FIRST ROAD TEST: MERCEDES 250 COUPE

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Datsun 240Z: 150-bhp 2.4-liter six for $3500

DATSUN 240Z: The newest GT

And a bargain too. Who else offers a GT coupe with 2.4-liter sohc 6-cyl engine and all-independent suspension for $3500?

BY RON WAKEFIELD, Engineering Editor

LOOK AT THE specifications on pages 12-15. In them you'll find quite a few nice, compact imported GT coupes. You'll also find among them high prices (when you shop), small engines, unsophisticated chassis or various combinations thereof. Going alphabetically we find such as the Alfa Romeo 1750 GTV (2+2, 1779 cc, 132 bhp, 5-speed, live axle rear suspension, $4500); Fiat 124 Sports Coupe (2+2, 1438 cc, 96 bhp, 4-speed, live axle, $3000); Jaguar E-type Coupe (2 seats, 4235 cc, 246 bhp, 4-speed, independent rear, $5800); Mercedes-Benz 280SL Coupe (2 seats, 2778 cc, 180 bhp, 4-speed, independent rear, $7000); MGB GT (2+2, 1798 cc, 92 bhp, 4-speed, live axle, $3300); Opel GT (2 seats, 1897 cc, 102 bhp, 4-speed, live axle, $3500); Porsche 911T (2+2, 2195 cc, 142 bhp, 4-speed, independent rear, $6000), Triumph GT6+ (2 seats, 1998 cc, 95 bhp, 4-speed, independent rear, $3000); the Volvo 1808E (2 seats, 1986 cc, 130 bhp, 4-speed + OD, live axle, $4500). All good cars. But do you see any bargains there? Maybe the Triumph —maybe—but all the rest seem high-priced for what you're getting, *by American standards*. Compare, for instance, America's one sports car, the Corvette: 2 seats, 5735 cc, 300 bhp, 4-speed, independent rear and a gob of gadgets, $5100. A bargain, if you like a big, flashy car. And it seems that a good many Americans do.

For years I've said that it is possible to build a small GT with a generous-size engine, fully independent suspension, disc brakes, 4- or 5-speed gearbox and decent trim and fittings for well under $4000. All it would take, I reasoned, was a manufacturer with some appropriate parts on his shelves and the vision to tool up for enough production to pare the unit cost. An American company could do it; using one of the 6-cyl engines or even a "small" V-8 from their smaller sedans and the front suspension from same, they could build an independent rear suspension and an exclusive body with simple equipment and meet that sort of price target if the car were produced in quantities of, say, 50,000 per year. It's more difficult to envision a European maker doing it: they always think in terms of small-displacement engines, which immediately puts a damper on U.S. sales, and their GT cars tend to be premium items even in their home markets. The British have larger-displacement engines but lack the vision to invest capital in such a project. It was left to the Japanese, and somehow we knew a long time ago that they would do it. They did.

The car is the Datsun 240Z. The parts on the shelves were the 510 sedan engine and the 1800 Laurel (a sedan not imported to the U.S.) front suspension. From there the 240Z is an entirely new car, unique from other Datsuns. It's going to sell for about $3500 in the U.S. in (Datsun U.S.A. hopes) quantities of 1600 per month once production is in full swing.

Before anyone jumps to the conclusion that the 240Z's engine is a 1595-cc 4-cyl, let us hasten to add that it's actually a 2393-cc, 6-cyl unit derived from the 510 engine's reciprocating parts.

Body and Chassis

THE 240Z's body and chassis platform is a conventional unitized, all-steel structure whose rigidity is derived almost totally from the welded-together unit from the firewall back. Seating is for two only: the area behind the seats is a flat floor covering for luggage and under that is the spare tire and the fuel tank.

