THE CAR CRITIC

BY ROGER HUNTINGTON

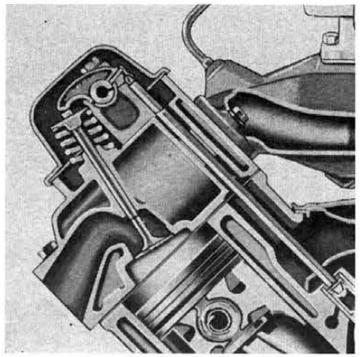
Newer Buick Dynaflow Coming
American Motors Designs Another V-8
Did Tucker Really Have a "Prototype"?

BUICK'S 1956 DYNAFLOW, so I hear, will have *two* variable-pitch stator elements! The current model has one, which gives the effect of two "speeds" in Drive range when it's in high and low pitch position. A second variable-pitch stator would give the effect of three speeds. This should mean even more "dig" at the traffic light. Zooommm! Just as important, it would allow Buick to use a little closer spacing between the torque multiplication ratios in each pitch position; this, in turn, would mean a more effective "passing" range out on the road . . . and the final payoff would be that they could lower the rear axle gear ratio for better economy and less engine noise. Buick uses a 3.40:1 ratio now with the 236-hp engine, and I understand they would like to go down nearer 3:1 for 1956.

In my humble opinion the Buick Dynaflow is far and away the best automatic transmission on the market today. The Hydra-Matic boys are feeling the squeeze. They're knocking themselves out to get something better on the '56 Hydra-Matic, and rumors are a dime a dozen. One says the next model will have three planetary units and *five* speeds forward —but that it might not be ready for the early '56 cars. Another says GM plans to drop the fluid clutch altogether and go to the torque converter within a year. Time will tell.

LOOKS LIKE AMERICAN MOTORS (Nash-Hudson) may have a V-8 engine of their own before long. (They use the Packard engine now.) The front office has recently announced a $60 million expansion program, and a new engine will get priority. They say some of the tools for it have already been ordered. Here's hoping the A.M. engineers do some bold, advanced thinking on this new engine—and don't just follow the field to the extent Packard did on their new V-8. If the designer today doesn't guess right on every angle from valve layouts to engine height, his brainchild may well be obsolete before it ever comes off the production line.

From another standpoint, few auto enthusiasts fully realize the terrific problems involved in developing an entirely new engine on a sharply limited budget, such as the small "independents" have to do. It costs millions to do the job right—and yet the little guys have to watch every dime just to keep their heads above water. The easiest way out is to merely copy the other designs and try to adapt the best features of each one. The new Packard engine illustrates this clearly; here we see a typical G.M. combustion chamber. Lincoln valve and port sizes, no valve guides a la Ford, etc.



Just a hint of the narrow engineering budget for this design: I heard from a reliable source that they used only *four* hand-built experimental engines in the entire development program! How many advanced, untried features can you work out with only four engines to test in a period of a few months? A big outfit like Chevrolet will use up to *300* hand-built units—maybe more—in a new engine program. A new gizmo like the ball-joint rocker could never be tackled without hundreds of test engines and a multi-million-dollar budget.

A year or so ago we had great hopes that the new Packard V-8 would revolutionize the industry . . . but we weren't facing facts. This matter of money alone is more than enough to keep the little guys always on the conservative side—and about three years behind the big guys in basic engineering. The horrible thing is that, when you have to live with a basic engine design for six or eight years, "conservative" design is a vicious circle that can turn into a whirlpool to suck you under. I think you get the idea.

SPEAKING of the small companies, did you know that the merger idea was in the talking stage as long ago as 1946? The late George Mason, president of Nash, foresaw the impossible cost problem that was descending on the independents right after the war, and secretly tried to work out a merger with Hudson. But they were selling all the cars they could build in those days, and couldn't see the future in a more normal market. Mason then approached Packard—with no more luck. Not until their backs were right against the wall would the independents seriously consider merging. Is it now too late? Only time will tell. And the merging isn't over yet. I look for all the small guys—American Motors, Studebaker-Packard, and possibly Kaiser-Willys (if they don't drop out of the passenger car field altogether) —to get together within two years.

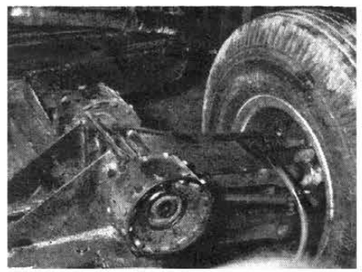
REMEMBER the Tucker automobile? Back in 1948 there was a big to-do in the auto world about "tomorrow's car." Promoter Preston Tucker organized a corporation, sold millions of dollars worth of stock, leased a huge Dodge war plant in Chicago, and generally stirred up quite a ruckus with a plan for a radical new car design. You know what happened. There was always some doubt whether or not the whole deal was a colossal stock swindle scheme . . . but auto enthusiasts have always wondered whether Tucker ever really built a *prototype* car that embodied all the unconventional mechanical features he claimed for his new design. (You'll recall that the 50 or so "prototypes" he showed to the public were thrown together from a conglomeration of stock parts.

Well, I can tell you now that there *was* a real prototype. The chassis was on display at the recent custom car show in Detroit, sponsored by the Michigan Hot Rod association. I snapped some pictures that are shown here. This car definitely didn't embody all the features Tucker claimed, but it was certainly one of the weirdest pieces of machinery I've ever seen!

The engine was a flat opposed six-cylinder of cast aluminum; valves were inclined in the head, similar to the double-overhead-cam layout, with the spark plugs in the center of the combustion chambers. But the valves were operated

hydraulically—in other words, oil pressure acting on small pistons opened them, and I believe they were closed by spring tension. (The piston towers can be seen in the photos.) A rotary "distributor" unit driven from the crank routed oil pressure to the proper valve piston, something like a fuel injection pump, with return lines to vent it back to the pump—all through a fantastic maze of plumbing. Early Tucker news releases claimed fuel injection, but this thing had a conventional carburetor and manifold on each bank (though the injector nozzle plugs were there in each cylinder).

Remember that four-wheel "hydraulic drive" they talked about? They were going to generate oil pressure with the engine and use it to drive small hydraulic motors on each wheel. This prototype chassis actually had a torque converter at each end of the engine, driving to the wheels through short U-jointed shafts. The whole deal took up so much lateral space that the tread width on the car was more like a truck—around 80 inches! Suspension was by rubber in shear; that is, wheel forces were made to twist two donut-shaped blocks of solid rubber that were anchored around the outside (a photo shows the layout).



There weren't any shocks on the chassis that I could see. Tucker claimed disc brakes, and he had 'em. I couldn't tell much from the outside, but they were very large and required special 18-inch wheels to get them inside.

Well, I won't go into any more detail here. I just thought you might be interested in these pictures, even if the rig didn't leave much of a mark in automotive history. The chassis was obviously completely impractical from stem to stern. I'm not sure the engine had ever actually run. Out of all the unconventional features, only the torque converter has since been widely adopted. Whether disc brakes, aluminum engine construction, and the flat opposed cylinder layout will eventually come remains to be seen. More radical features like rubber suspension, hydraulic valve operation, rear engine location, etc. may never become popular in our auto industry.

Anyway, whether Preston Tucker was a smart engineer or just a smart operator . . . we can never again accuse him of not even having a prototype!