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MODIFYING MOPAR'S 273 V8...FROM LEGAL STOCK TO HOT

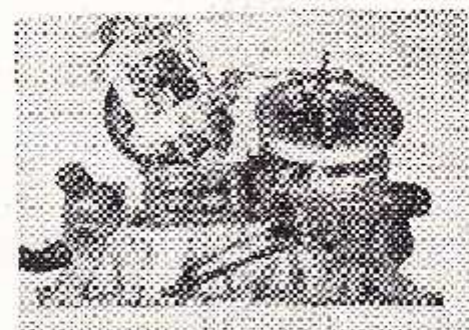
Cover:

Prettily painted and ready to romp: the 273 MOPAR falling out of tis month's cover. See page 64 for the way to make these "small" poweplants wail. Below the engine, John Dallafior smokes off the line. John's 273 is the F/S Nat'l. Champ.

Power Mods for MoPar's 273

An in-depth account of the specific ways in which the unheralded Chrysler 273 engine can assault the records from F/S to C/EX

by Eric Dahlquist/technical editor



Surrounded by Chrysler Engineering's finest, Tom Hoover (left) and Mike Buckle, IHRA Tech Editor Eric Dahlquist asks pointed questions about mods to 273's Carrier carb for dual 4-throat Edelbrock manifold. Most of the engine work required to make a 273 howl involves the pieces seen here. Of primary importance is a correctly designed collector system. Intriguing header setup is what engineers use to quickly change pipe length. Thermocouple, plumbed in immediately below flange, registers exhaust temperature. Another important consideration is a deepened oil sump. Pan shown is for dyno and does not have tie rod provision. Below this; close up of 2 x 4 manifold shows throttle hoses matched to carburetor.

photography: Chrysler Corp.

Are there any of you guys out in the audience who know the complete inside scoop on modifying Chrysler's little 273 V8 engines? I mean besides you cool fellows from the engineering establishment over on Oakland Avenue in Detroit—like Dick Maxwell, Dale Reeker, Mike Buckle and Tom Hoover, sometimes collectively known as the Ramchargers. Except for this swinging little combo, you're probably as much in the dark as we were until spending a few days back at "MoParville" learning all the various tricks that will allow the racer to liberate horsepower sufficient to gallop away from competitors in F/Stock to C/FX. The operation is interesting for many reasons, not the least of which is that it follows a logically conceived series of modifications for various stages of tune. Everything is planned and proven on the dyno yet doesn't fly to wild extremes of alteration.

The whole caper started back in the early spring of 1961 when Chrysler Corporation commenced producing a 3.63x3.31-inch bore and stroke, 273 cubic inch powerplant to be used in the Dart and Valiant compacts. More recently, the Barracuda and Dodge Sportsmar A-100 have also used this engine. The compacts were gaining in popularity but a healthier engine option was necessary to augment the 170- and 225-inch sizes. What evolved was a light powerplant designed around newly-developed thin-wall casting techniques and the idea of combining the best possible features of the two V8 engines Chryslers already had, the 318- and 383-inch units.

From the bottom up, the 273 used the same forged steel crank (2.5-inch main bearing journals and 2.125-inch crankpin journals) as the 318, as well as the 6.12-inch center-to-center connecting rods. The 8.3:1 compression pistons had full

skirts with steel expander control inserts and offset floating piston pins to minimize noise during warm-ups.

Combustion chamber shape was the proven wedge-type, and valve diameter was a conservative 1.78- and 1.50-inch on intake and exhaust respectively. Cam timing wasn't too radical either, with .395- and .405-inch lift on intake and exhaust, pearlitic malleable iron rocker arms holding the valves open 240 degrees on each sequence, and a total overlap of 16 degrees.

On the whole, it was a pretty uncomplicated little unit rated at 180 horsepower with a Carter RBD series two-barrel. As a result of this false mediocrity, it slipped quietly into the stream of American engines, where the roaring white water of 426 cross-ram manifold wedges, eight-barrel 427's and Z-11's sparkled in the sunlight and stole the scene.

But nothing stands still in our business, and barely a year later out came a little optional package of "zazz" which yielded a slick 30 percent hike in horsepower. Where the original pistons were flat-topped, the new ones had a dome that popped compression to 10.5:1 and were of a slipper-type skirt design with two steel inserts in each for thermal expansion control. While they were at it, an additional 8 degrees duration (248 degrees total) and 10 degrees of overlap (26 degrees total) were tacked onto the cam specifications.

Upside, there was a single 4-throat, usually a Carter AFB with primary throttle bores up to 1 7/16-inch and secondaries of 1 1/16-inch. Venturis were 1 1/16- and 1 1/2-inch front to rear, pre-empting the tiny two-throat. Filtration of incoming air was done with a non-silenced, low-silhouette cleaner and paper envelope type filter. Outgoing exhaust gases were helped on their way by using a 2 1/2-inch diameter exhaust pipe, straight-through muffler (instead of reverse flow), and 2 3/4-inch diameter tailpipe with that throaty, rectangular-ended resonator finishing things off. Spark found itself strengthened and hotter with a dual-point distributor.