The wheelbase is 90.7 in., just 0.3 in. shorter than the MGB and 1.4 greater than that of the Porsche 911, and with an overall length of 162.8 in., the 240Z is 9.4 in. longer than the MGB and 1.1 in. shorter than the 2+2 911. So it is not particularly efficient in terms of fore-aft seating room relative to its overall length. Considerable wasted space ahead of the radiator for the sake of styling, and the long engine, account for this. It is 4.1 in. wider than the MG and 0.7 wider than the Porsche, and at 50.6 in. high is 0.8 in. taller than the MG and 1.4 in. lower than the Porsche. The track dimensions, 53.3 in. front and 53.0 rear, are much closer to those of the Porsche than the MG but it appears that there is plenty of room in the wheel wells for wheels with greater offset, which would increase the track further and improve the car's appearance.

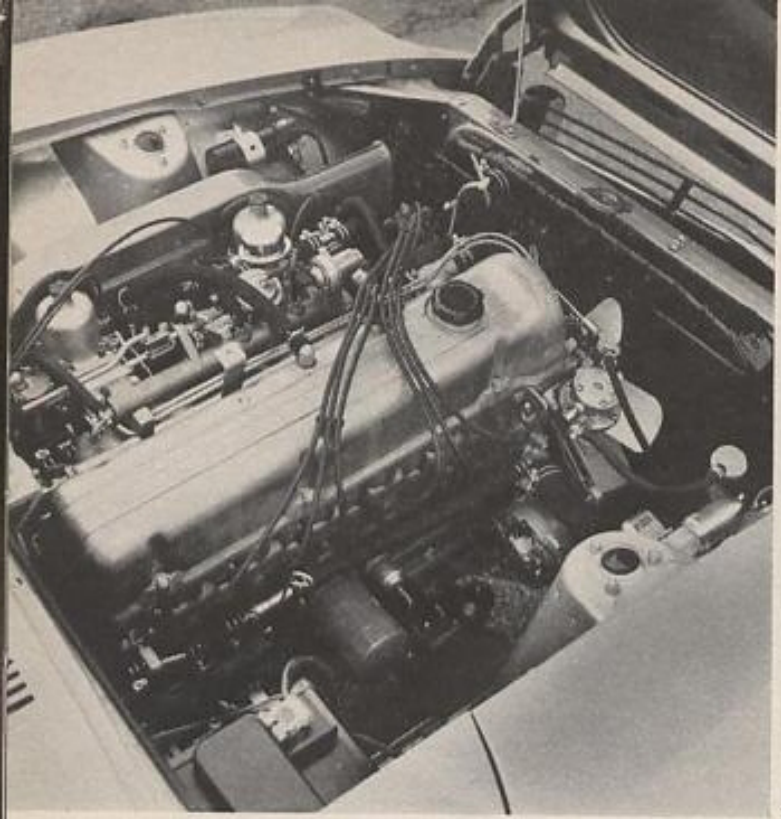
Body appointments are on a par with other GTs in the same price class but is more up-to-date in appearance than most of them. True to current fashion there are no door ventwings—we hope that Datsun has solved the potential draft problem in the coupe better than they did in the 510—and the rear quarter windows are fixed. Flow-through exits are located under the rear window in the lift-up tailgate, the fresh air entering through flush cowl intakes and outlets in the center and at both ends of the molded and padded vinyl dash panel. Ventilation, even through the end vents, can be assisted by a 3-speed blower and there are the usual horizontal-moving levers for directing air to feet or windshield and controlling temperature.

