

# PERFORMANCE HISTORY-PART 2

## OLDSMOBILE'S HOTTEST CAR AND ENGINE COMBINATIONS

By Bob Gerometta

The Oldsmobile Division of General Motors has always enjoyed a solid reputation for engineering excellence. As we've mentioned elsewhere in this volume of *Oldsmobile In Action*, it was GM's Lansing division that designed and marketed the first mass-produced automatic transmission back in 1940, the first modern overhead-valve engine in 1949, and more recently, the ahead-of-its-time, front-wheel-drive Toronado line of the Sixties.

The ancestors of Oldsmobile's present series of lightweight, small-block Rocket V8 engines were first introduced in 1964 and 1965. Known as well-designed powerplants that respond to minor

modifications by producing impressive amounts of horsepower, production Olds V8 engines displacing from 260 to 455 cubic inches were built along the same assembly line. Despite each engine having a different casting, the same basic block design means that a lot of the powerplants' hardware is easily interchangeable. For the performance enthusiasts, this type of corporate thinking is a real blessing.

Considering the kind of attention that other V8 engines seem to get, the small-block Olds may be the most overlooked high-performance engine around today. Recently, however, drag racers, road and rally racers, and

competitors on the nation's high banks have really started to recognize the late Rocket engine's performance potential. Out on the racetrack, they're demonstrating that the diesel-based small-block is equal to or better than competitive domestic engines with the same displacement. It's for these reasons that we've covered them in-depth in this issue.

Introduced as the new powerplant for the 4-4-2 sport model in 1964, the Olds small-block engine had an immediate impact on performance enthusiasts. Replacing the trusty but "tired" overhead-valve V8 engine first introduced in 1949 as a 303-incher, the 330-cubic-inch small-block Olds engine was the division's second-generation V8. The original 4-4-2 models produced an advertised 310 horsepower from 330 cubic inches of displacement. In 1965, the big-block 400-cubic-incher replaced the 330 engine as the 4-4-2 powerplant, a position it continued to occupy until 1972. The small-block was relegated to the Cutlass line, making the model very attractive, especially after the '67 introduction of superior valvetrain components.

Designed as a replacement for the 394-cubic-inch engine that had been around since '49, the big-block Rocket was introduced in 1965. Based on a common 3.975-inch stroke and offered in two configurations—400 and 425 cubic inches—the smaller of the two was rated at 345 horsepower at 4800 rpm and was used as one of the early killer 4-4-2 powerplants. The real top eliminator Olds motor combination back then was the 425-cubic-inch version, rated at 365 horsepower at 4800 rpm.

Oldsmobile's famous W-30 option was the hit of the model lineup in 1966. Only 54 of the special 4-4-2 models were built with the trick Ram Air option, which included a 308-degree-duration, high-lift camshaft, high-tension valve springs, a "blueprinted" (select-fit) engine assembly and a triple two-barrel induction system. The cars' outrageous over-the-road performances were also the product of cold air induction scoops located at front bumper height, strengthened frames and a trunk-mounted battery. While there weren't too many of those all-out trick machines produced by the factory, there

1962 215 V8 TURBO



When Olds elected, in 1962, to turn its totally tame F-85 V8 intermediate coupe into an on-demand tarmac terror, the Jetfire was the result. With the addition of a Garrett-AiResearch turbocharger to the division's 215-cubic-inch lightweight aluminum V8, the resulting Turbo-Rocket motor cranked out one-horsepower-per-cubic-inch!



Available in any F-85/Cutlass model (except a station wagon), a total of only 2999 4-4-2 options rolled out of the factory in 1964. The 4-4-2 designation indicated a four-barrel carb, a four-speed trans and rumbling dual exhausts. Fitted with already-available extra-duty hardware that included enforcement-oriented springs and shocks, a new rear stabilizer bar, a dual-snorkel air cleaner and low-profile 7.50x14 red-stripe sidewall tires, the first 4-4-2 option was actually listed as a "B09 Police Apprehender Pursuit" package.

were enough to successfully challenge Pontiac's GTO and Chevrolet's SS396 on the street and on the strip.

The following model year saw the demise of the exciting tri-power option in the 4-4-2, when a GM corporate edict banned multiple carburetors on all GM A-bodied cars. Each GM division got the word in plenty of time to make the necessary deletions, but only Oldsmobile

1964 330 V8



*Debuted in 1964, the short-stroke small-block hinted at its capabilities in 4-4-2 form. Packing a forged-steel crankshaft, revised cam timing and a high compression ratio, the little V8 made 310 horses from 330 cubic inches.*

1965 400 V8



*The long-stroke 400-incher replaced the 330 engine as the 4-4-2 powerplant in 1965 and remained the model's mainline motor until 1972. Rated at 345 horsepower at 4500 rpm, the 400-inch Rocket engine also provided 4-4-2 models (also available in '65 with an automatic trans) with the fill-in number "four" in its 4-4-2 nametags.*

followed the policy to the letter. Envious of the Lansing division's drag racing successes, some insiders claimed that the ban was nothing more than a move by the other GM divisions to strip Olds of some of its performance glory.

