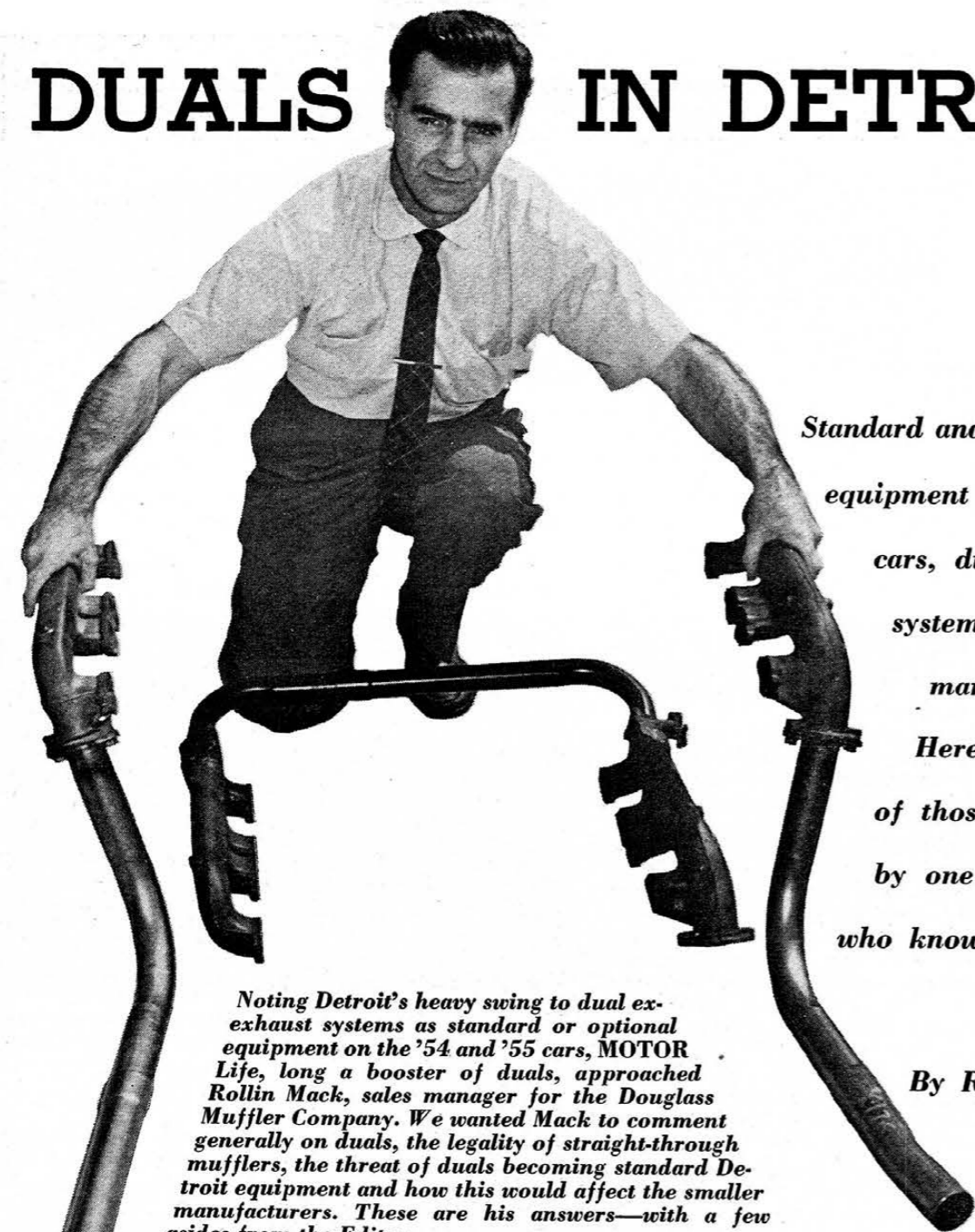


DUALS IN DETROIT



Standard and optional equipment on most '55 cars, dual exhaust systems still pose many problems. Here is a survey of those difficulties by one of the men who knows duals best.