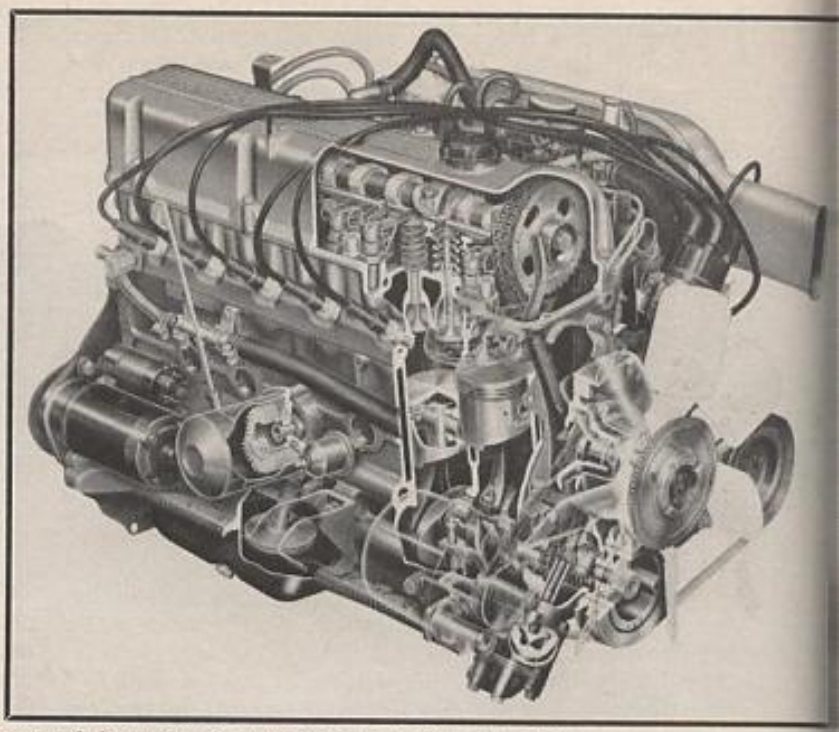
Some of the standard equipment items are impressive. For instance, an AM radio with electrically powered antenna is standard (stereo, with speakers in the rear quarters, is optional) and a real wood steering wheel sets off an otherwise stark (if modern) interior. Carpeting is standard, as is an electrically heated rear window. Round, white-on-black instruments are set into molded hoods in the dash and controls are distributed among the dash, central console and a steering-column stalk in such a way that they can be operated without looking at them. The standard seats, which have the head restraints built in as extensions of their backs, have backs adjustable about 10 degrees but a 59-degree range is optional.

The front suspension parts are taken from the Datsun 1800 sedan, a stretched and more luxurious car based on the 510. A lateral subframe, mounted to the main structure with rubber isolation, carries pivots for the stamped lower suspension arms which, with the long MacPherson struts that angle up to their towers atop the wheel wells, determine the front wheels' camber characteristics. Rubber-mounted struts go forward from the underbody to the outboard ends of the lower arms, thereby taking braking loads and allowing fore-aft compliance as the front wheels hit bumps or dips. The coil springs are located near the top of the MacPherson struts and the shock absorbers at the bottom; a link-type anti-roll bar connected to the lower arms is standard.

Rear suspension is unique to the 240Z and is a departure from any previous Datsun practice. It is reminiscent of the Lotus Elan's independent rear suspension, though made from less expensive and weight-saving pieces, so we have taken the liberty of labeling it Chapman strut. Location of the wheels is the same as at the front: a very wide-based lower A-arm does the job of the front's lateral arm and compliance strut, and vertical struts (again including the coil spring and telescopic shock) angle upward to towers that protrude into the luggage area. Two constant-velocity universal joints and a ball-bearing spline are necessary in each axle halfshaft to accommodate the wheel movement. Mounting of the components to the underbody is most interesting: at the front a conventional-looking stamped crossmember bridging the driveshaft tunnel provides the front pivot for the A-arms and supports the differential nose. At its rear the differential is hung from a rather fragile-looking piece of sheet steel that goes sideways to rubber isolation mounts which fix it to the structure. Then, to the bottom side of a frame crossmember behind the differential, bolts another flat sheet steel brace that hangs straight down to form the rear pivot points for the A-arms. The whole support arrangement has a flimsy look about it but I'm willing to be persuaded that it really does the job—it must be fabulously inexpensive to produce!

Girling-type disc brakes are used at the front: solid discs of 10.7-in. diameter with single calipers. These discs are of smaller diameter than those of the 2000 sports car (10.7 ≡→





Tuneups and oil filter changes will be easy with all that space around the engine. Cutaway shows the innards of the new 2.4-liter six, which is based on the reciprocating parts of the sturdy 1.6-liter 4-cyl engine used in the 510 series.

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in., still a good size for a car in this weight range) but have larger pads so that the swept area is the same. The 240Z's rear drum brakes of 9.0 in. inner diameter and with linings 1.58 in. wide, are taken directly from the 2000. Front and rear brakes are self adjusting and are assisted by a vacuum booster.