Regardless of the politics involved, the Olds W-30 big-block option grew to include a single four-barrel intake version that was rated at 350 horsepower at 5400 rpm. Some Olds enthusiasts felt that the combination made almost 50 horsepower more than the advertised factory figures claimed. But it's hard to argue with history.

In 1968, performance enthusiasts were quick to respond to the introduction of the 350-cubic-inch Ram Air engine. The new W-31 option, called the "Ram Rod 350" in factory literature, owes its strong reputation to more than just its cold air induction system. Included in this combination were almost-big-block-size, larger-diameter valves in the small-block cylinder heads and a well-designed port configuration that helped the engine produce exceptionally strong horsepower numbers right up to 6500 rpm. Drag racing participation by Oldsmobiles escalated behind this particular package, as a number of dealer-sponsored efforts made a mark for themselves on a national basis.

In an effort to produce more torque at lower rpm, the basic design of the big-block engine was radically changed in 1968 by increasing the engine's stroke. The result was a giant 455-cubic-inch powerplant that, according to GM corporate law, was much too big to fit within the intermediate A-body car line.

## SETTING THE PACE



1949



1960



1970



1972



1977

Over the years, Olds has helped to further their performance image by supplying the pace car for the world's premiere racing event—the Indy 500. Like the all-out racers competing at Indy, pace cars must be capable of high-level performance and handling. It was fitting that Wilbur Shaw paced the 1949 500 race behind the wheel of a Rocket V8 Olds convertible. Oldsmobile convertibles also did pace car duty at the 1960 and 1970 events, while a modified Hurst/Olds had the field-leading honors in 1972 and 1974. Veteran actor/racer James Garner wheeled a '77 Olds pace car at the Indy 500 in 1977.

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1966 400 V8

The outcome of this edict led to the production of two different engines based on the same basic block design. The 400-cubic-inch version had considerably smaller cylinder bores than the big 455-cubic-incher, with more torque yet lower rpm capabilities. By 1970, the big 455 engine became *the* 4-4-2 powerplant, with its performance potential considerably increased by special cylinder heads, a 328-degree-duration camshaft, and a special aluminum intake manifold for the single four-barrel Quadrajert carb.

Many Olds experts had long felt that the key to the success of the W-31 small-block Rocket program was the engine's high compression ratio. Tougher 1971 federal emission standards mandated the use of reduced ratios and signalled the end of the popular and powerful W-31 option.

The 350-cubic-inch small-block became the workhorse V8 of the Oldsmobile Division until the 1975 introduction of the 260 and 403 engines. Both of these motors use the same basic block design with different castings; resulting internal dimensions determine their final displacements. The small engine isn't exactly the answer to a performance enthusiast's prayers, but both the 350-cubic-inch diesel block and the 403 gasoline version have real performance possibilities, especially when equipped with optional, over-the-counter marine, export and high-performance pieces. The same can also be said for the division's current short-stroke small-block, the Rocket 307, which appeared in 1980.

While the late-model crop of Oldsmobile engines has yet to achieve the popularity of some of their sister division's powerplants, they do offer a great many possibilities for the performance enthusiast. At this point, all Olds engines are relatively inexpensive and wrecking-yard plentiful. There's also a considerable amount of aftermarket equipment for Rocket V8s available at very reasonable prices. Most of the newer Oldsmobile engines also have smaller exterior dimensions, making them ideal choices for engine swaps in street machines, street rods and in bracket racing applications.

In proper tune, both the big- and small-block Olds engines are capable of producing in excess of one-horsepower-per-cubic-inch—a commendable feat for almost any internal combustion production engine. With a healthy transfusion of some of the aftermarket parts and processes illustrated in this edition of *Oldsmobile In Action*, the legendary Rocket engine series is certain to continue making high-performance history.



*Available from the factory with a standard 350-horsepower 400-incher, the hot option for the 4-4-2 in 1966 actually came in the trunk. Specifying order code L-69 added three two-barrel carbs with fresh-air induction plumbing and a hotter hydraulic camshaft. Underrated at 360 horsepower, just 10 more than a four-barrel stocker, only 54 of these killer machines were sold in '66—and the option went for only \$264.54!*



*Stripped to its essentials, the features in this '67 4-4-2 were typical of those found in most years' Olds musclecoupes. Later in '67, the division began tagging their performance options with the legendary "W" prefix. Available under part No. 230309, the dealer-installed W-30 package included an outside air induction system, a high-lift, long-duration cam and valve spring kit, extra engine chrome and a special fan and shroud. The air scoop inlets were fitted between the headlights. To make room for the air ducts, the battery was moved to the trunk.*





1968 RAM ROD 350 V8



Released for production in January of 1968, the 325-horsepower, 350-cubic-inch small-block Ram Rod Cutlass option included extra-duty hardware throughout. Large valves and a high-lift, long-duration camshaft contributed to the mini-muscle motors' 325-horsepower output to make it a killer combination on street and strip.