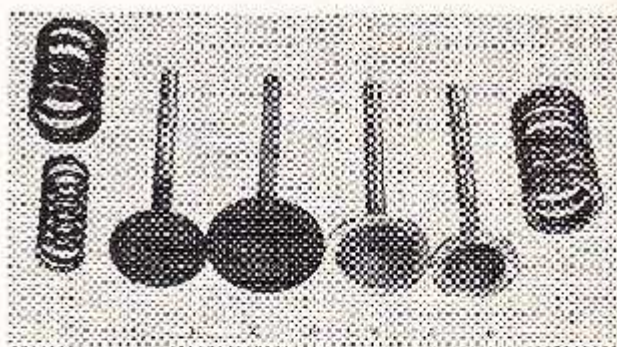
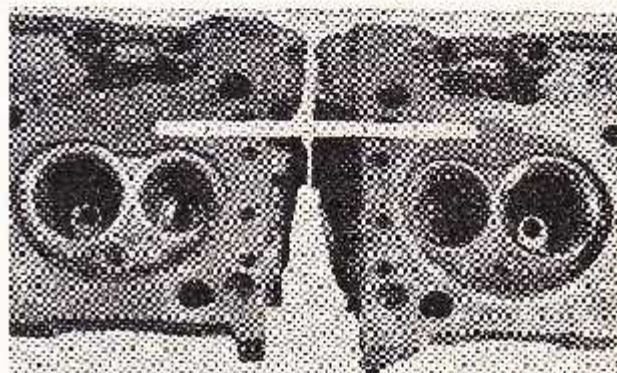
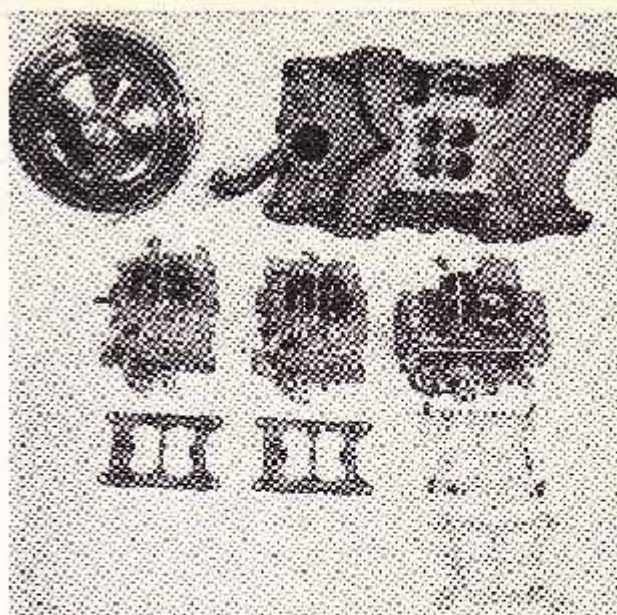
And there were other changes; like the five, half-leaf springs, high-speed governor for the automatic transmission option, and heavy-duty ring gear. But the important fact for us in all of this was the "total" conceptual approach that the engineering staff used. All the individual steps were small, but, in phase, figured for good percentage increments at very little sacrifice to normal operation, except for the use of premium fuel.

Such a high-performance engine in the average Barracuda, Valiant or Dart would normally run near 90 miles per hour in the quarter with a corresponding elapsed time in the high-15- or low-16-second category, depending on atmospheric and pavement conditions. About this time, a lot of people began to deduce that the 273 engine might be just the ticket for a budget-conscious, low class warrior. The only problem was that most of the would-be runners had little notion, outside of the usual blueprint and balance or cam switch operation, of how to make the performance of the high-performance engine higher — to compete on equal terms with the hordes of Chevroys and Pontiacs.

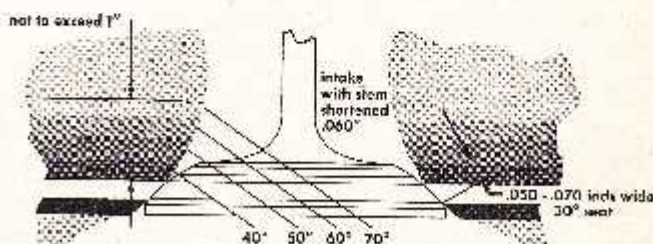
Had these fellas but dropped a line to P. O. Box 1919, Detroit, Michigan (Chrysler Corp. Domestic Product Planning), some of those learned types on the third floor would have put into their hot little hands a 273 Tune-up Tips Bulletin containing sufficient information to make the rest of the competitors in the class run over to the protest committee. But since Chrysler had gotten only a few such inquiries, the information potential just had to rattle around in the office files waiting to be unleashed. So, stand back already, we're about to open the file!

And what a realm of information there is; enough to keep you busy and possibly confused, so we'll categorize it a bit into easier handled headings like Stock, Modified Production, Factory Experimenta, or Gas, Original, huh? Legal stock "mods," NHRA and AHRA style, look like a safe bet as a

(Continued on following page)



TOP — Hot setup for NHRA AHRA stock is 4-throat manifold with, from left, Carter 273, Carter 3457S, Holley 4100.
CENTER — Stock valve seats in left hand head contrast with the staged blending for modified counterpart.
ABOVE — For the ultimate in valving, 354 Chry. 1.34-in. intakes and cut down exhausts (left) use double springs.
BELOW — Progressive bottom dress with on intake valves are shown here with correct seat width and seat angle.



Power Mods for MoPar's 273

jumping-off point and then we'll lean a little more to the left.

The single most critical thing you can do to the 273 engine to perk performance is to forget the factory ever made that set of cast iron exhaust manifolds and either build or buy some decently designed collectors. In fact, if this isn't done, there's really no sense in working on anything else to increase power because of the big breathing bottleneck. Ideally, headers should be of the separate-branch, equal-length type, fabricated from 1 3/4-inch o.d. tubing, 42 inches long measured from the mounting flange to the end of the tube. This is for all automatic transmission cars and stock manual machines with a rear end ratio of no higher than 3.91. Otherwise a 30-inch tube is the thing.

In either case, the four tubes on a given side are routed together to form a four-leaf clover outline when viewed from the end. You will notice that in the center of the four pipes a diamond-like hole is formed and this should be plugged. Next, a short 6- to 9 inch transition piece is made to join the four pipes to a 2 1/4-inch-diameter, 12-inch-long collector. It is of utmost importance that the pipe end of the transitional section conform to the clover-leaf shape and all welds be leak-tight. The header flange should be 1/2-inch steel minimum thickness, with 3/4" preferred to avoid warpage and, therefore, leakage which torpedoes the scavenging benefits.

With the exhaust tangle fairly straight in our mind, the next order of business is to lower the oil pan sump as much as possible to reduce the possibility of the crankshaft counterweights hitting the lubricant — "windage" as it is properly known. You might not realize it, but at 6000 rpm the counterweights are traveling at 120 mph in relation to stationary objects, like the oil, for instance. It requires little imagination to anticipate the "friction" impressed upon such a moving object continually slamming into the oil. As much as fifteen horsepower can be lost from an engine's actual potential by neglecting to get the lubricant out of the crank's way.

Of course, when the oil pan is lowered, in this case to a total of about 2 3/4 inches, the pickup has to be dropped an identical amount. The best solution is to adapt the 1962-'64 wedge engine swinging pickup (Nos. 2406678, 2406679) to the 273 oil pump, making sure the sump area is sufficient to allow the pickup to swivel 180 degrees.