By Rollin Mack

Noting Detroit's heavy swing to dual exhaust systems as standard or optional equipment on the '54 and '55 cars, MOTOR Life, long a booster of duals, approached Rollin Mack, sales manager for the Douglass Muffler Company. We wanted Mack to comment generally on duals, the legality of straight-through mufflers, the threat of duals becoming standard Detroit equipment and how this would affect the smaller manufacturers. These are his answers—with a few asides from the Editor.

THIS IS still the age of discovery. One of the country's leading automotive editors, while researching a current story on dual exhaust equipment for a dealers' trade paper, found that new car dealers have at last "discovered" the advantages of installing duals. Do not smile, mechanical minded one; any of these dealers, even that editor himself, might be a relative of yours. Any "hep" reader of *MOTOR Life* will regard the news of this discovery in the same light as the discovery of electricity last Tuesday by Joe Bogue of East Cupcake, Penna. But even if the relatives have arrived somewhat tardily at this great discovery, let's give them credit for arriving. Of course, the accent on the advantages reported by that trade publication were economic. The headline of the piece was "Dual Exhausts Brighten Shop Profits"; the sub was "Customers Asking for Them"! One Oldsmobile dealer mentioned in the story actually netted \$1175 profit in the first half of 1954 with the "plus" operation of installing dual equipment. This, as an example of the strides taking place in dealerships all over the country, is the best of all possible reasons to proclaim that "duals" are here to stay. And complete acceptance isn't too far away.

This news came as no surprise to the straight-through muffler manufacturers of Southern California. They have sweated out the pioneering problems of improving automobile exhaust systems for a lot of years, and they have had the satisfaction of seeing their backyard businesses grow into a large volume, high production industry. At the start, modification of stock equipment was confined to the small sprinkling of performance-minded motorists who insisted upon extra efficiency and power. In these enlightened days, due in part to Detroit's performance progress of recent years, most average motorists are interested in top performance. (Ed. Note: In certain sections of

the country, an estimated 25% of passenger cars now have dual exhaust systems.)

It doesn't take a two-headed genius to figure out the practical benefits of dual equipment. With the ascendancy of the V-8 engine, the need for better engine breathing becomes imperative. The increased power of today's high compression engine is produced by an increased volume of the air-gas mixture; the combustion gases must be expelled faster. You can't, after all, take new air into your lungs faster than you can breathe the old out. With the old-fashioned exhaust systems used as original equipment on most cars, the exhaust gases from the left bank of cylinders are forced through the right side exhaust system. Moreover, the cross-over pipe, which takes those gases from the left bank and forces them through the single right system, is a tight 180° bend arrangement with a smaller passage than the manifolds. Use of this traditional cross-over restricts the exhaust flow, results in a marked build-up of back pressure. Conclusion: this arrangement is strictly from Rube Goldberg! (Rollin, if we might step in here for a short moment: Single exhaust systems do offer the advantage of less parts which can come loose, rattle, wear or go bad. The single exhaust system, as standard, helps keep automotive prices down in an industry where every accessory is scrutinized by hordes of engineers, sales-conscious personnel and cost accountants before it can be seriously considered for inclusion on a mass-produced car. Automobiles are at their relatively low sale price mainly because of these groups who know when to say "no.")

Dual exhausts eliminate the cross-over pipe altogether and handle the exhaust problem efficiently with two complete systems, one for each bank of cylinders. This not only doubles the engine's breathing capacity but virtually eliminates the back pressures of the overloaded original stock system. (Just a moment Rollie—we'd like to clear up another misconception about back pressure, per se. Nearly every automobile owner has had a "friend" say something like this, "Your engine's

supposed to have back pressure—it's designed that way. Won't operate right without it." Nothing could be further from the truth. As a matter of fact, if Detroit engineers had their own way—without consideration of costs or noise—they'd undoubtedly have single header systems coming off each cylinder! Back pressure is definitely detrimental to the internal combustion engine!)

