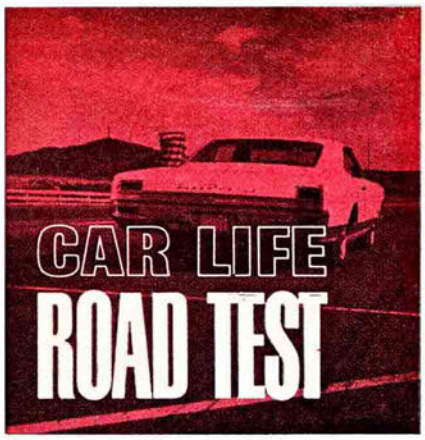

Oldsmobile Delta 88

Young Delta's Just A Chip Off The Olds Family Block

IF ALL General Motors cars reflected the characteristics of high level corporate management, they might all be the Oldsmobile Dynamic Delta 88 Holiday Coupe. Of course, GM cars are actually produced by five different divisions and most models differ to the degree that divisional executives differ from the higher-up corporate counterparts. No divisional manager fit the GM mold more ideally than did Jack F. Wolfram, who retired from that post about the time the 1965 Oldsmobiles went into production. This year's Olds, then, was his responsibility well past the time of the final Go-No-Go decision.

Wolfram hewed the corporate edict on performance with a literal vehemence that at times approached the absurd. Despite his engineering background, this tough general manager could blandly expound on the "sports car qualities" of the Starfire or the inherent high performance of any standard, garden variety sedan bearing the Olds medallion. His question, "Why should we sell aluminum or magnesium wheels when we've got wheel covers that look just like them?" has become something of a classic among the knowledgeable, who detect in it the epitome of the view through GM-colored glasses.

Though the general manager's suite has since been relinquished to former chief engineer Harold N. Metzel, the Dynamic Delta 88 Holiday Coupe still exudes the Wolfram-on-wheels aura. (A Metzelmobile might have, among other things, front-wheel drive.) Its resemblance to corporate GM lies in the facade of things which are called what they aren't, such as bench seats that supposedly act like buckets or wheel covers masquerading as turbine spools; in a little alliteration chosen by its wordsmiths as description; and in ▶

HOLIDAY HARDTOP coupe is "sportingest" model in the Dynamic/Delta line-up.

Delta 88

conservative tailoring so commonplace as to become distinctive uniform.

As monuments go, the DD88HC, or Delta for short, has certain awe-inspiring qualities. The engine is one of these. It's the newest 15-year-old engine in the industry (see "Third Stage Rocket Fires Up," CL Oct. '64). At 425 cu. in., it's a big engine but GM sees nothing wrong with big engines, so long as they're kept on the public roadways. In standard form, however, it is choked off to 310 bhp with a 2-barrel Rochester carburetor although versions up to 370 bhp can be special-ordered. The latter comes only with the 3.5-speed Turbo Hydra-Matic automatic transmission, which the test Delta had, but with 3.23:1 rear gears. There is also an "economy" version of 300 bhp, achieved by lowering compression to 9.0:1, which drives 2.73:1 axle gears through the automatic.

The engine replaces the long-lived 394-cu. in. Rocket, which started life in 1949 as the original high compression overhead valve V-8 that ordained the present abundance in V-8 engine design. At that time, it was only 303 cu. in. and produced 135 bhp. Through successive attacks with boring bar and crankshaft grinder, and sundry other refinements, it grew to 394-cu. in. displacement. In scrapping that block, Oldsmobile engineers designed a new engine which would incorporate the most modern concepts of engine technology as well as fit existing toolwork and maching equipment. Since the same had been done more than a year earlier for the new 330-cu. in. V-8 for the F-85 series, that original tooling was really returning every possible cent on the original investment.

Some 30 lb. less weight is deposited over the front wheels with this new engine than with a 394, despite the absence of thinwall methods in casting the gray iron block and heads. Total weight is 618 lb. without flywheel but with all accessories and 2-barrel carburetor. Another 30 lb. or so may be saved when production facilities become available for hot-box coring and thinwall techniques that then can be used; the present castings were actually designed to eventually take advantage of that method. Actual weight savings at the moment come from the use of aluminum parts and from swapping integrally cast hous-

ings: A sheet metal and aluminum cover replaces the former flywheel housing, which also reduces block length at the rear, and the timing gear case has given way to a cast-in pocket at the front which is covered by a flat steel plate.