Another problem that crops up with a lowered pan is that the tie-rod or centerlink no longer clears the bottom. To negotiate this hurdle, a 3-inch diameter tube is welded into the pan, providing a passage through which the centerlink can move. The exact location of this little tunnel is best determined by trial and error because centerlink location may vary slightly from car to car. While on the subject of pan modifications, it is wise to weld a 2 1/2-inch-wide baffle into the back of the pan, 4 inches from the bottom, to restrict oil movement away from the pickup during hard acceleration. It seems that motion pictures made through a transparent oil pan on the Ramchargers' hemi match racer revealed that in a normal 2-second run, the G-force was sufficient to force the lubricant to rise rear vertically up the back of the pan, almost completely away from a normally located fixed pickup; not the most desirable of conditions.

As long as the pan is down for work, it is just as well to accomplish the rest of the bottom end, block and head modifications. The hot setup is to switch the Power Pak pistons from bank to bank. This will put the right-hand alga in the left-hand holes, and vice versa. You know you're looking

good when the position notches all face rearward. If you had the two-barrel flat-top buckets, the units could be merely reversed on the rod and the bank-jumping would be unnecessary. You'll remember that in the description of the 273 design, we said the piston pins were offset to reduce piston slap. By reversing the pistons then, you gain more favorable piston-to-rod angularity, thus reducing friction at the expense of a negligible increase in noise. Piston rings for best results are the Dykes-type compression jobs with low tension oil rings underneath to reduce drag and improve lubrication. Piston bore clearance of .003- to .0035-inch will be satisfactory with a .129-inch height above the block. Minimum two-barrel piston deck height is .011-inch below the block's top.

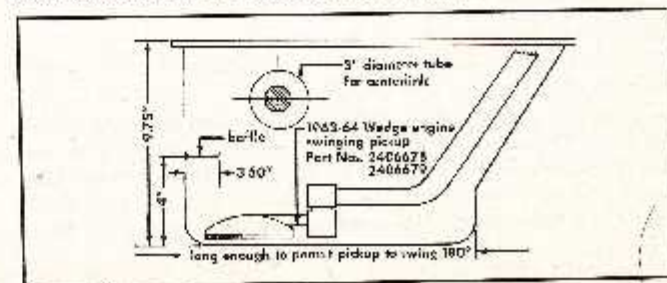
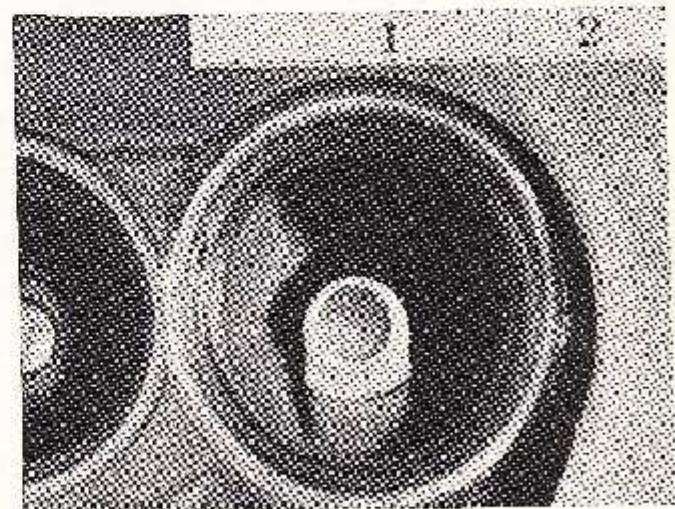
As far as the bottom end goes, it is recommended to install the grooved upper main bearing shells in both the block and main bearing caps to allow greater oil flow through the mains and rods. For drag racing, production balancing is more than adequate and only 30-weight, high-detergent oil is the factory way for increased bearing life.

To get a head, a good set, that is, there are a lot of do's and one important don't. The minimum cylinder chamber volume is 57.3cc, acquired by removing .0065-inch per cc of chamber volume. Some of the boys get down pretty close to optimum volume and then sink individual valves in an effort to easily equalize all the chamber sizes. While they may achieve their immediate goal, the air flow characteristics of the valve port and seat are so disrupted as to delete, rather than add, horsepower. And the same logic goes for exotic porting jobs as well.

A good valve job is a necessary adjunct to any engine, especially the racing variety, and the word for NHRA stock is to run the valve seats on both intake and exhaust as close to the outer edges of the head as possible. The seat angle should be 25 degrees on the exhaust and the intake, .050- to

BOTTOM — Rough diagram of how oil pan sump is lowered to reduce drag on crank shows provision for tie rod.

BELOW — Close-up of how choice valves seat and bottom dress cuts will appear after rework on only the intake.



.070-inch wide. The valve seat approach angle for both is 70 degrees.

The standard Power Pak cam and companion valve gear will run to 6000 rpm before float is encountered, and although a somewhat higher rev limit would be desirable, there is no substitute unit that's NHRA legal. Minimum installed height for the springs is 1.62 inches where load is 103 pounds.

Before the engine is buttoned up, the exhaust crossover in the intake manifold is blocked to ensure a dense charge even when the powerplant is hot. To cover the heat passage, a thin block-off shim can be fabricated for the gasket, or better yet, plates brazed into both sides of the crossover in the intake manifold. When the passages are blocked, cars with automatics may run into a problem of insufficient manifold heating which will kill horsepower at low speed. The best idea is to plumb water from the heater circuit to the exhaust crossover in the manifold, but make it controllable with a valve so you can use a lot when it's cold and taper off as the temperature climbs.

Engine reassembly procedure follows shop manual suggestions, and all clearance and torque specs should be adhered to unless otherwise stated. One little touch of which many people are unaware is the utilization of the 273 air conditioner water pump (Part No. 2463643). It uses less power. Another "secret" is to install the primary power cluster of the automatic transmission four-barrel carburetor (Carter No. 38548, Chrysler No. 2332310) in the manual units. Next, for the Carters, No. 16-216 metering rods are fitted while the stock primary jets are retained. The production secondaries, however, are exchanged for Carter No. 120-165's (.086-inch).

Now prepare yourself for a shock. Contrary to what you believe as the sacred writ of the West Coast's high priest from the beginning of history (hot rod history, that is), the air cleaner is not to be removed during engine operation. You see, air cleaners of today are part of an over-all air-flow design aimed at providing equal mixture distribution between cylinders. When the cleaner is removed or switched for one reason or another, the bollixed up distribution more than offsets the restriction. What you wind up with is rich center cylinders, lean end ones, and inhaled dirt that can ruin piston rings, not to mention valve faces.

For sparking, the stock mechanical distributor advance curve should be altered to allow full 35-degree advance at 1000-1200 rpm. Under no circumstances should the vacuum advance mechanism be used. While you're at it, you would also be wise to check to see if the ignition system is composed of cable rather than carbon center wire which will crack with age and probably short out.

