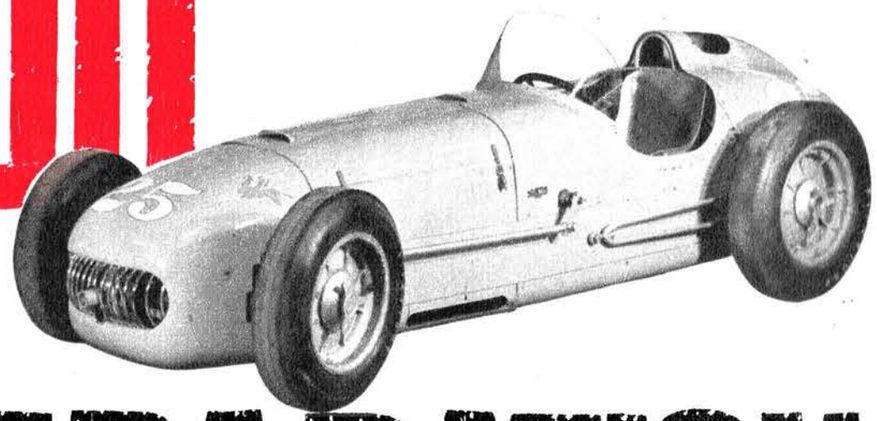
"500" PREPARATION



by Bob Canaan

OF THE many cars taking the qualifying test for the Indianapolis 500 mile Memorial Day classic this year, those of the greatest interest, to the average motorist, will undoubtedly be the three Chrysler engined, Kurtis built machines.

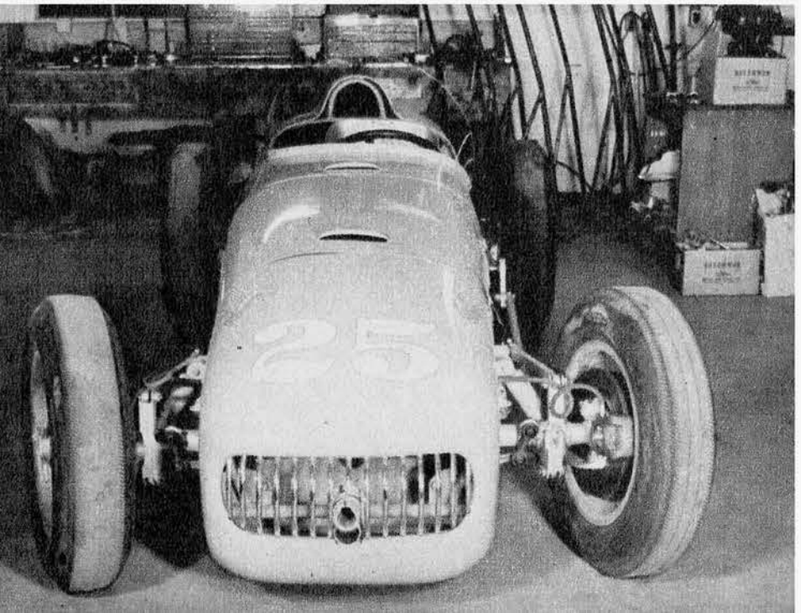
In anticipation of this, Hop Up magazine has gone to some length to bring its readers the inside story behind the development of the project. To make certain the information we received was as near accurate as possible, we contacted Mr. Herbert Porter, the man who was the mechanic on the original car tested at Indianapolis during the summer of 1952.

Herb was not certain just how the principal parties first got together and decided to put a modified stock car engine in a racing car. He wasn't brought into the picture until after those details had been arranged. His job, like all racing car mechanics, is to see to it the cars are prepared in the best possible manner for the 500 mile grind. As Herb so aptly puts it: "They were turned over to me to be 'Porterized'."

At this point it might be well to make it clear that these machines, as entered in this year's race, are NOT official entries of the Chrysler Motor Car Corp. Chrysler naturally is very much interested in the performance of their engines, a further development of their K 310 project, but the engines will be purchased outright from them by Mr. R. G. Walcott the owner of two of the Kurtis chassis in which they will be installed. The third car will be entered by Merle Belanger who first became interested in the idea in February 1953. It was felt more than just one car should be prepared in fairness to Chrysler.

We asked Herb what the suitability of these engines, for racing, was, judging from the results of the preliminary tests made last summer.

"The power plant, as tested, was of stock Chrysler bore and stroke, having a cubic inch displacement of 331 inches. Running an 11-1 compression ratio it developed 404 horsepower, at 5200 rpm, on straight alcohol. We ran approximately 1500 miles, 150 miles at



Front view of same car shows some of the front end features including spot brakes and discs, dual shocks, & torsion bar arms. Tube protruding through grille is to line up electric starter.

135.5 m.p.h. (The official competition record for 100 miles, on this track, is 133.008 m.p.h.) Our fastest lap was 139.384 m.p.h. Four laps were run at an average speed of 138.6 m.p.h."

Our question at this point was: Isn't the track supposed to be faster during practice week due to deposits of oil and rubber in the corners,

"All I know," he replied, "is we did over 139 m.p.h. when we ran; whether we can do any better during qualifying remains to be seen."