A one-piece cast-iron intake manifold serves as a strengthening cover plate for the camshaft chamber. While this manifold has adequately provided the necessary breathing passages for the 2-in. intake valves, the brace of 1.69-in. carburetor barrels are actually a strangler's grip on the windpipes. In testing, this engine would gasp to 4400 rpm, at which point the transmission would change ratios with w.o.t. Beyond that, lung collapse was inevitable; it was heartless and futile to force it along in lower gears once the gagging started. Removing the adenoidal restrictions with a full quartet of venturis is obviously necessary before the third stage Rocket can hope to stay on the track team. And without some care, it was feared that the pulsation inside that 425-cu. in. chest cavity might inhale the inner organs of the carburetor.

It is no fault of the valve train that this engine has breathing trouble. This layout is such that even the 4-barrel 370-bhp version can't turn fast enough to foul it, certainly not at the 4800 rpm peak of rated power. The secret here is in excellent lifters and an unusual rocker arm design. Olds' hydraulic lifters are designed with a pump-up speed of 5800 rpm (even for the loafing 310-bhp engine) with a measured bleed-down rate which prevents valve/piston collision. They pump up quickly until the engine runs out of revs, all the while avoiding the pitfalls of valve float.

For rocker arms, Olds engineers came up with an excellent compromise between the ball-pivot type and the older rocker and shaft method. It's called semi-cylindrical and has a saddle-stamped rocker arm sliding under a stud-mounted, rod-like crosspiece. Oil is fed up through the hollow pushrods to bathe the rocker arm with slippery. Stamped keeper yokes to hold the assembly together bridge between each pair of valves. It is a lightweight, positive arrangement which has the further virtue of avoiding the problems of galling and scuffing sometimes encountered with the ball-pivot set-up. Valve lift is 0.431 in., actuated by a camshaft with 278°/282° intake/exhaust duration.

Inside the combustion chamber, cup-top aluminum alloy pistons vary the compression ratio. Standard is 10.25:1, but the "regular fuel" engine is rated at 9.0:1 and the 370-bhp option has 10.5:1. Chamber shape is modified wedge for high turbulence, with spark plugs jutting in near the vortex of the air/fuel charge for greatest combustion efficiency.

Lengthened connecting rods (to 7 in.) of forged steel require the deck height to be raised 1.3 in. over that of the 330 block. Rods ride on 0.825-in. wide steel-backed aluminum bearings. Five sturdy webs carry the main bearings, of the same material and 3 in. in diameter, to insure a lower end strong enough for the big bore pounding. Mains are somewhat larger than in the 394, except for the rear which no longer takes the thrust (a chore now assigned to the center main).

The engine is cooled by a new cross-flow radiator of 18-qt. capacity (with air conditioner). Tubes and fins cross horizontally with tanks located at each side, an arrangement said to provide greater cooling efficiency, but suspected of serving as a boon to stylists. For the rest, the engine is quite straightforward and depends on a high degree of engineering achievement to keep it above the common herd. In common with the 330, its exterior appearance displays the cleanness and service accessibility of a Six.

Switching from the previously used Hydra-Matic to the Turbo Hydra-Matic, equipped as it is with three-element torque converter, seems to put a little more snap into the Delta. In addition to the two geared reductions and direct drive provided by this transmission, there is the in-between area where the torque converter is put to use through variable "switch-blade" stators (hence, the CL label as "3.5-speed transmission"). At cruise, with an easy throttle pedal, the stator blades ride at 32° and a stall ratio of 1.8. But a sudden mash on the organ-type bass treadle pedal flips a solenoid switch which yanks the blades open to 51°, thereby stepping up torque multiplication to 2.2:1. With closed throttle, as at idle, the blades also are open to cut down tendencies for the car to creep. It makes no difference, however, whether acceleration is from a standstill or in the passing speed ranges, the increased torque multiplication means there's an intermediate gear (in effect) so that the speed up is both positive and rapid.

This transmission uses three multiple disc clutches, two sprag assemblies and a pair of friction bands to get the engine torque to the planetary gear sets. Shifting up automatically is somewhat smoother than has been the previous case because of vacuum control. An aneroid modulator assembly operates the hydraulic shift valve, which also means that shifting points are automatically corrected as the air thins out when driving through the mountains.

The column-mounted shift control can be used to keep this transmission in any range on the now-standardized quadrant (PRNDSL, with the S meaning Super). In the lower gears, it stays there until the aforementioned inhalation of carburetor innards happens. But it also means that the car has what amounts to nine gears: 5.46, 4.46, and 2.48:1 in Low; 3.26, 2.66, and 1.48:1 for Super; and 2.20, 1.80, and 1.00:1 in Drive. Such an arrangement is, to say the least, a far cry from early post-war lurch-and-shift automatics.