If you have an automatic, one of the first things to be attended to is the installation of a manual shift plate (Part No. 2538049) in the valve body which will allow more positive control. It's sound practice to specify when ordering the piece that installation instructions be sent too, so that the parts are assembled properly. In the rear of both auto and sticks, the "cheater" sticks are the answer for traction, and it is best to mount whatever set you wind up with on the 5.5-inch-wide Barracuda "S" wheels (Part No. 2534885). For better wheel control, once the tires are on, try this for size: Super Stock springs and shocks (Part No. 2495060 - right; Part No. 2495061 - left and Part No. 2275848 - shock absorbers).

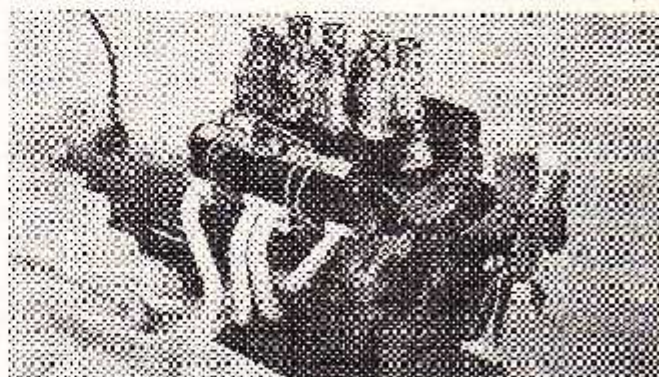
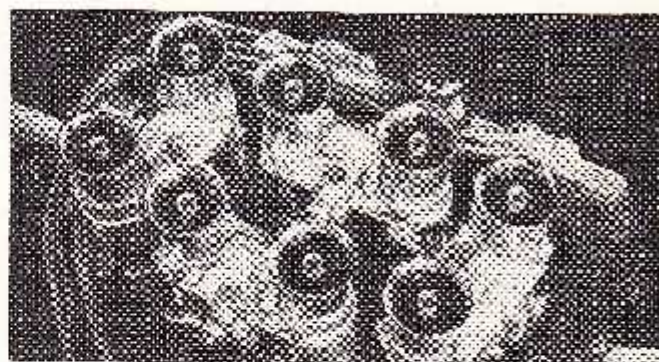
Stick guys may discover after a number of to-the-wood shifts with the 273 clutch that slippage is pretty grim. But there's an answer. The 1952 Chrysler six (remember that little jewel?) and/or '53 Dodge V8 (Part No. 1406503, Borg and Beck No. 1220) clutch will get the job done without any fuss. Explosion speed on this unit is approximated at 7 grand but, so you don't go walking around like "Closter" the rest of your life, a scattershield is prudently recommended.

Well, here we are at trail's end for this section, and before plunging ahead to AHRA-land you might want to know how

a Valiant, Barracuda or Dart so modified would go. Perhaps modified is a bit uncompromising - remanufactured might be more appropriate. Like, is the sweat worth it? How does slicing 2 seconds off the stock 15.90 elapsed time sound for openers? Or a 103 to 102 mph top speed? Kind of grabs you right there, huh? Right in the trophy room.

The American Hot Rod Association's definition of stock is not too much different from NHRA's, but it allows the tinker several additional avenues to explore for extra power. Instead of the specific carburetor that came with the car, any other unit that can be adapted to fit the flange is acceptable. So you hunt up one of the 429 Wedge Ram Carter 3447S's (Part No. 2402359) which, although it features improved breathing capacity, requires some alteration for 273 application. To begin with, the secondary bore holes in the intake manifold must be enlarged to 1.69 inch diameter to match the carburetor's throttle bores. Also, since the 3447S's base is somewhat narrower, its base must be re-drilled for the 273 manifold stud pattern. When the carburetor is slipped on for a trial fit, it becomes apparent that the secondary throttle linkage simply will not clear the manifold, and since the stock 273 secondary shafts are not recommended in the other car-

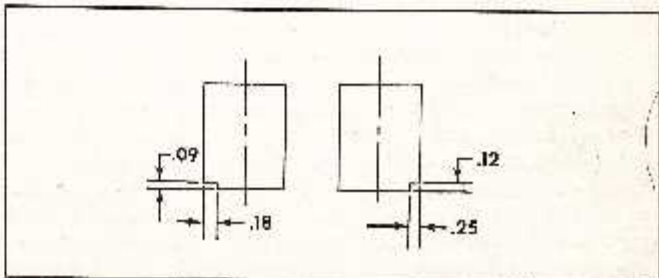
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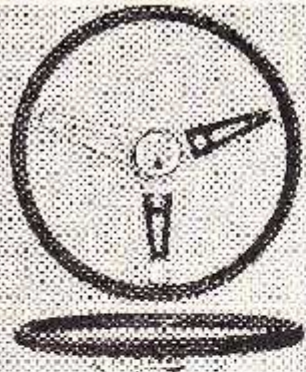
ABOVE - Well here's how it looks when it's all done, gump. Similar mill powered Dave Koffel to C/PX crown

TOP - Manifold biased with Italian art - Weber, 48 style. Almost infinitely adjustable induction system is boss

BELOW - This is the carb plan. Notches in Holley secondary boosters (viewed from rear) provide even dispersion.



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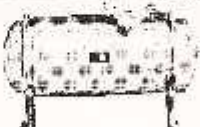
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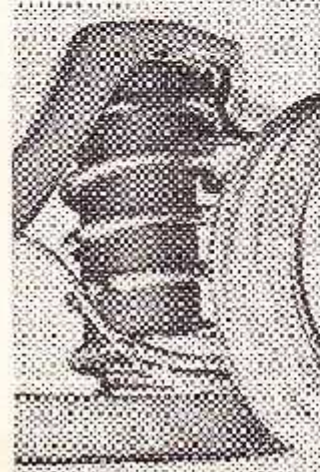
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Power Mods for MoPar's 273

continued from page 66

buretor, a spacer must be fabricated. With the new not fitted on, it may be necessary to raise the accelerator pedal to obtain sufficient throttle cable travel to fully open the throttles. At the same time, the 3447S throttle linkage is set so the secondaries stop some 15 degrees short of fully open and it is recommended that the set stop be adjusted to provide no limit point ahead of all-out.