Then we asked: During the 1500 miles you ran, just how did the engines stand up? Did you have any trouble or break down?

"No," he replied, "The power plant required no extra service other than the ordinary valve adjustment, plug changes, etc. Actually we ran the longest distance, at high speed, that has ever been run at Indianapolis, by a racing car. We are convinced the engine is very reliable."

Incidently, speaking of long distance running, it is well worth noting this test could not have been possible had not the Firestone Tire and Rubber Co. been willing to supply the tires and make tire tests in conjunction with the test of the machine. Firestone, always the friend of the racing organization, were the ones who stood the expense of the track guards, ambulances, timers, and various other personnel required at the track when it is in use. This can very well cost over a hundred dollars per day!

The modifications to the engine itself, as has been stated, an 11-1 compression ratio was used with alcohol fuel, using fuel injection, Scintilla magneto, special exhaust headers, with modification to the cam shafts, valves, and ports. In true racing car practice, a dry sump oil system was also used.

In order to avoid any misunderstanding we should make it clear, this engine used the stock heads, with push-rod operated valve mechanism, roller tappets, and modified push-rods. They are definitely not special overhead cam jobs built for racing only, as is the Studebaker unit described elsewhere in this issue of Hop Up.

As these engines must be reduced from their stock displacement of 331 cubic inches to 274 inches allowed by the contest board, we asked Herb how this was to be accomplished. Would the De Soto or Dodge blocks and heads be used due to their lighter weight and smaller displacement?

"No, one of these lighter assemblies would not be used. It was decided by Mr. W. E. Drinkard of the Chrysler Central Engineering Dept. it would be better, in the time allowed, to use the Chrysler block and hemispherical head assembly (although over a hundred pounds heavier than the 'Offy') as considerable experimental work had been done with these units as part of the K 310 project. Central Engineering, therefore, felt the quickest way to lower the displacement was to shorten the stroke to 2 31/32 inches. Actually you can't call the engines we will run on race day 'modified Chrysler power plants' because we are bringing them down in cubic displacement to where they are not representative of a stock Chrysler engine."

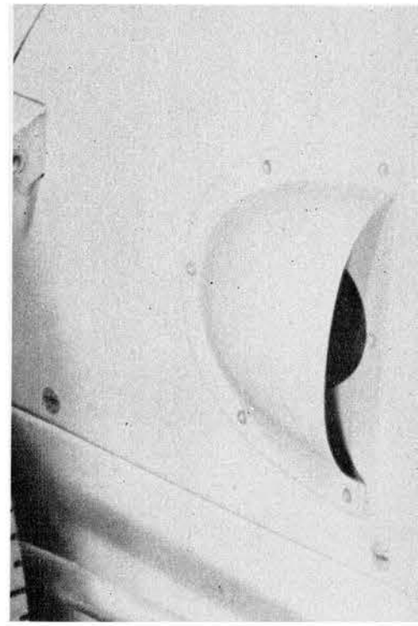
Our next question has been asked many times by almost everyone who talks to Herb.

Just how does the Chrysler stack up against the old reliable 'Offy' racing power plant?

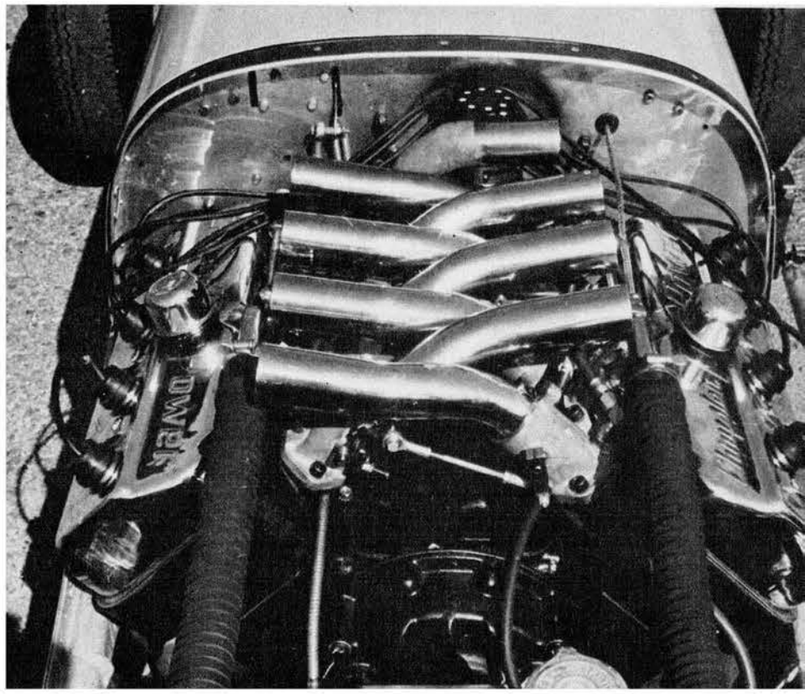
"Well," Herb grinned, "that's a hard question to answer until after May 30th. But we found it developed 440 foot pounds of torque, which is greater than the 'Offy' per cubic inch. Of course, being an eight cylinder, instead of a four, it runs much smoother, at high speed, which makes it easier on the chassis and driver."