The standard wheels aren't high-styled, being simply 14-in. steel disc with 4½-in.-wide rims. But 5½-in. rims are optional for a small extra charge, and all the styled wheels currently available for the 2000—American Racing, Empi, Minilite, Appliance Plating—in 5- to 6-in. rim widths will fit, which leaves the buyer with an easy route to some individuality with his 240Z.

Engine

NISSAN, DATSUN's parent company, has an almost staggering variety of unrelated engines in production, partly because of a merger some time ago with the Prince company and partly because some of its own more out-of-date engines are still in production alongside the new ones. The 240Z's 150-bhp, 6-cyl engine bears no relation to an existing 2-liter six in their Gloria Six sedan, nor to the 2.3-liter six in the Datsun 2300 sedan, nor to the 2-liter four in the 2000 sports car—and these are all unrelated inline single-overhead-cam designs! What it does amount to is a 6-cyl version of the 1.6-liter 4-cyl unit in the familiar Datsun 510, a relatively new and modern design that's bound to replace some of the older ones at Nissan.

The new engine shares the 510's bore, stroke, pistons, rods,

Hatches at rear corners of hood, similar to those on Toyota 2000 GT, uncover windshield washer reservoir (here, the left one) and the battery on the right side.

A nice touch borrowed from Porsche (below) is this rubber flap that flops out when the gasoline filler door is opened.

Instrumentation is complete, well arranged and readable except for distance to the small instruments from driver's eye. Rear suspension intrudes into rear cargo area but capacity is still generous; spare tire lives in well beneath floor.

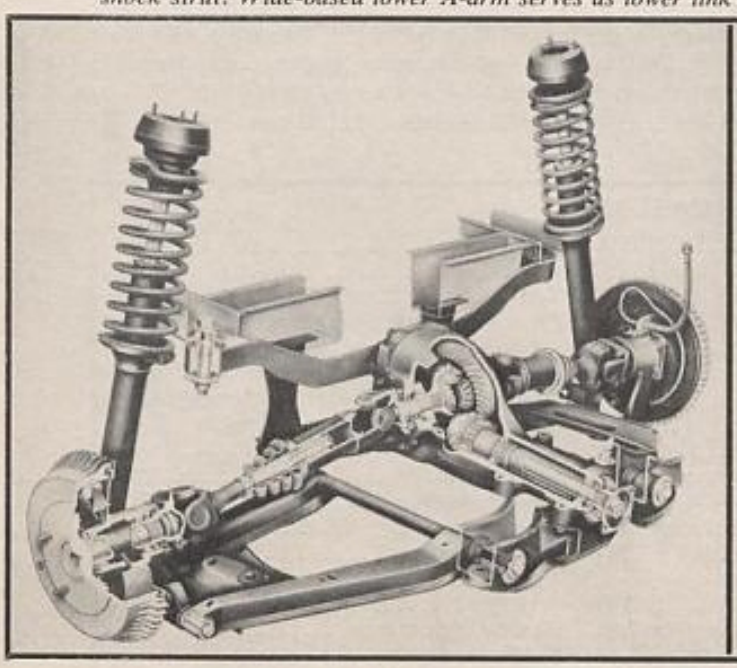
rod bearings, valves, valve gear and general design characteristics and is a conventional inline, sohc design with cast iron block, aluminum head, seven main bearings and a single-stage duplex chain cam drive.