Now that carburetor mounting is squared around satisfactorily, internal modification can begin. Carter No. 120-139 (.089-inch) primary jets are added, and because the 3447S secondary jets are too lean for the 273 lush-up, No. 120-167's (.095-inch) are substituted. Conversely, the 3447S primary metering rods are too rich, so No. 16-75's hit this spot. Carter No. 58-151S and 58-152S secondary clusters normally found in Stage II and III Wedge Ram cars (Carter 3705S, Chrysler Part No. 2463977) and early hemi stuff (Part No. 2463977) are added. One final suggestion is to lighten the velocity weights for quicker response.

But the "le gerra" setup is the new 1 1/4 x 1 1/4-inch big Holley (No. 4160, list \$116) if you can find one. The boys in the dyno lab have learned that Holley No. 70 primary jets with a .93 primary power valve restrictor are the answer here. A #45 drill is used to enlarge the secondary main metering restriction on the throttle side and a #41 for the secondary main metering on the diaphragm end. While these alterations will help get the gas in and out of the carburetor more efficiently, a further step will put the atomized particles perfectly into the manifold. By simply filing notches on each of the outboard sides of the secondary boosters (see sketch: throttle side—3/16 x 3/16-inch, diaphragm side, 1/4 x 3/16-inch), the mixture will be thrown toward the inside of the venturi and more evenly distributed.

As with the 3447S, use of the 4160 Holley requires that some modifications be made to the 273 intake manifold. First off, the manifold's primary and secondary throttle bores must be hogged to 1 1/4-inch. Then, to get the unit on properly, some kind of adapting flange is necessary. Instead of starting from scratch on this, a Super Stock carburetor mounting flange (Part No. 2468451) will help cut the job time.

AIRRA allows any camshaft grind as long as it is of flat tappet design, so to gain full advantage of the class rulings, it is advisable to install one of the popular makes. The unit Chrysler has worked with most is for the sticks only.

a Racer Brown ST-12 (installed with the overlap split-centerline #1 intake 108 degrees past TDC exhaust stroke), but other equally beneficial grinds can be obtained from several different manufacturers.

For example, Camcraft, in Detroit, has a new 284-degree unit with .480-inch lift (No. 2806673). This "bump stick" is to be slipped in also with the overlap split (centerline #1 intake lobe 108 degrees past TDC #1 exhaust). On automatic cars, advance the cam to 104 degrees centerline. The minimum valve springs for this cam would be the 1958 Chrysler 300D units (Part No. 1944554) installed to a height of no less than 1.62-inch. Before the engine is flogged through the quarter, it is excellent practice to check the piston-to-valve clearance which should be .060-inch minimum.

With the Racer Brown valve springs (outer VR-18X and inner VR-56) at an installed spring height of 1.68-1.70-inch, the outervalue surge dampener may not fit over the inner valve spring seal on the 273 cylinder head. This can be overcome by reducing the inner seat diameter or removing one coil of the surge dampener. Chrysler hemi tappets (Part No. 2402288) or the standard 273 tappets can be used with this cam, although it would be advisable to have the cylinder block tappet bores enlarged .0006-inch oversize in the latter case.

This about closes out the possibilities for AHR stock, but already the car is going in the high 12's at 106 to 110 or thereabouts, and remember, we haven't even altered any interior pieces like valves or pistons. But we will, because the platform thus created is an excellent vehicle to range through the outer reaches of Modified Production or Factory Experimental or even the lower Gas ranks.

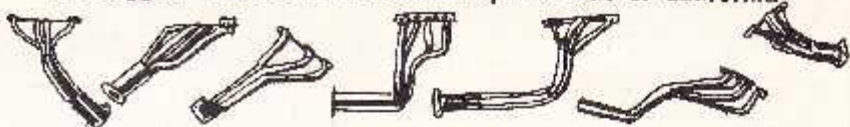
From this point on, most of the stuff we'll be dealing with is fairly accepted practice in the world of speed, but, understandably, is not covered by the 60,000-mile warranty. Or is it? Anyway, the head should be re-removed and milled down to a minimum volume of 91.3cc's per chamber or a final ratio of 12.5:1. In this lofty compression crag, stock head gaskets tend to favor punching out of their dilemma in all kinds of spots, but extreme care during assembly will go a long way toward longevity.

Now comes the passage on how to get yourself what is most appropriately referred to as a "boss valve job." If you have been paying any attention, you remember that the stock 273 comes with 1.78-inch intake and 1.50-inch exhaust valves. By using the venerable Chrysler 354 components, 273 sizing can be brought out to 1.65 and 1.84 inches. At the same time, there are a series of transition cuts which can be made in the port ahead of the valve to smooth mixture and increase power. We'll elaborate.

(Continued on following page)

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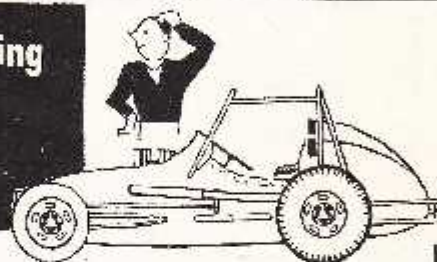
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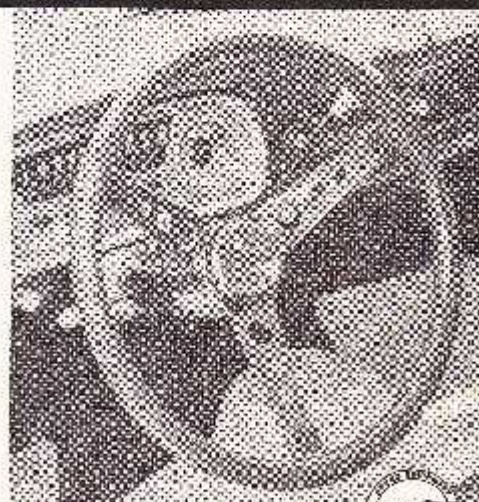
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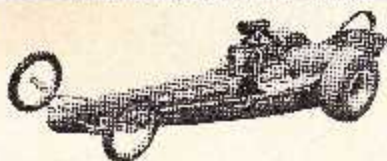
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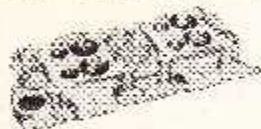
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POWER MODS FOR 273

continued

Commencing on the exhaust side, a 354 Chrysler valve (Part No. 1834744) is chucked into a lathe, cut to a head diameter of 1.05-inch and a face angle of 15 degrees. The seat angle in the cylinder head is also put in at 15 degrees at a width of .050-.070-inch. Bottom dress on the seat is 70 degrees which, with a 0-degree stone for top dress, will provide some clearance between the top of the seat and cast chamber. On the bottom end, the transition from the 70-degree cut into the port should be smoothed with a hand grinder.

