Performance Corner:

1956 "NASCAR" Dual Four-barrel Engine

By Len Sokol

The 1956 285-Horsepower engine was really the first serious attempt by Pontiac at a high-performance racing engine. It was developed at the end of the 1955 calendar year to compete in the Daytona Speed Weeks in February 1956 and on the NASCAR circuit, and later became available as a factory or dealer installed option on any 1956 Pontiac model except those with air conditioning. (Due to that fact, and the over-the-counter availability of replacement parts, it is very difficult to determine just how many full or partial engines were produced.) The '56 Pontiac race cars had plenty of go, but they also managed to have more than their fair share of mechanical problems and bad luck, having only moderate success throughout the '56 racing season. That fact, coupled with the poor street ability of the dual quads, led Pontiac to develop the now-famous Tri-power and experimental Fuel-Injection in 1957.

The blocks used for the '56 285-Horsepower engines were stamped with the letters "HY" on the right front engine pad, near the serial number, but the components involved in making up this engine did not require the use of a special block. In order to have a complete and parts-legal 285-hp engine, the following basic components are required:

1. 1956 block, 316.6 cu. in. (3.94" bore x 3.25" stroke.)
2. Cast iron intake manifold, bearing casting number D32960 on left side.
3. Two identical Rochester 4-barrel carbs (two #7009820 for hydramatic, or two #7010600 for standard), complete with individual chokes and idle systems (although these carbs are supposedly for the 2/4 bbl only, they can be run on a single 4-bbl manifold, which is a neat way to check out the carbs after rebuilding them.)
4. Linkage to operate both carbs simultaneously.
5. Heads which generate 10 to 1 compression, casting #522845 (valves in these heads have the same standard face diameters -- 1.78" & 1.5" -- but are 3/32" longer than the standard valves to account for the "lowering" of the combustion chamber toward the block in order to give the increased compression.)
6. Dual-point distributor, Delco #1110875, which uses no vacuum advance.
7. High performance cam and lifters (most any type will suffice.) The original racing cars used solid lifter cam setup, but later factory parts releases specified the hydraulic cam setup as replacements.
8. Special mounting brackets for coil and generator, and a larger diameter pulley on the generator to keep its RPM's down.
9. Right side rocker arm cover with no oil fill opening, since generator placement interferes with the oil cap position.
10. Valley cover, which is different from the stock '56, but which the parts book says is the same as a standard-carburetored '57.
11. Finally, the 2/4 bbl air cleaner, which everyone seems to have tossed in the trash back then in favor of 2 chrome pots (a '54-'56 Caddy 2/4-bbl air cleaner can be used with minor modifications.)

There are a few other odds and ends needed if you're looking to restore the engine to original, details of which can be found in the Pontiac Service Craftsman News dated February 1956. Lots of other equipment was also available from the factory at the time, such as heavy duty suspension, heavy duty rear-end gears, heavy duty radiator, wider 15" reinforced rims, etc., so that the car could be ordered in some degree of racing trim.

When it comes to locating '56 high performance equipment today, the most common item found seems to be the manifold. It is either encountered bare (the manifold, that is), or with carbs, often the wrong ones when it is found off the car. The heads, individual valves, distributor,

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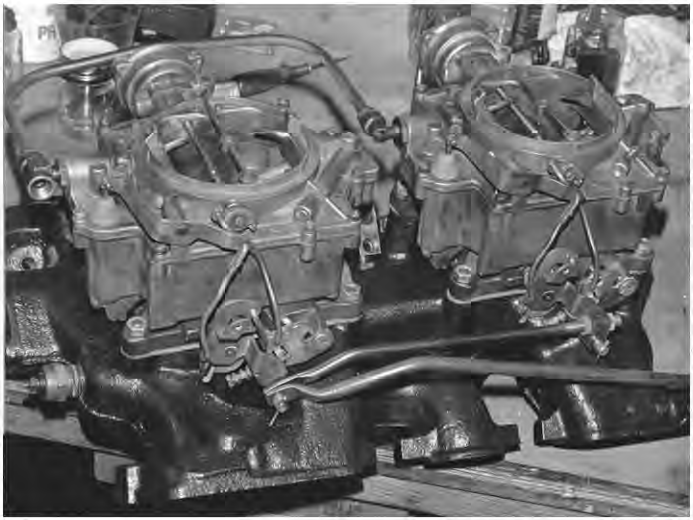

and right side rocker arm cover are among the toughest to find, since they would get left behind when someone would yank the carbs and manifold off a junked motor. If you're just interested in putting the carbs and manifold on a stock '56 engine, you'll be way over carbureted, but don't forget that the '55 thru '60 series of manifolds are interchangeable, so you can go right onto a higher compression 370 or 389 engine if you're not running 100% stock.

Although external markings may differ among '56 blocks with regard to engine identification and compression rating, the basic 316.6 cu. in. bare block is interchangeable throughout the line. Across the entire '56 line, three different compression ratios were offered (7.9, 8.9, and 10.0) by utilizing 2 different heads and 2 different pistons. The standard 8.9 C.R. was obtained by mating the standard head (casting #522010) with the standard flat top piston. The optional 7.9 C.R.. used the same 522010 head but with dished pistons. When the 285-hp engine was developed, the increase in compression to 10.0 was accomplished solely through the use of new head 522845 (casting #), which used a smaller volume combustion chamber. Pistons remained unchanged from the standard flat top. (Occasionaly an old reference might state "10-to-1 pistons," but this is incorrect - it was the "10-to-1 heads" which made the compression difference.)

The Pontiac Service Craftsman News mentioned above goes into more detail on the engine and provides specifications as well as carburetor syncronization instructions. If anyone would like a copy, I can provide one for the nominal cost of $1.00 (to cover reproduction and postage.)