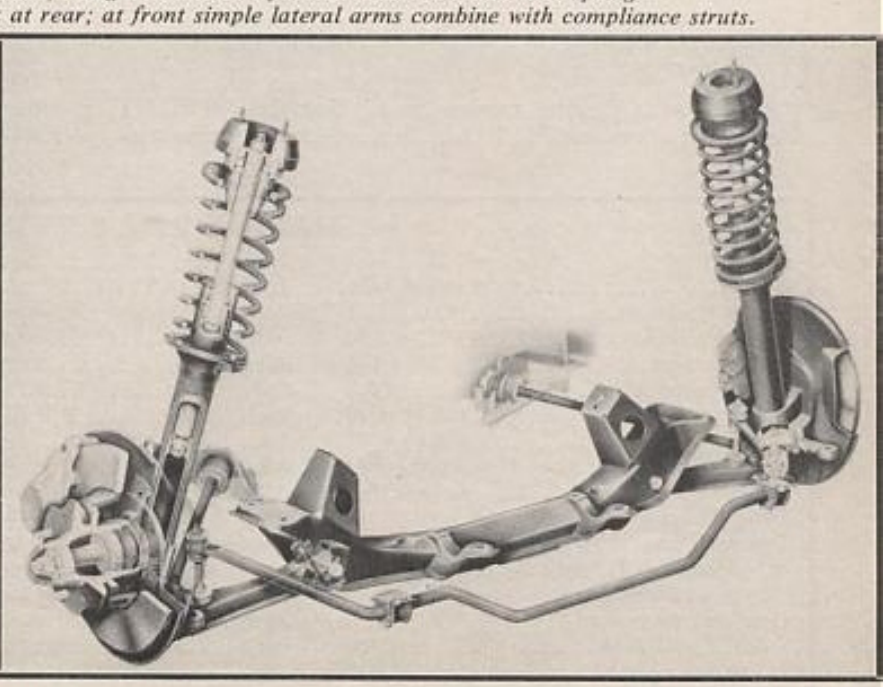
The 510 as sold in the U.S. has only a single Hitachi carburetor, relatively mild valve timing and 1.50-in. intake valves; it produces an advertised 96 bhp at 5600 rpm. For the home market there is a twin-carburetor (SU carbs built by Hitachi under license) SSS version with more radical valve timing and larger (1.65 in.) intake valves, producing 109 bhp @ 6000 rpm. The 240Z engine is closer to the SSS version, sharing its valves (the exhausts are the same for both 4-cyl and the 240Z at 1.30 in.), valve timing (16-52-54-14, 248°) and 9.0:1 compression ratio. Carburetors for the 240Z, however, are Hitachi-SU model HJG 46W (46-mm throat diameter) whereas the 510 SSS has 38-mm versions of the same carburetor. Exhaust emission control is accomplished by exhaust manifold air injection, which makes us wonder if the 510 SSS might now meet the emission regulations and be eligible for Federal certification and sale in the U.S.

Canted about 5 degrees to the right, the 240Z's engine looks much like a Mercedes 6-cyl unit except for its SU carburetors. It is well silenced—a rapping exhaust note was not considered desirable by Nissan—by a single exhaust system with muffler and resonator. The rev limit is 7000 rpm with a yellow band beginning at 6500 rpm on the tachometer, and viscous-drive fan clutch is standard to keep fan noise down at high revs.

A final note on the engine: it's surrounded by lots of wide-open spaces, which may not be so great for space utilization but which make things easy for the mechanic. Do-it-themself owners will find it exceedingly easy to change the oil filter, spark plugs and points and the like. Who says a car can't be sophisticated and still be entertaining to work on? →

Geometry of rear (left) and front suspension (right) is similar, being determined by lower transverse link and spring-shock strut. Wide-based lower A-arm serves as lower link at rear; at front simple lateral arms combine with compliance struts.





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Transmission

THE STANDARD 4-speed, all-synchromesh gearbox is combined with a conventional single-dry-plate diaphragm clutch and uses the Warner synchronizer design. The box is similar in design to that of the 510 but has a different set of ratios and stronger internals to handle the 6-cyl torque. The Dana Spicer differential, built by Nissan but of a design widely used in cars all over the world, comes in a 3.36:1 ratio with the 4-speed box, giving about 2800 engine revolutions per mile or 21.4 mph/1000 rpm.

Optional is the 5-speed manual gearbox as used in the 2000 sports car; its overdrive 5th gear (0.852:1) with the 3.70:1 final drive gives a slightly longer-legged 22.9 mph/1000 rpm. A 3-speed automatic transmission will be available later but at this point Nissan has not decided whether it will be the Borg-Warner 35, as used in the 510, or a unit produced by Nissan, Toyo Kogyo and Ford in Japan.