A 354 Chrysler 1.94-inch intake valve (Part No. 181241) is used for this end almost as is, except for lopping .060-inch off the stem. The valve face for the intake and its seat is held at 30 degrees, with a seat width of .050-.070-inch. We just alluded to the fact of some "trick" steps, and these are embodied in a series of four progressive bottom dress cuts of 40, 50, 60 and 70 degrees, all of which make for a large radius approach to the intake valve seat. This method provides a greater power gain than opening up the throat below the valve and using a tighter radius approach.

As with the intakes, the 70-degree bottom dress cut should be smoothed with a hand grinder. Top dress also follows intake procedure so that a 0-degree stone is used, allowing clearance between the top of the seat and cast chamber.

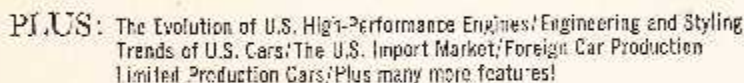
On both the intake and exhaust valves, as we noted in the stock section, the respective seats should be as close to the outer edge of the valve as possible. In addition, when installing the larger 354 valves, the edge of the cylinder bore must be matched for valve clearance. Enlarged, too, will be the piston pockets so that a minimum of .080-inch clearance is maintained between the valves, the pistons, and the cylinder bores. The importance of checking these clearances cannot be stressed enough because you're just bound to bend up a few valves if you don't. Care must also be exercised when notching the bores so as not to grind outside the head gasket heads.

Since the demands placed on an engine of this demeanor will be quite strenuous, it may be advisable to install a 318-S truck crankshaft (Part No. 2268810), rod bearings (Part No. 2421-30b), and main bearings (Part No. 2421330 — #1, 2, 4; Part No. 2405007 — #3; Part No. 1643151 — #5). The 318-S crank is a hard unit using tri-metal bearings, and to ensure there are no other weak bottom end links, it would be an excellent idea to have the connect-

(Continued on page 114)

continued

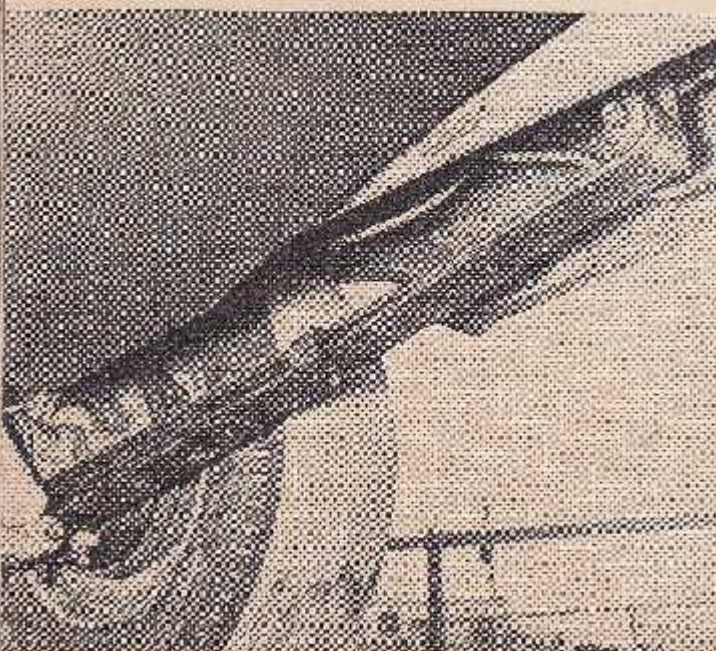
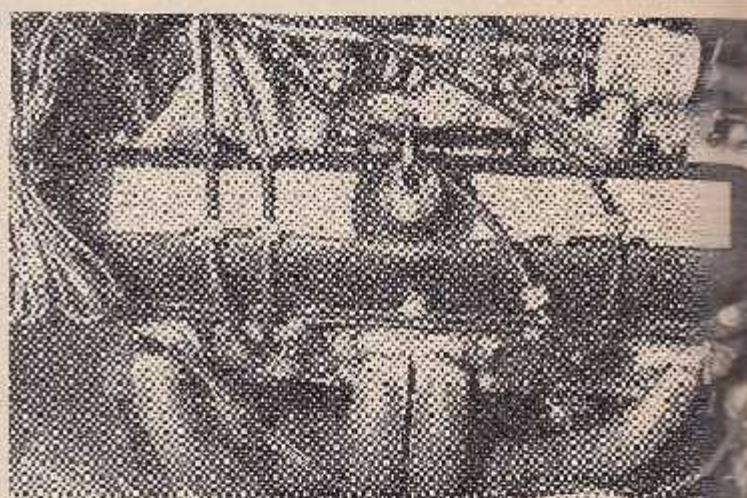
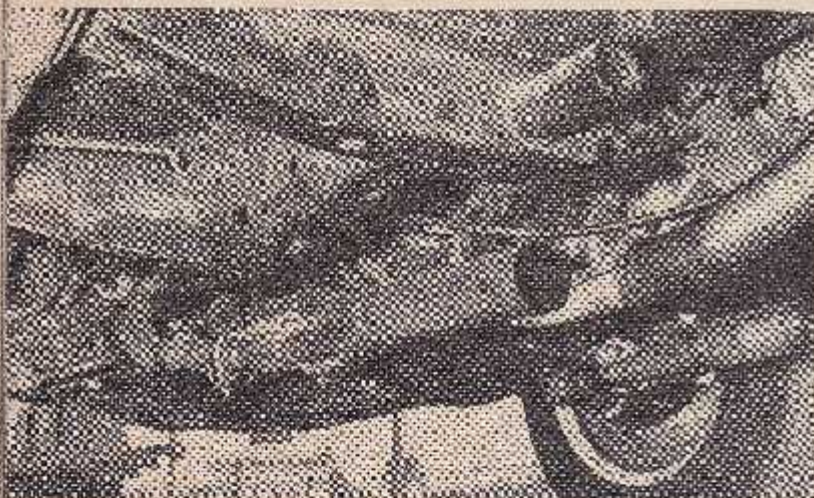
192 PAGES * \$11.95



HOT ROD MAGAZINE

Embodying all the many mods for the mini MoPars described elsewhere in this issue, Dave Koffel's

PROOF OF THE



Flintstone Flying Commando" illustrates how successful a 273 can be

PUDGING



Canton, Ohio
photography: Tom Bedford

FAR LEFT — Interior of the "Flintstone Flying Commando" is well braced for emergencies with $1\frac{3}{4}$ -inch o.d. seamless tubing. Halt can be easily halted.

