'll see that they are quite free from interference between exhaust pulses with this type of design.

Traction bars of 1 X 3, .125-inch wall tubing measure eight feet and are welded to the rear spring pads. Bar at lower right is part of hoist.

The clutch equalizer bar passes between the collector branches on the left header, which doesn't simplify installation problems. Since the car is used primarily for the drag strip, with both collector flanges open, a crossover pipe with a single exhaust is rigged to save weight. Production on the headers has already begun and they should be available by the time this is in print.

At the time Holman and Moody ran very successfully with their Falcon Challengers, considerable improvements were gained by temporary fixes such as reversing the manifolds to better align them with the

Traction bars up front pivot on the chassis and hinge on idler arm bushings. The plate welded to the car's floor pan acts to spread out the load.

For hotter versions of this car, Dearborn High Performance is making up long branch intake manifolds for use with four single-barrel Ford carbs.

flow from the ports and routing the exhaust past the front. Even there, considerable power gains were registered and the new headers will do much better, being specifically designed for large, faired-in curves and better grouping of the pipes . . . plus a tuned length. The headers will list for around 100 dollars, we hear.

While the stock car runs with the original four-barrel manifold, both Dave Farell and Dean McCann have done extensive experimenting on ram manifolds with interweaving branches extending to the plenum chambers somewhat in the manner of the long ram Chryslers. The package is, however, quite compact and can fit under Fairlane or Falcon hoods without bubbles or scoops.

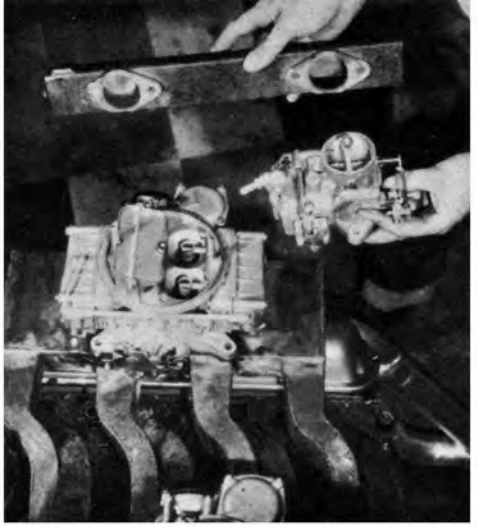
One basic problem was avoiding the front mounted distributor. This called for an intricate set of curves in the ram sections leading to the ports. A uniform cross sectional area was maintained over the full length of the runner and the changes in cross section shape from thin and rectangular at the ports to nearly square at the plenum chamber is achieved very gradually. The ports and plenum chambers are self-draining so that puddles of fuel cannot form to upset carburetion on sharp throttle closing or during transition from idle to full throttle.

At present the manifolds have been tried and tested in two versions fabricated from sheet metal. One has four single-barrel carbs of the type used on Six cylinder Galaxie Fords. Each of the single barrels is located between a pair of ports. The plenum chamber volume on this design is 70 cubic inches on each side. Another version currently under development is a two four-barrel unit with 180 cubic inch plenum chambers. In the production version the manifold will consist of a cast center section containing all of the ram passages plus the valve valley cover and water passages.

To this center section will bolt a pair of plenum chambers with optional carburetor mountings. Thus, you won't need to modify a complete manifold or buy a different one for a change in carburetion. Plans are also afoot for a Hilborn injected version. The current sheet metal experimental manifold doesn't have a heat supply under the plenum chambers.

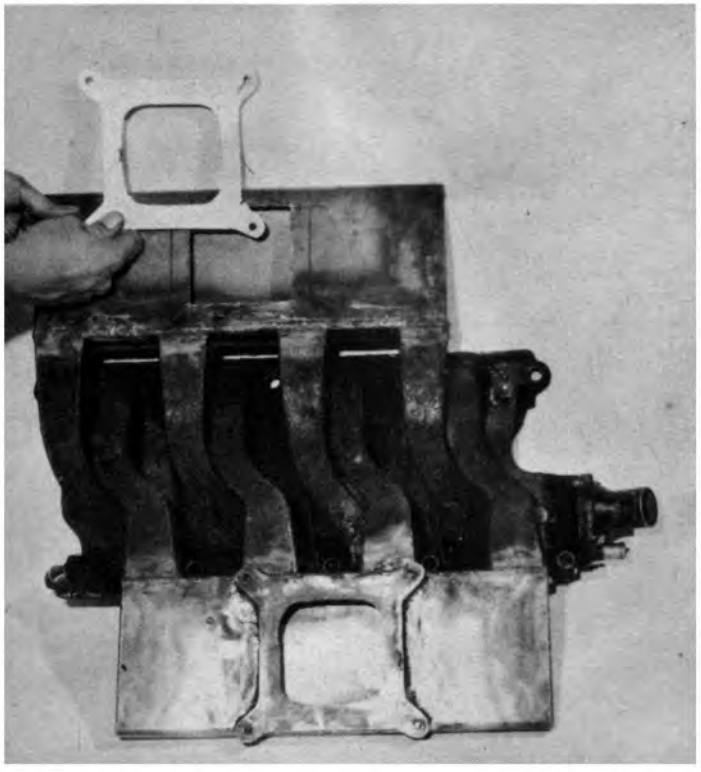
(Continued on page 74)