1970 W-30 455 V8



1968 W-30 400 V8



For its fifth year in production, the 4-4-2 was upgraded from an option to a complete series within the F-85/Cutlass line. Seen here fitted to a 400-inch Rocket V8, the W-30 Force-Air induction plan also included a special camshaft, a six-bladed aluminum declutching fan and heat-treated valve springs and dampers.



Olds W-machines thrived in 1970. All performance options got a W-prefix and the 4-4-2 production models were available with a 365-horsepower 455 V8, coded W-32. The \$369 W-30 option consisted of a dual-scoop, Force-Air fiberglass hood, a special air cleaner and an alloy intake system that added up to five ponies more. Olds even offered a now-rare aluminum third-member option under code W-27. A total of 19,330 4-4-2 "Escape Machines" were assembled in 1970.



1969 W-30 400 V8



Continued at the top of the '69 line in 4-4-2 models, the W-30 option included the Force-Air induction system and a 360-horsepower, 400-cube Rocket V8. With the help of its ad agency, the division promoted a fictitious Dr. Oldsmobile character whose laboratory crew helped him brew the new W-machines. The good doctor lives today as the spirit of Oldsmobile high-performance.

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### THE HURST/OLDSMOBILES

Produced in limited quantities for nine of the past sixteen model years, the Hurst/Olds series is often regarded as the high-performance flagship line in the Oldsmobile factory fleet. The first H/O debuted in 1968 when George Hurst and Jack "Doc" Watson approached Oldsmobile's chief engineer, the late John Beltz. With the help of outside contractors and vendors, they proposed to produce a short run of specially modified Olds intermediates to be marketed as executive hot rods.

A particularly attractive part of this start-up scheme was a back-door shuffle around the GM edict that limited production A-body cars to a maximum of 400 cubic inches. By having new Cutlasses delivered to Lansing's Demmer Engineering works without their engines, it was acceptable for the sub-contractor to then install the division's killer 455. Well, not only did the early H/Os get the monster Rocket V8 for power, but each 380-horsepower H/O engine was also select-fit assembled for maximum performance.

The 515 Peruvian silver H/O machines that were built in '68 were low-profile rollers compared to their 1969 counterparts. The second-edition H/Os made loud graphic and mechanical statements, as did quite a few of the Hurst-built machines that followed. In fact, some H/Os were actually out there acting bold at times when all the other automakers avoided the subject of performance-oriented models. This fine Olds-built '79 is already regarded as a collectable.

Last year, the true flavor of the H/O family was again captured in Cars & Concepts' (Hurst's parent company) 15th Anniversary Editions. Based on the current G-special Olds Cutlass body, the Olds intermediate was already the nation's Number Two best seller in 1983—and in H/O form, they quickly became almost as rare as some of their decade-and-a-half-old ancestors. Of course, each and every Hurst/Olds ever built has been equipped with a Hurst shifter.

Our 1984 cover car's black-on-silver paint scheme is the direct opposite of last year's layout, but mechanically, both models remain closely related stablemates. Packing a powertrain that includes a 307-cubic-inch Rocket V8, a THM four-speed automatic trans and a Sixties-like 3.73:1 rearend gear, these late-model, rear-drive supercars are genuinely refined Olds hot rods. For today's performance enthusiast, a new Eighties V8 Hurst/Olds makes a right-fine set of street wheels.



1968 H/O 455 V8



1969 H/O



1979 H/O

### WHAT'S A W-MACHINE?

As do most questions, Oldsmobile's performance options traditionally begin with the letter "W." This practice started with the limited, high-output, W-30 tri-power performance option offered in 1966. It was then extended in '67, when the W-30 became the "outside air induction system" for the 4-4-2 and Cutlass Supreme. In '68, a W was also assigned to the small-block "Rockette," and its now-legendary W-31 designation continued through the years to signify a hot Olds option.

As a combination of engineering and marketing nomenclature, the W-prefix was assigned, in 1969, to the 360-horsepower, 400-cubic-inch, forced-air 4-4-2 Rocket V8 (W-30). It also appeared on the slightly tamer 400-cubic-inch, 350-horse package (W-32), and the famous 350-cubic-inch "junior supercar," the W-31. The Oldsmobile W has, at one time or another, also applied to a special force-air performance package for the Toronado (W-34), an aluminum rearend center-section with a special rear cover (W-27), dual hood stripes (W-42) for a dual-scooped fiberglass hood (W-25), a Hurst shifter-equipped center console (W-26), and a rear decklid spoiler designated W-35. With this long history of high-powered alpha-numeric plans, the only current question is, when will the really hot Ws be revived?