LEFT — Lined up and ready to cut the corn on would-be competitors, Dave Koffel's Canton (Ohio) Express won class at '65 Nationals with 18.95 elapsed time, 101.80 mph.

RIGHT — Two of the heads responsible for this Buckeye blaster are Dave Koffel (right) and Dick Maxwell, member of the famous Buckeye racers racing team.

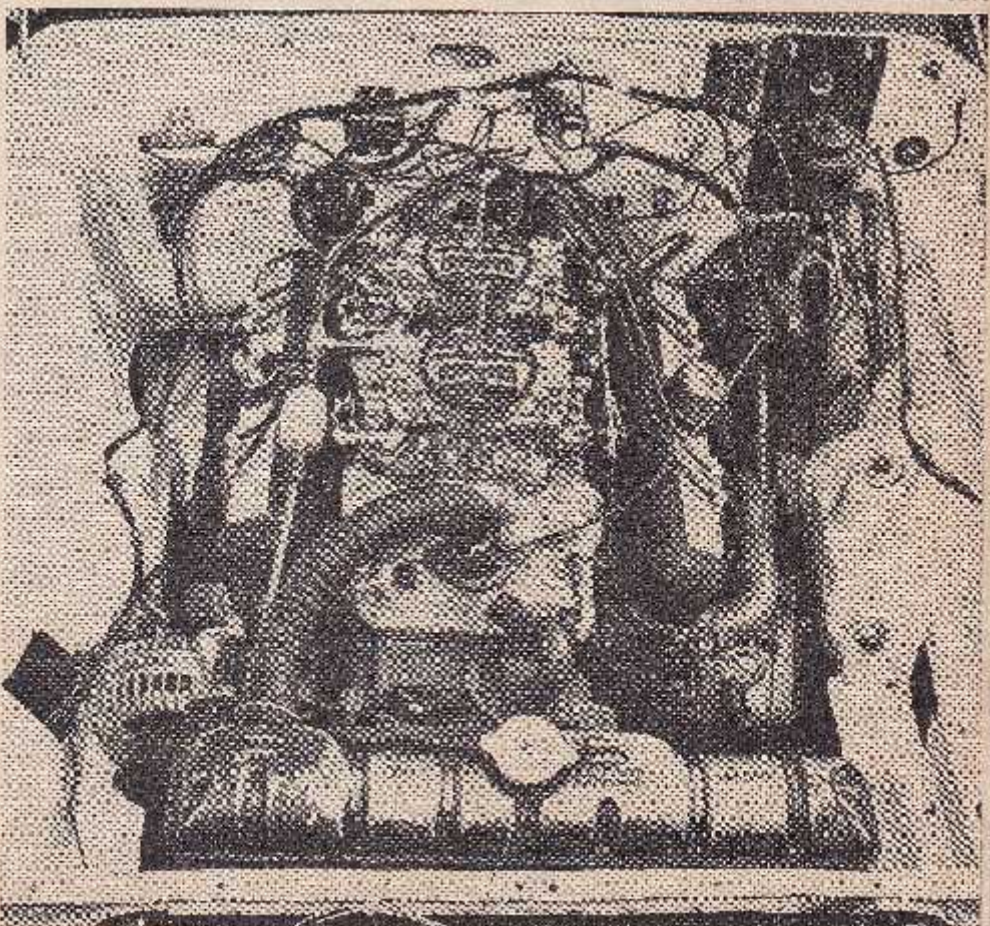
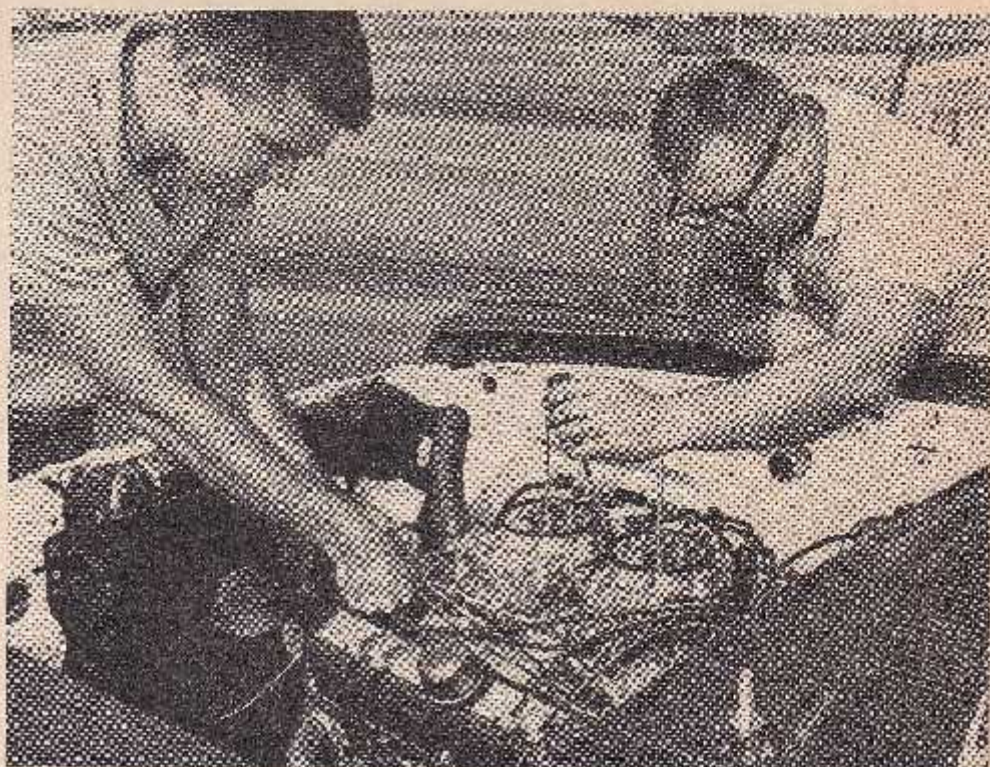
FAR LEFT — Separate hump, equal length-type headers are made from $1\frac{3}{4}$ -in. o.d. tubing. Notice 2- to 3-in. transitional piece between tube and collector pipe.