To put this volatile and variable propellant to work, Rocket engineers have refined the Olds-initiated perimeter frame and related body shell for 1965. Chief change has been reworked front rails, which now have a channel steel K member bracing them from underneath the engine. This change was in part to accommodate the new-to-GM drag-strut front suspension, which locates the stamped lower arm by means of a rubber-bushed rod from the front of the frame rail. The design effects an extremely wide-based A arm with the added benefit of better absorption of harshness before it reaches the frame. ▶

DASH FEATURES three big dial faces in and between padded hoods. Armrest between seatbacks folds down to give "bucket" seats.

SCOTT MALCOLM PHOTOS

Delta 88

The frame change was said by Oldsmobile engineers to increase front end rigidity, but in the test Delta, at least, it might have been more thorough. Far from removing minor road harshness, the design seemed to transmit it to the front fender areas; racking and twisting experienced on less than perfect roadways in turn generated some crackling noises in the windshield header and drip rail part of the body. A lack of knowledge of metal fatigue at a time like this can be distressing, indeed.

Some realignment of the rear suspension members has also been made necessary by the new frame, but nothing has been basically altered in the geometry. The primary benefit as far as customers are concerned has been a 0.75-in. reduction in the height of the driveshaft tunnel. There has been another benefit of sorts, though not particularly obvious, which is a 2-in. wider rear track (front track also has been widened 0.3 in.). This increases, at least theoretically, the cornering power of the rear end.

To balance off a stickier rear end in a powerfully understeering car, suspension engineers then reduced the size of the front anti-roll bar by 0.062 in. Spring rates at the front wheel remain at 89 lb./in., while stiffer rear coils (130 lb./in.) are used than was the case last year. The end result of all of this jiggery-pokery is a car which handles about the same as before.

Oldsmobile has too much invested in owner loyalties to jeopardize in any way the riding qualities of its cars. So they use a little more rubber of a little softer variety and a little more sound padding, and the less said about it all from the enthusiast point of view the better. Previously noted observations (CL, May 1964) about isolation booths on wheels, however, suffer somewhat despite the quest for quiet. There now is actually less isolation from distractions of the roadways since the frame lets the occupants know about almost every imperfection.

The new bodies are wider by 2.6 in. and most of the increase does benefit the passengers. Curved side windows also help to increase the air space at shoulder blade height. Inside appointments are calculated to carry the passengers in the veritable lap of luxury, as in the Oldsmobile tradition. Much could be criticized, on the other hand, in the matter of taste; nevertheless, such things instill what partisan spirit remains among Oldsmobile owners, so perhaps they had best be ignored.

What is one of the more interesting dashboard treatments in a few years has been created by Olds stylists. They have taken the almost full-width padded upper lip and plunged it down to cradle the steering column in a deep V. Inside that cleavage, like a diamond pendant, nestles a large round speedometer dial which proved to be almost dead accurate below 75 mph—a virtue no doubt of the front wheel hook-up for the speedometer drive cable. Plastered to each burnished aluminum lapel of this neckline were similar large dials, a clock on the right and a fuel gauge to the left (which rounded out its alloted space with flashing lights for brake, cold, hot, and other ills).

Seating in the Delta was on pleated vinyl benches. Despite a folding center armrest, they remained benches even in appearance, company publicity to the contrary. Ignoring that, it was plush, comfortable seating for either two or three, as regulated by armrest position. With the 4-way electric adjustment, none of the test drivers had a complaint about driving position. The tilting steering wheel was the only thing missing for full adjustability.

The electric window buttons had a somewhat novel arrangement, being mounted in a backwards order. The rear buttons operated front window and vice versa. But this, while rather annoying at first acquaintance, turned out to be acceptable with more familiarity and the business of finding the wrong window going down became less commonplace.

In common with all the other GM slopeback body designs, the Delta had its problems. Uncertain sealing between the channel-less side windows is a price which must be paid for pillarless styling. More serious is the curtailment of vision towards the rear quarters. Outside rearview mirrors are mandatory, and on both sides of the car, as the price one must pay for such fashionable styling. To Oldsmobile's credit, however, this combination of pillarless side glass and slopeback failed to produce the window bulging at higher speeds which another version of this GM body exhibited.