Consider the resulting benefits: smoother performance and higher horsepower output in the upper rpm range; cooler running engines with resultant longer valve life; more efficient expulsion of gases, which in turn means better utilization of fuel (increased mileage); faster acceleration; in short, a more efficient automobile.

That Detroit is well aware of these benefits and is working skillfully and purposefully to achieve free-flowing engines through better breathing, is evidenced by the record. Dual exhausts are original equipment on Cadillac, Chevrolet Corvette, Chrysler, Ford Thunderbird and the Ford Police Specials. They are optional on late Ford and Mercury models. (And, they will be available as optional on most '55 cars in kits comparable to Chevrolet's "power package"—a four-throat carburetor and duals — for increased performance.) The major stock replacement manufacturers of exhaust equipment have all augmented their catalogs with dual exhaust and header systems. (We mentioned headers once before, Rollie. Let's explain what they are to those who haven't encountered the word before. Headers are swoops of fabricated steel pipe which replace the stock cast iron manifolds on the engine. Headers have no sudden bends or curves, are designed to collect exhaust gases as efficiently as possible before introducing them to the exhaust line. Nearly everyone has seen exposed headers on pictures of Indianapolis cars.)

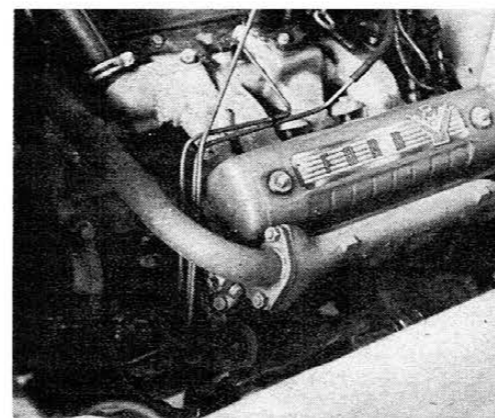
One editor of *MOTOR Life* magazine asked us if we considered duals here to stay. In the ensuing discussion, he convinced himself that if duals were as good as we said they are, he'd better have a

set on his '54 car. They were installed forthwith. (No convincing was done actually. *MOTOR Life* staff is more than aware of the advantages of duals and the Douglass duals were installed when the car was one week new—had less than 200 miles on the odometer.) A conservative young man, this particular editor evinced a desire for stock replacement mufflers in his dual set. This is a point on which we never demur, since it is, after all, a matter of personal preference, as the cigarette people say. We do, to be sure, recommend the use of our steel-packed, straight-through mufflers with our dual system. They are more efficient than stock replacement models. But even the stocks are great in duals and there is no marked set-back in the horsepower gain or back pressure reduction. (To tie it down, Rollie, the difference, as shown by many tests, boils down to one half pound or one pound of back pressure more by using stock mufflers.)

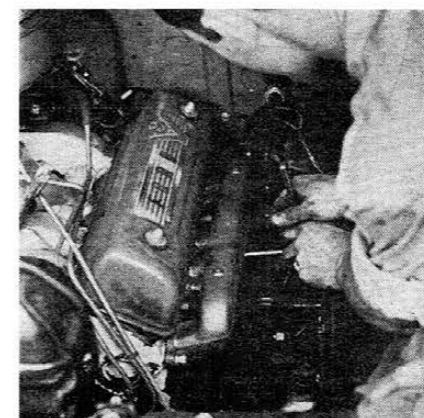
We of the specialized exhaust system field are, in the main, very happy with the Detroit swing toward the use of duals as original equipment. This might appear, at first glance, to be something of a death wish. If Detroit builds it on the car at the factory, what is there left to sell? However, with some 60 million cars on the road today, there is little reason to weep for the lost opportunity.

The important consideration here is that Detroit is actually helping us carry the ball. For the most of its history, our industry has suffered intermittently from local legal jaundices, petty persecution and discrimination. The "safe target" critics, the zealous noise abatement crusaders, the arbitrary eagle of the law whose ear is limited by his eye—these worthies will find better preoccupation than tangling with Big Brother. Which is merely a smart-aleck way of saying that Detroit usage will, as it has already done to some degree, make universal the acceptance of the design principles which are our stock in trade.