One more question, Mr. Porter, and then we will let you go. You told us Mr. Walcott was having a new chassis built at Kurtis Kraft so that he could run two cars at the speedway; in order to get a more accurate picture of how the engines will perform, our question is: Why didn't he order one of the new Kurtis chassis that are being built for this year's race, instead of using last year's model?

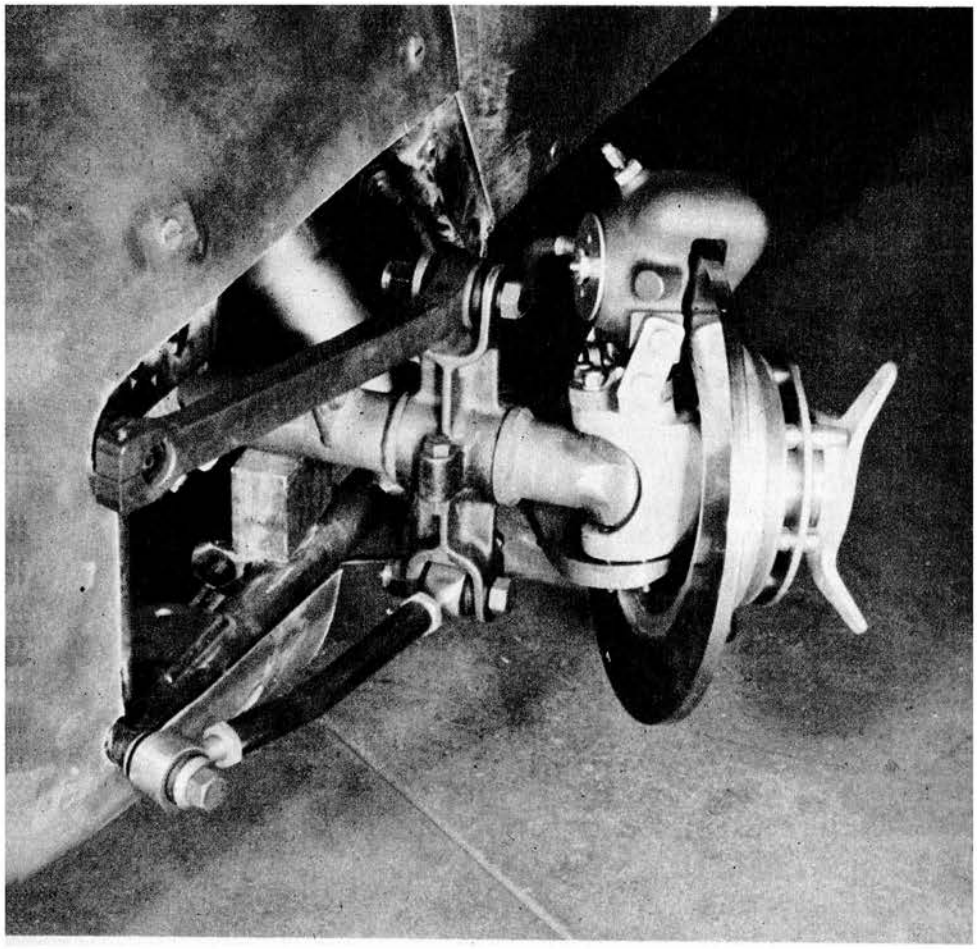
"We felt," Porter said, "that in the time allotted, we wouldn't be able to



Airscoop on the side of the body on the Chrysler engined car directs air to the differential. Due to terrifically high speeds of speedway cars, the rear end gears have been running hot, so all the 1953 Kurtis cars will have this feature built in to them.



Chrysler engine for the race cars as it was run in tests at the speedway. The intake tubes from injectors cross past each other to offset any chance of intakes drawing air away from each other.



really learn the character of the new chassis before race day. We already know what adjustments to make to the older chassis, such as torsion bar setting, shock adjustment, etc."

The staff of Hop Up magazine will surely be pulling for you and Mr. Walcott on race day, as well as Mr. Belanger and his Chrysler. We would like nothing better than to see a HOPPED UP production engine in the car inside the winner's circle.

Detail of LH suspension unit. Bracket between torsion bar arm & radius rod contains axle in plain metal bearing. The axle cannot be anchored solid to suspension units on both sides because it would have to twist when one wheel goes over a bump, hence the floating mount. Spot disc brake also shown in this shot. Spindle is a new type with a single, double row ball bearing race instead of the usual inner and outer bearings of a normal front end design.

A row of the new 500 B series Kurtis cars under construction for race this year. Unlike the car Vukovitch drove last year the front torsion bars are ahead of the axle. These are crossed transversely instead of running parallel to the frame as most other race cars however. Rear torsion bars are mounted transversely behind the rear axle. Nose and tail of new cars are made of fiberglass while the rest of the body paneling is aluminum. Engine in this car will be offset to left while the driver will sit on right side of the wide body. This body design is similar to the Cummins Diesel.