LEFT — Detailed view shows how exhaust header flange is fashioned to allow room for spark plug access. Flange should be minimum $\frac{1}{4}$ -inch thickness, $\frac{3}{8}$ -inch preferred.

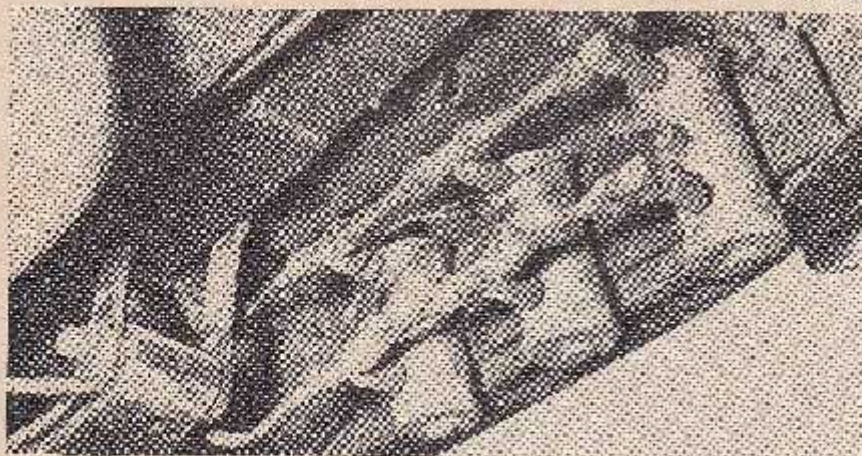
RIGHT — At this showing, 273 engine was supplied with pair of Carter 945S carburetors. Later, these were replaced with more exotic and more adjustable Weber two-throats. Water pump is unit originally designed for use with air-conditioned cars, uses fewer horses.

FAR LEFT — To control wheel hop, Super Stock springs and shocks are the answer. For traction, M&H Racemaster tires are employed on standard six-inch rims.

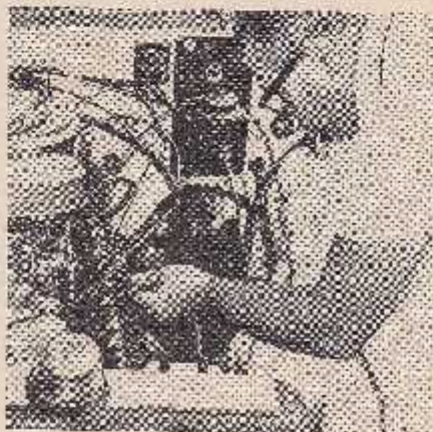
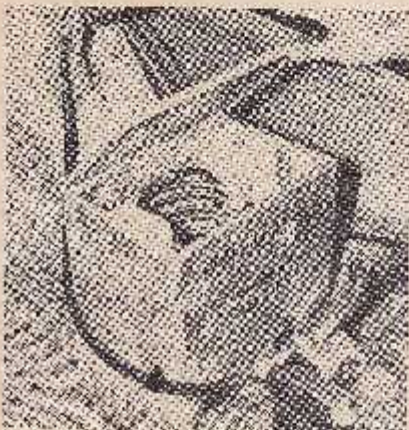
LEFT — Now if you get everybody in town to kick in about twenty-five skins apiece for sponsorship, you, too, can have a brand-new C/FX Plymouth with lettered trunk.
(Continued on following page)



PROOF OF THE PUDDING

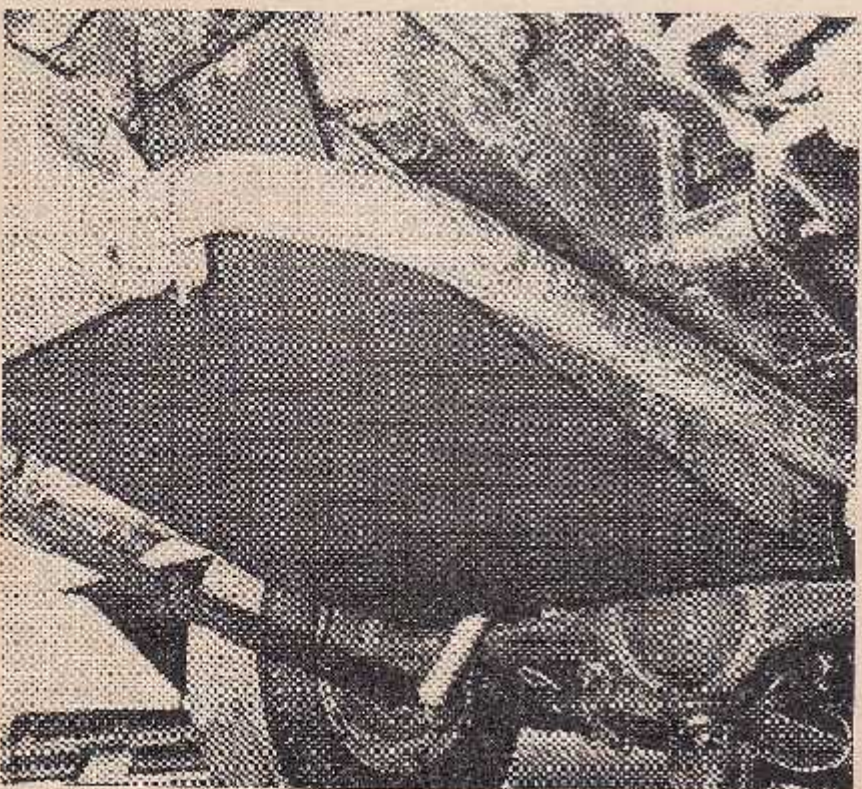


LEFT - One method to ensure that you've never caught short on gas pressure is to use three electric fuel pumps connected in parallel by 1/8-inch o.d. copper fuel line feeding stock pump.



FAR LEFT - So the fuel doesn't lose its cool, the line is coiled in an aluminum box that is packed with dry ice during runs. Heavy battery is mounted in extreme right rear of trunk.

LEFT - Dace runs a feeler gauge through the valves to check lash. Notice that air cleaners of the non-silenced variety are retained for competition. Carburetor linkage operates progressively.



LEFT - Looking under Koffel's car, you might take the sheet steel gas tank shield as a safety measure, and while it is, it is also a legal way to add some ballast in the back where it can do some good. Spring shackles are lengthened 1 in.