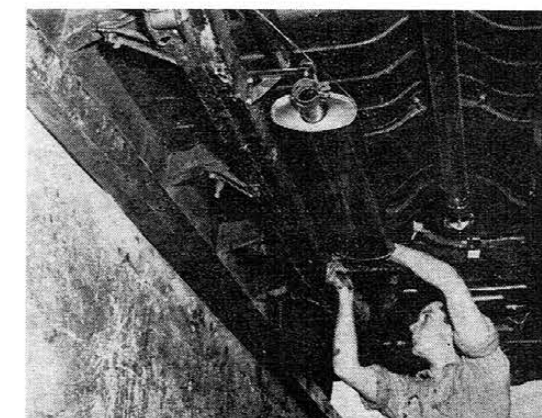
If Detroit ever puts us all out of our own business, we'll have only ourselves to . (Continued on page 57)



Stock '54 Ford exhaust system has cross-over pipe which feeds gases into single line.



The crossover pipe has been removed and a special left-hand manifold is being installed.



Dual exhaust installation is simple, neat. Most 1955 cars will have duals as an option.

DUALS IN DETROIT

(Continued from page 33)

blame. We have a long headstart in this kind of building—and if they have superior technologies and the finest production lines in the world, we still believe that our specialists are willing to build better duals.

Detroit will undoubtedly adopt duals across the board in some future year. It will perhaps maintain its insistence for a long time to come on the "quiet engine at any cost," which means continued resistance to straight-through mufflers by the majority of Detroit names. (And yet, *Rollie*—one of the largest selling cars of 1954 had straight-through mufflers in previous postwar years.) But you cannot temporize with progress. Once the ball is rolling, the end is inevitable. We shall have duals wherever we go.

No commentary on dual exhaust equipment can ignore the legality aspects of the use of such equipment. Because there are still a few intransigent minds around the country who insist upon the identification of this equipment with noise. (The same group which calls any old wreck a hot rod. No super race, they insist that everyone own an expensive late model American car—in pristine and often, inefficient, form. At one time, voices

throughout the land actually mentioned something about ruling cars off the highway when they were more than six years old!) Let us consider briefly the legality problem of driving a car equipped with a dual muffler set or a complete header-equipped dual system—with stock or straight-through mufflers. More than a few righteously indignant letters have been directed to our attention, protesting some local police attitude or arbitrary punitive action against "pipes." They have a "smooth" system in New Jersey; cars must be inspected twice a year and a car with duals is not passed. With no inspection renewal, the driver is open to fine every day he drives the car without the new OK sticker. It's unfortunate, however, that many people who buy dual exhaust systems are not the best ambassadors. Let's face it: many drivers like speed and noise.

Without moralizing on the issue, it may be of interest to note that the entire staff of Douglass Muffler owns cars equipped with our dual setup. Nobody in that group has ever been challenged or questioned by the Law because of loud mufflers or "pipes." We have driven through many of the tough localities of the country. Whenever an Officer comments on the exhaust equipment on any of these cars, it is with curiosity or admiration. Which is sufficient commentary

on the general law attitude. If you don't abuse your privilege of motoring on American highways, it's a safe assumption that you can stay friends with the Law.

The lesson, if you'll permit me to play Dutch Uncle, is that you can't win friends by poking them in the eye with an umbrella. If you want the Man with the Badge to leave you alone, don't make him travel 70 mph after you. Don't annoy less appreciative citizens by investigating how loud you can "sound off"; and don't go ramping around the countryside with a chip on your shoulder. The privilege of enjoying smoother performance, greater economy and top efficiency carries with it the responsibility of not abusing the privilege.

(Thanks *Rollie*—and we'd just like to add a comment on our pet peeve here. If Law enforcement officials are going to bring pressure on the owners of cars with dual exhaust systems with a noise level above those of the stock model—we feel that the Law should be equal. Under an equal law, the police would be too busy "writing up" motorcycles (including themselves), trucks, busses, and race-type sports cars to get around to regular passenger cars long before these antiquated laws are banished—through inevitable progress.) •

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