One significant step forward which has been taken by Olds engineers has been to install larger brakes throughout the larger car series. Swept area is increased from the former 310 sq. in. by the addition of 0.25-in. wider shoes at the front (to 2.75 in.). In addition, the 98 series gets wider shoes in the rear. Brake drums are still 11 in. in diameter, of cast iron with steel shells, and line pressure resulting at a given pedal force has slightly increased. During the CL brake tests, they proved to be above average though there was a tendency for the rears to lock solid during the first few stops. Once burnished-in, however, they hauled the Delta to a halt at a 24 ft./sec./sec. rate

CAVERNOUS TRUNK has huge capacity, but spare location requires tire-changer to get into trunk to get out jack.

TWO-BARREL carburetor on standard version of 425-cu. in. engine chokes off horsepower, gives reasonable mileage.

at least once before they began to fade.

Buyers who take their driving seriously, and who have occasion to use their brakes more often, might investigate the metallic brake option which Olds lists. In fact, that type of driver would be far happier to order as many of the trailer-hauling options as he can (with or without the trailer hitch, depending on preference) to firm up the ride and handling of the car. The fact that many police departments find Oldsmobiles—albeit properly optioned ones—satisfactory for pursuit work indicates that the car can be upgraded in overall performance if the effort is made. Whether a friendly, local dealer is willing to make the ordering attempt is, of course, something else.

Having said all that, it is necessary to point out that the Oldsmobile also has a good deal of merit. The Delta was a pleasant enough car for those whose main concern is for a character and breeding not unlike that of the third-generation rich: Proper in its place, accepted in the Right Places, and expected to conform. If the veneer is beginning to wear a bit thin, that's sad, of course. Certainly it has had the benefit of all the proper upbringing and the tutorage of the finest headmasters. Its family stock has been known to raise a bit of the Old Ned in earlier days; shows they were human, you know. Young Delta's just a chip off the old block, and a handsome lad, too. Good breeding always shows, they say.

And it shows in the sales figures, too. With so many people wanting just such a car, is there any reason to build anything else? ■

CAR LIFE ROAD TEST

1965 OLDSMOBILE
Dynamic Delta 88 Holiday

SPECIFICATIONS

List price	$3438
Price, as tested	4749
Curb weight, lb	4150
Test weight	4480
distribution, %	55/45
Tire size	8.55-14
Tire capacity, lb. @ 24 psi	5280
Brake swept area	328
Engine type	V-8, ohv
Bore & stroke	4.125 x 3.975
Displacement, cu. in	425
Compression ratio	10.25
Carburetion	1 x 2
Bhp @ rpm	310 @ 4400
equivalent mph	115
Torque, lb-ft	450 @ 2400
equivalent mph	63

DIMENSIONS

Wheelbase, in.	123
Tread, f & r	62.5/63.0
Overall length, in.	216.9
width	80.0
height	55.5
equivalent vol., cu. ft	557.3
Frontal area, sq. ft.	24.6
Ground clearance, in	5.8
Steering ratio, o/a	21.74
turns, lock to lock	3.5
turning circle, ft.	43.6
Hip room, front	63.7
Hip room, rear	62.9
Pedal to seat back, max.	44.0
Floor to ground	13.0
Luggage vol., cu. ft	19.4
Fuel tank capacity, gal	25.0

EXTRA-COST OPTIONS

Auto. trans., power brakes, power steering, power seats, power windows, remote trunk rel., air cond., 8.55-14 wsw, accessory group 2, tinted windshield.

GEAR RATIOS

3rd (1.00) overall	3.08
3rd (1.00 x 2.20)	6.78
2nd (1.48)	4.56
1st (2.48)	7.64
1st (2.48 x 2.20)	16.8

CALCULATED DATA

Lb./bhp (test wt.)	14.4
Cu. ft./ton mile	126
Mph/1000 rpm	26.1
Engine revs/mile	2300
Piston travel, ft./mile	1520
Car Life wear index	35.0

SPEEDOMETER ERROR

30 mph, actual	30.1
60 mph	60.0
90 mph	88.4

FUEL CONSUMPTION

Normal range, mpg	13-16

PERFORMANCE

Top speed (4200), mph	110
Shifts, @ mph (auto.)	
3rd ( )	
2nd (4400)	78
1st (4000)	42
Total drag at 60 mph, lb	160

ACCELERATION

0-30 mph, sec	4.3
0-40	5.9
0-50	7.8
0-60	9.8
0-70	12.6
0-80	16.8
0-100	36.3
Standing ¼ mile, sec	17.1
speed at end, mph	82