A two four-barrel version with large plenum chambers is being tested. The production version will have cast center sections and bolt-on plenums to fit different carburetors.



Quick comparison shows how good sheet metal work can be put to use testing various versions of a manifold.

The stock water passage is duplicated in sheet metal but will be cast in aluminum when production starts. Use of wide plenum chambers makes it necessary to pull manifold when the rocker covers must be reached.



Logs (above) maintain even cross section area and changes in shape are gradual. The manifold clears the stock, front mounted distributor. The manifold underside (right) has no provision for plenum chamber heat, but this is easily available. Some heat reaches via the tappet valley cover reaching the manifold's bottom.

S/S FAIRLANE CONTINUED

Cast versions will probably have provision for water heated pads under the plenums and will pick up heat from the tappet valleys more readily. While heat isn't needed or wanted at the drag strip since it cuts down on volumetric efficiency, it is a highly desirable item for cold weather driving and general street performance.

Effort was put into the cylinder heads to bring them up to full factory specs on compression and breathing. On the stock Fairlane head the valve seat is slightly below the combustion chamber surface, which pockets the valve during initial lift. This was removed with a 15-degree stone, permissible under NHRA rules which allow narrowing the seats in normal shop procedure. The insides of the ports were opened with a 70-degree reamer, another authorized improvement. Compression ratios listed in factory specifications take into account potential carbon buildup in arriving at a somewhat optimistic 11.4-to-1. The new stock production head never came within nodding distance of this figure until helped along. The block hasn't even been down to date. This is next on the list.

One interesting area of change is the rear suspension. The most casual glance at the side or rear of the car shows a pair of king size traction bars welded to spring pad plates which clamp the leaf springs to the rear axle. The bars are eight-foot-long sections of 1-by-3-inch rectangular tubing with .125 walls. At the front, they pivot on supports welded to the unit body platform and are cushioned by idler arm bushings. The arms have all the advantages of a torque tube suspension in that they relieve the leaf springs of all thrust transmitting function. Thus the springs can be tailored for ride and traction rather than stiffened to the point of no return just to get out of windup or power hop. Overstiff rear springs lead to bounce and traction loss. Torque reactions about the axis of the rear axle are taken by fairly long lever arms so the rear of the body doesn't tend to lift.

A leaf spring type rear suspension is subject to spring windup and must, therefore, be fitted with a pinion bumper that limits the windup and prevents excessive angles between the driveshaft and the pinion. Also, the spring is designed to exert a certain amount of control over the axle housing. When the rear axle goes into jounce (moves up toward the body)

the springs twist the axle housing so that the pinion moves down, away from the body. The long bars welded to the spring pad make the pinion bumper unnecessary and undesirable, so it was simply removed.

Front shocks have a very loose rebound action so they won't interfere with body lift and weight transfer. Front springs have a lower rate than the originals. In other words, it takes less weight to deflect them one inch. By the same token, for any given front-to-rear weight transfer due to acceleration, the front of the car will rise higher. Since lifting the nose of the car is a key factor in securing additional weight transfer, the lower rate springs really do the job.

As you see, there is no real mystery to making a Fairlane go. It has the basic ingredients, so all you need is a little extra detail work. If you have been bitten by the Fairlane bug and would like more detailed info on the headers and manifold, by all means drop a line to Dean McCann or Dave Farell at Dearborn High Performance Engineering, PO Box 402 in Dearborn. They seem to have a direct pipeline on the latest poop. And let's face it, 103 mph isn't bad for a little stocker!