Performance

THERE WAS a definite reason for picking the MGB GT and the Porsche 911T for dimensional comparisons earlier. Both are familiar quantities; but more importantly the 240Z will sell for about the same price as the MG while offering performance—that is, acceleration and top speed—in the Porsche bracket. At the promised price the Datsun is neck-and-neck with a similarly equipped MGB GT and its combination of 150 bhp with 2238 lb sounds mighty like the 911T's 142 bhp and 2395 lb—allowing for the fact that Japanese horses seem to be somewhat smaller than German ones. Datsun's performance claims are for a top speed of 124 mph and a standing ¼-mile time of 16.3 sec; these line up almost exactly with what we recorded for last year's 125-bhp 911T, so projecting from that we might predict a 0-60 mph time of 8.9 sec. We'll have a road test before long.

As for handling, the standard tires and wheels should give moderately high ultimate cornering power; both front and rear suspension appear to have good camber characteristics and should therefore make for pleasant handling as well as respond well to larger wheels and tires for those who want still better results. Certainly the car is light enough to have no need for power steering even with relatively large amounts of rubber on the road. And what of braking? Our 2000 test car of a couple years ago did 0.9g in the panic stop and showed no fade in our brake fade test; the 240Z with the same brake area and about 130 lb more weight should be nearly as good. I haven't seen any evidence yet that a car this light really needs discs at all four wheels to give good braking performance, so the disc/drum setup seems appropriate.

WHAT, THEN is the 240Z and where does it fit in the scheme of things? From what we can tell—we haven't driven it yet—it's a bargain GT with most of the things Americans expect but don't always find in a GT. The relatively hefty engine is what really sets it apart from its competition, and it's certainly modern in concept and execution throughout. It doesn't have the handling potential of the mid-engine Porsche 914, another 2-seater, but at the same price it offers abundantly more straight-line performance and (probably) refinement of running. Our experience with other Datsuns to date tells us that it won't be assembled with the precision of a German car nor will it have the fine edge of "feel" found in the Italians—but the same package produced in either of those countries would undoubtedly cost $1000 to $2000 more. We think Datsun has a real winner.

DATSUN 240Z SPECIFICATIONS

Engine:
Type.....6 cyl inline, sohc
Bore x stroke, mm.....83.0 x 73.3
Equivalent in.....3.27 x 2.90
Displacement, cc/cu in.....2393/146
Compression ratio.....9.0:1
Bhp @ rpm.....150 @ 6000
Torque @ rpm, lb-ft.....148 @ 4400
Carburetion.....two Hitachi-SU (1V)
Emission control.....air injection

Drive Train:
Transmission.....4-speed manual (std) or 5-speed manual (opt); 3-speed automatic to be available later
Gear ratios: 4-speed
4th.....1.00.....3.36:1
3rd.....1.42.....4.77:1
2nd.....2.20.....7.39:1
1st.....3.55.....11.92:1
5-speed
5th.....0.85.....3.14:1
4th.....1.00.....3.70:1
3rd.....1.31.....4.85:1
2nd.....1.86.....6.88:1
1st.....2.96.....10.95:1
Final drive ratios.....3.36:1 (4-speed), 3.70:1 (5-speed), 3.54:1 (automatic)

Chassis & Body:
Body/frame.....unit steel
Brake type: 10.7-in. disc front, 9.0 x 1.58-in. drum rear; power assisted
Swept area, sq in.....310
Wheels.....steel disc, 14 x 4½J
Tires.....radial, 175-14
Steering type.....rack & pinion
Gear ratio.....17.8:1
Turning circle, ft.....31.5
Front suspension: MacPherson struts, lower lateral arms, leading compliance struts, coil springs, tube shocks, anti-roll bar
Rear suspension: Chapman struts, lower A-arms, coil springs, tube shocks

General:
Curb weight, lb.....2238
Wheelbase, in.....90.7
Track, front/rear.....53.3/53.0
Overall length.....162.8
Width.....64.1
Height.....50.6
Ground clearance.....5.7
Fuel tank capacity, U.S. gal.....15.9