1970 RALLYE 350



*In a departure from the traditional Hurst/Olds plan, the '70 model had been proposed as more of a "low-buck supercar" than another "executive hot rod." America's insurance companies favored fewer cubes, so the idea had numerous unique angles. The scheme was, in fact, accepted by factory execs. But instead of being marketed as another H/O, Oldsmobile built and sold more than 3500 striking Sebring Yellow (the only color available) Rallye 350 models as a W-45 Cutlass option. For a total cost of less than \$3300, the standout one-year-only Rallye cars came with color-matched urethane-coated bumpers, a rear deck spoiler, blacked-out grille sections and yellow-trimmed Super Stock wheels.*



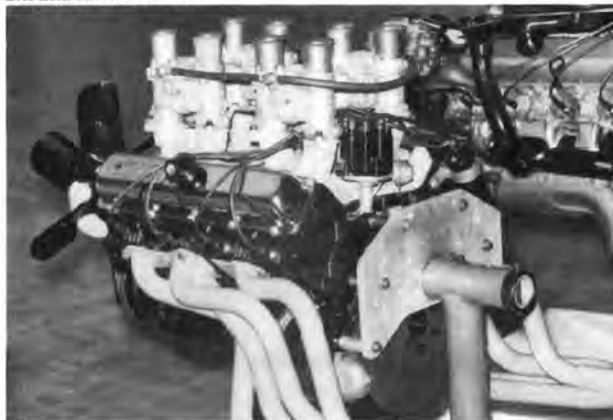
Standard equipment in the Rallye 350 was, quite naturally, a 310-horsepower, 350-cube small-block V8. Olds also offered the legendary select-fit W-31 Rocket motor as a 325-horsepower option, but reliable sources indicate that less than a dozen were actually built. All Rallye engines, as well as 4-4-2 models, used this unique vacuum-controlled air cleaner/induction assembly to duct in fresh air through the twin-nostril scooped hood to the short-stroke motor's four-barrel Q-jet carb.

1983-'84 307 V8



The very latest Rocket V8 displaces 307 cubic inches and can be found in its most potent form in the Eighties' incarnations of the Hurst/Oldsmobiles. This particular street-style 307 motor was warmed over by C.J. Batten's shop to make it perform like the larger 350s that it replaced. Responding to traditional tuning and tweaking techniques, the motor's stock 180-horsepower output now feels more like the motors in the older musclecars.

EXPERIMENTAL 389 V8



In efforts to develop their small-block production V8 to its maximum performance potential, Olds engineers brewed up this all-iron, multi-carbed Rocket. Displayed at the 1969 Detroit Auto Show, the 389-incher was topped off with a brace of exotic-looking two-throat Webers.

## A CALL FOR THE DOCTOR

However far-fetched, most myths have some basis in fact. The facts behind Lansing's legendary Dr. Oldsmobile actually arose from the lab. Well, not exactly from the laboratory itself, but rather as the result of that laboratory look.

As a character appearing in advertising and promotion literature during 1969 and 1970, the image of the white-smocked doctor was inspired by the Oldsmobile factory's own enthusiastic technicians thrashing about their engineering labs. They designed and built W-machines, the youth market read the ads, and Dr. Oldsmobile sold them.

In print, the good doctor came off as a cross between a kindly country doctor, the bandleader Sgt. Pepper, and some kind of mad Old World genius with an ultimate mountaintop garage. The guy just oozed divine mechanical knowledge. And he sure knew how to conjure up musclecars!

What began as an "inside" factory parody reached mythical proportions among America's Rocket fans. But contrary to the notions of certain enthusiasts' circles, no one individual served as a role model for the good doctor. His entire lab-staff and travelling-acceleration show were the products of fertile ad agency minds working during inspirational times. When the government and other policy writers shut the cage in '71, the guys retired underground—maybe they're out there in your neighborhood.



Out at the test track, another 1970 W-machine is unchained by the doctor and his lab staff. According to the ad copy, they are, from right to left: Elephant Engine Ernie for the big 455 V8, Esses Fernhill for his tireless testing and perfecting of the FE-2 underpinnings, Shifty Sidney for development of the smoothest shifters this side of an automatic, the good Dr. Oldsmobile himself, Wind Tunnel Waldo for scientifically placing those whopper scoops where they do some good, and Hy Spy for keeping an ear to the ground and an eye at the knothole to keep you a jump and a cube or two ahead of the competition.